Valkaria Airport

Airport Master Plan and Airport Layout Plan Update

FDOT Item No. 435317-1-94-01

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DRAFT Master Plan Update

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INTRODUCTION

Brevard County completed the previous Airport Master Plan for the Valkaria Airport (X59) in 2006. The study recommended an update in the 2012 – 2016 timeframe. In the fall of 2014, Hanson was selected to complete an Airport Master Plan Update for X59. The full study will include all required elements typical of an Airport Master Plan. This working paper summarizes the data and information gathered in preparing the first 2 chapters of the study, the Existing Conditions and Forecast of Aviation Demand.

The information presented was gathered in a variety of ways including review of published data and reports provided by airport management and staff, data contained in the Florida Aviation System Plan (FASP), on-site inspections, in-person meetings and interviews with airport staff, airport tenants and users, and agency contacts. This master plan update is consistent with the Federal Aviation Administration (FAA) and the Florida Department of Transportation (FDOT) guidelines, including those described in:

- Advisory Circular 150/5300-13A, “Airport Design”
- Advisory Circular 150/5070-6B, “Airport Master Plans”
- FDOT “Guidebook for Airport Master Planning
- Code of Federal Regulations Title 14 Part 77 “Safe, Efficient Use, And Preservation Of The Navigable Airspace”

In the recent months, the following projects that were identified in the 2006 Airport Master Plan recommended capital improvement program have been completed at X59:

- Installation of an airport beacon and runway threshold/end lights
- Reconstruction of Taxiway B and the aircraft parking apron
- An Environmental Assessment, design, and construction of a 4,000’-long Taxiway A parallel to primary Runway 14/32
- Construction of 2 8-unit T-hangars with connecting box hangars, including needed stormwater and drainage improvements and addition of Skyman Park
- Runway Safety Area improvements, including hazard removal or mitigation
- Facility safety improvements as a result of a Wildlife Hazard Assessment
- Implementation of a Wildlife Hazard Management Plan completion
- Rehabilitation of secondary Runway 10/28, including installation of a precision approach path indicator (PAPI) approach aids
- Security Enhancements

Valkaria Airport is subject to licensing requirements contained in Rule 14-60.007, Florida Administrative Code (F.A.C.), per the requirements of Ch. 330.30, Florida Statutes (F.S.). The facility is inspected and licensed by the FDOT Aviation and Spaceports Office (ASO) on an annual basis. The most recent inspection of the facility was conducted on August 28, 2014, and resulted in a positive outcome. FDOT identified several matters such as runway marking improvements needs that will be addressed in a future planned runway rehabilitation project.

1 Existing Conditions

1.1 Airport Ownership and Location

Valkaria Airport is a public use airport owned by Brevard County, Florida and administered by the County Commission, as the airport sponsor. The County employs the services of a full-time, professional airport manager and staff.

X59 is a non-towered basic utility airport that primarily serves general aviation recreational and training activity. The airport is located along the east coast of Florida in the East Central Florida Metropolitan CFASPP[1] area, which includes Brevard, Flagler, Lake, Orange, Osceola, Seminole and Volusia Counties. Brevard County is a noted tourist and service-oriented economy with a variety of transportation, government, educational and technology based businesses including Patrick Air Force Base, NASA-Cape Canaveral, Florida Institute of Technology, Spaceport Florida, Harris Corporation, Northrup-Grumman, Embraer, and others.

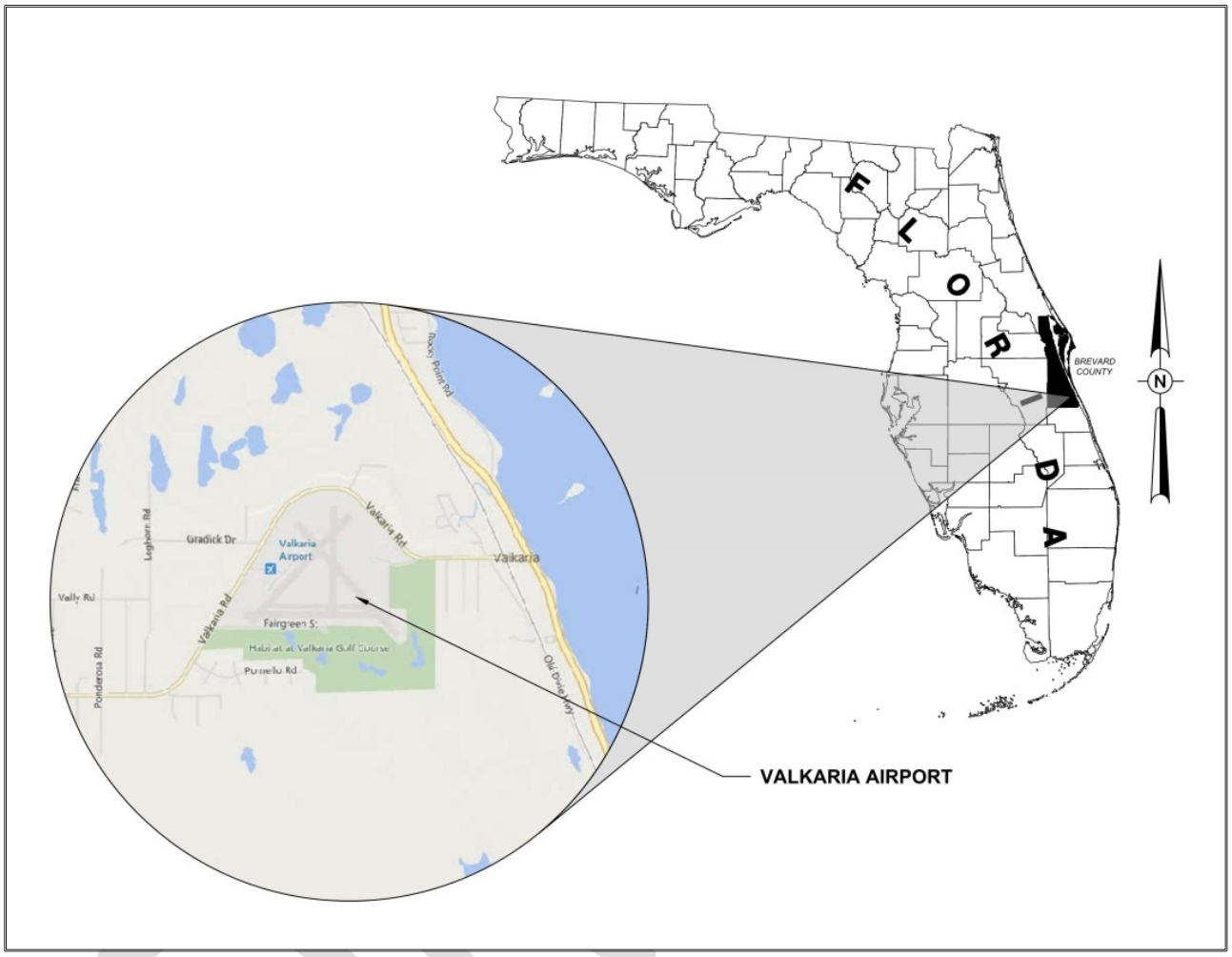
Valkaria Airport is a community/general aviation airport supporting the movement of aircraft and visitors, business travel, pilot training activities, recreational and sport aviation and other activities, including those supporting law enforcement, emergency services and preparedness, and disaster relief. The airport is an asset to the Florida airport system and provides an important connection to the larger aviation system and access to its respective communities.

Valkaria is included in the National Plan of Integrated Airport Systems (NPIAS), which identifies existing and proposed airports that are significant to national air transportation and thus eligible to receive Federal grants under the Airport Improvement Program (AIP). A 2012 study sponsored by the FAA evaluated the Nations general aviation airports and their various roles in the communities they serve. This study identified Valkaria as a “Local/Basic” airport that “supplements the community by providing access primarily to intrastate and some interstate markets, and that supports general aviation activities such as emergency service, charter or critical passenger service, cargo operations, flight training, and personal flying.” This study will evaluate Future development needs that are important to maintaining this role in Brevard County’s airport system.

Existing airport property consists of approximately 660 acres of land located on the northwest side of the City of Grant-Valkaria, approximately 1 mile from the city center. The airport is located west of U.S. Highway 1, and is accessible by Pilots' Place which connects to Valkaria Road. Airport coordinates are Latitude 27-57-39.10 N and Longitude 080-33-30 W. Airport elevation is 26 feet above mean sea level (MSL). The airport’s location is shown on Figure 1.1.

[1] The Continuing Florida Aviation Systems Planning Process (CFASPP) was established by the FAA and FDOT as a means of maintaining and enhancing the Florida aviation system. A primary function of CFASPP is to provide a mechanism for the continued monitoring of the Florida and National aviation environment in order to keep pace with the safety, security and capacity needs of Florida airports. CFASPP is a component of the Federal Aviation Administration Continuous Airport Systems Planning Process.

Figure 1.1: General Location map



1.2 Airport Facilities

1.2.1 Runways and Taxiways

Valkaria Airport has 2 asphalt runways, both 4,000 feet long. Runway 10-28 is 60 feet wide, reduced from the previous width of 75 feet following recent runway reconstruction and resurfacing in May 2014. The width of the runway was reduced to match the FAA runway design criteria for B-I (Small) Airplane Design Group (ADG). The pavement condition is excellent. Runway 14-32 is 75 feet wide to match FAA runway design criteria for B-II ADG. The pavement and markings are in fair condition.

Runway 14-32 has a 25’ wide full parallel taxiway (Taxiway “A”) with connectors to the aircraft parking apron. The taxiway is constructed of asphalt and is in excellent condition as it was recently completed.

In May 2011, FDOT Aviation and Spaceports Office published a Statewide Airfield Pavement Management Program report for the facility, documenting the condition of the pavement at the Valkaria Airport. The pavement conditions for runways, taxiway, connectors, and apron space were evaluated by an FDOT pavement inspector. The 2011 report determined that Runway 10-28, aircraft parking aprons and Taxiway B pavement conditions as "poor" and these surfaces have been rehabilitated since the inspection. Runway 14-32 pavement conditions were identified as fair and will be rehabilitated as part of a future project. Table 1.1 below summarizes existing airfield characteristics.

Table 1.1 Summary of Runway Characteristics, Valkaria Airport

Airport Elevation			**26 feet**	
Runways	**10**	**28**	**14**	**32**
Dimensions (ft)	4,000 x 60		4,000 x 75	
Surface	Asphalt		Asphalt	
Surface Condition	Excellent		Fair	
Pavement Strength	12,500 LBS S.W.			
Lighting	None			
NAVAIDS	None			
Visual Aids	PAPI - 4	PAPI – 4	PAPI – 4	PAPI - 4
Runway Marking	Basic		Basic	
Taxiways				
Dimensions (ft)	None		4,000 x 25	
Surface	NA		Asphalt	
Surface Condition	NA		Excellent	
Lighting	NA		None	
Source: Airport Master Record 5010, Airport Facility Directory, 2015, Hanson 2015				

1.2.2 Airport and Airfield Lighting

Valkaria Airport has a rotating light beacon that is clear-green, and which operates from sunset to sunrise. Runway 14-32 and Runway 10-28 are equipped with runway threshold/end lights. The remainder of the facility's operational surfaces are not lighted.

1.2.3 Approach and Landing Aids

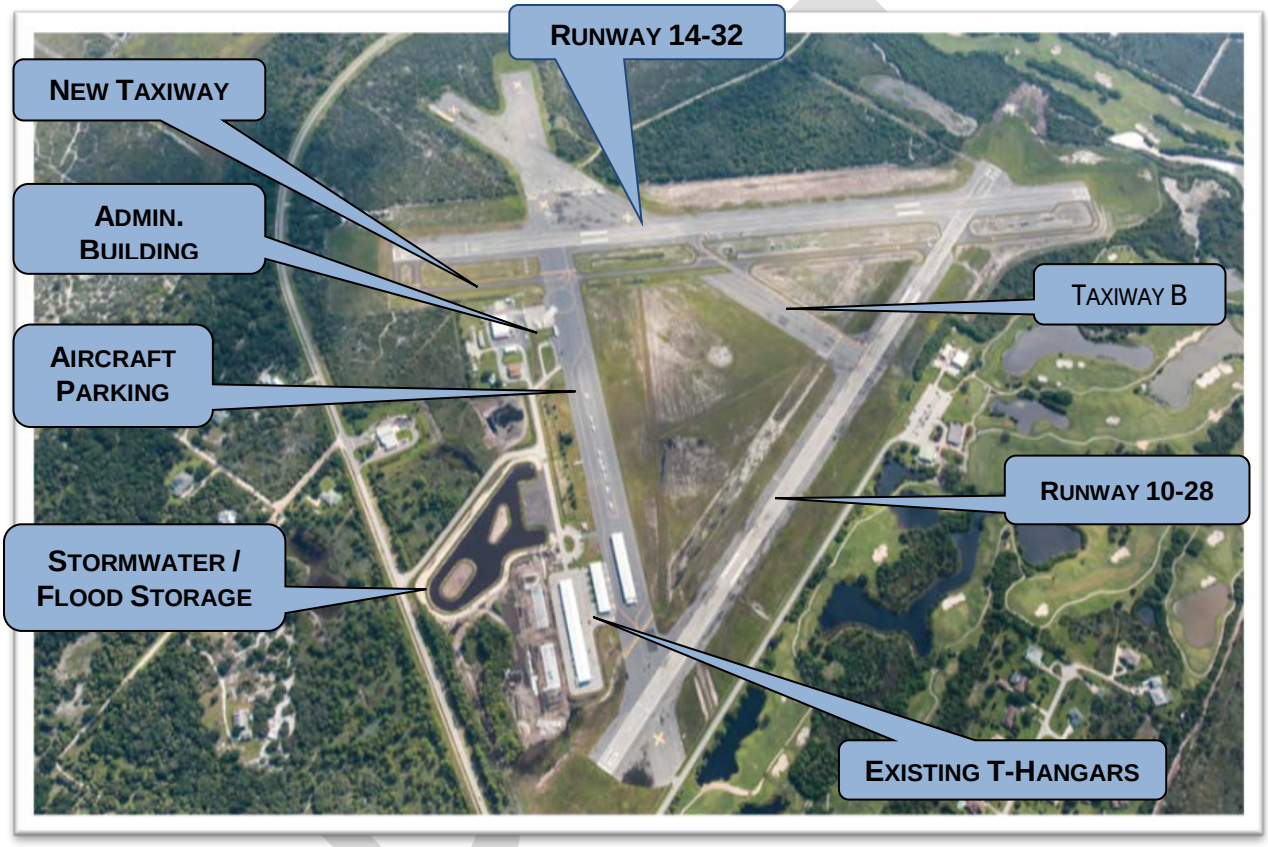
In addition to the rotating beacon, all runway ends are equipped with precision approach path indicators (PAPIs) of the four-light unit type. X59 is also equipped with a lighted windsock and a segmented circle.

1.3 Landside Facilities

Landside facilities include T-hangars and box hangars, apron and ramp access, and automobile parking. At X59, these facilities are located on the west side of the airport, along Valkaria road and west of the intersection of Runway 14-32 and Runway 10-28. Independent tenants provide a variety of services including small aircraft manufacturing, flight training, small airframe and powerplant repairs, and avionics installation and repair. Airport administration occupies a small building on the north side of the apron area. There are 10 paved parking spaces for automobiles.

The airport provides a total of 30 anchored tie-down spaces for local and itinerant aircraft located on the paved apron adjacent to the administration trailer and Taxiway/Taxilane C. The aircraft parking apron was recently repaved and remarked. During special events or periods of increased activity, additional parking for 10 to 15 aircraft is available for temporary use on the paved areas north of Runway 14-32. A hangar complex is located just southwest of the apron and includes 5 T-Hangar strands and 4 box hangars leased to local aviation companies consisting of Hughes Aircraft Services, Composite Designs, Recreational Mobility, and the Valkaria Aviation Association (VAA). These 67 T-hangars and 4 box hangars. Hangars provide storage for 115 aircraft. Figure 1.2 provides the general location of airport facilities.

Figure 1.2 Facility Locations



1.4 Fuel Storage

Valkaria Airport has self-service fueling. The facility that serves general aviation aircraft consists of a self-service system and dispenses 100LL Avgas with a 12,000 gallon tank capacity. The airport also has a Jet-A fuel tank with a 5,000 gallon tank capacity. The facility is located north of the airport administration building, constructed in 2002 as an above ground installation, and is currently undergoing renovation. Table 1.2 provides a history of Avgas (100LL) and Jet-A fuel sales.

Table 1.2 Summary of Fuel Sales, Valkaria Airport

Year	Avgas		Jet-A	
(Fiscal Year)	Gallons	Sales	Gallons	Sales
2006	58,233	$211,206		
2007	62,299	$227,755		
2008	40,085	$180,578		
2009	37,640	$142,151		
2010	50,375	$197,939		
2011	51,751	$235,424		
2012	52,953	$270,790		
2013	47,318	$249,827	681	$2,758
2014	49,647	$250,458	3,738	$16,447.50
Total	**451,283**	**$1,966,128**	**4,419**	**$19,205.25**
Source: Airport Master Record 5010, Airport Facility Directory, 2015, Hanson 2015				

1.5 Published Instrument Approach Procedures

Valkaria Airport does not have any published instrument approach procedures, and there are no procedures that are pending development as a part of the FAA Instrument Flight Procedure Production Plan. This precludes IFR approaches, although marginal VFR approaches do take place. However, the airport does have a limited number of IFR departure operations. Specifically, aircraft departing the airport in Instrument meteorological conditions (IMC). IMC is an aviation flight category that describes weather conditions that require pilots to fly primarily by reference to instruments, and therefore under instrument flight rules (IFR). Pilots operating in IMC conditions can receive all clearance information, including discrete transponder (squawk) code, heading to enter Orlando Approach controlled airspace, altitude limitation, and clearance departure and void times using telephone contact with Flight Service. The number of such operations is not quantifiable, but direct conversation with users of the airport confirms they do occur. Projected use will require IFR approach capability in addition to the IMC departure operations now occurring.

1.6 Area Airports and Airspace

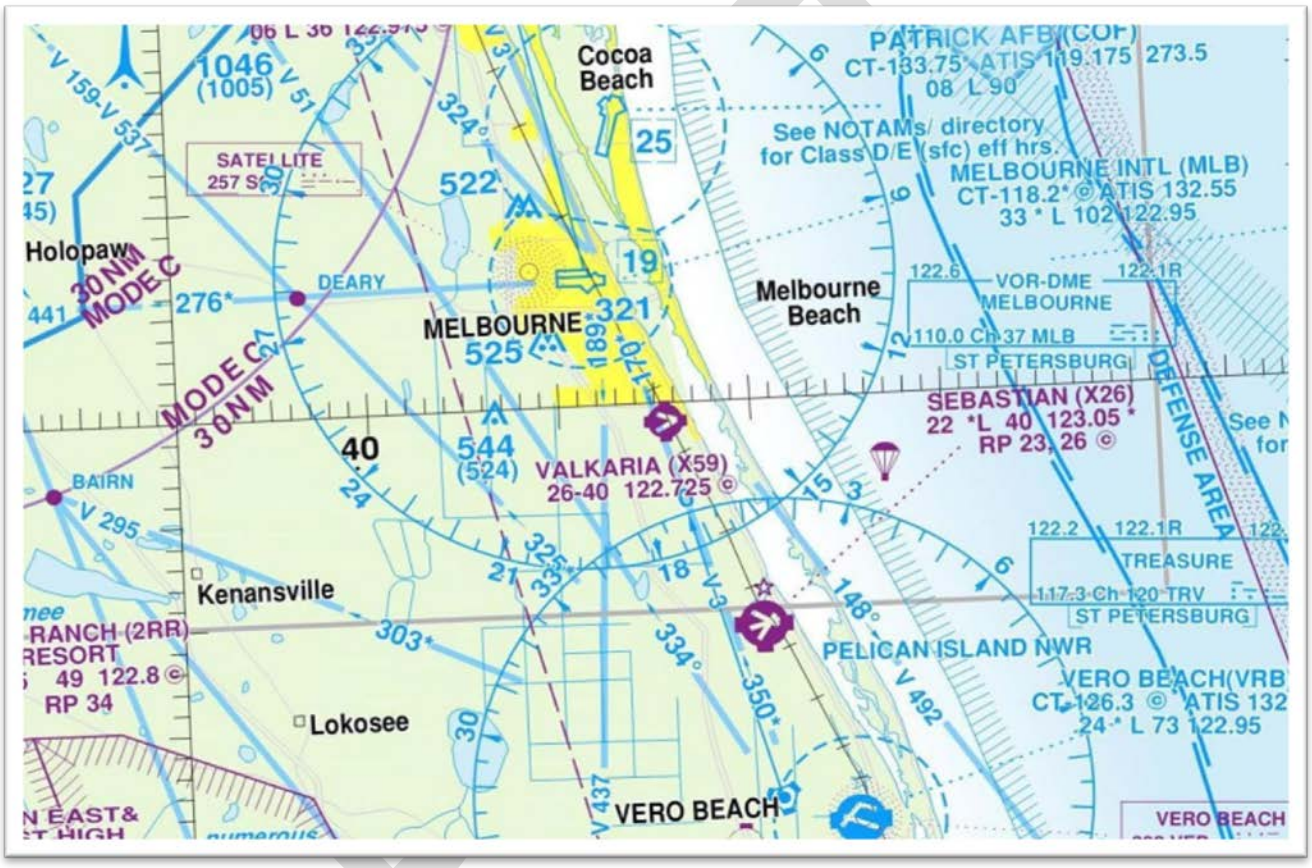
Valkaria Airport is a non-towered airport located in Class G airspace extending from the ground up to 1,200 feet AGL. Pilots operating in Class G airspace are not required to operate aircraft equipped with radio communications equipment or transponders, although this equipment is recommended. From 1,200 feet above ground level (AGL) to 18,000 feet AGL, the airspace over Valkaria Airport is designated as Class E airspace. Class E airspace serves as a sort of default form of controlled airspace, imposing stricter standards for visual flight than uncontrolled airspace (Class G), but demanding nothing more of the pilot than adhering to the appropriate ceiling, visibility, and cloud-clearance requirements.

There are no overlapping airspaces associated with surrounding airports. Pilots in the vicinity of the airport may communicate using the Unicom frequency of 122.725. Airports and airspace in the vicinity of X59 are depicted in Figure 1.3 below. The airport closest to X59 is Sebastian

Municipal Airport, located approximately 9 nautical miles south. Sebastian Municipal is a public use airport with two asphalt runways and full service facilities. Approximately seven privately owned, private use airports are located within 20 statute miles with P&D Heliport being the closest at approximately 4.2 statute miles. Other nearby public use airports include:

- KMLB – Melbourne International Airport (10 nm NW)
- KCOF – Patrick Air Force Base (17 nm N)
- KVRB – Vero Beach Municipal Airport (20 nm S)
- KCOI – Merritt Island Airport (24 nm N)

Figure 1.3 Area Airports and Airspace



1.7 Airport Activity

1.7.1 Based Aircraft

Based aircraft historic data was obtained from the airport records and FAA's Terminal Area Forecast (TAF). Current based aircraft data was obtained from airport management, which conducted an inventory survey of based aircraft in Fall 2014. The collected data is presented in Table 1.3 below.

Table 1.3 Based Aircraft by Type, 2006 to 2014, Valkaria Airport

Year	Single -Eng. Piston	Multi-Eng. Piston	Turbo Prop	Jet	Rotorcraft	Amphib.	Gyro	Ultra-Light	TOTAL
2014	95	4	0	0	3	6	3	16	127
2013	65	3	0	0	4	4	3	15	94
2012	55	3	0	0	4	4	3	15	84
2011	45	3	0	1	4	4	3	15	75
2010	45	3	0	1	4	4	3	15	75
2009	43	3	0	1	2	0	0	0	49
2008	43	3	0	1	2	0	0	0	49
2007	43	3	0	1	2	0	0	0	49
2006	43	3	0	1	2	0	0	0	49

Source: Airport Records (2011-2014); 2006 Valkaria Airport Master Plan; Hanson Professional Services

The number of based aircraft has grown significantly from a total of 49 in 2006 to 127 in 2014. Growth in based aircraft has paralleled the installation and availability of general aviation storage hangars. Construction was completed on T-Hangar Charlie in 2011, adding 18 T-hangar storage spots which were immediately filled. T-Hangars Delta and Echo were completed in 2013 and added another 20 T-hangar storage spots and additional box-hangar parking, which were also immediately occupied. The majority, 77%, of based aircraft fall into the single-engine piston category. Ultralights occupy the second highest category of based aircraft, at 12%.

1.7.2 Aircraft Operations

X59 does not have an air traffic control tower therefore specific detailed aircraft activity records are not available. However, the airport is staffed from 8:00 a.m. to 5:00 p.m. daily and, when time permits, observations are made regarding the number of operations by aircraft type. These airport records have been annualized and are shown in Table 1.4.

The total number of operations has increased since the last airport master plan update. Air traffic has increased from 28,470 annual operations, or about 78 takeoffs and landings per day, to 53,160 operations, or more than 145 operations per day. These operations breakdown as follows: 74%, *local*; 25% *itinerant*; and 1% *military*. A local operation is a takeoff or a landing performed by an aircraft that will operate within the local traffic pattern, within sight of the

airfield, or one that simulates a takeoff or a landing. Itinerant operations are all other arrivals and departures.

The TAF's data concerning aircraft operations were also obtained and reviewed. A comparison of the FAA projections included in the 2014 TAF, and the 2006 Airport Master Plan are also shown in Table 1.4.

Table 1.4 Total Airport Operations, By Type, Valkaria Airport

	Airport Records				FAA - TAF			
Year	**Local**	**Itinerant**	**Military**	**Total Operations**	**Local**	**Itinerant**	**Military**	**Total Operations**
2014	39,140	13,290	730	**53,160**	23,990	9,100	10	**33,100**
2013	31,875	10,839	436	**43,150**	23,990	9,100	10	**33,100**
2012	26,735	9,100	365	**36,200**	23,990	9,100	10	**33,100**
2011	26,490	9,000	110	**35,600**	23,990	9,100	10	**33,100**
2010	24,890	9,000	110	**34,000**	23,990	9,100	10	**33,100**
2009	24,090	8,900	110	**33,100**	23,990	9,100	10	**33,100**
2008	23,290	8,600	10	**31,900**	3,000	11,400	0	**14,400**
2007	21,290	8,600	10	**29,900**	3,000	11,400	0	**14,400**
2006	21,170	7,300	0	**28,470**	3,000	11,400	0	**14,400**
Forecast (2006 Airport Master Plan)								
2011	**25,550**	**9,125**	**0**	**34,675**	**23,990**	**9,100**	**10**	**33,100**

Source: Airport Records, FAA 2013 TAF, February 2014; 2006 Airport Master Plan

The number of total operations has remained unchanged since 2009. For the purpose of this update, the 2014 base year data provided by airport staff identifying 53,160 operations will be used.

1.8 Socio-economic Data and Projections

Socio-economic characteristics identify an area's past and future growth. In certain regions, socio-economic characteristics have a positive relationship to aviation activity and are often useful in preparing estimates of future airport activity.

1.8.1 Population

The U.S. Census Bureau in Census 2010 recorded the population of Brevard County as 543,376 persons. This represented an increase of 14% from the 2000 population (477,735). Florida's population grew to 18.84 million residents in 2010, representing a 14.8% increase from 2000 (16.05 mil.). The Census Bureau estimates that the population of Brevard County in 2013 was 550,823, while Florida's population was estimated at 19,600,311. Population projections from Florida's Office of Economic and Demographic Research anticipate continued rapid growth in the state's population to 21,149,697 by 2020. Projections for Brevard County are estimated to be 589,333 persons in 2020 representing a 8.5% increase from the 2010 population figures.

1.8.2 Income

Income data were obtained for the U.S., Florida, and Brevard County. The data indicates the following levels of per capita personal income (PCPI) in 2013:

- U.S. – $53,750
- State of Florida – $41,497
- DeSoto County – $39,420
  (Source: World Bank, Florida Office of Economic and Demographic Research)

The data examined shows an increase in PCPI of 9.6% for U.S. since 2010. Corresponding percentage increases for the State of Florida and Brevard County were 7.8% and 5.3%, respectively since 2010.

1.9 Area Land Use Planning and Management

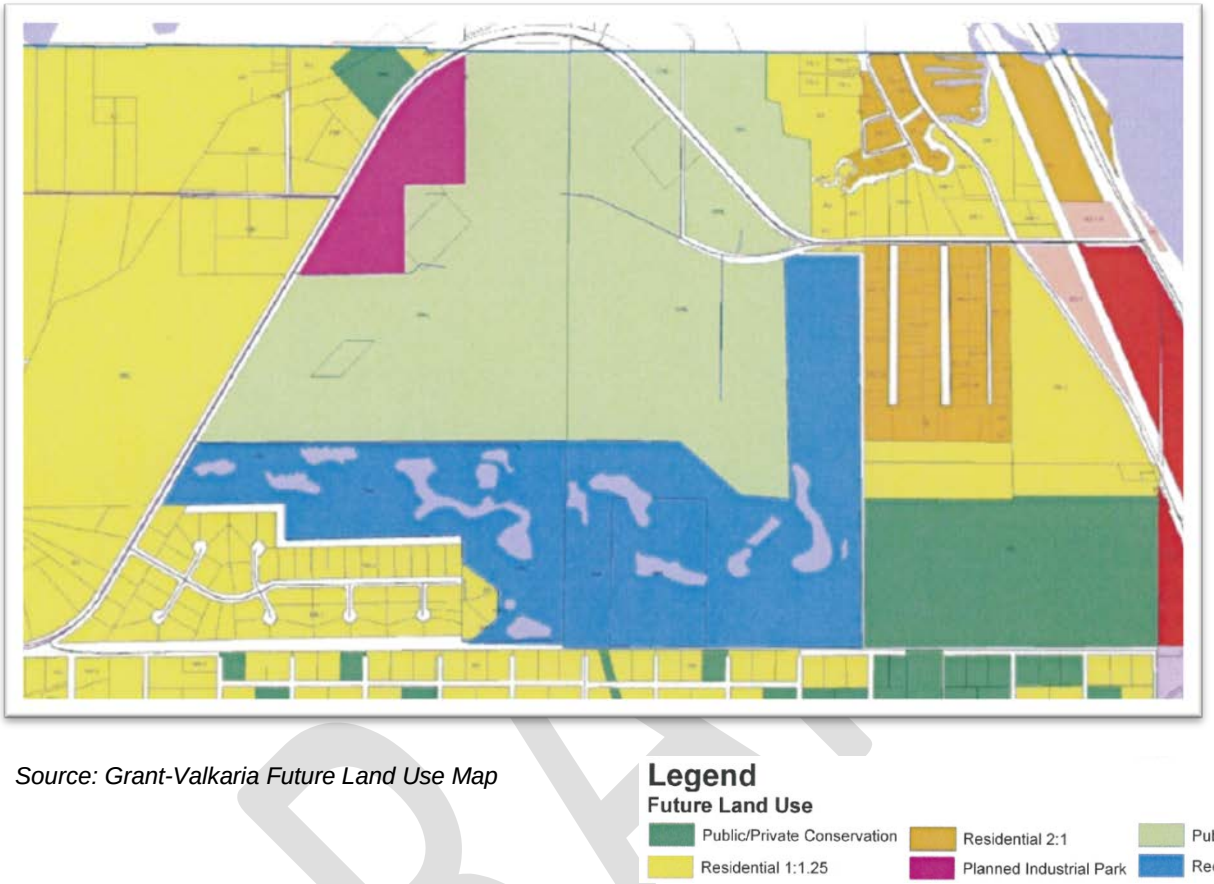
The airport resides in the municipalities of Grant/Valkaria and Malabar. While the facility's property is designated as Public Facility and Recreation uses on the municipality's Future Land Use Map, a section of which is provided as Figure 1.4, the adjacent areas are designated as follows:

- To the west, Residential (1 unit/1.25 ac.), Planned Industrial Park, and Conservation.
- To the south, Residential (1 unit/1.25 ac.) and Conservation
- To the east, Residential (1 unit/1.25 ac. and 2 units/ac.), and Conservation.

The area north of the airport falls within Brevard County, which designated the property to the north of the facility as low-density residential and agricultural uses on the county's Future Land Use Map.

Brevard County has adopted land use regulations to protect aviation facilities in the county from encroachment in accordance with Ch. 333, Florida Statutes as a part of Brevard County Code of Ordinances Sections 62.2201-62.2209. However, no inter-local agreements for regulation implementation within the boundaries of the municipality of Grant-Valkaria or Malabar have been identified.

Figure 1.4 Airport Area Future Land Use Map



Source: Grant-Valkaria Future Land Use Map

Land Use Descriptions:

Residential 1:1.25: Allows one dwelling unit per 1.25 acres
Residential 2:1: Allows two dwelling units per acre
Public: Public facilities usually owned and/or managed by a government entity
Recreation: Those lands that are utilized for parks and recreation
Planned Industrial Park: Designation for lands intended to accommodate indoor manufacturing or materials processing with a 0.5 FAR maximum intensity of use.
Public/Private Conservation: Designates lands considered environmentally sensitive. Private conservation category has a future land use density of 1 dwelling unit per 10 acres.

2 Forecasts of Aviation Demand

Future activity level estimates provide the basis for evaluating the adequacy of existing airport facilities and their capacity to handle future traffic volumes. Demand forecasts are also utilized to determine the types, quantities, and timing for needed aviation facility maintenance and improvements.

2.1 Forecast Methodologies

Forecasting methodology that produces projections of aviation activity extrapolates that data from a variety of related and independent factors. Demographic factors such as population, income, and local unemployment rate, as well as facility factors, such as airport location, availability and type of airport services, and location of a flight training facility on the facility have repeatedly demonstrated a relationship with the number of based aircraft and airport operations at general aviation facilities.

Although the individual facility factors and amount of detailed data varies by airport, aviation demand forecasts generally follow a series of similar steps. First, historical aviation activity data, including the previous facility forecast, is gathered and examined to estimate existing and past levels of traffic and trends or patterns of growth. That data needs to be carefully evaluated for factors that may indicate conditions or circumstances that may alter growth patterns. The second step involves projecting past growth patterns into the future and projecting historical relationships between aviation activity and other indicators into the future. The resulting estimates are used in the third step, where a judgment is made concerning which projection represents the most reasonable estimate of future levels of aviation activity. This judgmental evaluation culminates in the selection of a preferred forecast.

Several forecasting techniques are available to forecast general aviation activity. These include regression analysis, trend analysis, market share analysis, and growth rate projections. Selection of the most appropriate forecasting technique largely depends on the history, physical and socioeconomic environment of the facility, and its role within the aviation system.

Regression analysis involves use of historical data to identify the relationships between a selected dependent variable, such as based aircraft, and independent variables, such as population. These relationships are then applied to projections of the independent variables to give estimates of future values for the dependent variable.

A second statistical technique, trend analysis, provides estimates of future values for the desired element (aviation demand) by determining its pattern of change and extending that pattern into the future. The primary assumption of this methodology is that the same factors will influence future aviation demand as have affected it in the past.

A third means to estimate aviation demand, market share analysis, involves review of historical activity at an airport and calculations to determine that activity as a percentage of activity in a larger regional, statewide, or national market. Calculated percentages, or market shares, are then applied to forecasts of activity at the larger level(s) to produce a market share projection for the individual airport.

A fourth method, similar to market share analysis, involves the application of growth rates present in third-party projections, such as the FAA's Terminal Area Forecast (TAF) to the local market. Adjustments may be made, up or down, on the basis of factors such as local socio-

economic conditions and pending projects or development activity that could affect aviation activity.

These approaches were examined for applicability in the preparation of alternative projections from which the recommended forecast was selected. The historical airport activity report on the number of based aircraft and annual operations highlights a shortcoming in using standard forecasting techniques in the case of Valkaria Airport. While such approaches may have been appropriate for earlier updates to the airport's master plan, they can no longer account for a number of significant capital and infrastructure improvements at the facility that are spurring an unprecedented growth in airport activity. In fact, the jump in activity during 2014 most closely resembles a step function, and is consistent with the physical changes at the airport and the economic changes to the local aviation industry.

As illustrated by the historical based aircraft activity at X59, the facility experienced a 53% increase in based aircraft from 2009 to 2010-2011, followed by a 12% increase in 2012 and 2013. By the 3rd quarter of 2014, the facility has already documented a 32% increase in based aircraft from the previous year. The average annual growth rate in based aircraft from 2006 until 2014 is 12.3%.

With regard to total aircraft operations, the facility has experienced a steady growth followed by a punctuated growth jump since the latest update to the facility master plan. From 2006 through 2014, the operations at the facility grew at a pace of 3.8% to 23.19% per year, with an average annual growth of 8.12%. The largest percent increase in operations was demonstrated by the military aircraft category.

This demonstrated rate of growth exceeds the metrics laid out by both the federal and state aviation authorities, and can primarily be attributed to improvements to the airport's landing surfaces, attraction of on-airport aviation businesses, and increase in the number of leasable hangar space, as well as the aforementioned increase in flight training activity due to a growing demand for professional pilots. Although the forecast results below engage several accepted techniques for aviation demand forecasting, the results -- that were prudently selected with the use of best professional judgment – reflect a growth trend that is founded on historical data and facility conditions.

2.2 Forecast Results

The inventory of existing conditions, the FDOT Florida Aviation Database (FAD), and the FAA TAF provided data reflecting existing and historical quantity and mix of based aircraft at Valkaria Airport (X59). The FAA TAF shows no annual positive or negative variation in airport operations between 2009 and 2040 (projected).

While both the FDOT FAD and the FAA TAF contain historic data, the FDOT FAD data is generally more accurate, as it is updated on an annual basis by FDOT during the course of the facility’s annual inspection. Although the FDOT FAD data is updated annually, it is based on the airport self-reporting based aircraft and operations data. Overview of based aircraft and GA operations data showed extreme variations in reported data, as well as long periods of no reported changes. Therefore, due to a lack of reliable and consistent data for regression analysis techniques, that analysis was not conducted.

Forecast Elements - Airport activity forecasts are prepared for specific components of aviation demand.

- Based aircraft
- Aircraft operations by type
  - Annual operations
  - Design hour pilots/passengers
  - Local/itinerant
  - Aircraft mix
- Design aircraft
- Annual instrument approaches
- Automobiles/vehicles

The results obtained from forecasting of these elements provide direct inputs for subsequent portions of this airport master plan update, most particularly the capacity analysis and facility requirements determinations.

2.2.1 Forecast of Based Aircraft

The number of based aircraft at an airport is an important factor for determining future activity levels and the need for expanding or improving airport facilities. Forecasts of based aircraft are used directly to estimate the need for certain types of facilities, such as hangars and aircraft aprons. At non-towered general aviation airports, projections of based aircraft also often serve as the basis for developing the forecasts of other components of demand, such as aircraft operations. Table 1.3 identified the number of based aircraft by type for the 2006 to 2014 period. Table 2.1 shows the 2014 based aircraft by type.

Table 2.1 2014 Based Aircraft By Type, Valkaria Airport

Year	Single-Eng. Piston	Multi-Eng. Piston	Turbo-Prop	Jet	Helicopter	Amphib.	Gyro	Ultra-Light	TOTAL
2014	95	4	0	0	3	6	3	16	127

Trend analysis for X59 can be accomplished via a straight-line regression approach. The 12.3% historical growth rate in based aircraft at the facility between 2006 and 2014 was primarily reflective of the facility improvements and additions that took place in those years, and was accurately reflected by the Florida Aviation System Plan (FASP), which showed an average annual growth rate (AAGR) of 8.02% through 2011. As the facility intends to continue adding aircraft hangar space, due to existing documented demand for the improvements, the historical AAGR trend is anticipated to be sustained through the first 5 years of the planning timeframe. Beyond 2019, the rate is anticipated to taper off, and follow the regional growth trends forecast by federal and state aviation sources. Due to Florida's unique demographic growth characteristics use of straight-line national growth trend was not determined

appropriate. As based aircraft forecast can customarily be tied to demographic factors, those criteria have been examined and compared.

Specifically, the annual growth rate of the US population was compared to the same criterion in Florida. The comparison indicated that while the annual growth rate of the US population equals 0.74% and is anticipated to slowly decline through the planning horizon (*Source: U.S. Census Bureau*). Meanwhile, Florida's annual growth rate is rapidly recovering from the recession, currently equals approximately 1.4%, and is anticipated to continue strengthening. Therefore, it is reasonable to anticipate that the average annual growth rate of 1.56%, as forecast by the Florida Aviation System Plan, will be the most appropriate growth rate beyond 2019. Utilizing these assumptions, Table 2.2 illustrates the calculated based aircraft forecast results.

Table 2.2 Trend Analysis Forecast, Valkaria Airport

Year	No. of Based Aircraft
2014	127
Forecast	
2019	187
2024	202
2034	236

The FAA TAF and the FDOT FAD databases provide historical data of based aircraft and multi-year information that can be used for market share and growth rate projection techniques. In addition to the TAF referenced earlier, the FAA's current reports include FAA Aerospace Forecasts FY 2014 – 2034, which includes forecasts of the national general aviation fleet trends. Table 2.3 displays the projections from the FAA report.

Table 2.3 Total General Aviation Aircraft, By Type, U.S.

Aircraft Type	Aircraft by Year			
	2014	**2019**	**2024**	**2034**
Single-engine	122,755	118,700	115,660	113,975
Multi-engine	14,180	13,890	13,500	12,890
Piston Engine Sub Total	136,935	132,590	129,160	126,865
Turboprops	10,160	10,355	11,000	14,370
Turbojets	12,055	13,600	15,800	22,050
Turbine Sub Total	22,215	23,955	26,800	36,420
Rotorcraft	10,710	12,465	14,240	17,895
Experimental	25,895	28,100	30,130	34,440
Sport	2,240	2,955	3,595	4,880
Other	5,025	5,095	5,115	5,200
Total	**203,020**	**205,140**	**209,040**	**225,700**

Source: FAA Aerospace Forecasts, FY 2014-2034

Using the market share approach involves calculating the percentage of national active aircraft and applying it to X59's 127 based aircraft. Applying the 2014 X59 aircraft share of 0.06255% (derived from the following calculation [(127/203,020)*100]) to the projections for total national aircraft for 2019, 2024, and 2034 yields the projections for X59 shown in Table 2.4.

Table 2.4 Market Share Forecast, Valkaria Airport

Year	No. of Based Aircraft
2014	127
Forecast	
2019	128
2024	131
2034	141

Another approach to developing an independent projection was used that applied national growth rates for total aircraft to the 127 based aircraft at X59. The FAA Aerospace Forecasts Fiscal years 2014-2034, projects an average annual growth rate of 0.5% between FY 2014 and 2034. Based on that projected average annual growth rate, the national growth rate forecast yields the results shown in Table 2.5

Table 2.5 Nat. Growth Rate Forecast, Valkaria Airport

Year	No. of Based Aircraft
2014	127
Forecast	
2019	130
2024	133
2034	138

Comparison of these projections shows a difference of three based aircraft between the market share and national growth rate forecasts for the 2034 horizon year. The national market share and the national growth rate projections show a conservative increase in growth of 14 and 11 based aircraft over the entire planning horizon respectively. The 2006 Airport Master Plan identified 49 based aircraft in the base year.

Therefore, as demonstrated by a rapid growth in the number of based aircraft at the facility since the 2006 update, the based aircraft forecast of 138 aircraft, reflected by the market share forecast could reasonably be expected to exceed the 2034 projection. Table 2.6 compares the projections for the market share and the national growth rate.

Table 2.6 Comparison of National Growth Rate vs Market Share Based Aircraft Forecasts, Valkaria Airport

Year	Actual	National Growth Rate	Market Share	Difference
2014	127			
Forecast				
2019		130	128	-2 (-1.54%)
2024		133	131	-2 (-1.50%)
2034		138	141	3 (2.17%)
Growth		8.66%	11.02%	

Judgment in the selection of a preferred forecast should also include consideration of alternative forecasts; therefore, two alternative forecasts were considered. The previously referenced FAA TAF has certain limitations for small general aviation facilities, as those facilities not inspected by the FAA and rely solely on Form 5010 data to obtain based aircraft and operations numbers. The TAF based aircraft at X59 for 2013 is 64, as opposed to airport-provided total of 127. Nevertheless, the TAF projects steady growth in based aircraft at X59, as shown in Table 2.7

Table 2.7 FAA Forecast Based Aircraft, Valkaria Airport

Year	No. of Based Aircraft
2014	127
Forecast	
2019	70
2024	76
2034	96

The TAF based aircraft projection of 96 aircraft significantly underestimates the national growth rate projection utilized for planning purposes in this Master Plan update, as the documented number of based aircraft already exceeds the 2034 forecast. The second independent forecast, available from the Florida Department of Transportation (FDOT) Aviation Office FAD (which utilizes a trend forecasting technique), forecasts based aircraft at X59 as shown in Table 2.8

Table 2.8 FDOT Forecast Based Aircraft, Valkaria Airport

Year	No. of Based Aircraft
2014	127
Forecast	
2019	87
2024	94
2034	109

As discussed earlier, while the FDOT forecast is based on data requested from the airport management, collected, and updated by FDOT during the annual inspection, the data for X59 shows a number of very drastic changes in based aircraft, followed by a period of no change. Therefore, due to those database variations and a significant discrepancy between recorded based aircraft and the figure provided by the airport, the consultant believes that the data utilized for the trend forecasting technique is likely unreliable. Table 2.9 provides a side-by-side comparison of the four forecasts discussed.

Table 2.9 Comparison of Alternative Forecasts for Based Aircraft, Valkaria Airport

	Forecast Model				
Years	**Trend Analysis**	**Market Share**	**Nat. Growth Rate**	**TAF**	**FDOT**
2014	127	127	127	42	
Forecast					
2019	187	128	130	70	87
2024	202	138	133	76	94
2034	236	141	138	96	109

In conclusion, as previously noted, due to the unique demand characteristics at X59 and growth characteristics of Florida, the national growth rate and market share analyses do not adequately reflect the facility's based aircraft growth. **For the purposes of this study, the model trend analysis forecast, based on the historic and forecast FASP figures, as supported by actual growth at the facility, was selected for the based aircraft forecast.** This is supported by the following factors:

- As reflected by demonstrated need Valkaria will request FDOT grant funding for the construction of a 20 unit T-Hangar and 1 to 3 new box hangars. These storage facilities will be constructed in 2016 and immediately occupied. The waiting list for T-Hangars is currently at 62 potential customers, with an additional 30 potential customers on the large box hangar waiting list.
- The addition of services such a small airframe and powerplant repairs, avionics installation and repair and other operator services has enhanced the attractiveness of X59 as a base of operations.
- On airport Aero Club flight training (ACV), new on site independent flight instructors, area flight schools such as F.I.T. Aviation and Flight Safety are growing, and operate regularly, both during the day and night, at X59.

2.2.2 Forecast of Annual Aircraft Operations

Forecasts of annual operations were also prepared. An "operation" is defined a take-off or a landing. Touch-and-go activity that simulates take-offs and landings constitute two operations for each touch-and-go cycle. As was the case with based aircraft data, it was determined that

data available from sources such as the FAA TAF and the FDOT FAD was not viable for conducting regression or model trend analysis. For example, the TAF data presented in Table 1.4 estimates of total annual operations of 33,100 that remain constant from historical year 2009 to the year 2040. While the FDOT FAD data mirrors the historical data presented by FAA TAF precisely, the provided trend analysis specifies a projected average annual growth rate of 2.47%. In the year 2014, airport staff estimates that approximately 145 operations take place daily. Therefore, those data sources were not deemed appropriate for this study, and data provided by airport management and flight training operators was utilized.

As the data sourced from airport management indicates, the steady growth in airport operations approximately replicates the trend reflected by the based aircraft forecast, and is historically indicative of the improvements to the facility's landing surfaces, addition of hangar space, and attraction of on-airport aviation businesses. However, there's no definitive correlation between the growth in the number of based aircraft and the growth in the number of operations. The likely cause for that finding is the type of aircraft that were added to the facility in recent years, and the character/frequency of flying operations that these aircraft conduct. The jump in use in 2014 certainly reflects a higher use from flight training operations based in the area but not at the airport.

Due to the types and timing of planned improvements at the facility, it is anticipated that the current growth rate in annual operations will be sustained through 2019, and will taper off following 2019 through the 2034 planning horizon. However, the rate will start from the higher baseline that the 2014 traffic jump establishes. According to the FAA Aerospace Forecast for FY2014-34, GA activity is going to continue growing at a modest pace of 1.4% through the planning horizon, with a slight decline in piston-engine aircraft activity being offset by a moderate growth in the turbine aircraft market. As such, the forecast AAGR of 1%, as forecast by the most recent FASP update is a realistic estimate of future operations at X59 from 2020 through 2034. With that in mind, the forecast annual operations are illustrated in Table 2.10.

Table 2.10 FASP Annual Operations Forecast, Valkaria Airport

Year	No. of Annual Aircraft Operations
2014	53,160
Forecast	
2019	55,872
2024	58,722
2034	64,865

Generally, in the absence of installed acoustic counters, airport or FBO staff at a non-towered facility is relied upon to provide operations counts. This is supplemented by information from the off-airport flight training operations using the airport as a regular location in their programs. An alternative method frequently used in preparing airport master plan operations forecasts is the Operations Per Based Aircraft (OPBA). OPBA is a method that develops a ratio of aircraft operations to the number of based aircraft on the facility using historical data. This ratio is then applied to forecasts of based aircraft to develop estimates of future annual operations.

As mentioned earlier, the growth in based aircraft and annual operations showed an insignificant correlation due to the type of based aircraft that produced the increase, and the nature of flying operations they conduct. As such, OPBA was not judged to be a reliable quantitative measure, and was not utilized.

2.2.3 Forecast of Annual Aircraft Operations by Type (Local/Itinerant)

Airport operations at airports the size of X59 are typically classified in 1 of 3 categories: local, itinerant or military. As previously noted, a local operation is a take-off or a landing performed by an aircraft that will operate within the local traffic pattern, within sight of the airfield, or an operation which simulates a takeoff/landing cycle. Itinerant operations are all other arrivals and departures. Military operations may be local or itinerant. They are broken out separately for the purposes of this study. Airport management, based tenants, regular itinerant operators, and pilots, were interviewed to gain their perspective on the split between local and itinerant operations. The previous master plan was also referenced.

Based upon this input, the estimate of 74% local/26% itinerant will be utilized for the purposes of this master plan update. Military operations are assumed to be itinerant since there are no military aircraft based at X59. The TAF database's estimates show that annual operations will be made up of 73% local and 27% itinerant throughout the planning horizon. This results in the forecast shown in Table 2.11. Because military operations forecasts often have national security implications, the Department of Defense provides limited information on future military aviation activity. Therefore, the TAF projects military activity at its present level except when FAA or a specific agency has specific knowledge of a change in military activity.

Table 2.11 FAA TAF Airport Operations, By Type, Valkaria Airport

Year	Local	Itinerant & Military	Total Operations
2014	39,338	13,822	53,160
Forecast			
2019	41,345	14,527	55,872
2024	43,454	15,268	58,722
2034	48,000	16,865	64,865

2.2.4 Design Hour Operations

Design hour operations were also forecast as a function of total annual operations. The methodology used involved three steps. First, average day operations were calculated by dividing total annual operations by 365. Then, design day operations were calculated by multiplying average day operations by 1.9. At last, utilizing an assumption that a typical design hour constituted a fixed percentage (15%) of design day operations, design hour operations were calculated by multiplying design day operations by .15. The projections are presented in Table 2.12.

Table 2.12 Forecast of Design Hour Operations, Valkaria Airport

	Airport Operations			
Year	**Total Annual**	**Average Day**	**Design Day**	**Design Hour**
2014	53,160	145	277	41
Forecast				
2019	55,872	153	291	44
2024	58,722	161	306	46
2034	64,865	178	338	51

2.2.5 Forecast of Pilot and Passenger Demand

The number of persons using an airport during design hour conditions is a major consideration in defining future needs for general aviation pilot and training facilities, passenger and terminal needs including restrooms, meeting space and auto parking space. Data presented in past FAA studies indicate the applicability of a ratio of two persons (one pilot and one passenger) per general aviation design hour operation. This ratio and forecasts of activity for X59 were used to produce the projections of design hour pilots and passengers presented in Table 2.13.

Table 2.13 Forecast of Pilots and Passengers, Valkaria Airport

Year	No. of Design Hour Pilots & Passengers
2014	82 Persons
Forecast	
2019	88 Persons
2024	92 Persons
2034	102 Persons

2.2.6 Forecast of Annual Instrument Approaches (AIAs)

Valkaria Airport does not have any published instrument approach procedures, and there are no procedures that are pending development as a part of the FAA Instrument Flight Procedure Production Plan. This precludes IFR approaches, although marginal VFR approaches do take place. However, the airport does have a limited number of IFR departure operations. Specifically, aircraft departing the airport in IMC can receive all clearance information, including discrete transponder (squawk) code, heading to enter Orlando Approach controlled airspace, altitude limitation, and clearance departure and void times using cell phone contact with Flight Service. The number of such operations is not quantifiable, but direct conversation with users of the airport confirms they do occur. Projected use will require IFR approach capability in addition to the IMC departure operations now occurring.

Although the airport runways and taxiways are unlighted except for threshold lights on runway ends, the airport has a lighted beacon and supports around 2,500 night operations per year. Of these, around 1,000 operations are done by mosquito control helicopters. Military CH-46

helicopter operations are also a significant component of night operations. Both of these involve multiple full stop landings and takeoffs during each night that operations are underway. However, within the definition of civil twilight as starting night operations, there are also fixed wing takeoffs and landings that contribute to the total operations. These are at pilot-in-command discretion subject to FAR Parts 91.3 and 91.13.

2.2.7 Aircraft Mix

Aircraft mix refers to the types of airplanes that use, and will use, the airport. Mix is considered in requirements for runway length, strength, and width among other design parameters. For initial forecasting purposes, the categories considered were those reported by airport staff. Those categories and the number of based aircraft reported for each are shown in Table 2.1. The types of based aircraft currently occupying hangar storage and tie-down space at X59 include:

- Single-engine aircraft: Cessna 150, 152, 172 and 182 aircraft, Piper Tomahawk, Cherokee, Arrow, Quickie Q1, Sonex, T51, Midget Mustang, Kolb Kolbra, RV 4, RV 6, RV 7, RV 8, RV 9 & RV 10
- Multi-engine aircraft: Piper Apache, Casa 212, Beech Baron B58, Piper Twin Comanche, and Piper Aerostar/600A
- Helicopters Include: RotorWay, Mosquito, and Eurocopter 135
- Amphibian, Gyro and Ultralights include: Searey Amphibian, Aventura Amphibian, Air Command Gyro, Phantom Ultralight, CGS Hawk, Dominator Gyro, Buckeye powered parachute and Kolb

The FAA Aerospace Forecast for FY 2014-2034 was referenced to determine forecast industry growth rates by type:

Aircraft Type	Forecast Growth Rate
Piston Engine	-0.4%
Turbine	3.4%
Helicopter	2.6%
Other	0.2%

Consideration of this information, as well as historical data for X59, suggests that based aircraft will continue to be dominated by the single-engine piston aircraft category. However, assumptions and findings of the based aircraft forecast had to be applied to the fleet mix forecast. These observations and assumptions are reflected in the results presented in Table 2.14.

Table 2.14 Forecast Based Aircraft, By Type , Valkaria Airport

	Year			
Aircraft Category	**2014**	**2019**	**2024**	**2034**
Single-Engine Piston	95	139	151	177
Multi-Engine	4	6	7	7
Jet	0	1	1	2
Helicopter	6	10	11	13
Others	21	31	32	37
Total	**127**	**187**	**202**	**236**

2.2.8 Design Aircraft

As mentioned earlier, aircraft mix is considered in requirements for runway length, strength, and width among other design parameters. The aircraft mix is also utilized to determine the three primary aircraft characteristics with respect to airfield design: aircraft weight, approach speed, and wingspan. Review and consideration of these characteristics results in planning decisions and produces planning inputs including the selection of design aircraft for the airport, as well as the mix of based aircraft and the overall operational fleet mix. The "design" aircraft may be a single aircraft or a composite of several different aircraft composed of the most demanding characteristics of each.

FAA Advisory Circular (AC) 150/5300-13A, Change 1, Airport Design, suggests two categories of aircraft weight. Aircraft weighing 12,500 pounds or less are classified as small aircraft, and aircraft weighing more than 12,500 pounds are classified as large aircraft. The AC lists five Aircraft Categories with respect to approach speed:

Category A: with speeds of less than 91 knots

Category B: with speeds of 91 knots or more but less than 121 knots

Category C: with speeds of 121 knots or more but less than 141 knots

Category D: with speeds of 141 knots or more but less than 166 knots

Category E: with speeds of 166 knots or more

The AC divides aircraft into six Airplane Design Groups according to wingspans:

Group I: with wingspans of up to but not including 49 feet

Group II: with wingspans of up to but not including 79 feet

Group III: with wingspans of up to but not including 118 feet

Group IV: with wingspans of up to but not including 171 feet

Group V: with wingspans of up to but not including 197 feet

Group VI: with wingspans of up to but not including 262 feet

Applying these criteria to aircraft at X59 shows that most based airplanes are small aircraft in Approach Categories A and B and Design Group I. Identification of the design aircraft at most general aviation airports is accomplished by considering itinerant aircraft. Based on the information provided by airport staff, that while majority of based and itinerant aircraft fall into the Category A and Design Group I, frequent and year-round use by B200 Super King Air and Casa 212 aircraft necessitates consideration of a more demanding design aircraft category. As a result, **the recommended design aircraft category for the facility is B-II.**

Runway 10-28 was recently reconstructed providing a new asphalt surface; the runway width was reduced from 75 to 60 feet to match FAA design criteria for the B-I Small aircraft design group. It is anticipated that when Runway 14-32 is programmed for rehabilitation, it will meet the B-II design criteria.

2.3 Forecast Summary

Preceding sections have presented the forecasts of aviation demand at X59 and have described the historical data and methods used to produce the estimates of activity. Table 2.15 summarizes major elements of the recommended forecasts.

Table 2.15 Forecast Summary, Valkaria Airport

	Forecast Year											
	2014 Base Year			2019			2024			2034		
Element	FAA TAF Est.	Airport Actual	Difference (%)	FAA TAF Est.	MPU Forecast	Difference (%)	FAA TAF Est.	MPU Forecast	Difference (%)	FAA TAF Est.	MPU Forecast	Difference (%)
Based Aircraft												
Single-eng.	-	95	-	-	139	-	-	151	-	-	177	-
Multi-eng.	-	4	-	-	6	-	-	7	-	-	7	-
Jet	-	0	-	-	1	-	-	1	-	-	2	-
Rotorcraft	-	7	-	-	10	-	-	11	-	-	13	-
Other	-	21	-	-	31	-	-	32	-	-	37	-
Total	64	127	+98.44%	70	187	+167.14%	76	202	+165.79%	96	236	+145.83%
Annual Operations												
Local	23,990	39,338	+63.97%	23,990	41,345	+72.34%	23,990	43,454	+81.13%	23,990	48,000	+100.08%
Itinerant	9,110	13,822	+51.72%	9,110	14,527	+59.46%	9,110	15,268	+67.6%	9,110	16,865	+85.13%
Total	33,100	53,160	+60.6%	33,100	55,872	+68.8%	33,100	58,722	+77.41%	33,100	64,865	+95.97%
Design Hour Ops.	-	41	-	-	44	-	-	46	-	-	51	-
Design Hour Pilots/Passengers	-	82	-	-	88	-	-	92	-	-	102	-
Design Aircraft	B-I (Small)			B-II								

Source: Airport Records; FAA 2013 TAF, February 2014

3 Facility Requirements

3.1 Introduction

This section of the Master Plan is intended to identify, define, and locate the facilities required to meet the aviation forecast demand. Required facilities will be identified as they relate to capacity, safety standards, security needs, and demand for services. These requirements provide a starting point for development and refinement of alternative placement locations and the supporting capital improvement program. The nature of described facility requirements is based not only on identified needs, Brevard County Government's & the community's vision for the airport, but also on the supporting regulatory framework and criteria required to meet those identified needs and vision.

3.2 Airport Reference Code and Critical Design Aircraft

The initial step in identifying an airport's facility requirements is to establish fundamental development guidelines. FAA guidance on airport facility dimensional standards is based on the Airport Reference Code (ARC). The ARC is defined using an alphanumeric designation, or letter designation followed by a Roman numeral. A letter is used to identify the Aircraft Approach Category (AAC). Each airplane is assigned a letter designation based on the manufacturers recommended approach speed during landing. The Roman numeral designates the Airplane Design Group (ADG) which is based on the airplane's wingspan. **Table 3.1** depicts the criteria used to define the ARC according to FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*.

Table 3.1 Airport Reference Code Grouping

Aircraft Approach Category (AAC))	
Category	**Approach Speed (knots)**
A	< 91
B	91 – 121
C	121 - 141
D	141 – 166
E	> 166
Airplane Design Group (ADG)	
Design Group	**Wingspan (feet)**
I	< 49
II	49 -78
III	79 – 117
IV	118 – 170
V	171 – 213
VI	214 - 262

Source: AC 150-5300-13A, Change 1.

The 2006 Valkaria Airport Master Plan identified an ARC of B-II and designated the Beech Super King Air as the critical design aircraft. The critical design aircraft is the

most physically demanding aircraft having more than 500 annual operations at the airport. The critical design aircraft affects key aspects of airport design, such as sizing of runways, taxiways/taxilanes, aircraft parking areas, and hangar facilities.

The Beech B200 Super King Air remains the largest aircraft presently utilizing the Valkaria Airport. This airplane has a wingspan of 54.5 feet and approach speeds ranging from 95-105 knots, making it an ARC B-II aircraft. The King Air has a Maximum Takeoff Weight (MTOW) of 12,500 pounds placing it in the small aircraft (utility) category. **Recommendation: The Valkaria Airport use B-II Small Aircraft as the future ARC designation.**

3.3 Airfield Requirements

The demand capacity analysis for Valkaria Airport indicates that while the airport should not experience significant capacity shortfalls with the existing airfield facilities prior to the 20-year planning horizon, some airfield enhancements are recommended to meet the forecast demand.

3.3.1 Runway

The runways have been examined with respect to dimensional criteria, orientation, length, width, and pavement design strength. Runway design criteria outlined in FAA AC 150/5300-13A, Change 1, *Airport Design* is based on the critical aircraft's approach speed and visibility minimums of the approach. Methods for determining recommended runway length are specified in FAA AC 150/5325-4C, *Runway Length Recommendations for Airport Design*.

3.3.2 Runway Orientation

Runway orientation is primarily a function of wind coverage requirements for the existing and projected aircraft fleet mix. It has been concluded from the meteorological data analysis conducted for this update that Valkaria Airport's runway configuration is in compliance with the 95 percent wind coverage recommended by the FAA. It is anticipated that this wind coverage will not change for the 20-year planning period and will not warrant the addition of another runway or reconfiguration of the existing runway configuration. **Recommendation: The current runway orientation provides adequate wind coverage.**

3.3.3 Runway 14-32 Safety Surfaces

Runway 14-32's 75-foot width meets B-II runway design standards and contains sufficient space to meet 10-foot runway shoulder requirements. The runway pavement and runway markings are in fair condition. It is anticipated that a runway pavement rehabilitation and associated marking project will be needed within the first five years of the planning timeframe.

The B-II RDC for Runway 14-32 also requires that the associated runway design surface requirements are met for the Runway Safety Area (RSA), the Runway Object Free Area (ROFA), the Obstacle Free Zone (ROFZ), and the Runway Protection Zone (RPZ). Runway 14-32 meets the design criteria for the RSA, ROFA and ROFZ, but the RPZ contains a type of vegetation that may serve as a wildlife attractant.

In addition, this vegetation, if left unmaintained, may penetrate the runway approach surfaces. During the most recent airport licensing inspection conducted by the Florida Department of Transportation (FDOT) on August 28, 2014, the inspection identified trees as the controlling obstacle for the FDOT airport licensing 20:1 approach surface to Runway 14, which required mitigation in the form of displacing the approach surface from the standard location to the end of Runway 14 pavement. Based on information provided by airport personnel, these trees were removed in April 2015. However, periodic maintenance of vegetation in the approach surfaces should be performed in order to maintain clear approaches. **Recommendation: Conduct an FAA approach survey as part of the Runway 14-32 rehabilitation project in order to verify clear approaches.**

3.3.4 Runway 10-28 Safety Surfaces

A complete runway reconstruction to a width of 60 feet was completed in 2013, therefore the pavement and the markings are in good condition. Runway 10-28 meets FAA B-I design standards for the RSA, ROFA and ROFZ. However, during the most recent airport licensing inspection conducted by the Florida Department of Transportation (FDOT) on August 28, 2014, the inspection identified trees as the controlling obstacle for FDOT airport licensing 20:1 approach surface to Runway 10, which required mitigation in the form of displacing the approach surface from the standard location to the end of the Runway 10 pavement. Based on information provided by airport personnel, these trees were removed in November 2014. **Recommendation: Periodic surveys should be performed to verify maintenance of the visual approaches.**

3.3.5 Runway Length Recommendations

The length of a runway is a function of many factors, the most notable of which is the selection of an appropriate critical aircraft. Runway length analysis was conducted in accordance with FAA AC 150/5325-4C, *Runway Length Requirements for Airport Design*. Based on the performance characteristics of the Beech B200 (small, propeller-driven, greater than 10 passenger seats), the airport elevation of 26 feet, and a mean daily maximum temperature of the hottest month of 90.5 degrees Fahrenheit, a length of approximately 4,250 feet is recommended. A 250-foot extension to Runway 14-32 would provide this required runway length. **Recommendation: extend the Primary Runway to a total length of 4,250 feet to meet runway length requirements**

Runway 10-28 analysis, conducted on the basis of small propeller-driven airplanes (B-I) with fewer than 10 seats and the daily maximum temperature yielded a recommended length of approximately 3,650 feet, which the existing runway currently exceeds..

3.3.6 Runway Designations

A runway designation is identified by the whole number nearest the magnetic azimuth of the runway when viewed from the direction of an approach. This number is rounded to the nearest 10 degrees and then applied to the actual runway designation. Magnetic azimuth is determined by adjusting the geodetic azimuth associated with a runway to compensate for magnetic declination. Magnetic declination is defined as the difference between true north and magnetic north. This value varies over time and global location, and periodically necessitates the re-designation of runways.

Due to a change in magnetic declination to approximately 5 degrees west, in accordance with the National Geophysical Data Center (NGDC) data, the designation for former Runway 9-27 was changed to Runway 10-28. The designation of Runway 14-32 was not impacted and is recommended to remain unchanged.

3.3.7 Runway Lighting

Currently, the airfield lighting at Valkaria Airport is limited to runway threshold/end lights. The addition of runway edge lighting continues to be identified as a key issue for the Valkaria Airport. The safety and utility of the airport can be greatly enhanced by installing medium intensity runway edge lighting on primary Runway 14-32. This enhancement would greatly improve the safety for general aviation users and be very beneficial to the Brevard County's Mosquito Control (BCMC) facility, as a majority of their operations are conducted during nighttime hours.

The addition of runway edge lights is not expected to result in any significant increase in the total number of operations at the airport, or in the BCMC operations, as this activity is mission-driven. The added degree of operational safety on the facility's primary runway, an increase of facility utility after dark, coupled with the low-impact nature of medium intensity, pilot controlled lighting serves as the basis for the strong recommendation for their inclusion. **Recommendation: Install runway edge lighting system on the primary runway.**

3.3.8 Taxiway System Requirements

The key role of an airport taxiway system is to provide safe and efficient aircraft movement between the runways and the landside facilities that serve the aviation traffic. A properly designed taxiway and taxilane system will enhance safety by minimizing runway occupancy time for each airplane and enhancing pilot ground spatial awareness. Poorly designed taxiway systems can be confusing, and result in safety issues, such as runway incursions. As the number of aircraft operations increases the

existing taxiway system will become constrained, limiting access to various airport amenities, resulting in a reduced facility throughput.

Valkaria Airport currently has only one full-length parallel taxiway, Taxiway A serving Runway 14-32. Without a supporting parallel taxiway, and appropriately spaced runway/taxiway connectors, aircraft are forced to taxi, or turn around and back-taxi, on the runway, significantly increasing the time each aircraft occupies the runway.

The dimensional and design standards for a taxiway system are contained in FAA's AC 150/5300-13A Chg. 1 *Airport Design.* Sections of this document affect the taxiway system at X59:

- Appendix 7, Table A7-3, *Runway design matrix, A/B-II, Small Aircraft*, requires a runway to taxilane centerline separation of 240 feet.
- Paragraphs 403 & 406 of the AC describe the Taxiway Design Group (TDG) which categorizes aircraft on the basis of the dimensions of the undercarriage. The TDG is used to define the width of the runway and the curve radius (fillet) design. The Beech King Air falls into the TDG 2 category which requires a 35 foot wide taxiway.
- The Airplane Design Group (ADG), paragraph 404 of the AC, defines centerline separation requirements between taxiways, taxilanes and fixed or movable objects and the dimensions of required safety surfaces. The ADG-II Taxiway Object Free Area for example is 131 feet in width, 65.5 feet either side of the taxiway centerline.
- Paragraph 401, b, Design Method, describes specific guidelines for taxiway layouts including configurations to be avoided and existing non-standard conditions that should be corrected as soon as practicable. The existing taxiway connectors leading from the existing primary aircraft parking apron directly to Runway 10-28 and Runway 14-32 do not meet these standards and must be corrected.

The facility also has taxilanes, using portions of a closed runway, between Runways 10-28 and 14-32. This taxilane provides access to the T-hangars; tie-down, itinerant aircraft parking and fueling apron; and the airport administration facility. While taxilanes provide convenience and access to vital facility infrastructure, their design and routing are not straightforward and efficient.

Recommendation: Construct a system of taxiways to: minimize runway occupancy time; facilitate a more efficient flow of aircraft during ground operations; and to meet current FAA configuration criteria.

3.3.8a New Taxiways

Extensive future landside and airside development will be necessary to meet the existing and forecast aviation demand at Valkaria Airport. The increased number of based aircraft and flight operations makes the development of an efficient taxiway

system a major emphasis of this Master Plan. Many of these additional facilities will have secondary benefits such as improving the airport's service to the flying public and fiscal self-sufficiency. Following is a description of the recommended taxiway improvements:

- **Terminal access taxiway:** Identified as Taxiway C is recommended to provide direct flow access to and from the terminal complex to both runways. In addition it is recommended to move this B-II taxiway out from the apron area in order to free the existing pavement to accommodate the forecast itinerant aircraft activity. In addition, the construction of designated Taxiway C will conform to current taxiway design standards.

- **Short parallel to Runway 10-28:** Designated Taxiway E, this short parallel taxiway will serve the west hangar complex (hangars A–F) allowing aircraft direct access to Runway 10-28 and to Future Taxiway C for access to Runway 14-32. In addition the construction of this taxiway will facilitate the reconstruction of the existing taxiway system that currently does not meet FAA design standards. Consistent with the B-I ARC of Runway 10-28 and the geometry of the existing west hangar complex it is recommended that this taxiway be constructed to B-I design standards.

- **Parallel taxiway to Runway 10-28**: Designated Taxiway D this parallel taxiway is recommended to minimize runway occupancy time, improve runway safety and efficiency by minimizing back-taxiing, as well as to provide access to an itinerant aircraft apron that will serve the Habitat Golf Course. Since it is anticipated that aircraft in ADG II and TDG 2 will be using this taxiway, it is recommended that runway-taxiway separation should be based on B-II design standards and taxiway width/fillet should be based on TDG 2 design standards.

- **Parallel taxiway to Runway 14-32:** Designated Taxiway F on the ALP. As the north landside area is developed it will become necessary to include a taxiway parallel to Runway 14-32 in order to allow runway access and egress without the need to back-taxiway on the runway or to cross the runway to access a parallel taxiway. It is anticipated that this taxiway, and associated runway connectors, will be constructed in phases as the north side airfield support facilities are constructed.

- **Taxiway Connectors:** Designated as new pavement on the ALP, these additional paved areas are recommended to provide more efficient access and egress to the associated runway or to replace existing taxiway/runway connectors that do not meet current FAA design standards.

For taxiway/taxilane design for an ARC designation of B-II and TDG 2 designation, taxiways must be 35 feet wide and have 10-foot shoulders. In addition, a parallel taxiway centerline must have a separation of 240 feet from the runway centerline, a

Taxiway Safety Area (TSA) 79 feet wide, and a Taxiway Object Free Area (TOFA) with a width of 131 feet. These recommendations are described in AC 150/5300-13A Change 1 for aircraft approach categories A and B for visual runways or instrument runways with no lower than ¾ statute mile approach visibility minimums.

3.3.9 Aircraft Parking Aprons

Aircraft aprons are areas that provide aircraft parking, fueling, access to a terminal and ground transportation, as well as other aviation support facilities. Regarding aprons, AC 150/5300-13A states that sizing and layout is dependent on local conditions. The document does however provide some limited sizing and clearance guidance. Guidance for parking position, tie-down criteria, using Cessna 182 as a typical design aircraft for apron design, approximately 1,610 square feet of pavement area will be necessary to accommodate the aircraft and provide the appropriate wingtip and apron edge clearance. That figure does not take into account B-II taxiway and taxilane OFA clearance, as the space requirement will vary greatly based on the specific apron design. The general guiding principle behind apron sizing is to park the maximum number of airplanes while satisfying taxilane OFA criteria.

The airport currently has two apron areas on the airfield. The primary apron, located on the west side connects the fueling area with the south hangar complex and is currently used to accommodate parking of both based and itinerant aircraft. With the development of the administration and flight services building and the anticipated increase in itinerant operations, this apron will need to be expanded to meet the demand. In order to place a taxilane in front of the terminal and a taxiway to allow unencumbered circular traffic serving 'drive-through' airplane parking, the apron must be a minimum of 264 feet wide. As the itinerant traffic increases, the demand for itinerant parking can be met with this apron if the based aircraft currently using this apron are relocated. This will require the development of additional apron space dedicated to tie-down facilities in another location on the airfield.

The existing secondary apron is large enough for 10-13 aircraft parking positions. Due its location north of Runway 14-32 this apron is not convenient to the existing aviation support facilities and is therefore typically used for parking during special events. In addition future development of a north hangar complex and a parallel taxiway to serve facilities on the north side of Runway 14-32 will require the removal of this apron as it does not meet current FAA taxiway configuration standards.

Another impact on apron and other facility requirements will be the result of an increase in based aircraft. The forecast anticipates up to 109 additional based aircraft of various types within the 20-year planning horizon. While a significant number of these additional aircraft owners will prefer to store their aircraft in hangars, as evidenced by an existing waiting list for hangar space, it is anticipated that up to 24 (10%) of the total based aircraft owners will choose to utilize tie-down positions on an apron. **Recommendation: Include reconfiguration of the existing apron in a phased approach in conjunction**

with the construction of the pilot services/administration building and develop an additional apron capable of ultimately accommodating up to 24 based aircraft.

Table 3.2 Apron Requirements (in square feet)

	Actual	Forecast		
	2014	2019	2024	2034
Itinerant Aircraft	8	9	9	10
Itinerant Apron	12,880	14,490	14,490	16,100
Increase in Based Aircraft	20	30	34	40
Based Aircraft Apron	32,200	48,300	54,740	64,400

3.3.10 Pavement Markings

The Inventory chapter of this update noted that both runways are marked as basic visual runways and include runway number designations, centerline stripes, and runway side stripes. The runway markings for Runway 10-28 have been recently refurbished and are in good condition, while the markings for Runway 14-32 are in fair condition. It should be noted that the closed runway markings for Runways 4-22 and 18-36 are in poor condition and should be updated. Additionally, the apron taxilane centerline is in poor condition, and there are no taxilane sideline markings to properly identify the limits of the taxilanes. The Taxiway A markings and related hold-short markings for Runway 14-32 and Runway 10-28 are in good condition. **Recommendation: Airfield marking/striping to occur on an as needed basis or when the type of approach changes. Runway marking should include edge-of-pavement lines.**

3.3.11 Airfield Signage

New airfield directional signs were installed as part of the rehabilitation of Runway 10-28. These signs comply with current FAA design standards but are not lighted for operations during night or inclement weather conditions. The FAA reference for airfield signage is AC 150/5340-18F, *Standards for Airport Sign Systems.* **Recommendation: Include lighting existing airfield signage as part of project to install Runway 14-32 edge lights.**

3.3.12 Instrument Approaches

Valkaria Airport does not have an instrument approach system or procedure. Instrument approach systems allow aircraft to conduct operations at an airport when poor visual conditions preclude pilot visual guidance. Airport management and users advocate for inclusion of a non-precision instrument approach on Runway 14-32. FAA publication of an instrument approach should be addressed during the design, survey and rehabilitation of Runway 14-32.

While Valkaria Airport traffic counts are growing airport delay is still non-existent, the types of aircraft that utilize the facility are primarily small general aviation aircraft used for recreation or for business. IFR conditions occur approximately 7 percent of the time. As the need for an approach continues to be evaluated, an FAA approach survey is highly recommended as an initial step in the development of a non-precision instrument approach. **Recommendation: Conduct an FAA approach survey in anticipation of GPS based non-precision approaches to the Primary Runway.**

3.3.13 Visual Landing Aids

Valkaria Airport has visual glideslope indicators on all four runway ends. Visual glideslope indicators provide pilots with vertical guidance to ensure obstacle clearance and touchdown zone arrivals during either day, night, or limited visibility conditions. The visual glideslope indicators used at Valkaria Airport are the 4-light Precision Approach Path Indicator (PAPI). These systems of lights are focused and arranged in such a way as to provide visual descent guidance information during the approach to a runway. These lights are typically visible from 3-5 miles during the day and up to 20 miles or more at night. The visual glidepath indicated by the system provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline, and up to 4 miles from the runway threshold.

3.3.14 Segmented Circle/Windcones

A segmented circle performs two functions: it aids the pilot in locating runways and airport wind indicators, and it provides a centralized location for such indicators and signal devices as may be required on a particular airport. Valkaria Airport has updated and improved the facility's segmented circle, including a lighted primary windcone. Additionally, Valkaria Airport has three unlighted windsocks that complement the lighted wind indicator located within the segmented circle near the airport mid-point. Placement guidance and standards for these secondary wind indicators is contained in AC 150/5340-30, *Design and Installation for Airport Visual Aids*, AC 150/5345-27E, *Specifications for Wind Cone Assemblies,* and AC 150/5300-13A, *Airport Design.* **Recommendation: Install/Upgrade Primary Wind Cone/Segmented Circle lighting to current standards during the runway lighting and vault equipment installation project. Maintain the secondary windsocks located at the Runway 14 and Runway 10 thresholds in a manner consistent with FAA standards.**

3.4 Support Facility Requirements

3.4.1 General Aviation Administration and Flight Services Facility

Valkaria Airport has experienced tremendous itinerate and local traffic growth over the past five years. Current air traffic operations exceed 53,000 annually. The current airport administration and flight services facility does not meet the daily demand for pilot planning & training requirements, airport administrative & operational requirements,

passenger and terminal needs including restrooms, meeting space and auto parking space.

An Administrative and Flight Services facility continues to be a strongly desired feature for the airport as the current trailer is inadequate for the current demand. The intent of the facility is to provide proper pilot and passenger services, flight planning support, public meeting space, a central location for aviation servicing and offices to support the administration of the airport. In addition, natural disaster shelter space is envisioned for this area to provide additional space during prolonged severe weather events. These described services are typically provided by GA terminal buildings. The terminal should continue to reflect the airport management's focus on fostering a sense of community space at the airport, and provide potential amenities that can be utilized by the surrounding community.

According to the *FDOT Guidebook for Airport Master Planning*, the sizing of a GA terminal facility can be calculated using a forecast of peak-hour transient passengers plus some percentage of local passengers. The number of persons per aircraft could range from 1.8 for single engine aircraft to 3.1 for higher performance aircraft, and the space requirements range from 50 to 100 square feet per peak hour passenger.

The airport administration is currently in the preliminary design phase for this administration building. The building size will be established during the first design task and will be subject to FDOT approval. The building size will reflect the guidance in the *FDOT Guidebook for Airport Master Planning, April 2010*. The following assumptions from this Master Plan may be used by the designers in calculating total building size requirements:

- Design Hour Pilot/Passenger of 102 persons (2034)
- 75 square feet (average) of GA terminal building space per peak hour passenger.
- 350 feet of additional space for an administrative office, including a records/equipment storage room.
- 250 feet of additional space for a lounge/conference room facility.
- Space for future airfield electrical vault equipment

Recommendation: Construct a public building that can serve the dual purpose of pilot/passenger service and airport administration functions.

3.4.2 Fuel Storage Requirements

According to airport fuel sales records, an average of 50,142 gallons of AvGas were sold annually between 2006 and Fall of 2014. Fuel storage requirements were based on an estimated number of operations, including forecast growth, and excluding operations from FlightSafety, FIT Aviation, DoD operators, and Brevard County Mosquito Control. These operations were excluded from this analysis because those operators generally do not make fuel purchases from the airport.

Annual Avgas demand of 125,006 gallons has been calculated based on 2034 horizon year forecast operations, excluding training flights. FDOT recommends that each airport maintain a 14 day supply of Avgas and JetA. The 20 year planning forecast 14-day storage recommendation of 4,795 gallons is met by the capacity of the existing system. Based on this analysis, it can be concluded that the capacity of the fuel facilities described in the inventory section of this master plan update will satisfy the demand over the 20-year planning horizon.

This document recognizes that with the construction of T-Hangar F the existing hangar area will be built out. A new hangar complex, large enough to accommodate up to 75 based aircraft, will be recommended. The location of this new complex will likely dictate a small Avgas fueling system in order to reduce taxi time and runway crossings for those based airplanes. This stand alone, self-serve fueling system would be included in the construction of one or more of the hangars and therefore not specifically identified as a recommendation.

3.4.3 Hangar Requirements

Hangars provide aircraft with protection from the weather as well as safety and security of the owner's investment. The demand for hangars at Valkaria Airport has been and is forecast to remain high. Currently 115, or 90%, of the 127 based aircraft are stored in hangars. Based on this historical demand for hangars at Valkaria, as well as the forecast need to accommodate the growth in based aircraft, up to 97 additional hangar units will need to be constructed during the 20-year planning period. The timeline for the construction of these hangars will be based on demand and the availability of funding. Industry planning guidelines recommend that hangars be supported by a paved apron area equal in size to the hangar itself. This allows aircraft movements to and from the hangars without blocking adjacent taxilanes or taxiways.

Based on the airport's administrative records there are 90 aircraft owners that are on a waiting list for hangar space at X59. Industry experience indicates approximately 40% of aircraft owners on a waiting list represent valid demand. Aircraft owners for example, may be signed up on multiple airport lists, have moved from the area, or have lost interest. Using this methodology it is assumed that 36 aircraft owners represent immediate valid demand. **Recommendation: Anticipate construction of 97 additional hangar spaces over the 20 year planning period.**

3.4.4 Airport Rescue and Fire Fighting

The presence of Station 87 of the Brevard County Fire Rescue Department within the footprint of the airport offers an opportunity for expanded Airport Rescue and Fire Fighting services. The station provides routine coverage to the community and the airport. Direct access to the airfield would minimize response time to any airport emergency. **Recommendation: Acquire property adjacent to Fire Station 87 and construct a direct access road from the fire station to the primary runway.**

3.4.5 Airport Access and Parking

Access to Valkaria Airport is provided by Valkaria Road, classified by FDOT as an "Urban Major" traffic artery from US Highway-1 westward, with a design capacity of 15,600 average daily trips (ADT) and a 2013 FDOT traffic count of 3,200 ADT which results in a 20 percent utilization. The nature of the airport operations at Valkaria Airport and any changes thereto are not anticipated to significantly increase the traffic on the access roadway over the planning horizon. Therefore, the current airport access capacity is adequate.

The airport has limited formal parking in the form of 18 spaces, paved with asphaltic concrete, located between the airport viewing pavilion and the T-hangar area. Additional parking is accommodated on a turf area to the southwest of the administration facility, and outside the perimeter fence. The current vehicle parking capacity is minimally adequate to satisfy existing demand. The future construction of an airport administration and flight services facility on the airport's west side will require expansion and reconfiguration of the existing parking area. According to the Brevard Co. Code of Ordinances Sec. 62-3206, the construction of a terminal facility would require a significant amount of additional parking spaces. The many special events conducted at the airport may require additional spaces. All parking requirements should include the correct amount of space to satisfy the Americans with Disabilities Act (ADA). **Recommendation: Auto parking requirements for itinerant aircraft, special events and conducting airport business be addressed with the design and construction of the administration/flight services building.**

3.4.6 Airport Fencing

The characteristics of the airport fence are described in the inventory section of this update. The perimeter fence should continue to be maintained and improved, with additional access points (key/card controlled) created for north airport hangar complex access, as well as the fire station access. FDOT security project funding must be utilized to the maximum extent feasible in order to ensure that the facility, its assets and the assets of its tenants are secure from theft and vandalism. **Recommendation: Construct/upgrade airport perimeter fence for wildlife control and security, to include clear area on each side consistent with security needs and/or the airport's Wildlife Hazard Management Plan.**

3.4.7 Stormwater Management

The airport has committed to a program of environmental stewardship consistent with safe and efficient aircraft operations. A planned component of the overall environmental management program was the design, permitting and construction of a stormwater management pond along the south side of Pilot's Place. This nearly five acre site was constructed in 2013-14 to replace a pond displaced by the construction of T-Hangars D and E. In addition, the pond is the source of draft hydrant water for fire protection. A trench drain system is used to convey stormwater from the existing west hangars into

the pond. A concurrent project was completed to regrade the infield areas and upgrade the drainage system under the main apron to reduce standing water and open channel flow in the infield. These projects served both drainage and wildlife reduction on the airside. These stormwater system improvements were sized and constructed to accommodate the existing facility. Future development will require expansion of this system to meet stormwater demand. **Recommendation: Identify and preserve location(s) sufficient to manage stormwater runoff from additional impervious surfaces.**

3.5 Utilities

3.5.1 Electricity

Florida Power and Light Company provides the airport with a total installed electrical capacity of 300 KVA. This capacity is sufficient to satisfy the electrical power demand over the planning horizon. If required, capacity can be increased by installing transformers with a higher capacity rating. Power consumption of proposed lighting of Runway 14-32 with incandescent bulbs is estimated at less than 5 KVA. That number can be further reduced, if energy-efficient LED lights are used. Although the power supplied to the airport by the utility is adequate, the airport does not currently have an electrical vault for proper supply of the power to the airfield for lighting needs. **Recommendation: Add electrical vault space into the Administration Building construction and install electrical vault equipment during the Runway 14-32 lighting project.**

3.5.2 Water

Valkaria Airport is not connected to any public water system. All water used on the airport is pumped from underground wells on airport property. It is recommended that the water facilities be inspected, and upgraded if needed to provide adequate water supply to the proposed wash rack locations, proposed terminal building, and any other aviation support or non-aeronautical on-airport users.

4 Alternatives Analysis

Alternative ways to meet the defined facility requirements were identified and evaluated. The few alternatives that reasonably met demand, community objectives and agency standards for reasonable financial and environmental cost were reviewed and included in the MPU. Priority was given to issues and projects related directly to safety, airfield standards, efficiency and meeting aeronautical demand. Consideration was also given to environmental consequences, financial feasibility and economic development.

4.1 Land Use

A first step in the development of alternatives and selection/recommendation of a preferred alternative is to define the land-use options for the airport. Typically all property owned by the airport sponsor and identified as airport property is evaluated and placed in one of three land use categories. Day-to-day application of this land-use policy will provide airport management and ownership a powerful tool in decision making when evaluating future development opportunities. Following are the land use categories with a brief description of how they are applied:

- **Airfield:** Identifies all property necessary and able to support the movement of aircraft. Uses include runway, taxiway and taxilanes and all associated safety and approach surfaces.
- **Aviation Use:** Property available and able to serve the flying community. Facilities include aircraft parking aprons, fueling, hangars, tie-downs, maintenance facilities, pilot/passenger services building and ground transportation.
- **Non-Aeronautical:** Property that is either not needed or access is impractical for aviation use. This property serves as a buffer or interface with the adjoining property. Uses include environmental mitigation, aviation compatible commercial development, recreation or open space.

4.2 Methodology

The evaluation of alternatives to meet the aviation needs of the airport focused on the first two land use categories. Evaluation included advantages, disadvantages, financial costs, environmental impacts and compatibility with the community. These alternatives were reviewed with airport management team and the preferred alternatives presented to the public for discussion. The alternative review was guided by and consistent with FAA guidance provided in AC 150/5070-6B, Change 2, *Airport Master Plans* including the following criteria:

- Conforms to best practices for safety and security
- Conforms to FAA design standards
- Satisfies demand and user needs
- Is technically, environmentally and financially feasible
- Provides growth potential beyond the planning period
- Provides the highest and best use of property
- Conforms to the airport owner's strategic vision
- Conforms to relevant local, regional and state transportation plans

4.3 Environmental Overview

This Master Plan Update recommends substantial improvement to the Valkaria Airport during the 20-year planning horizon. This environmental review identifies impacts in certain areas, such as noise and compatible land use, which do not require field surveys. Other impact categories, such as air quality and wetlands, are examined to identify areas that could require further examination in the form of an EA. FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* identify airport development actions typically requiring an Environmental Assessment. This environmental review should not be considered an exhaustive analysis; rather, its purposes are to consider potential impacts of future airport development actions and to identify areas in which additional analysis may be needed.

FAA Order 1050.1E, CHG 1, *Environmental Impacts: Policies and Procedures* identify airport development actions normally requiring an Environmental Assessment (EA). Review of that document indicates that the recommended actions in this Master Plan will not require an EA. The following sections identify the key and applicable environmental impact categories as described in FAA Order 1050.1E.

- Air Quality
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act: Section 4(f)
- Farmlands
- Fish, Wildlife, and Plants
- Floodplains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archeological, and Cultural Resources
- Light Emissions and Visual Impacts
- Natural Resources, Energy Supply, and Sustainable Design
- Noise
- Secondary (Induced) Impacts
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands
- Wild and Scenic Rivers

4.3.1 Air Quality

The two principle sources of air pollution associated with the development and operation of the Airport are vehicular (both customer and maintenance vehicles and equipment) and aircraft emissions. Other contributing sources include emissions from aircraft refueling and repair/production activities.

Implementation of the recommendations in this Master Plan Update will require coordination with Florida Department of Environmental Protection Division of Air Resource Management to determine permitting requirements under the New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Program. Construction permits are used to implement the Federal Clean Air Act requirements for air quality including Best Available Control Technology (BACT) determinations.

The principal effects upon air quality associated with proposed development actions will be construction emissions, especially dust. These will be temporary in nature; however, any necessary permits must be obtained before construction begins. Best Management Practices, such as watering, should be required of contractors to reduce any impacts associated with dust from construction activities.

Air quality associated with construction emissions, specifically dust, will not be a long-term factor. All necessary permits should be obtained before construction begins. Best Management Practices, such as watering, should be followed to reduce any impacts associated with dust from construction activity.

4.3.2 Coastal Resources

"The National Coastal Zone Management (CZM) Program is a voluntary partnership between the federal government and U.S. coastal states and territories authorized by the Coastal Zone Management Act of 1972. The Coastal Programs Division, within the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, administers the program at the federal level and works with state coastal zone management partners…"

In Florida, the entire state comprises the coastal zone, however, the nearest Coast Barrier Resources System is Unit P09A located 2.5 miles northeast of the Valkaria Airport. Implementation of the proposed improvements would not be expected to impact coastal zones adversely. Jurisdiction for this impact category is within the Florida Department of Environmental Protection Division of State Lands Office of Coastal and Aquatic Managed Areas. Compliance with the Coastal Barrier Resources Act of 1982 is not a factor identified by this overview as requiring additional analysis.

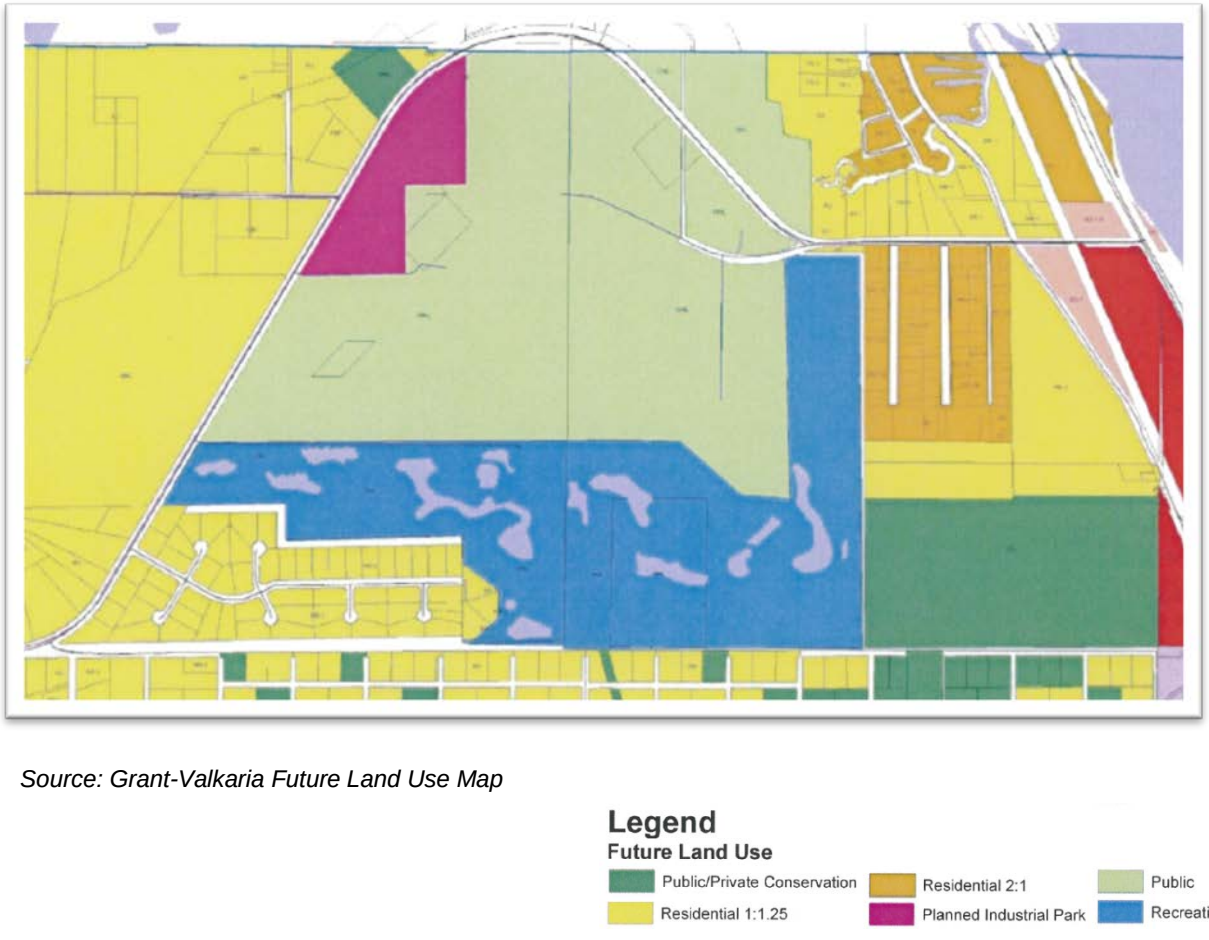
4.3.3 Compatible Land Use

For the purposes of this analysis, compatible land use refers to the land use interfaces between the airport and surrounding properties. As discussed in Chapter 1, the Valkaria Airport is surrounded by residential, recreational, conservation and industrial land uses. The airport continues to maintain a compatible land use buffer with a municipal golf course to the south. **Figure 4.1** illustrates the land use classification surrounding the airport.

Brevard County has adopted land use regulations to protect aviation facilities in the county from encroachment in accordance with Ch. 333, Florida Statutes as a part of Brevard County Code of Ordinances Sections 62.2201-62.2209. However, no inter-local agreements for regulation implementation within the boundaries of the municipality of Grant-Valkaria or Malabar have been identified.

The existing Runway Protection Zones (RPZs) for all runway ends are located within the airport property line. The proposed 250 foot extension of Runway End 32 extends beyond airport property. The small portion of the future RPZ located outside of airport property will require the acquisition of an avigation easement. In accordance with the Federal Aviation Administration interim guidance on RPZs, any on-airport development that changes the dimensions of the present RPZs, or off-airport development that takes place within the existing or planned RPZs has to undergo an analysis of alternatives, designated to avoid, mitigate, or minimize potential impacts.

Figure 4.1 Airport Area Future Land Use Map



Source: Grant-Valkaria Future Land Use Map

4.3.4 Construction Impacts

Construction operations will cause specific impacts resulting from, and limited to, actions to improve the Valkaria Airport. The following are some impacts that might be expected from the proposed improvements.

- An increase in particulate and gaseous air pollution levels as a result of dust generated by construction activity and by vehicle emissions from equipment and workers' automobiles;
- An increase in solid and sanitary wastes from workers at the site;
- An increase in traffic volumes in the airport area due to construction activity;
- A slight increase in noise levels due to the operation of heavy equipment;
- Impacts to aircraft operations during runway construction, and
- Temporary erosion or scarring of land surfaces and loss of vegetation in areas which are excavated or otherwise disturbed.

These impacts are temporary in duration; however, preventative actions to reduce or eliminate impacts are described in FAA Advisory Circular 150/5370-10G. Bid packages for construction items should include provisions that require implementation of applicable practices to reduce such impacts.

4.3.5 Department of Transportation Act: Section 4(f)

In accordance with requirements of the FAA Order 1050.1E and under the provisions of the Department of Transportation Act, Section 4(f), projects that require the use of any publicly owned land from a public park, recreation area, wildlife and waterfowl refuge, or historic site cannot be approved by the Department unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use. None of the public land categories will be impacted by the proposed improvements.

4.3.6 Farmlands

The majority of the proposed improvements are located within the boundaries of the airport. The exception is the proposed expansion of the existing water management pond on the east side of the airport. The pond expansion will be located outside of the property boundary however there are no prime or unique farmlands impacted by this improvement.

4.3.7 Fish, Wildlife, and Plants

The National Environmental Policy Act (NEPA) established provision for the protection of state and/or nationally significant fish, wildlife and plants. For the purposes of the

initial fish, wildlife, and plant assessment, data was collected from the U.S. Fish and Wildlife Service (USFWS), Florida Statewide Endangered and Threatened Plant Conservation Program database, as well as wildlife observation databases made available by the Florida Fish and Wildlife Conservation Commission (FFWCC) through the Florida Geographic Data Library. The USFWS and Florida Natural Areas Inventory (FNAI) list protected species potentially found in Brevard County. **Tables 4.1 and 4.2** presents these wildlife and plant species.

Table 4.1 Federally and State Listed Wildlife Species in Brevard County

Common Name	Scientific Name	Federal Status	State Status
Atlantic Sturgeon	*Acipenser oxyrinchus oxyrinchus*	E	E
Striped Croaker	*Bairdiella sanctaeluciae*	SC	-
Opossum Pipefish	*Microphis brachyurus*	SC	-
Mangrove Rivulus	*Rivulus marmoratus*	SC	SC
Carolina Gopher Frog	*Lithobates capito*	-	SC
American Alligator	Alligator mississippiensis	T	T
Loggerhead Sea Turtle	Caretta caretta	E, T	T
Green Sea Turtle	Chelonia mydas	E	E
Leatherback Sea Turtle	Dermochelys coriacea	E	E
Eastern Indigo Snake	Drymarchon couperi	T	T
Gopher Tortoise	Gopherus polyphemus	C	T
Kemp's Ridley Sea Turtle	Lepidochelys kempii	E	E
Florida Pine Snake	Pituophis melanoleucus mugitus	-	SC
Florida Scrub-Jay	Aphelocoma coerulescens	T	T
Limpkin	Aramus guarauna	-	SC
Florida Burrowing Owl	Athene cunicularia floridana	-	SC
Crested Caracara	Caracara cheriway	T	T
Piping Plover	Charadrius melodus	T	T
Little Blue Heron	Egretta caerulea	-	SC
Reddish Egret	Egretta rufescens	-	SC
Snowy Egret	Egretta thula	-	SC
Tricolored Heron	Egretta tricolor	-	SC
White Ibis	Eudocimus albus	-	SC
Southeastern American Kestrel	Falco sparverius paulus	-	T
Florida Sandhill Crane	Grus canadensis pratensis	-	T
American Oystercatcher	Haematopus palliatus	-	SC
Wood Stork	Mycteria americana	E	E
Osprey	Pandion haliaetus	-	SC
Brown Pelican	Pelecanus occidentalis	-	SC
Red-cockaded Woodpecker	Picoides borealis	E	E
Roseate Spoonbill	Platalea ajaja	-	SC
Black Skimmer	Rynchops niger	-	SC
Least Tern	*Sternula antillarum*	-	T
North Atlantic Right Whale	*Eubalaena glacialis*	E	E
Southeastern Beach Mouse	Peromyscus polionotus niveiventris	T	T
Florida Mouse	Podomys floridanus	-	SC
Sherman's Fox Squirrel	Sciurus niger shermani	-	SC
West Indian Manatee	Trichechus manatus	E	E

Endangered Species (E), Threatened Species (T), Special Concern (SC), Candidate Species (C)
Sources: FNAI, 2015

Table 4.2 Federally and State Listed Plant Species in Brevard County

Common Name	Scientific Name	Federal Status	State Status
Sea Lavender	Argusia gnaphalodes	-	E
Curtiss' Sandgrass	Calamovilfa curtissii	-	T
Sand Butterfly Pea	Centrosema arenicola	-	E
Sand-dune Spurge	Chamaesyce cumulicola	-	E
Large-flowered Rosemary	Conradina grandiflora	-	T
Hay Scented Fern	Dennstaedtia bipinnata	-	E
Titusville Balm	Dicerandra thinicola	-	E
Glandularia maritima	Coastal Vervain	-	E
Glandularia tampensis	Tampa Vervain	-	E
Halophila johnsonii	Johnson's Seagrass	T	-
Harrisia simpsonii	Simpson's Prickly Apple	-	E
Lantana depressa var. floridana	Atlantic Coast Florida Lantana	-	E
Lechea cernua	Nodding Pinweed	-	T
Lechea divaricata	Pine Pinweed	-	E
Nemastylis floridana	Celestial Lily	-	E
Nolina atopocarpa	Florida Beargrass	-	T
Ophioglossum palmatum	Hand Fern	-	E
Peperomia humilis	Terrestrial Peperomia	-	E
Pteroglossaspis ecristata	Giant Orchid	-	T
Tephrosia angustissima var. curtissii	Coastal Hoary-pea	-	E
Zephyranthes simpsonii	Redmargin Zephyrlily	-	T
Sea Lavender	Argusia gnaphalodes	-	E
Curtiss' Sandgrass	Calamovilfa curtissii	-	T
Sand Butterfly Pea	Centrosema arenicola	-	E
Sand-dune Spurge	Chamaesyce cumulicola	-	E
Large-flowered Rosemary	Conradina grandiflora	-	T
Hay Scented Fern	Dennstaedtia bipinnata	-	E
Titusville Balm	Dicerandra thinicola	-	E
Glandularia maritima	Coastal Vervain	-	E
Glandularia tampensis	Tampa Vervain	-	E
Halophila johnsonii	Johnson's Seagrass	T	-
Harrisia simpsonii	Simpson's Prickly Apple	-	E
Lantana depressa var. floridana	Atlantic Coast Florida Lantana	-	E
Lechea cernua	Nodding Pinweed	-	T

Endangered Species (E), Threatened Species (T)
Sources: FNAI, 2015

The Environmental Assessment (EA) conducted in 2011 for the construction of Taxiway A was also consulted. The EA identified the Wood Stork *(Mycteria Americana)* and the Florida Sandhill *(Grus Canadensis)* as occasionally observed migratory birds at various locations surrounding Valkaria Airport. Gopher Tortoise burrowers were found on the

airfield during the EA on-site inspection which required relocation prior to constructing the new taxiway.

An on-site inspection by a certified wildlife biologist would be necessary to determine if endangered plants or wildlife are present in proposed project areas.

4.3.8 Floodplains

Executive Order (EO) 11988, *Floodplain Management*, directs federal agencies to take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health and welfare; and restore and preserve the natural and beneficial values served by floodplains. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on the 100-year base flood elevation (7 CFR Part 650.25).

EO 11988 defines floodplains as "the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a 1% or greater chance of flooding in any given year. The 100-year flood has been adopted by the Federal Emergency Management Agency (FEMA) as the base flood for floodplain management purposes.

Review of FEMA flood zone maps indicates that the entire Valkaria Airport appears to be situated in an area with a "Zone X" designation, and the site is surrounded by Zones A and AE. **Figure 4.2** identifies FEMA flood zone designations surrounding X59. The following is a brief description of each designation:

- ***Zones X*** indicates the flood insurance rate zones that correspond to areas of minimal hazard outside the 1-percent annual chance floodplain, areas of 1-percent annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1-percent annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1-percent annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in these zones.

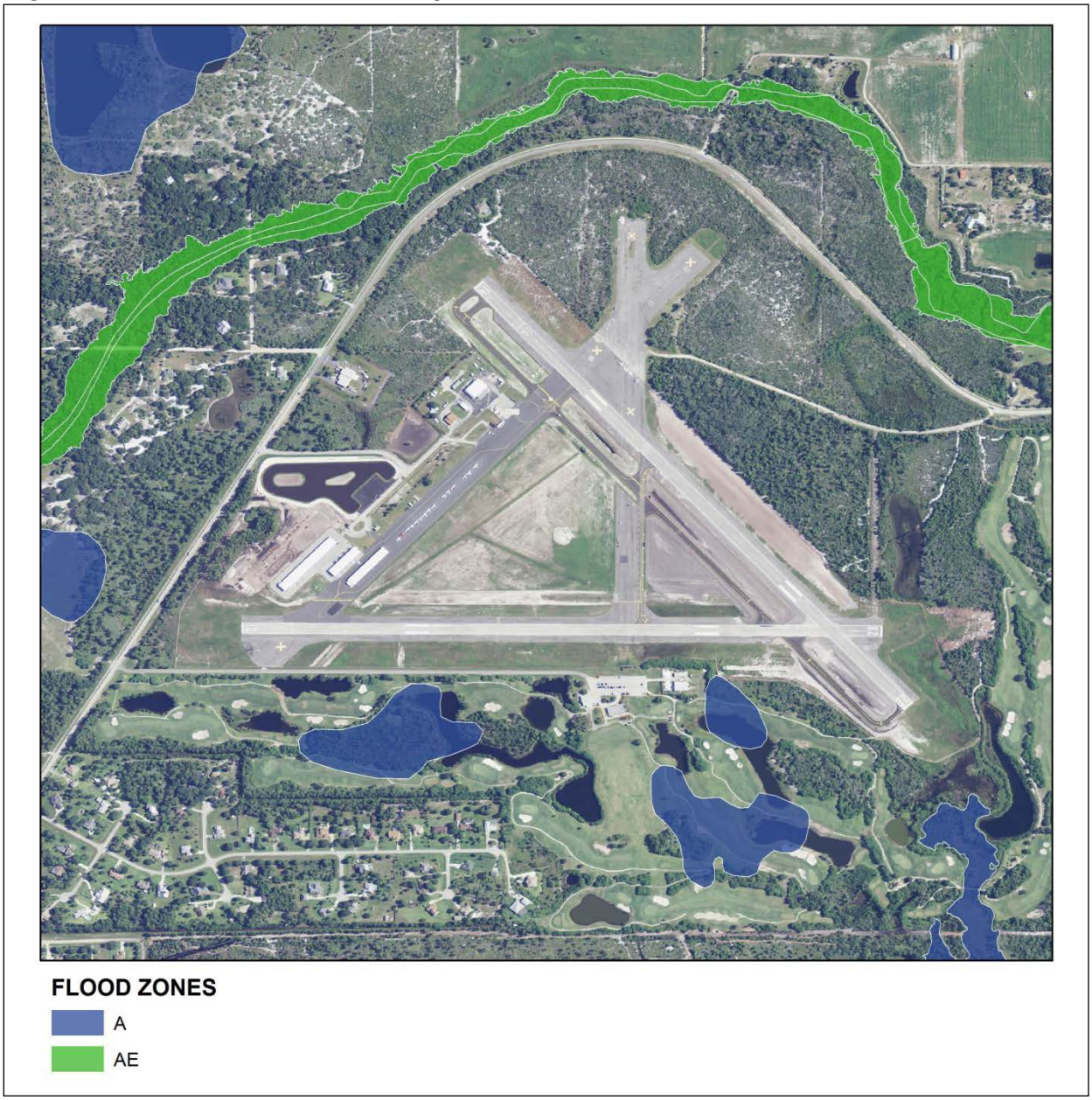
- ***Zone AE*** is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by detailed methods of analysis. In most instances, Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

- ***Zone A*** is the flood insurance rate zone that corresponds to areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.

Mandatory flood insurance purchase requirements and floodplain management standards apply.

Based on the location of the site, proposed improvement projects are not expected to impact the flood plain; however, in the event that expansion were to occur and extend into adjacent areas, it will be necessary to evaluate whether such expansion encroaches on the 100-year floodplain.

Figure 4.2 FEMA Flood Zone Map



Source: FEMA Flood Maps, 2015

4.3.9 Hazardous Materials, Pollution Prevention, and Solid Waste

FAA actions to fund, approve, or conduct an activity may require consideration of hazardous material, pollution prevention, and solid waste impacts under provisions of the National Environmental Protection Act (NEPA). FAA Order 1050.1.E, Change 1, *Environmental Impacts: Policies and Procedures*, dated March 20, 2006, identifies four primary laws that govern handling and disposal of hazardous materials, chemicals, substances and wastes.

Federal, state, and local laws regulate the use, storage, transport and disposal of hazardous materials. The largest hazardous material consumed and stored at the airport is fuel. The proposed airport improvements would not affect the existing fuel tank but will introduce a new self-serve fueling area to the north as part of the apron and aircraft storage development on that side of the airfield. Motor oil is the most common waste at the airport. Disposal bins should be provided to collect motor oil for appropriate disposal.

Based on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) and Resource Conservation and Recovery Act (RCRA) databases; the U.S. EPA has not listed any hazardous waste sites in the immediate vicinity of the airport boundary.

There are no landfills located near of the airport. Airport construction projects, such as runway, taxiway, and apron construction, do not normally generate significant amounts of perishable or non-perishable waste, other than wastes associated with construction debris. Any wastes generated will be disposed in licensed landfills.

4.3.10 Historical, Architectural, Archeological, and Cultural Resources

The proposed improvements are not expected to impact historical, architectural, and cultural resources. A review of the National Register of Historic Places and the National Historic Landmarks Survey, both maintained by the U.S. Department of Interior National Parks Service, indicated that no listed structures, sites, or objects were within the area that would be affected by the proposed airport development actions.

4.3.11 Light Emissions and Visual Impacts

The proposed 250 foot extension to Runway 32 and Taxiway A extensions will be lighted. There are no home sites in the vicinity of the proposed improvement area that would be significantly impacted by the relocated runway and taxiway lights.

4.3.12 Natural Resources, Energy Supply, and Sustainable Design

The proposed development actions will increase the power requirements for the airport due to the proposed runway lighting extensions and additional landside facilities. The increased power requirements are considered to be within the capacity of the current supplier. Fuel consumption is expected to increase with additional aircraft operations at the airport; however, the increased operations are not considered a result of airport improvements. This increase will not have a significant impact on the nation's fuel resources, and no mitigation measures are envisioned.

4.3.13 Noise

Aircraft noise is a major environmental consideration when assessing possible impacts of airport development actions. For land use planning purposes, noise impacts at the Valkaria Airport were evaluated for existing conditions (2014) and for 20-year planning forecast (2034) conditions.

In accordance with FAA guidelines for the development of airport master plans, noise contours were generated using the FAA's Integrated Noise Model (INM) Version 7.0d. Data including runway location, elevation, temperature, pressure, and other variables were combined with flight paths and estimated and forecast airport activity to create contours that may be used to assess noise and land use compatibility. The Day-Night Level (DNL) metric was used. DNL represents total noise exposure from aircraft operations over a given 24-hour period, and the noise contours produced represent noise levels in average daily duration of perceived decibels on the A-scale (dBA).

Interpretation of the significance of these noise impacts was based upon FAA guidelines presented in FAR Part 150, *Airport Noise Compatibility Planning* (see **Table 4.3**). Review of these standards indicates that DNL values of 65 and below are considered acceptable for every land use, including residential, identified in the standards.

Table 4.3 FAA Land Use Compatibility Guidelines

	Yearly Day-Night Average Sound Level (Ldn) in decibels					
Land Use	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	YES	NO (1)	NO (1)	NO	NO	NO
Mobile home parks	YES	NO	NO	NO	NO	NO
Transient lodgings	YES	NO (1)	NO (1)	NO (1)	NO	NO
Public Use						
Schools	YES	NO (1)	NO (1)	NO	NO	NO
Hospitals and nursing homes	YES	25	30	NO	NO	NO
Churches, auditoriums, and concert halls	YES	25	30	NO	NO	NO

Land Use	Yearly Day-Night Average Sound Level (Ldn) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Government services	YES	YES	25	30	NO	NO
Transportation	YES	YES	YES (2)	YES (3)	YES (4)	YES (4)
Parking	YES	YES	YES (2)	YES (3)	YES (4)	NO
Commercial Use						
Offices, business and professional	YES	YES	25	30	NO	NO
Wholesale and retail- building materials, hardware and farm equipment	YES	YES	YES (2)	YES (3)	YES (4)	NO
Retail trade-general	YES	YES	25	30	NO	NO
Utilities	YES	YES	YES (2)	YES (3)	YES (4)	NO
Communication	YES	YES	25	30	NO	NO
Manufacturing and Production						
Manufacturing, general	YES	YES	YES (2)	YES (3)	YES (4)	NO
Photographic and optical	YES	YES	25	30	NO	NO
Agriculture (except livestock) and forestry	YES	YES (6)	YES (7)	YES (8)	YES (8)	YES (8)
Livestock farming and breeding	YES	YES (6)	YES (7)	NO	NO	NO
Mining and fishing, resource production and extraction	YES	YES	YES	YES	YES	YES
Recreational						
Outdoor sports arenas and spectator sports	YES	YES (5)	YES (5)	NO	NO	NO
Outdoor music shells, amphitheaters	YES	NO	NO	NO	NO	NO
Nature exhibits and zoos	YES	YES	NO	NO	NO	NO
Amusements, parks, resorts, and camps	YES	YES	YES	NO	NO	NO
Golf courses, riding stables and water recreation	YES	YES	25	30	NO	NO

Numbers in parenthesis refer to notes.

Source: Federal Aviation Regulations Part 150, Airport Noise Compatibility Planning

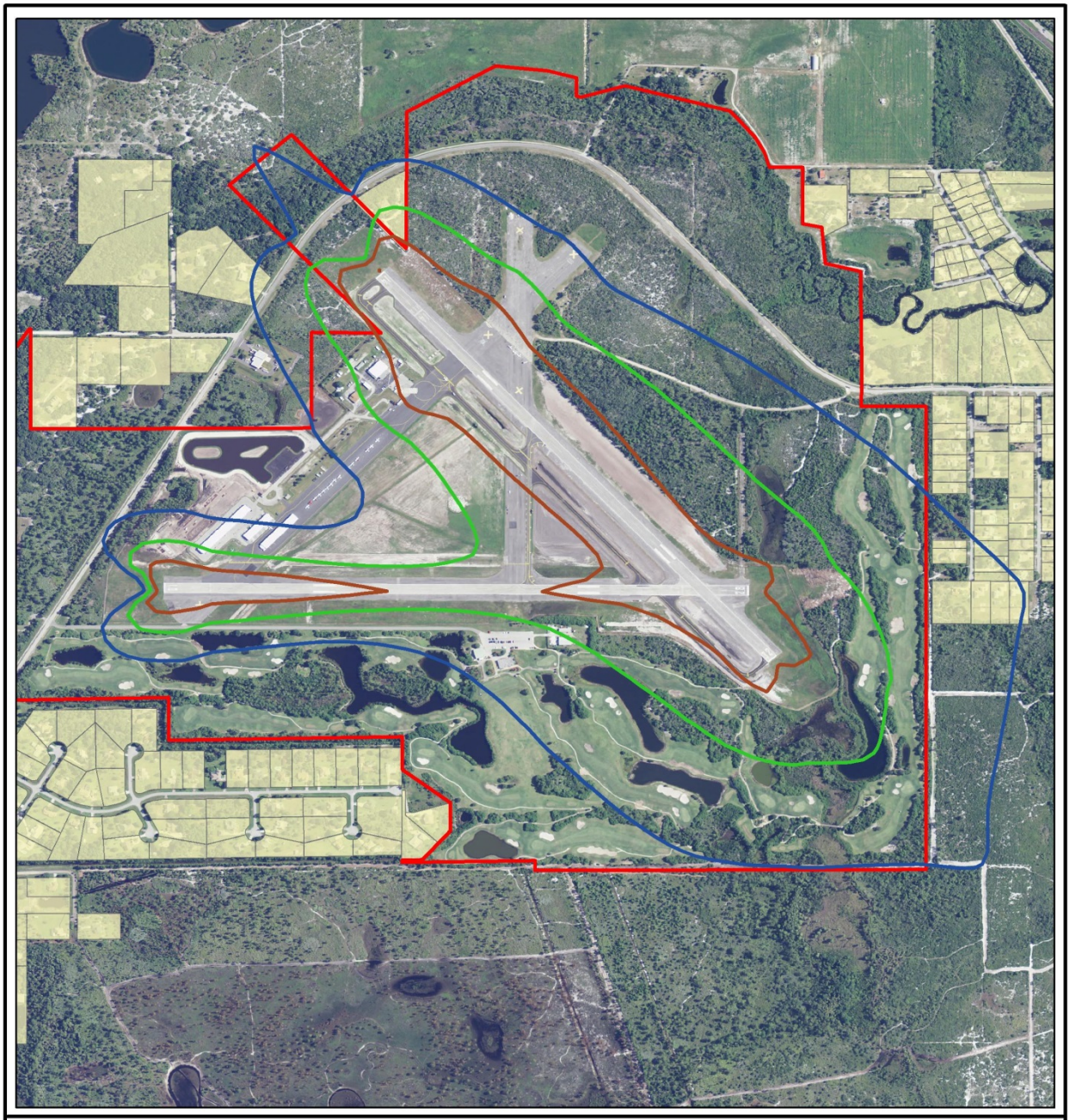
Notes to Table 4.3

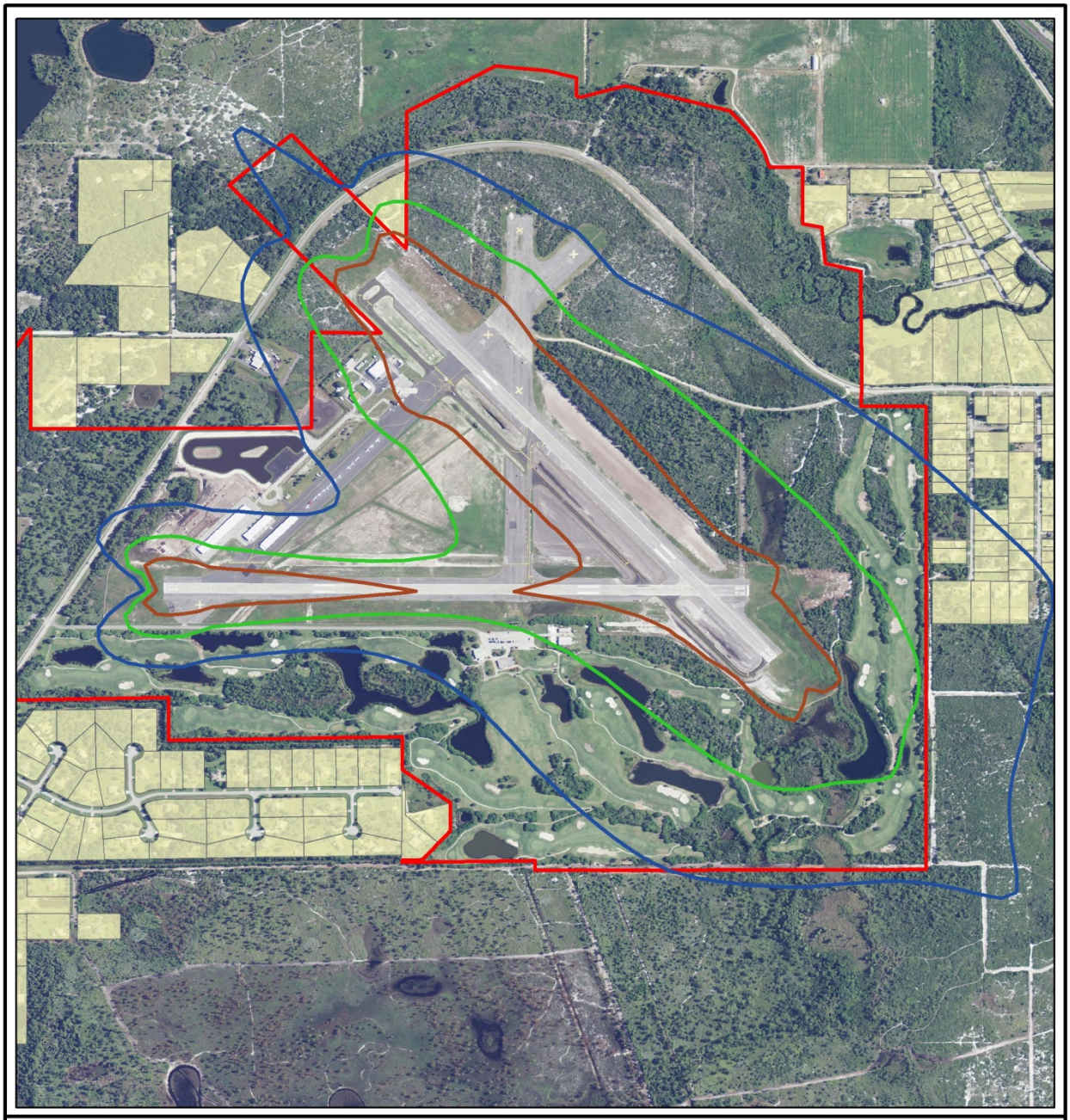
NOTE: The designations in this table do not constitute a Federal determination that any use of land is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with local land use authorities. FAA determinations under Part 150 are guidelines and are not intended to substitute for land uses determined to be suitable by local authorities in response to locally determined needs and values in achieving noise compatible land uses.	
Key to Table 1	
YES	Land Use and related structures compatible without restrictions.
NO	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35	Land use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.
Notes for Table 1	
(1)	Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be

	incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
(2)	Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(3)	Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(4)	Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(5)	Land use compatible provided special sound reinforcement systems are installed.
(6)	Residential buildings require an NLR of 25.
(7)	Residential buildings require an NLR of 30.
(8)	Residential buildings not permitted.
(End of Table 5.3)	

Source: FAA

A review of the DNL noise levels for The Valkaria Airport indicates that no substantial, objectionable levels of noise will be imposed on areas in the vicinity of the airport as a result of the proposed development. The 65 DNL contour, illustrated in **Figure 4.4**, for the proposed developments is contained within the airport property boundary for the 2034 activity projections. All of the land within the noise contours for the proposed action is considered currently compatible according to FAA guidelines. Existing and forecast condition noise contours are depicted in **Figures 4.3** and **4.4**, respectively.


2014 Noise Exposure Map
Figure 4.3
Legend
60 DNL Contour
65 DNL Contour
70 DNL Contour
Airport Boundary
Residential Property
HANSON
0 500 1,000
Feet
N


2034 Noise Exposure Map
Figure 4.4
Legend
60 DNL Contour
65 DNL Contour
70 DNL Contour
Airport Boundary
Residential Property
HANSON
0 500 1,000
Feet
N

4.3.14 Secondary (Induced) Impacts

Proposed airport improvements have the potential for positive socioeconomic impacts generated by proposed airport improvements in the form of temporary construction employment and income. However, the annual economic activity number is likely to go up in the event that planned airport improvements attract new airport tenants, businesses, or air traffic. Airport development is likely to create additional sources of airport revenue that go beyond the current revenues generated by flight training and recreational/sport aviation air traffic. Overall, it is expected that the community and region will be positively influenced by proposed improvements.

4.3.15 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

The areas proposed to be affected by the scope of the proposed airport improvements are contained within the airport property boundaries and areas designated for airport related activities. Therefore, there are no anticipated highly adverse impacts on minority or low-income populations as a result of this proposal. Also, there are no anticipated impacts or disproportionate risks to children, resulting from environmental health or safety risks.

4.3.16 Water Quality

The Federal Water Pollution Control Act, as amended, commonly known as the Clean Water Act (CWA), governs the control of water pollution in the nation. The objective of the act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Federal agencies are required to comply with all federal, state, interstate and local water pollution control requirements both substantively and procedurally. The CWA provides the statutory basis for state water quality standards programs.

The airport is located within the jurisdiction of the St. Johns River Water Management District (SJRWMD). Regulatory authority under programs delegated to the SJRWMD include management of the consumptive use of water, aquifer recharge, well construction, and surface water management, and the administration of the Department of Environmental Protections (DEP's) stormwater management program. The Florida DEP is also responsible for regulating public water systems in the State of Florida. This authority derives from Chapter 403, Part IV, Florida Statutes (FS), and by delegation of the federal program from the USEPA.

According to the USEPA, there is one Toxic Release to Water site near the Valkaria Airport. This site is located 1.5 miles north of the airport. Coordination with the South

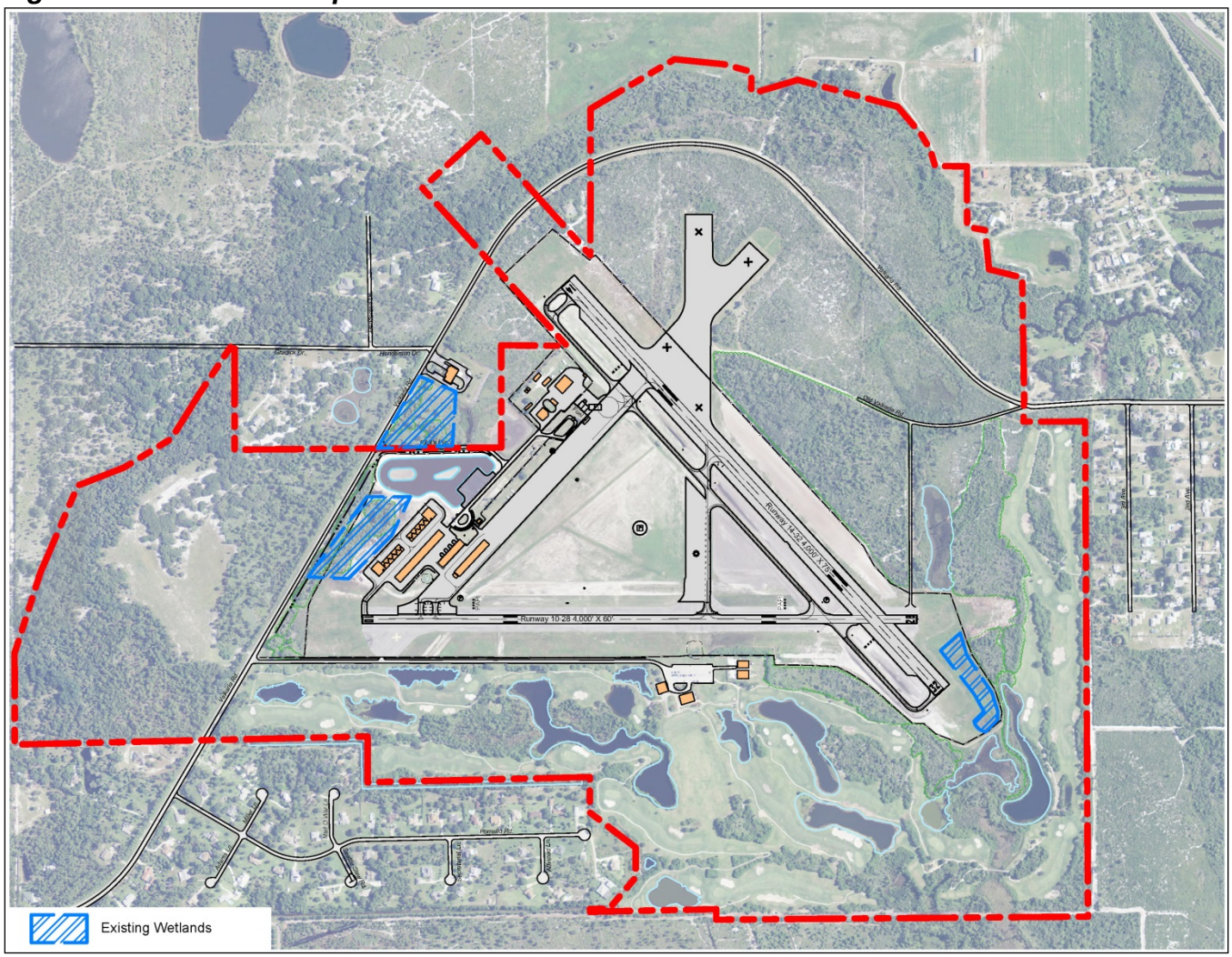
Florida Water Management District and the Florida Department of Environmental Protection will be required for implementation of various proposed improvements.

Long-term impacts of the projects would be limited to addition volumes of stormwater runoff due to increased areas of paved surface. The EPA considers this a non-point source pollution, because unlike point source pollution, it does not come from one specific location; rather, it comes from a broad range of sources. Pollutants carried by this runoff can be discharged into canals, lakes, and other bodies of water with adverse environmental impacts. These increases will be accommodated through stormwater management planning which will include the development of additional stormwater management areas/ponds.

4.3.17 Wetlands

Evaluation of existing wetland conditions indicates three locations within the development envelope of the airport. The two wetlands to the west of the airport will be disturbed due to proposed future development. The wetland adjacent to the existing stormwater pond will be mitigated to develop an additional stormwater management area. The wetland west of T-hangar buildings D and E will require mitigation for the development of T-hangar F. Agencies with jurisdiction over the wetlands are the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency at the federal level, as well as the Florida Department of Environmental Protection (FDEP) and the Southwest Florida Water Management District (SWFWMD) at the state level. **Figure 4.5** depicts the three wetland locations.

Figure 4.5 Wetlands Map



Source: Hanson Professional Services Inc., 2015

4.3.18 Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968, as amended, describes those river segments designated as, or eligible to be included in, the Wild and Scenic Rivers System. In addition, the President's 1979 Environmental Message Directive on Wild and Scenic Rivers directs federal agencies to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory as having potential for designation under the Wild and Scenic Rivers Act. The State of Florida has two wild and scenic rivers: the Wekiva River and the Loxahatchee River. The Airport is 80 miles southeast of the Wekiva River and 76 miles north of the Loxahatchee River. Therefore this environmental category has no impact on the Valkaria Airport.

5 Airport Layout Plan

5.1 Preferred Development Plan

The preferred development plan for X59 has been refined from the various alternatives following extensive discussion with airport management staff and the public. The consultant believes that these recommended alternatives reflect an appropriate balance between safety, meeting the anticipated demand, and preservation of the environment as well as the sense of community that is apparent at this airport. Implementation of this master plan update will result in the healthy growth of this small, safe and financially solvent airport that the entire community will appreciate.

An FAA approved Airport Layout Plan (ALP) is required for the airport to receive financial assistance under the terms of the Airport and Airway Improvement Act of 1982 (AIP). The ALP graphically depicts existing and future airport facilities. See Appendix for the ALP sheets.

5.2 Runways

The existing runway configuration of 14-32 and 10-28 will be maintained to provide the airport with complete wind coverage and to meet the anticipated demand. Runway 14-32, the primary runway, will be rehabilitated to FAA *B-II Small Aircraft* design criteria. Projects related to the rehab will include pavement to a width of 75 feet, runway edge lights, signage, an electrical vault, marking to standards for a non-precision approach and an approach survey. In addition, the long-term plan is to extend this runway to a length of 4,250 feet as operations by the B200 increase. Runway 10-28 will continue to be operated and maintained to B-I design criteria.

5.3 Taxiways

A major point of emphasis for this master plan has been to present a taxiway system that increases safety and where practical provides non-conflicting movement to all runway ends. The following taxiways are recommended:

- Taxiway A, the parallel taxiway serving Runway 14-32, is to be widened to comply with FAA design standards. Lights will be added in conjunction with the runway lighting project as well.
- Taxiway/taxilane C, serving the existing apron, will be upgraded to a taxiway to accommodate aircraft movement in the area adjacent to the new airport administration/pilot services building and the fueling apron as well as to meet FAA's new taxiway configuration standards.
- A parallel taxiway will be constructed to serve runway 10-28 and itinerant aircraft accessing the golf course complex of buildings.
- A short parallel taxiway (E) will be constructed to serve the west hangar complex and to comply with FAA taxiway configuration standards. This taxiway is identified as part of the construction of T-hangar F.

- In response to the development of the north hangar complex (see hangars) a taxiway (F) will be constructed parallel to Runway 14-32 to provide direct access to Runway ends 14 and 28.

Where practical, new or reconstructed taxiways will be designed to Airplane Design Group II (ADG-II) and Taxiway Design Group 2 (TDG-2) standards to allow unrestricted movement to each runway end.

5.4 Airfield Marking, Signage and Lighting

Proper airfield marking, signage and lighting are critical components to safe and efficient airport operations. The airport has recently installed signs to enhance pilot spatial awareness. These sign will require lighting in conjunction with the installation of runway edge lights. Typically runway rehabilitation projects include lighting, updating signs and marking however these items are listed in the Capital Improvement Plan (CIP) as individual line items to identify element costs and to recognize that budget constraints may require project phasing.

5.5 Aprons

Aircraft aprons are areas that provide aircraft parking, fueling, access to a terminal and ground transportation, as well as other aviation support facilities. The primary apron, between Hangar A and fueling apron, will be expanded to accommodate itinerant traffic and parking in front of the new administrative/pilot services building. Expansion of the apron, to include a flow-through Taxiway C, will allow ‘drive-through’ parking thereby eliminating the need to ground handle (tug) aircraft. The long-term plan anticipates that this apron will ultimately not have the capacity to accommodate based aircraft. A new apron for based aircraft tie-downs has been located in the north hangar complex.

5.6 Golf Course Apron

Consistent with the 2006 Master Plan an airplane parking apron is located to serve itinerant aircraft desiring access to the existing golf course. It is anticipated that this apron will be constructed in conjunction with phase 1 of the Taxiway D project.

5.7 Helicopter Pads

Helicopters (rotorcraft) represent approximately 5% of total based aircraft and contribute up to 3% of the total operations. In response to this activity a helicopter landing pad has been designated east of the intersection of Taxiways A and C. The other facility for helicopters is a servicing pad adjacent to the BCMC complex. .

5.8 Fueling Apron

Although the fuel storage volume is sufficient to serve the airport throughout the planning period some alterations and additions are recommended. The development of

the north hangar complex will facilitate the addition of a small (not more than 10,000 gallon) self-service fueling station incorporated into that apron.

5.9 Emergency Response Access Road

An emergency access road will be constructed linking the Brevard County Fire Rescue Station 87 directly to Taxiway A. This road will provide a dedicated road for emergency vehicle access to the airfield.

5.10 Aircraft Hangars

This master plan anticipates a requirement for up to 97 additional hangars to meet the forecast demand. The existing west side hangar complex has room for one additional T-hangar with a capacity of up to 24 aircraft. Additional hangars are to be constructed north of Runway 14-32 at a location that provides sufficient land to accommodate hangar development well beyond the 20-year period covered by this master plan. Each of the hangar buildings depicted on the ALP will accommodate 18-20 aircraft depending on the size of the box hangars constructed at the ends of each building. The CIP anticipates Hangar F will be constructed during the first 5 year period with Hangars G thru J following in the 10 and 20-year periods. In addition, box hangars are identified to satisfy anticipated demand for hangars capable of accommodating multiple aircraft. A box hangar has been identified to serve the administration/pilot services building and the itinerant operations. Box hangars to satisfy based aircraft demand are identified at the ends of the T-hangar buildings. Hangar construction is demand driven with the construction of each hangar only when construction will provide the desired hangar occupancy rate.

6 Facility Improvement Plan

6.1 Financial Analysis and Capital Improvement Program

The Capital Improvement Plan is presented in three implementation phases consistent with the master plan forecast periods: short-term (2015-2019); mid-term (2020-2024); and, long-term (2025-2034). The development projects most important to correcting existing safety and standard deficiencies are placed at the top of the list as highest priority. This CIP project list is not intended to be all inclusive. Airport management staff will retain the flexibility to adjust project priority and to add or delete projects as demand and priorities change.

Capital funding costs for the entire 20-year development plan are estimated to be $28,234,300 in 2015 dollars (Table 6.1). Development projects that may be undertaken using private funds, and therefore not requiring Airport financial support, have not been included in this total. Concurrent with the CIP the airport must continue to fund an Operating and Maintenance (O&M) budget with sufficient monies to properly maintain new and existing facilities.

Table 6.1 Summary of Development Costs (2015 Dollars)

Planning Period	Cost Estimate	Airport Portion [1]
Short Term 2015 - 2019	$9,402,000	$1,028,080
Mid Term 2020 - 2024	$12,512,300	$2,043,460
Long Term 2025 - 2034	$6,320,000	$544,000
Total Planning Period	**$28,234,300**	**$3,615,540**

[1] Airport (Local) funding is estimated assuming current 2% and/or 20% share remains unchanged

6.2 Capital Funding Sources

Securing state and federal funding requires close ongoing coordination with FDOT District Five and FAA's Orlando Airport District Office (ADO). Grants from FDOT and the FAA are contractual agreements that carry with them specific obligations and requirements. These grants are also typically limited to capital projects needed for safety, economic viability, environmental mitigation and/or capacity. Funds required for the operation and maintenance are normally the airport owner's responsibility. The funding distribution between federal, state and local shares in this CIP is based upon current (2015) FAA and FDOT programs.

6.2.1 The Airport

Airport revenues at general aviation airports similar in size to Valkaria are generated from a variety of user fees from sources such as: hangar leases; tie-down fees, both for based and itinerant parking; fuel sales; sales of pilot supplies and services; land leases from second party business enterprises; and, miscellaneous fees from special events and activities.

The preferred source of local funds for capital investment is from the airport's retained earnings. These are revenues in excess of the operating cost and may be accumulated over multiple years a "capital" account. Currently the Airport (Local) share for federal grant projects is 2% and 20% for projects that are funded by FDOT grants with no federal participation.

6.2.2 State Funds

Public airports in Florida are eligible for two types of state capital funding assistance for CIP development projects, state only funding and state participation in federal grants. For aeronautical planning and construction projects that are not part of the FAA Airport Improvement Program (AIP) FDOT may provide up to 80% funding leaving the local share responsibility of 20%. FDOT grants are also available for airport economic development carrying a 50% state/local share. FDOT currently participates with 8% of costs for those projects funded using FAA AIP program funds.

6.2.3 Federal Funds

As a participating airport in the National Plan of Integrated Airport Systems (NPIAS) Valkaria is eligible for two categories of funding under the current AIP. The first is the *Non-Primary General Aviation Airport Entitlement* which provides up to $150,000 per year to general aviation airports that apply for approved projects. Valkaria Airport began receiving these funds in 2008 and has used this funding source each year since. The second source of FAA funding is the *discretionary* portion of the annual AIP program. Discretionary grants may be awarded in addition to entitlement funds. Competition for these funds is high and distribution is based on regional and national priorities.

Between 2010 and 2014 the airport applied for and received $7,594,329.00 in federal grants from the Entitlement and Discretionary programs. These FAA funds were combined with $675,051.00 state contributing funds and $168,763.00 in local money resulting in a total airport facilities investment of $8,438,143.00 in the five year period.

FDOT funding for CIP projects without federal participation for the same time period, totaled $3,038,927 with an airport match of $747,232; bringing the total CIP investments into Valkaria Airport to over $12 million. All local matching funds were derived from airport revenue; no county general funds were used.

6.3 Short-Term CIP 2015-2019

The short-term development program is heavily weighted toward the two primary airport priorities, improving safety and serving the local and itinerant pilot community. The immediate projects center on the rehabilitation, upgrade in pavement and lighting of Runway 14-32 and the construction of the administration/pilot services building. This is a recommended project list. The airport will retain the flexibility to adjust project priority and to add or delete projects as demand and priorities change.

Major elements of the first short-term 5 year plan are:

- Design, permit and construct administration and pilot services building
- Design, rehabilitate and upgrade Runway 14-32 pavement and conduct
- Design and construct Runway 14-32 edge lights, signage and electrical vault equipment
- Design and construct T-Hangar F and Taxiway E access.
- Widen and light Taxiway A
- Design and construct helicopter landing and servicing pads
- Midfield apron pavement sealcoat
- Land acquisition and avigation easements for Fire/Rescue road and approach protection
- Design and construct south parallel Taxiway D phase 1

6.4 Mid-Term CIP 2020-2024

The mid-term phase of the development plan focuses on addressing the anticipated needs of a growing based aircraft fleet, safety and environmental projects. Major program elements are:

- Improvements to itinerant aircraft apron and Taxiway C
- Design and construction of Fire/Rescue access road
- Design and construct stormwater management system expansion
- Design and construct Taxiway D – south parallel phase II
- Design and construct T-Hangars G, H & I, tie-down and access taxiway
- Install perimeter wildlife/security fence and road

6.5 Long-Term CIP 2025-2034

The long-term development plan includes the assumption that additional hangar space will be needed to satisfy based aircraft demand, the extension of the primary runway to meet operational needs of the design aircraft and airfield pavement rehabilitation and remarking. Major elements include:

- Design and construct T-Hangar J and expand tie-down facility
- Extend Runway 14-32 250 feet.
- Rehabilitate and re-marking airfield pavement as necessary
- Acquire fuel truck
- Expand auto parking

Table 6.2 is a list of anticipated individual projects that will be undertaken to respond to the forecast aviation demand and to make necessary facility improvements. The project estimates are based upon current (2015) construction costs and are not adjusted for price increases in future years. In addition the distribution of funding responsibility between FAA, FDOT and local funding is expected to continue at present levels.

Table 6.2 Valkaria Airport Capital Improvement Plan

SHORT TERM DEVELOPMENT: 2015 – 2019					
Projects	**Estimated Cost**	**Eligible Funding by Source**			
		Federal	**State**	**Local**	**Private**
Design and Permit Administration and Pilot Service Building, Vehicle and Aircraft Parking	$ 150,000	$ -	$ 120,000	$ 30,000	$ -
Design and Permit Hangar F and Access Taxiway	$ 150,000	$ -	$ 120,000	$ 30,000	$ -
Upgrade Existing Fuel Farm	$ 120,000	$ -	$ 96,000	$ 24,000	$ -
Construct Administration and Pilot Service Building, Vehicle and Aircraft Parking	$ 1,600,000	$ -	$ 1,280,000	$ 320,000	$ -
Design, Rehabilitate, and Upgrade Runway 14/32: Pavement	$ 1,581,000	$ 1,422,900	$ 126,480	$ 31,620	$ -
Design and Construct Runway 14/32 Edge Lights, Signage, and Vault Equipment	$ 740,000	$ 666,000	$ 59,200	$ 14,800	$ -
Conduct FAA Approach Survey	$ 160,000	$ 144,000	$ 12,800	$ 3,200	$ -
Construct Hangar F and Access Taxiway	$ 1,950,000	$ -	$ 1,560,000	$ 390,000	$ -
Install New Automatic Weather Reporting System (AWOS)	$ 250,000	$ -	$ 200,000	$ 50,000	$ -
Widen and Light Taxiway “A”	$ 1,100,000	$ 990,000	$ 88,000	$ 22,000	$ -
Design and Construct Helipad and Upgrade Helicopter Service Area	$ 100,000	$ 90,000	$ 8,000	$ 2,000	$ -
Acquisition of Land and Avigation Easements (Appraisal and Survey)	$ 55,000	$ -	$ 44,000	$ 11,000	$ -
Conduct Property Metes & Bounds Survey – FAA Exhibit A	$ 98,000	$ -	$ 78,400	$ 19,600	$ -
Construct Ground Service Equipment Storage Facility	$ 20,000	$ -	$ 16,000	$ 4,000	$ -
Security Improvements	$ 75,000	$ -	$ 60,000	$ 15,000	$ -
Design and Construct South Parallel Taxiway Phase 1	$ 1,143,000	$ 1,028,700	$ 91,440	$ 22,860	$ -
Develop Solar Farm (Privately Funded; Airport Land Lease)	$ -	$ -	$ -	$ -	$ 1,000,000
Midfield Apron Rehabilitation (Sealcoat)	$ 50,000	$ -	$ 40,000	$ 10,000	$ -
Skyman Park Rehabilitation	$ 20,000	$ -	$ -	$ 20,000	$ -
Airport Operations Vehicle	$ 40,000	$ -	$ 32,000	$ 8,000	$ -
Total	**$ 9,402,000**	**$ 4,341,600**	**$ 4,032,320**	**$ 1,028,080**	**$ 1,000,000**

Table 6.2 Valkaria Airport Capital Improvement Plan (continued)

MID TERM DEVELOPMENT: 2020 – 2024					
Projects	**Estimated Cost**	**Eligible Funding by Source**			
		Federal	**State**	**Local**	**Private**
Administration Building Area Improvements, Taxiway C and Apron Expansion	$ 1,350,000	$ 1,215,000	$ 108,000	$ 27,000	$ -
Design and Construct Fire Department Access Road	$ 315,500	$ -	$ 252,400	$ 63,100	$ -
Design, Permit and Construct Hangars G & H, Tie-down Area, and Access Taxiway	$ 4,104,000	$ -	$ 3,283,200	$ 820,800	$ -
Construct North Stormwater Management Facility	$ 342,800	$ -	$ 274,240	$ 68,560	$ -
Design and Construct T-Hangar I	$ 1,800,000	$ -	$ 1,440,000	$ 360,000	$ -
Design and Construct Box Hangar 1	$ 500,000	$ -	$ 400,000	$ 100,000	$ -
Upgrade Airfield Signs	$ 300,000	$ -	$ 240,000	$ 60,000	$ -
Fuel Farm - North Complex	$ 250,000	$ -	$ 200,000	$ 50,000	$ -
Master Plan Update	$ 200,000	$ 180,000	$ 16,000	$ 4,000	$ -
Design and Construct South Parallel Taxiway/Apron Phase II	$ 1,700,000	$ -	$ 1,360,000	$ 340,000	$ -
Airfield Marking Update	$ 100,000	$ 90,000	$ 8,000	$ 2,000	$ -
Security Enhancements	$ 150,000	$ -	$ 120,000	$ 30,000	$ -
Install Airfield Perimeter Wildlife Fencing	$ 900,000	$ 810,000	$ 72,000	$ 18,000	$ -
FBO Hangar and Apron (Privately Funded; Airport Land Lease)	TBD	$ -	$ -	$ -	TBD
Pave North Development Access Road and Parking	$ 500,000	$ -	$ 400,000	$ 100,000	$ -
Total	**$ 12,512,300**	**$ 2,295,000**	**$ 8,173,840**	**$ 2,043,460**	
LONG TERM DEVELOPMENT: 2025 – 2034					
Projects	**Estimated Cost**	**Eligible Funding by Source**			
		Federal	**State**	**Local**	**Private**
Design and Construct T-Hangar J	$ 1,900,000	$ -	$ 1,520,000	$ 380,000	$ -
Extend Runway 14-32 250'	$ 1,500,000	$ 1,350,000	$ 120,000	$ 30,000	$ -
Airfield Pavement Rehabilitation and Re-marking	$ 2,500,000	$ 2,250,000	$ 200,000	$ 50,000	$ -
Fuel Truck	$ 70,000	$ -	$ 56,000	$ 14,000	$ -
Auto Parking Lot Expansion	$ 350,000	$ -	$ 280,000	$ 70,000	$ -
Total	**$ 6,320,000**	**$ 3,600,000**	**$ 2,176,000**	**$ 544,000**	

6.6 Financial Feasibility

The CIP is a product of careful and interactive review of airport needs and goals balanced against reasonable expectations of funding. Although small and undergoing redevelopment X59 has a solid revenue stream and a reasonable budget. Based on the growth the previous 5-6 years, and is expected to occur in the future, this airport has the potential to generate substantial revenue.

If the CIP is implemented as planned, all indications are that the Valkaria Airport will be able to fully fund near and long term development with modest short term debt that can be serviced by the growing revenue. Implementation of this CIP will allow the airport to meet safety and maintenance standards expected of a modern airport, give it the capacity it needs to serve the based aircraft and operations demand and provide

economic stimulation to the local community in the form of sales and property taxes and employment.

Appendix A

Airport Layout Plan

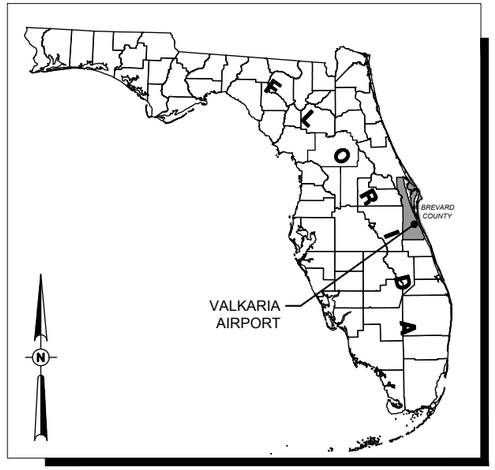
DRAFT
AIRPORT LAYOUT PLAN
FOR
VALKARIA AIRPORT (X59)
VALKARIA, BREVARD COUNTY, FLORIDA

MAY 20, 2015

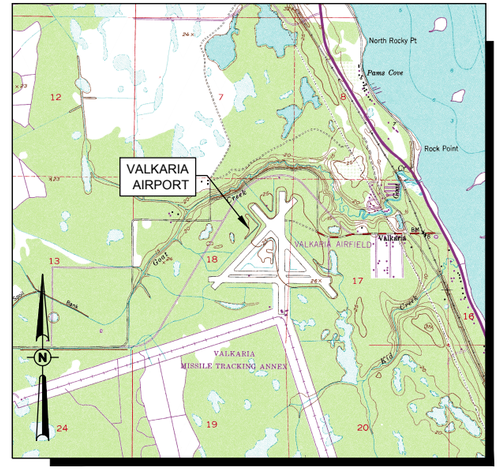
FDOT FM #435317-1-94-01

FAA AIP NO. 3-12-0144-007-2014

INDEX OF SHEETS



LOCATION MAP



VICINITY MAP

No.	Issue/Description	Date	By

VALKARIA AIRPORT
Brevard County, Florida

Steve Borowski, Aviation Director — Date

Hanson Professional Services Inc.
9015 Town Center Parkway, Suite 105
Lakewood Ranch, Florida 34202
Telephone: 941-342-6321
www.hanson-inc.com

Consultant — Date

FLORIDA DEPARTMENT OF TRANSPORTATION
Aviation and Spaceports Office

Jim Wikstrom, Supervisor, District 5 — Date

RUNWAY DATA TABLE

ITEM	10-28				14-32			
	Existing		Future		Existing		Future	
Runway Identification	Runway End 10	Runway End 28	Runway End 10	Runway End 28	Runway End 14	Runway End 32	Runway End 14	Runway End 32
Runway Design Code (RDC)*	B-I-VIS (Utility)		B-I-VIS (Utility)		B-II-VIS		B-II-5000 (Utility)	
Approach Reference Code (APRC)	B-I-VIS (Utility)		B-I-VIS (Utility)		B-II-VIS		B-II-5000 (Utility)	
Departure Reference Code (DPRC)	B-I-VIS (Utility)		B-I-VIS (Utility)		B-II-VIS		B-II-5000 (Utility)	
Pavement Surface Type	Asphalt		Asphalt		Asphalt		Asphalt	
Pavement Strength (lbs)	12,500 (Single Wheel)		12,500 (Single Wheel)		12,500 (Single Wheel)		16,975 (Single Wheel)	
Pavement Strength (PCN)	---		---		---		---	
Surface Treatment	None		None		None		None	
Effective Runway Gradient (%)**	0.05%		0.05%		0.04%		0.04%	
Wind Coverage (%)	92.11%		92.11%		94.50%		94.50%	
Runway Length	4,000'		4,000'		4,000'		4,250'	
Runway Width	60'		60'		75'		75'	
Critical Aircraft	Piper Aerostar 600/601		Piper Aerostar 600/601		CASA 212		Beech King Air B200	
Approach Speed	94 Knots		94 Knots		99 Knots		103 Knots	
Wing Span	34.3'		34.3'		62.4'		54.5'	
Aircraft Tail Height	12.1'		12.1'		20.7'		15.0'	
Main Gear Width (Outer)	10.9'		10.9'		11.1'		18.6'	
Cockpit to Main Gear/Wheelbase***	11' (est.)		11' (est.)		18.2'		15.0'	
Maximum Takeoff Weight (lbs.)	5,500		5,500		16,975		12,500	
Runway True Bearing	90° 16' 53.4"	270° 17' 14.3"	90° 16' 53.4"	270° 17' 14.3"	137° 45' 55.5"	317° 46' 9.5"	137° 45' 55.5"	317° 46' 10.4"
Runway End Coordinates (NAD83)								
Latitude	27° 57' 34.58" N	27° 57' 34.39" N	27° 57' 34.58" N	27° 57' 34.39" N	27° 57' 58.47" N	27° 57' 29.14" N	27° 57' 58.47" N	27° 57' 27.31" N
Longitude	80° 33' 56.88" W	80° 33' 12.27" W	80° 33' 56.88" W	80° 33' 12.27" W	80° 33' 40.43" W	80° 33' 10.45" W	80° 33' 40.43" W	80° 33' 08.57" W
Runway End Elevation (MSL)	22.75'	24.08'	22.75'	24.08'	24.7'	24.3'	24.7'	24.2'
Displaced Threshold From Runway End	None	None	None	None	None	None	None	None
Displaced Threshold Coordinates (NAD83)								
Latitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Longitude	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Displaced Threshold Elevation (MSL)	N/A	N/A	N/A		N/A	N/A	N/A	N/A
Runway Safety Area (RSA)								
Actual	4,480'x120'	4,480'x120'	4,480'x120'	4,480'x120'	4,600'x150'	4,600'x150'	4,850'X150'	4,850'X150'
Design Standard - Length Beyond Departure End	240'	240'	240'	240'	300'	300'	300'	300'
Design Standard - Length Prior to Threshold	240'	240'	240'	240'	300'	300'	300'	300'
Design Standard - Width	120'	120'	120'	120'	150'	150'	150'	150'
Runway Lighting Type	Threshold/End Lights	Threshold/End Lights	Threshold/End Lights	Threshold/End Lights	Threshold/End Lights	Threshold/End Lights	MIRL	MIRL
Approach Runway Protection Zone (RPZ)								
Length	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'
Inner Width	250'	250'	250'	250'	500'	500'	250'	250'
Outer Width	450'	450'	450'	450'	700'	700'	450'	450'
Departure Runway Protection Zone (RPZ)								
Length	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'
Inner Width	250'	250'	250'	250'	500'	500'	250'	250'
Outer Width	450'	450'	450'	450'	700'	700'	450'	450'
Runway Marking Type	Visual	Visual	Visual	Visual	Visual	Visual	Non Precision	Non Precision
14 CFR FAR Part 77 Approach Category	20:1	20:1	20:1	20:1	20:1	20:1	20:1	20:1
14 CFR FAR Part 77 Approach Type	Visual (Utility)	Visual (Utility)	Visual (Utility)	Visual (Utility)	Visual	Visual	Non-Precison (Utility)	Non-Precison (Utility)
14 CFR FAR Part 77 Approach Dimensions (IWxOWxL)	250'x1,250'x5,000'	250'x1,250'x5,000'	250'x1,250'x5,000'	250'x1,250'x5,000'	500'x1,500'x5,000'	500'x1,500'x5,000'	500'x2,000'x5,000'	500'x2,000'x5,000'
14 CFR FAR Part 77 Approach Visibility Minimums	Visual	Visual	Visual	Visual	Visual	Visual	> 3/4 Mile	> 3/4 Mile
Visibility Minimums (RVR)	Visual (VIS)	Visual (VIS)	Visual (VIS)	Visual (VIS)	Visual (VIS)	Visual (VIS)	> 1 Mile (5000)	> 1 Mile (5000)
Type of Aeronautical Survey Required for Approach	Not Vertically Guided	Not Vertically Guided	Not Vertically Guided	Not Vertically Guided	Not Vertically Guided	Not Vertically Guided	Not Vertically Guided	Not Vertically Guided
Runway Object Free Area (ROFA)								
Design Standard - Length Beyond Runway	240'	240'	240'	240'	300'	300'	300'	300'
Design Standard - Length Prior to Threshold	240'	240'	240'	240'	300'	300'	300'	300'
Design Standard - Width	250'	250'	250	250'	500'	500'	500'	500'
Runway Obstacle Free Zone (ROFZ)								
Length	200'	200'	200'	200'	200'	200'	200'	200'
Width	250'	250'	250'	250'	400'	400'	250'	250'
Precision Obstacle Free Zone (POFZ)								
Length	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Width	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Threshold Siting								
Approach Surface Type	2	2	2	2	3	3	4	4
Approach Surface Slope	20:1	20:1	20:1	20:1	20:1	20:1	20:1	20:1
Approach Surface Dimensions	0'x250'x700'x2,250'x2,750'	0'x250'x700'x2,250'x2,750'	0'x250'x700'x2,250'x2,750'	0'x250'x700'x2,250'x2,750'	0'x400'x1,000'x1,500'x8,500'	0'x400'x1,000'x1,500'x8,500'	200'x400'x3,800'x10,000'	200'x400'x3,800'x10,000'
Runway Departure Surface								
Departure Surface Slope	N/A	N/A	N/A	N/A	N/A	N/A	40:1	40:1
Departure Surface Dimensions	N/A	N/A	N/A	N/A	N/A	N/A	0'x1,000'x6,466'x10,200'	0'x1,000'x6,466'x10,200'
Visual NAVAIDS	PAPI(4)	PAPI(4)	PAPI(4)	PAPI(4)	PAPI(4)	PAPI(4)	PAPI(4), REIL	PAPI(4), REIL
Instrument NAVAIDS	None	None	None	None	None	None	None	None
Instrument Approach Procedures								
Type	None	None	None	None	None	None	Non-Precision	Non-Precision
Approach Instrumentation	N/A	N/A	N/A	N/A	N/A	N/A	RNAV (GPS)	RNAV (GPS)
Touchdown Zone Elevation	24.3'	24.6'	24.3'	24.6'	25.8'	25.8'	25.8'	25.8'
Taxiway Design Group	1A	1A	1A	1A	1A	1A	2	2
Taxiway/Taxilane Width	25'	25'	25'	25'	25'	25'	35'	35'
Taxiway Safety Area (TSA) Width	49'	49'	49'	49'	79'	79'	79'	79'
Taxiway Object Free Area (TOFA) Width	89'	89'	89'	89'	131'	131'	131'	131'
Taxilane Object Free Area Width	79'	79'	79'	79'	115'	115'	115'	115'
Taxiway/Taxilane Separation								
Taxiway Centerline to Fixed or Movable Object	44.5'	44.5'	44.5'	44.5'	65.5'	65.5'	65.5'	65.5'
Taxilane Centerline to Fixed or Movable Object	39.5'	39.5'	39.5'	39.5'	57.5'	57.5'	57.5'	57.5'
Taxiway Lighting	None	None	None	None	None	None	MITL	MITL

* RDC-RUNWAY DESIGN CODE. DESIGN AIRCRAFT BASED UPON AC 150/5300-13A TABLES 1-1, 1-2 AND 1-3, PAGE 13:
AIRCRAFT APPROACH CATEGORY B: SPEED OF 91 KNOTS OR MORE, BUT LESS THAN 121 KNOTS.
AIRPLANE DESIGN GROUP I: TAIL HEIGHT - LESS THAN 20'. WINGSPAN - LESS THAN 49'.
AIRPLANE DESIGN GROUP II: TAIL HEIGHT - AT LEAST 20' BUT LESS THAN 30'. WINGSPAN - AT LEAST 49' BUT LESS THAN 79'.
INSTRUMENT FLIGHT VISIBILITY CATEGORY: VIS - RUNWAYS DESIGNATED WITH VISUAL APPROACH USE ONLY; 5000 - NOT LOWER THAN 1 MILE

** RUNWAY MEETS LINE OF SIGHT REQUIREMENTS

*** COCKPIT TO MAIN GEAR (CMG) USED FOR AIRCRAFT WITH THE COCKPIT IS LOCATED FORWARD OF THE NOSE GEAR. WHERE THE COCKPIT IS LOCATED AFT OF THE NOSE GEAR, THE WHEELBASE IS USED IN LIEU OF CMG TO DETERMINE THE TAXIWAY DESIGN GROUP (TDG)

GENERAL NOTES

1. ALP PREPARED USING DESIGN CRITERIA FROM FAA ADVISORY CIRCULAR 150/5300-13A, CHANGE 1 "AIRPORT DESIGN" AND FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE".
2. THERE ARE NO OFZ PENETRATIONS.
3. GROUND CONTOUR INTERVALS SHOWN ARE 2-FOOT. CONTOURS GENERATED FROM USGS NATIONAL ELEVATION DATASET (NED) 3m DIGITAL ELEVATION MODEL.
4. AERIAL PHOTOGRAPHY OBTAINED FROM USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP), 2013.
5. BASE MAPPING FROM VALKARIA AIRPORT AND HANSON PROFESSIONAL SERVICES (VARIOUS PROJECTS).

REFERENCE

1. LATITUDE AND LONGITUDE ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83). AS APPLICABLE, CONVERSIONS MADE FROM FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE.
2. VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. ELEVATIONS SHOWN ARE IN "MEAN SEA LEVEL" (MSL) UNLESS NOTED OTHERWISE, AND ARE NOT INTENDED FOR DESIGN PURPOSES.
4. ALL ELEVATIONS AND DIMENSIONS IN FEET, UNLESS NOTED OTHERWISE.

DECLARED DISTANCES

Declared Distance	Runway 10	Runway 28	Runway 14	Runway 32
Takeoff Run Available (TORA)	4,000'	4,000'	4,000'	4,000'
Takeoff Distance Available (TODA)	4,000'	4,000'	4,000'	4,000'
Accelerate - Stop Distance Available (ASDA)	4,000'	4,000'	4,000'	4,000'
Landing Distance Available (LDA)	4,000'	4,000'	4,000'	4,000'

EXISTING RSA/OFA VIOLATIONS

Runway	Objects	Amount of Penetration	
		RSA	ROFA
10	None	---	---
28	None	---	---
14	Fence	---	45'
32	Fence	---	76'

MODIFICATION OF DESIGN STANDARDS

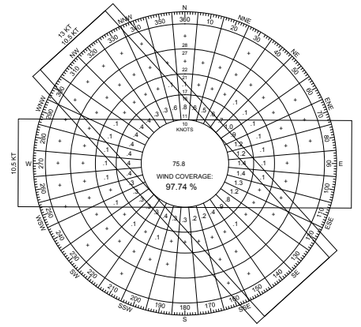
NO.	DESCRIPTION	FAA STANDARDS	EXISTING CONDITION	PROPOSED ACTION	DATE APPROVED
1					
2					

NOTE: NO MODIFICATIONS OF STANDARDS ARE CURRENTLY KNOWN TO EXIST.

AIRPORT DATA TABLE

Airport Identifier	X59
Airport Reference Code	
Existing	B-II
Future	B-II (Utility)
Mean Max Temperature of Hottest Month	90.7°F (July)
Airport Elevation (MSL)	26'
Airport Navigational Aids	Beacon
Existing Airport Reference Point (NAD 83)	
Latitude	27° 57' 39.15" N
Longitude	80° 33' 30.01" W
Future Airport Reference Point (NAD 83)	
Latitude	27° 57' 38.81" N
Longitude	80° 33' 29.38" W
Miscellaneous Facilities	
Existing	Lighted Windcone, Segmented Circle, AWOS, PAPI
Future	MIRL, MITL, Lighted Windcone, Segmented Circle, AWOS, PAPI, REIL
Critical Design Aircraft	
Existing	CASA 212
Future	Beech Super King Air B200
Magnetic Variation	6° 32.4' W changing by 5.6' W per year
NPIAS Service Level	General Aviation
State Service Level	General Aviation

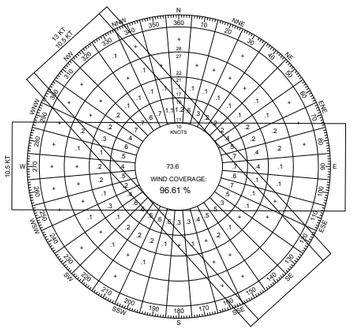
1. MAGNETIC DECLINATION: NOAA NATIONAL GEOPHYSICAL DATA CENTER, OCTOBER 2014.
2. TEMPERATURE: MONTHLY MEAN OF THE DAILY MAXIMUM TEMPERATURE OF THE HOTTEST MONTH OF THE YEAR, PROCESSED FROM 30 YEARS OF HOURLY OBSERVATIONS COLLECTED BY NOAA BETWEEN THE YEARS 1981 AND 2010 AT MELBOURNE INTERNATIONAL AIRPORT AND ARCHIVED BY NOAA.
3. AIRPORT REFERENCE POINT CALCULATED USING NGS ARP COMPUTATION UTILITY.
4. RUNWAY END COORDINATES PICKED FROM BASE MAPPING.



WIND ROSE
ALL WEATHER CONDITIONS
COMBINED RUNWAYS

ALL WEATHER WIND COVERAGE

RUNWAY	CROSSWIND COMPONENTS		
	10.5 Knot	13 Knot	16 Knot
10/28	92.11%	N/A	N/A
14/32	89.17%	94.50%	N/A
Combined	96.28%	97.74%	N/A



WIND ROSE
IFR CONDITIONS
COMBINED RUNWAYS

IFR WIND COVERAGE

RUNWAY	CROSSWIND COMPONENTS		
	10.5 Knot	13 Knot	16 Knot
10/28	87.98%	N/A	N/A
14/32	87.67%	92.26%	N/A
Combined	94.94%	96.61%	N/A

WIND DATA:
1. IFR CONDITIONS: CEILING <1000' AND/OR VISIBILITY <3 MILE, BUT CEILING >=200' AND VISIBILITY >= 0.5 MILE.
2. SOURCE: NOAA DATA FROM MELBOURNE INTERNATIONAL AIRPORT , FL, PERIOD OF RECORD 2005-2014, 24 OBSERVATIONS/DAY.
3. CROSSWIND COMPONENTS PER AC 150/5300-13A, CHANGE 1

DRAFT

HANSON
Engineering | Planning | Allied Services

Hanson Professional Services Inc.
9015 Town Center Pkwy, Suite 105
Lakewood Ranch, Florida 34202
Phone: (941) 342-6321
Fax: (941) 379-6474

EB-7961

Offices Nationwide
www.hanson-inc.com

BREVARD COUNTY, FLORIDA
2725 Judge Fran Jamieson Way
Viera, Florida 32940
Phone: (321) 633-2000

VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 02-DATA.DWG
DESIGN BY: MLH 04/21/2015
DRAWN BY: RAD 04/22/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

AIRPORT DATA SHEET

MAY 15, 2015 2:48 PM HARRI01115
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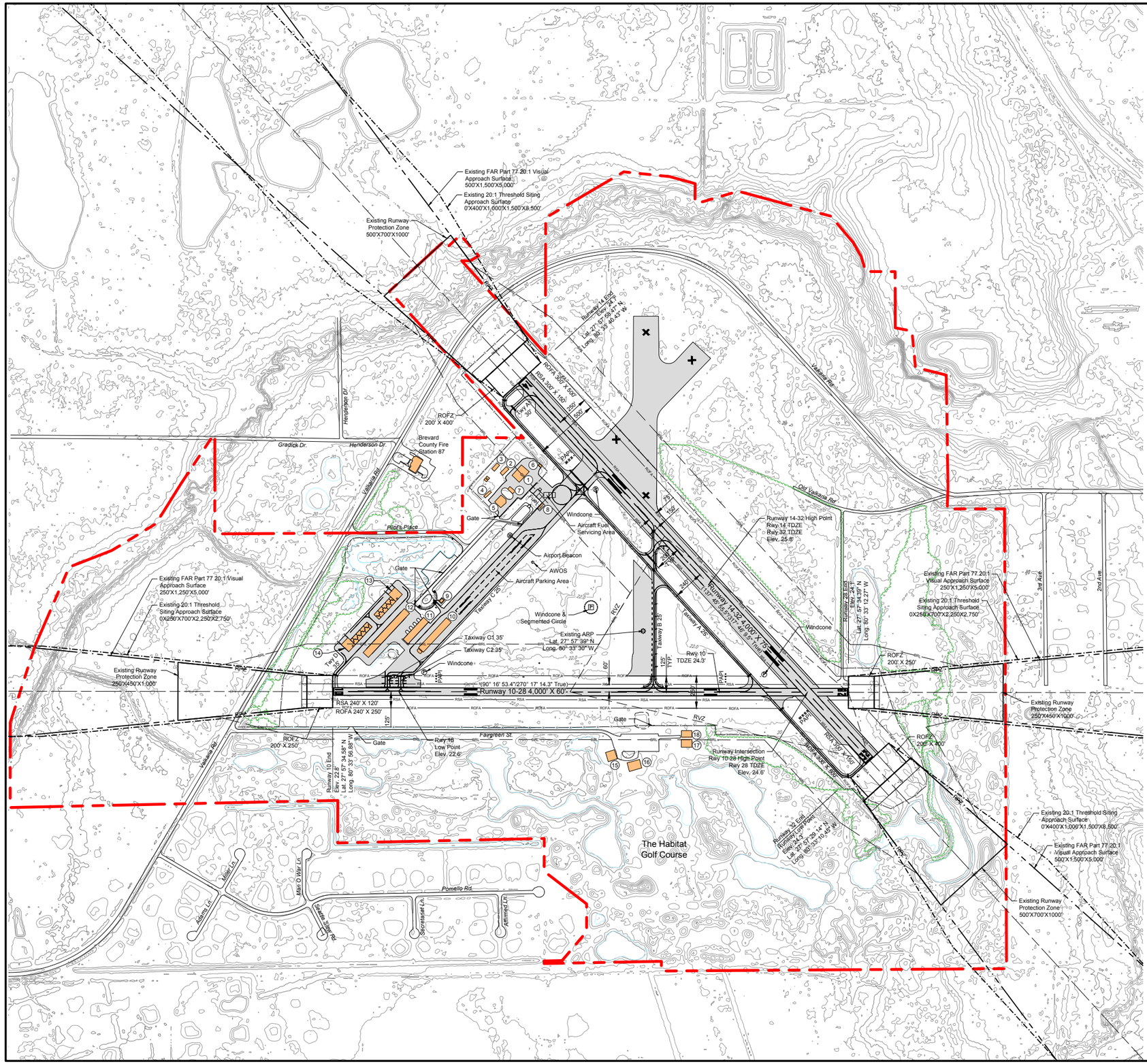

MAGNETIC NORTH
TRUE NORTH

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 200' 400' 800'
SCALE: 1"= 400'

GENERAL NOTES

1. ALP PREPARED USING DESIGN CRITERIA FROM FAA ADVISORY CIRCULAR 150/5300-13A, CHANGE 1 "AIRPORT DESIGN" AND FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE".
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4. AERIAL PHOTOGRAPHY OBTAINED FROM USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP). 2013.
5. BASE MAPPING FROM VALKARIA AIRPORT AND HANSON PROFESSIONAL SERVICES (VARIOUS PROJECTS).

REFERENCE

1. LATITUDE AND LONGITUDE ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83). AS APPLICABLE, CONVERSIONS MADE FROM FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE.
2. VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. ELEVATIONS SHOWN ARE IN "MEAN SEA LEVEL" (MSL) UNLESS NOTED OTHERWISE, AND ARE NOT INTENDED FOR DESIGN PURPOSES.
4. ALL ELEVATIONS AND DIMENSIONS IN FEET, UNLESS NOTED OTHERWISE.

Facilities Table

#	Facility Description	Top Elevation
1	Mosquito Control Hangar	45'
2	Mosquito Control Covered Auto Parking	37'
3	Mosquito Control Covered Auto Parking (2)	39'
4	Mosquito Control Storage Facility	39'
5	Mosquto Control Admin. & Maint. Building	45'
6	Mosquito Control Helicopter Landing Facility	39'
7	Mosquito Control Residence Mobile Home	39'
8	Airport Manager Trailer	39'
9	Picnic Pavilion	33'
10	Hangar A	45'
11	Hangar B	45'
12	Hangar C	45'
13	Hangar D	45'
14	Hangar E	45'
15	Habitat Golf Course Club House	39'
16	Habitat Golf Course Club House (2)	45'
17	Habitat Golf Course Parking Barn	40'
18	Habitat Golf Course Maintenance Building	45'

EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
	FENCE	
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
	LIGHTED WIND CONE/WIND TEE	
	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 25' BLDG.	
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	
TOFA	TAXIWAY OBJECT FREE AREA (TOFA)	
	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
RPZ	RUNWAY PROTECTION ZONE (RPZ)	
RSA	RUNWAY SAFETY AREA (RSA)	
TSA	TAXIWAY SAFETY AREA (TSA)	
	RUNWAY VISIBILITY ZONE	
	PAVEMENT REMOVAL	

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Viera, Florida 32940
Phone: (321) 633-2000

VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 03-ALD-E.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

EXISTING AIRPORT LAYOUT DRAWING

MAY 18, 2015 6:15 PM HARRI01115
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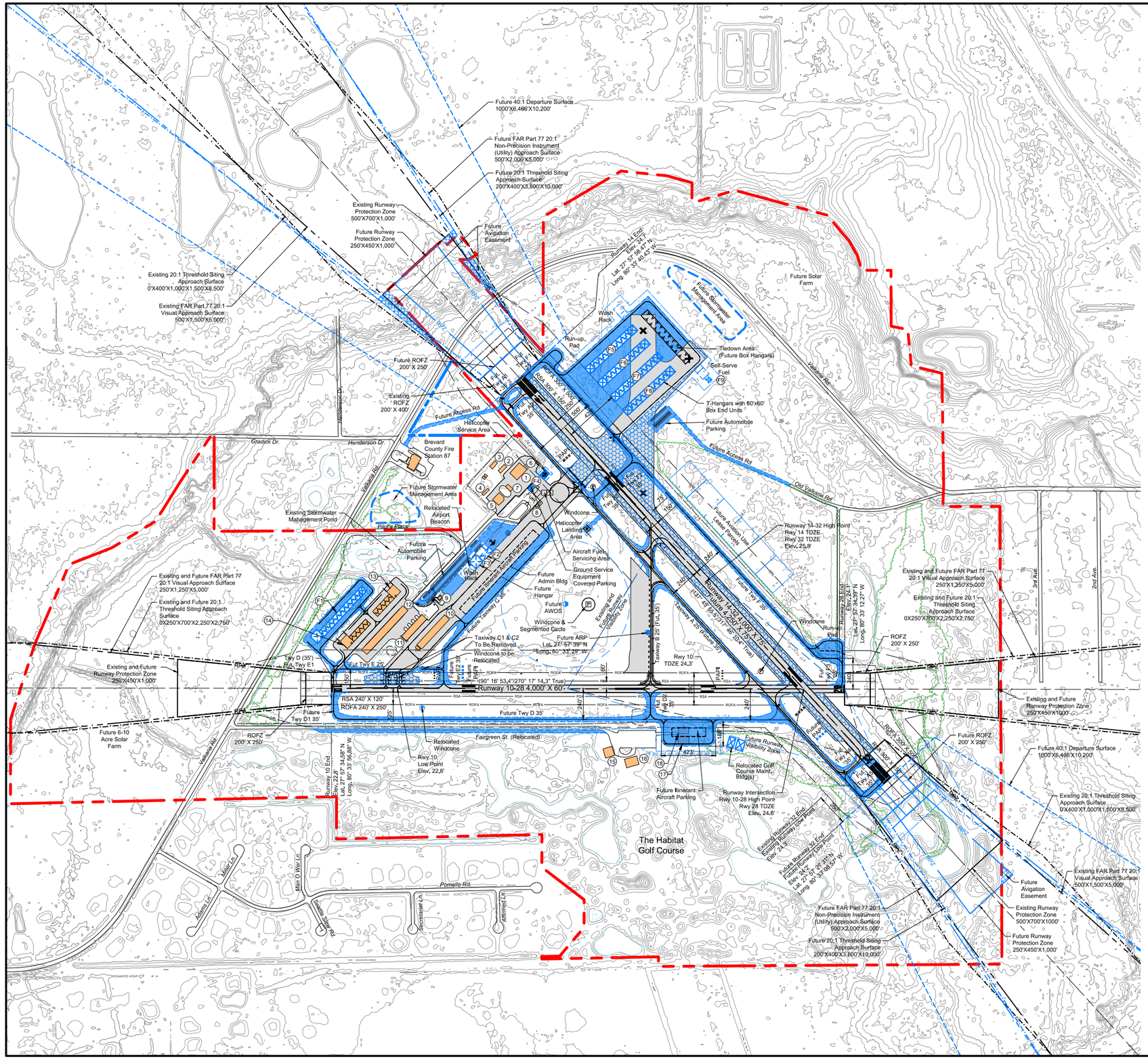

MAGNETIC NORTH
TRUE NORTH

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 200' 400' 800'
SCALE: 1"= 400'

GENERAL NOTES

1. ALP PREPARED USING DESIGN CRITERIA FROM FAA ADVISORY CIRCULAR 150/5300-13A, CHANGE 1 "AIRPORT DESIGN" AND FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE".
2. THERE ARE NO OFZ PENETRATIONS.
3. GROUND CONTOUR INTERVALS SHOWN ARE 2-FOOT. CONTOURS GENERATED FROM USGS NATIONAL ELEVATION DATASET (NED) 3m DIGITAL ELEVATION MODEL.
4. AERIAL PHOTOGRAPHY OBTAINED FROM USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP), 2013.
5. BASE MAPPING FROM VALKARIA AIRPORT AND HANSON PROFESSIONAL SERVICES (VARIOUS PROJECTS).

REFERENCE

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8	Airport Manager Trailer	39'
9	Picnic Pavilion	33'
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13	Hangar D	45'
14	Hangar E	45'
15	Habitat Golf Course Club House	39'
16	Habitat Golf Course Club House (2)	45'
17	Habitat Golf Course Parking Barn (To Be Removed)	40'
18	Habitat Golf Course Maintenance Building (To Be Removed)	45'
F1	Hangar F	45'
F2	Administration Building	45'
F3	Box Hangar 1	52'
F4	Ground Service Equipment Covered Parking	35'
F5	T-Hangar G	48'
F6	T-Hangar H	48'
F7	T-Hangar I	48'
F8	T-Hangar J	48'
F9	Fuel Farm	29'

EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
	FENCE	
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
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	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING APPROACH SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 25' BLDG.	BRL
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	ROFA
TOFA	TAXIWAY OBJECT FREE AREA (TOFA)	TOFA
	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
RPZ	RUNWAY PROTECTION ZONE (RPZ)	RPZ
RSA	RUNWAY SAFETY AREA (RSA)	RSA
TSA	TAXIWAY SAFETY AREA (TSA)	TSA
	RUNWAY VISIBILITY ZONE	
	40:1 DEPARTURE SURFACE	
	PAVEMENT REMOVAL	

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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 04-ALD-F.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

FUTURE AIRPORT LAYOUT DRAWING

MAY 19, 2015 4:18 PM HARRI01115
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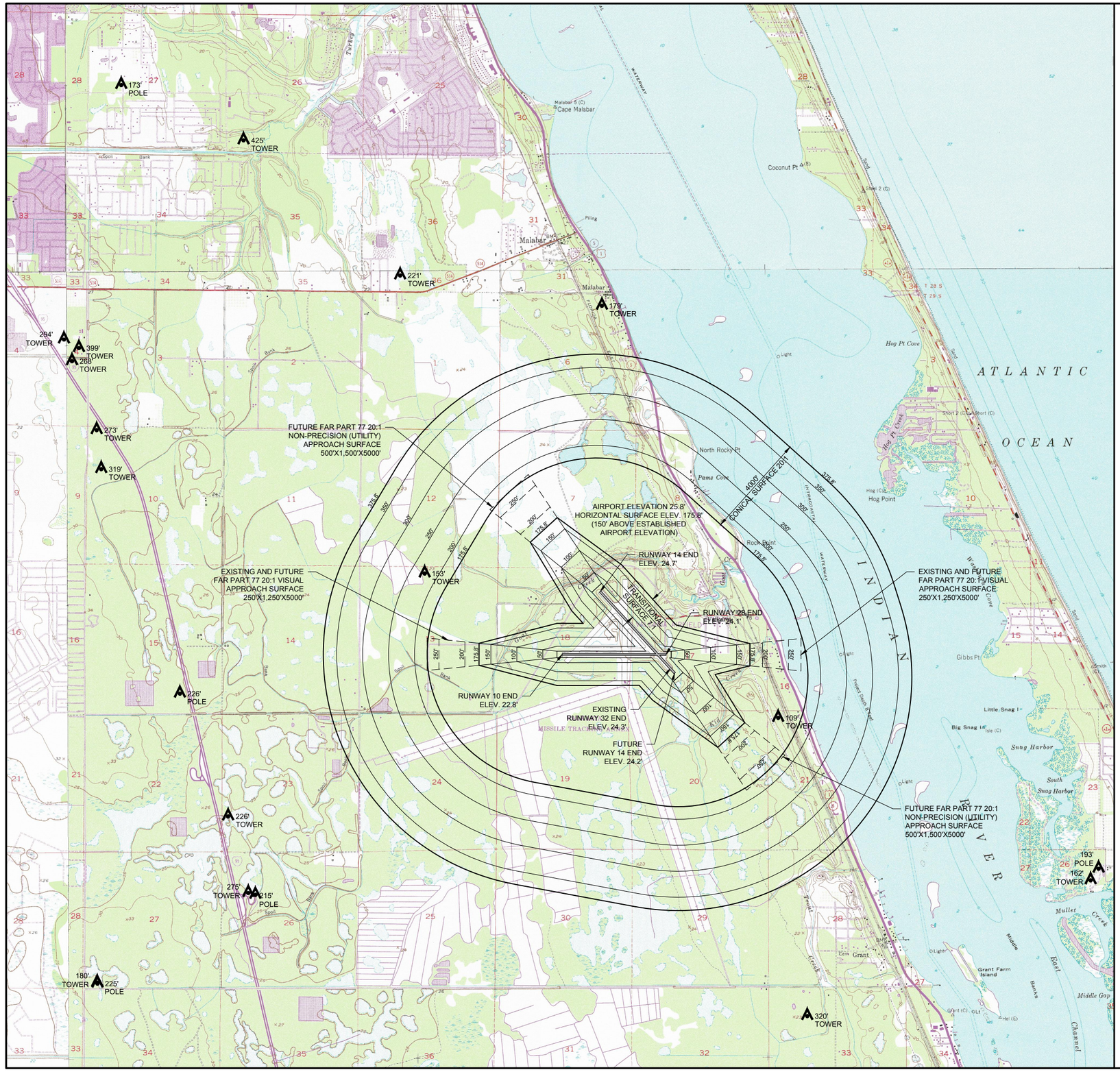
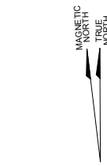
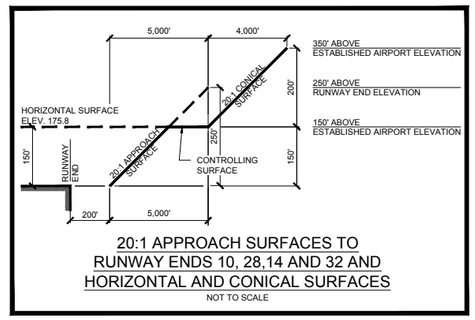




MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 1000' 2000' 4000'
SCALE: 1"= 2000'



20:1 APPROACH SURFACES TO
RUNWAY ENDS 10, 28,14 AND 32 AND
HORIZONTAL AND CONICAL SURFACES
NOT TO SCALE

GENERAL NOTES

1. APPROACH SURFACE TO PAVED RUNWAY ENDS BEGIN 200' BEYOND RUNWAY END.

2. ANY HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA, INCLUDING AN INITIAL APPROACH SEGMENT, AND A DEPARTURE AREA, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE IS AN OBSTRUCTION TO AIR NAVIGATION.

3. OBJECT DATA FROM FAA OE/AAA WEBSITE AND FAA OBSTACLE REPOSITORY SERVICE DIGITAL OBSTACLE FILE (DOF).

4. ELEVATIONS APPROXIMATE FEET ABOVE MEAN SEA LEVEL.

5. SEE RUNWAY PROFILE SHEETS FOR OBSTRUCTIONS IN INNER PORTION OF APPROACH SURFACES.

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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 05-AIRS-PT77-F.DWG
DESIGN BY: MLH 05/07/2015
DRAWN BY: RAD 05/07/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

AIRPORT AIRSPACE DRAWING

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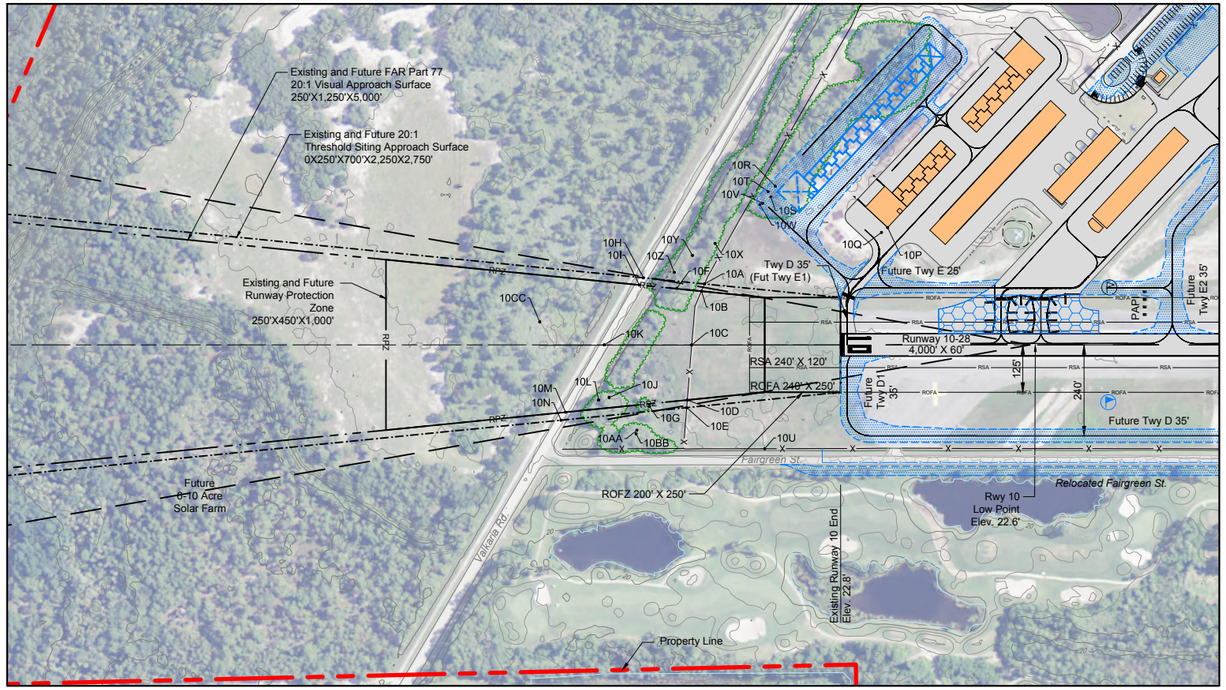
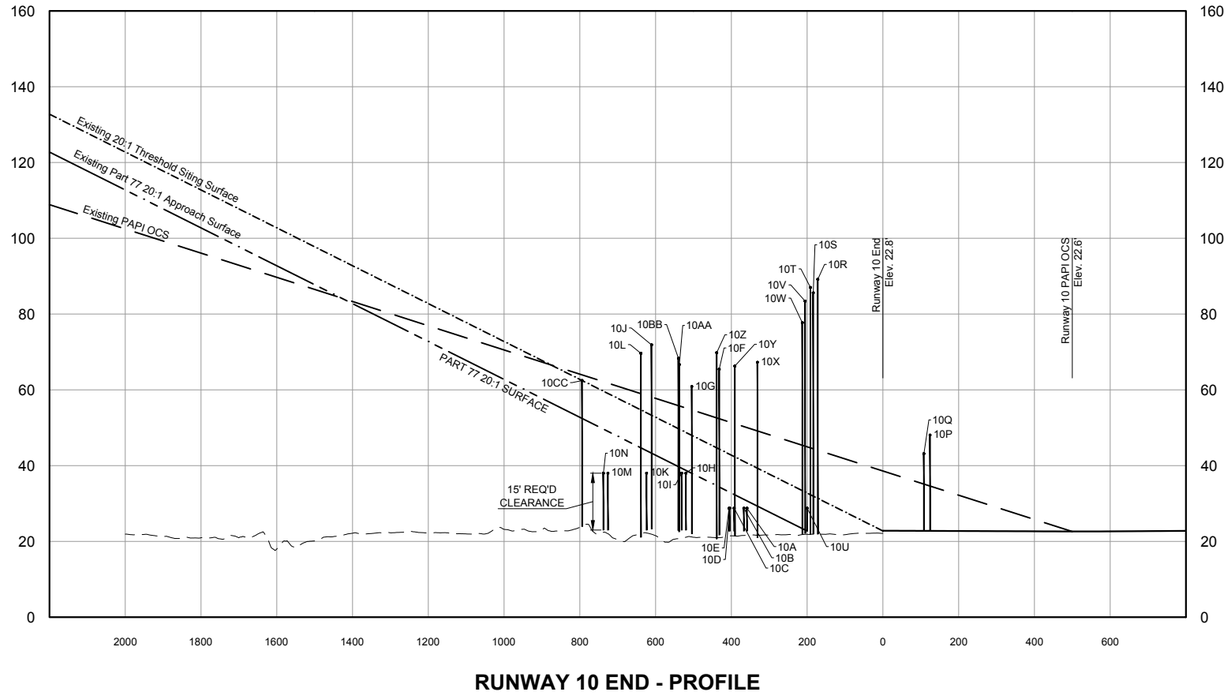


RUNWAY 10 END - PLAN



RUNWAY 10 END - PROFILE

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 100' 200' 400'

SCALE: 1"= 200'

RUNWAY 10 END SITING APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
10A	FENCE @ LT.	22.8	359	20	40	29	11	NO ACTION
10C	FENCE @ CL.	22.8	392	20	42	29	13	NO ACTION
10E	FENCE @ RT.	22.8	405	20	43	29	14	NO ACTION
10F	TREE	22.8	433	20	44	66	-22	**SEE NOTE
10G	TREE	22.8	506	20	48	61	-13	**SEE NOTE
10H	VALKARIA RD. @ LT.	22.8	521	20	48	38	10	NO ACTION
10J	TREE	22.8	612	20	53	72	-19	**SEE NOTE
10K	VALKARIA RD. @ CL.	22.8	625	20	54	38	16	NO ACTION
10L	TREE	22.8	640	20	54	70	-16	**SEE NOTE
10N	VALKARIA RD. @ RT.	22.8	738	20	59	38	21	NO ACTION
10CC	TREES*	22.8	794	20	62	62	0	**SEE NOTE

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.
** - TREES REMOVED NOVEMBER 2014 (BASED ON INFORMATION PROVIDED BY AIRPORT)

RUNWAY 10 END FAR PART 77 APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
10B	FENCE @ LT.	22.8	368	20	31	29	2	NO ACTION
10C	FENCE @ CL.	22.8	392	20	32	29	3	NO ACTION
10D	FENCE @ RT.	22.8	404	20	33	29	4	NO ACTION
10F	TREE	22.8	433	20	34	66	-32	**SEE NOTE
10G	TREE	22.8	506	20	38	61	-23	**SEE NOTE
10I	VALKARIA RD. @ LT.	22.8	531	20	39	38	1	NO ACTION
10J	TREE	22.8	612	20	43	72	-29	**SEE NOTE
10K	VALKARIA RD. @ CL.	22.8	625	20	44	38	6	NO ACTION
10L	TREE	22.8	640	20	44	70	-26	**SEE NOTE
10M	VALKARIA RD. @ RT.	22.8	725	20	49	38	11	NO ACTION
10CC	TREES*	22.8	794	20	52	62	-10	**SEE NOTE

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.
** - TREES REMOVED NOVEMBER 2014 (BASED ON INFORMATION PROVIDED BY AIRPORT)

RUNWAY 10 END FAR PART 77 TRANSITIONAL SURFACE CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	DISTANCE FROM SURFACE EDGE	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
10P	TOP OF HANGAR	22.8	0	20	297	7	55	44	11	NO ACTION
10Q	HANGAR DOOR	22.8	0	20	310	7	57	49	8	NO ACTION
10R	TREE	22.8	172	20	294	7	63	90	-27	**SEE NOTE
10S	TREE	22.8	184	20	266	7	60	86	-26	**SEE NOTE
10T	TREE	22.8	191	20	280	7	62	88	-26	**SEE NOTE
10U	FENCE @ RT.	22.8	200	20	149	7	44	29	15	NO ACTION
10V	TREE	22.8	211	20	243	7	58	78	-20	**SEE NOTE
10W	TREE	22.8	213	20	249	7	59	84	-25	**SEE NOTE
10X	TREE	22.8	332	20	130	7	47	68	-21	**SEE NOTE
10Y	TREE	22.8	391	20	92	7	45	67	-22	**SEE NOTE
10Z	TREE	22.8	439	20	43	7	40	70	-30	**SEE NOTE
10AA	TREE	22.8	537	20	66	7	49	67	-18	**SEE NOTE
10BB	TREE	22.8	540	20	76	7	50	69	-19	**SEE NOTE

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.
** - TREES REMOVED NOVEMBER 2014 (BASED ON INFORMATION PROVIDED BY AIRPORT)

OBSTRUCTION NOTES

1. OBSTRUCTION INFORMATION OBTAINED FROM AVAILABLE DATA SOURCES, INCLUDING CONSTRUCTION SURVEYS, FDOT LICENSING INSPECTION, FAA OEAAA, AND FAA DIGITAL OBSTACLE FILE REPOSITORY. OBJECTS MAY HAVE BEEN REMOVED.
2. THERE MAY EXIST OBSTRUCTIONS NOT REPRESENTED. IT IS RECOMMENDED THAT AN OBSTRUCTION SURVEY BE PERFORMED AS PART OF A FUTURE PROJECT AND OBSTRUCTIONS IDENTIFIED AND MITIGATED AS APPLICABLE TO ACCOMMODATE AIRFIELD DEVELOPMENT AND OPERATION. OBSTRUCTIONS TO BE MITIGATED AS PART OF FUTURE PROJECTS.
3. PER FAR PART 77, "OBJECTS AFFECTING NAVIGABLE AIRSPACE", PUBLIC ROADS CONSIDERED AS 15' OBJECTS, PRIVATE ROADS AS 10' OR THE HIGHEST OBJECT USING THE ROAD.
4. FUTURE OBJECTS TO BE SITED AND MITIGATED UNDER FUTURE PROJECTS.

GENERAL NOTES

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EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
X	FENCE	X
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
	LIGHTED WIND CONE/WIND TEE	
	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 35' BLDG.	BRL
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	ROFA
TOFA	TAXIWAY OBJECT FREE AREA (TOFA)	TOFA
	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
RPZ	RUNWAY PROTECTION ZONE (RPZ)	RPZ
RSA	RUNWAY SAFETY AREA (RSA)	RSA
TSA	TAXIWAY SAFETY AREA (TSA)	TSA
	RUNWAY VISIBILITY ZONE	
	PAVEMENT REMOVAL	

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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 06-07-INNR-APCH-1028.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

RUNWAY 10 INNER PORTION OF THE APPROACH SURFACE DRAWING

MAY 05, 2015 2:42 PM HARRI01115
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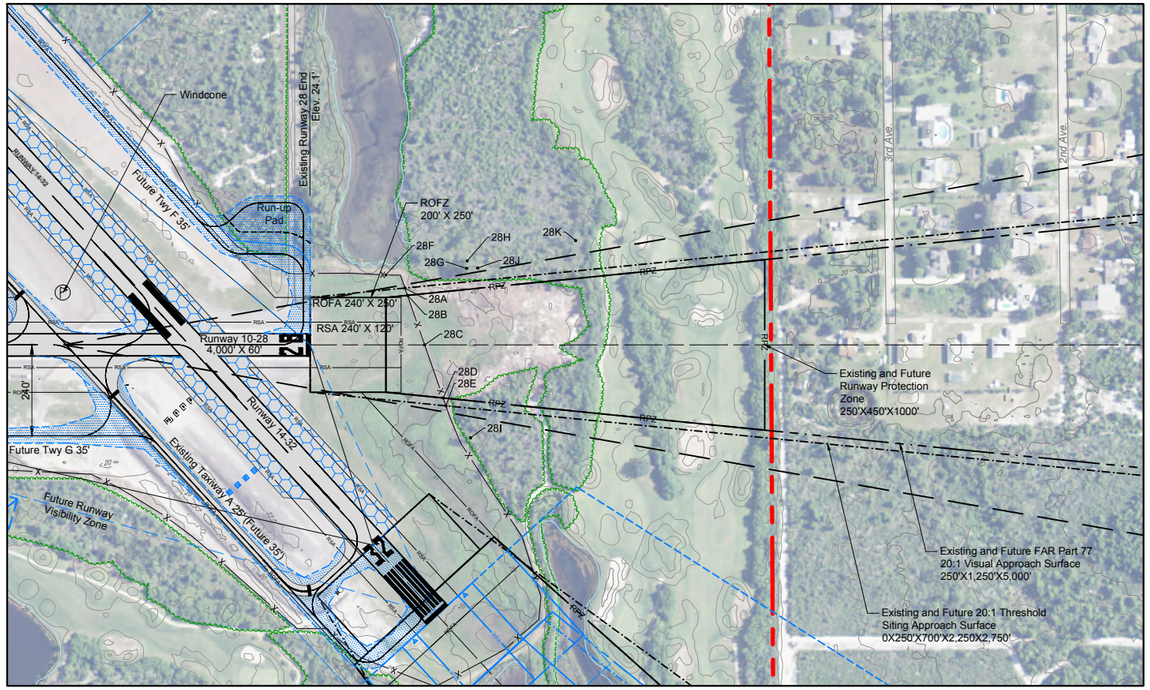
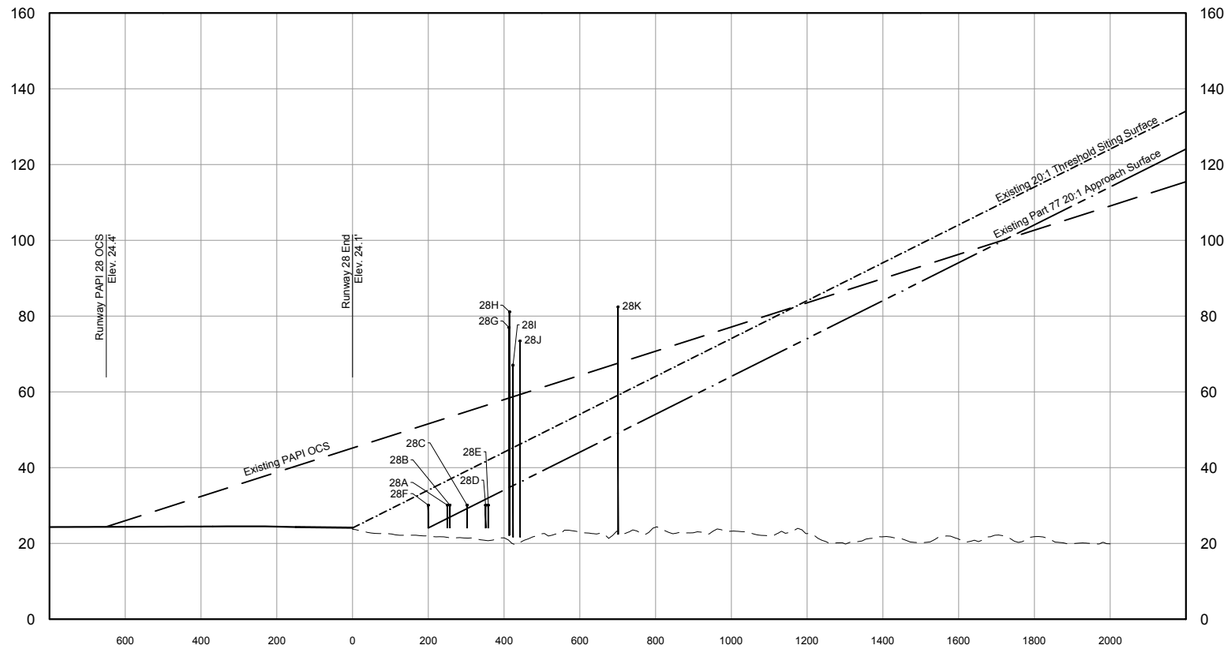


RUNWAY 28 END - PLAN



RUNWAY 28 END - PROFILE

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 100' 200' 400'

SCALE: 1"= 200'

RUNWAY 28 END SITING APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
28A	FENCE @ LT.	24.1	250	20	36	30	6	NO ACTION
28C	FENCE @ CL.	24.1	302	20	39	30	9	NO ACTION
28E	FENCE @ RT.	24.1	358	20	42	30	12	NO ACTION

RUNWAY 28 END FAR PART 77 APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
28B	FENCE @ LT.	24.1	257	20	26	30	-4	RELOCATE
28C	FENCE @ CL.	24.1	302	20	29	30	-1	RELOCATE
28D	FENCE @ RT.	24.1	352	20	31	30	1	NO ACTION

RUNWAY 28 END FAR PART 77 TRANSITIONAL SURFACE CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	DISTANCE FROM SURFACE EDGE	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
28F	FENCE @ LT.	24.1	200	20	60	7	30.1	30	0	NO ACTION
28G	TREE	24.1	413	20	56	7	42	77	-35	REMOVAL
28H	TREE	24.1	415	20	75	7	45	82	-37	REMOVAL
28I	TREE	24.1	424	20	98	7	49	67	-18	REMOVAL
28J	TREE	24.1	442	20	54	7	43	74	-31	REMOVAL
28K	TREE	24.1	702	20	100	7	63	83	-20	REMOVAL

OBSTRUCTION NOTES

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5. BASE MAPPING FROM VALKARIA AIRPORT AND HANSON PROFESSIONAL SERVICES (VARIOUS PROJECTS).

REFERENCE

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4. ALL ELEVATIONS AND DIMENSIONS IN FEET, UNLESS NOTED OTHERWISE.

EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
X	FENCE	X
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
	LIGHTED WIND CONE/WIND TEE	
	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 35' BLDG.	BRL
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	ROFA
TOFA	TAXIWAY OBJECT FREE AREA (TOFA)	TOFA
	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
RPZ	RUNWAY PROTECTION ZONE (RPZ)	RPZ
RSA	RUNWAY SAFETY AREA (RSA)	RSA
TSA	TAXIWAY SAFETY AREA (TSA)	TSA
	RUNWAY VISIBILITY ZONE	
	PAVEMENT REMOVAL	

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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
			DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 06-07-INNR-APCH-1028.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

RUNWAY 28 INNER PORTION OF THE APPROACH SURFACE DRAWING

MAY 05, 2015 2:45 PM HARRI01115
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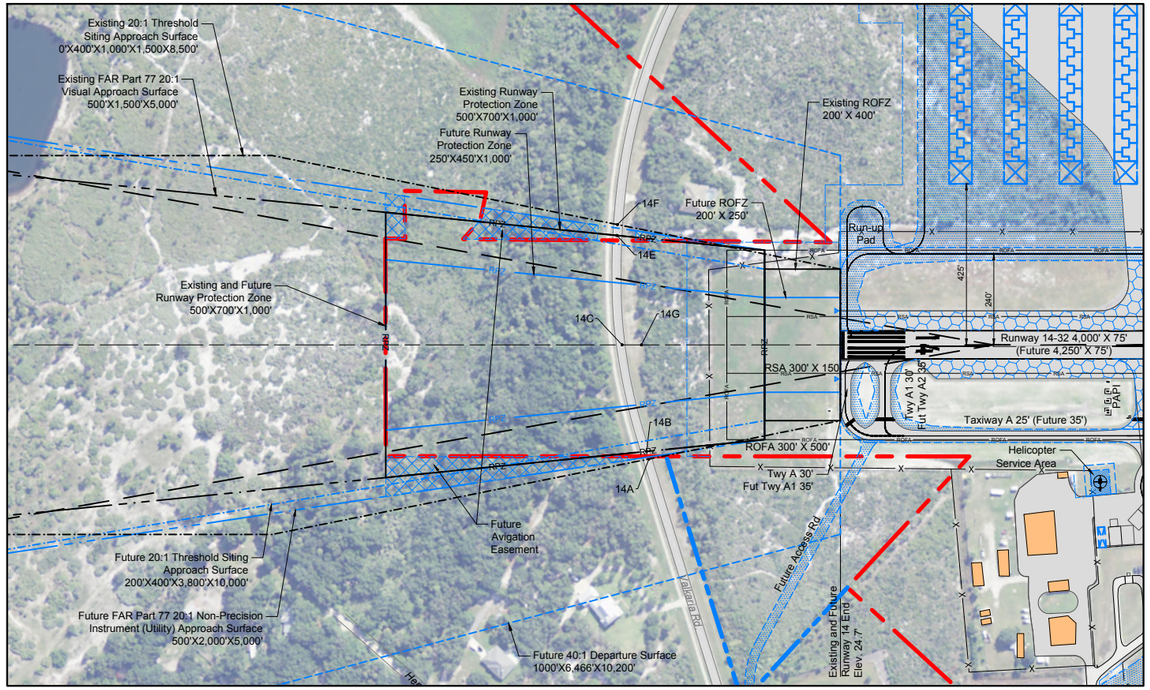
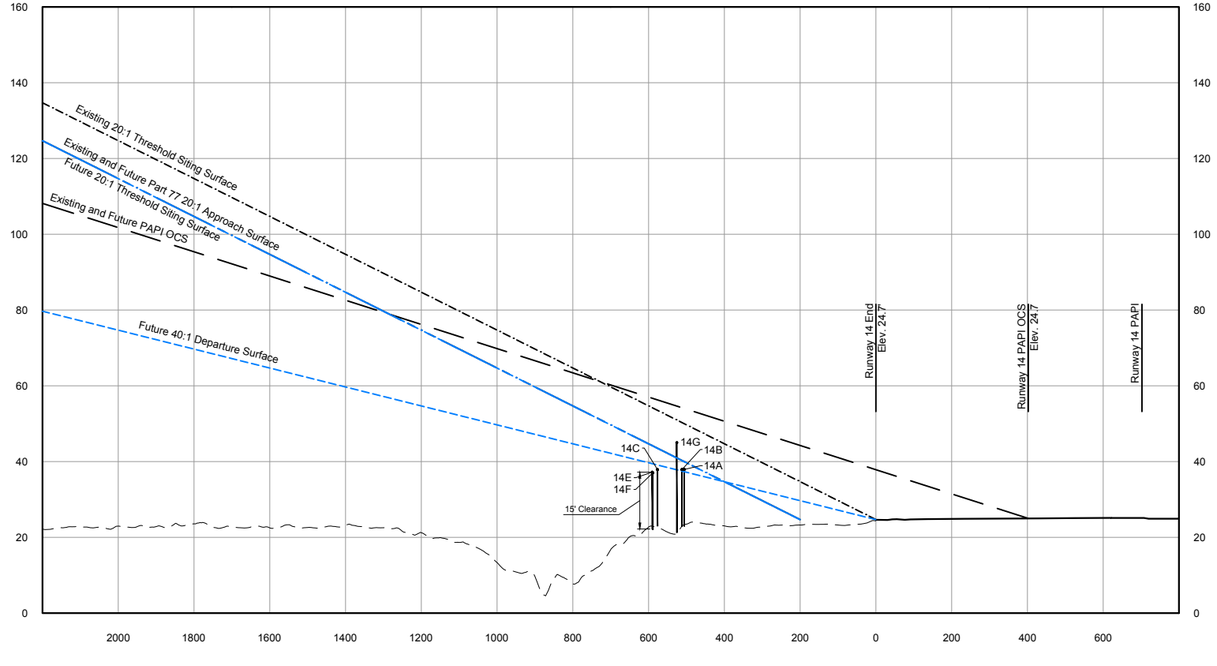
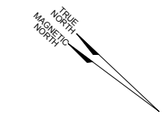


RUNWAY 14 END - PLAN



RUNWAY 14 END - PROFILE



MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 100' 200' 400'

SCALE: 1"= 200'

EXISTING RUNWAY 14 END SITING APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
14A	VALKARIA RD. @ RT.	24.7	505	20	49	38	11	NO ACTION
14C	VALKARIA RD. @ CL.	24.7	575	20	53	38	15	NO ACTION
14F	VALKARIA RD. @ LT.	24.7	588	20	54	38	16	NO ACTION
14G	TREES*	24.7	525	20	50	45	5	**SEE NOTE

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.
** - TREES REMOVED APRIL 2015 (BASED ON INFORMATION PROVIDED BY AIRPORT)

EXISTING RUNWAY 14 END FAR PART 77 APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
14B	VALKARIA RD. @ RT.	24.7	511	20	40	38	2	NO ACTION
14C	VALKARIA RD. @ CL.	24.7	575	20	43	38	5	NO ACTION
14E	VALKARIA RD. @ LT.	24.7	590	20	44	38	6	NO ACTION
14G	TREES*	24.7	525	20	40	45	-5	**SEE NOTE

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.
** - TREES REMOVED APRIL 2015 (BASED ON INFORMATION PROVIDED BY AIRPORT)

OBSTRUCTION NOTES

1. OBSTRUCTION INFORMATION OBTAINED FROM AVAILABLE DATA SOURCES, INCLUDING CONSTRUCTION SURVEYS, FDOT LICENSING INSPECTION, FAA OEAAA, AND FAA DIGITAL OBSTACLE FILE REPOSITORY. OBJECTS MAY HAVE BEEN REMOVED.
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3. PER FAR PART 77, "OBJECTS AFFECTING NAVIGABLE AIRSPACE", PUBLIC ROADS CONSIDERED AS 15' OBJECTS, PRIVATE ROADS AS 10' OR THE HIGHEST OBJECT USING THE ROAD.
4. FUTURE OBJECTS TO BE SITED AND MITIGATED UNDER FUTURE PROJECTS.

GENERAL NOTES

1. ALP PREPARED USING DESIGN CRITERIA FROM FAA ADVISORY CIRCULAR 150/5300-13A, CHANGE 1 "AIRPORT DESIGN" AND FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE".
2. THERE ARE NO OFZ PENETRATIONS.
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4. AERIAL PHOTOGRAPHY OBTAINED FROM USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP), 2013.
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EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
x	FENCE	x
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
	LIGHTED WIND CONE/WIND TEE	
	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING APPROACH SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 35' BLDG.	BRL
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	ROFA
TOFA	TAXIWAY OBJECT FREE AREA (TOFA)	TOFA
	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
RPZ	RUNWAY PROTECTION ZONE (RPZ)	RPZ
RSA	RUNWAY SAFETY AREA (RSA)	RSA
TSA	TAXIWAY SAFETY AREA (TSA)	TSA
	RUNWAY VISIBILITY ZONE	
	40:1 DEPARTURE SURFACE	
	PAPI OBSTACLE CLEARANCE SURFACE	
	PAVEMENT REMOVAL	

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VALKARIA AIRPORT

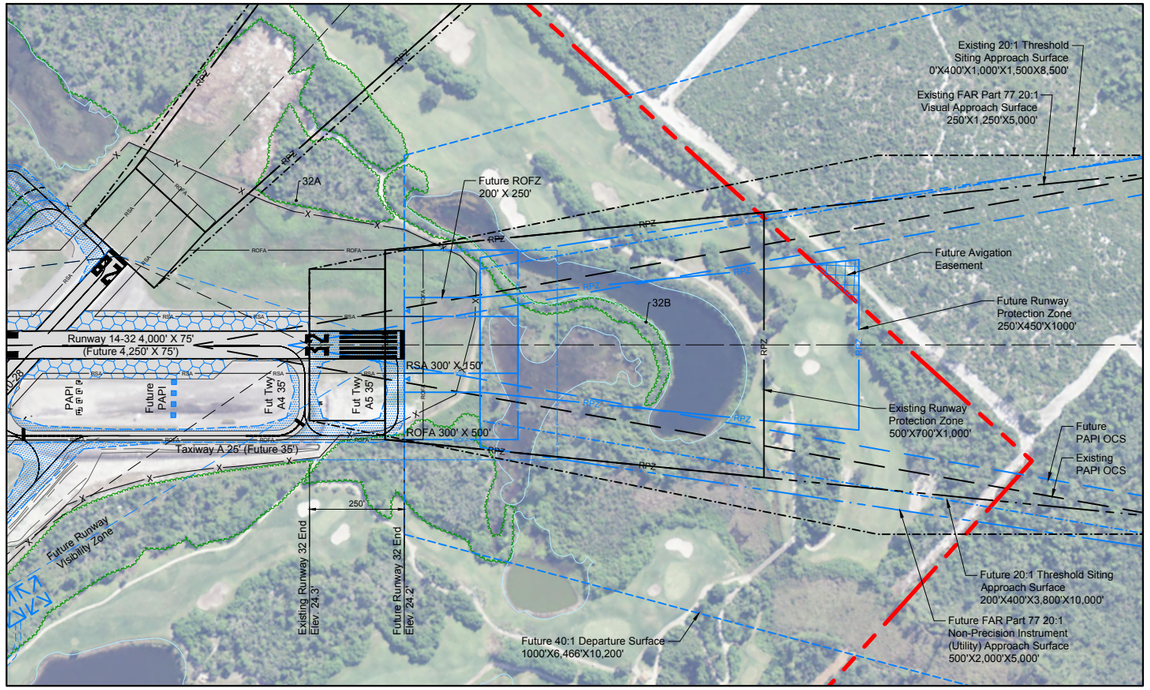
AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

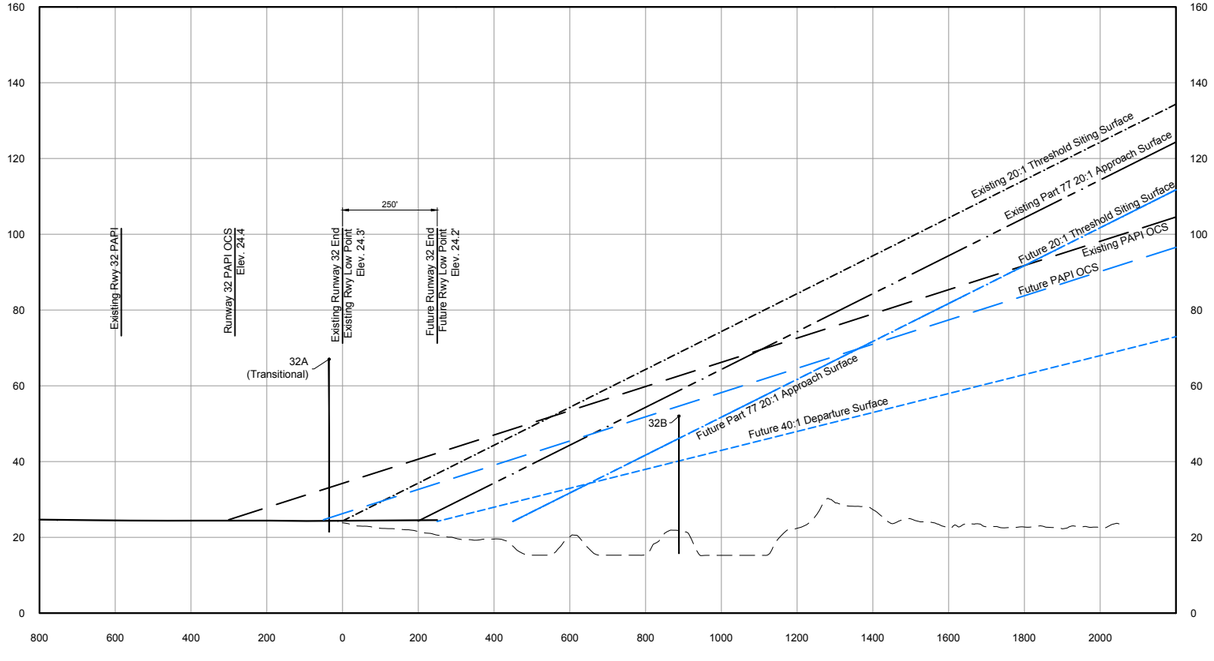
ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 08-09-INNR-APCH-1432.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

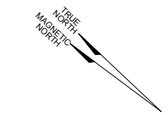
RUNWAY 14 INNER PORTION OF THE APPROACH SURFACE DRAWING



RUNWAY 32 END - PLAN



RUNWAY 32 END - PROFILE



MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 100' 200' 400'

SCALE: 1"= 200'

EXISTING RUNWAY 32 END SITING APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
32B	TREES*	24.3	889	20	68	52	16	NO ACTION

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.

EXISTING RUNWAY 32 END FAR PART 77 APPROACH CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
32B	TREES*	24.3	889	20	58	52	6	NO ACTION

* - CONTROLLING OBJECT FROM MOST RECENT FDOT LICENSING INSPECTION CONDUCTED 8/28/2014.

RUNWAY 32 END FAR PART 77 TRANSITIONAL SURFACE CLEARANCES

ID	DESCRIPTION	RWY ELEVATION	DISTANCE FROM RUNWAY END	SURFACE SLOPE	DISTANCE FROM SURFACE EDGE	SURFACE SLOPE	SURFACE ELEVATION	OBJECT ELEVATION	CLEARANCE (+)/ VIOLATION (-)	DISPOSITION
32A	TREE	24.3	35	20	256	7	62	67	-5	REMOVAL

OBSTRUCTION NOTES

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EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
	FENCE	
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
	LIGHTED WIND CONE/WIND TEE	
	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING APPROACH SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 35' BLDG.	BRL
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	ROFA
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	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
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RSA	RUNWAY SAFETY AREA (RSA)	RSA
TSA	TAXIWAY SAFETY AREA (TSA)	TSA
	RUNWAY VISIBILITY ZONE	
	40:1 DEPARTURE SURFACE	
	PAPI OBSTACLE CLEARANCE SURFACE	
	PAVEMENT REMOVAL	

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Phone: (321) 633-2000

VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 08-09-INNR-APCH-1432.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

RUNWAY 32 INNER PORTION OF THE APPROACH SURFACE DRAWING

MAY 05, 2015 3:18 PM HARRI01115
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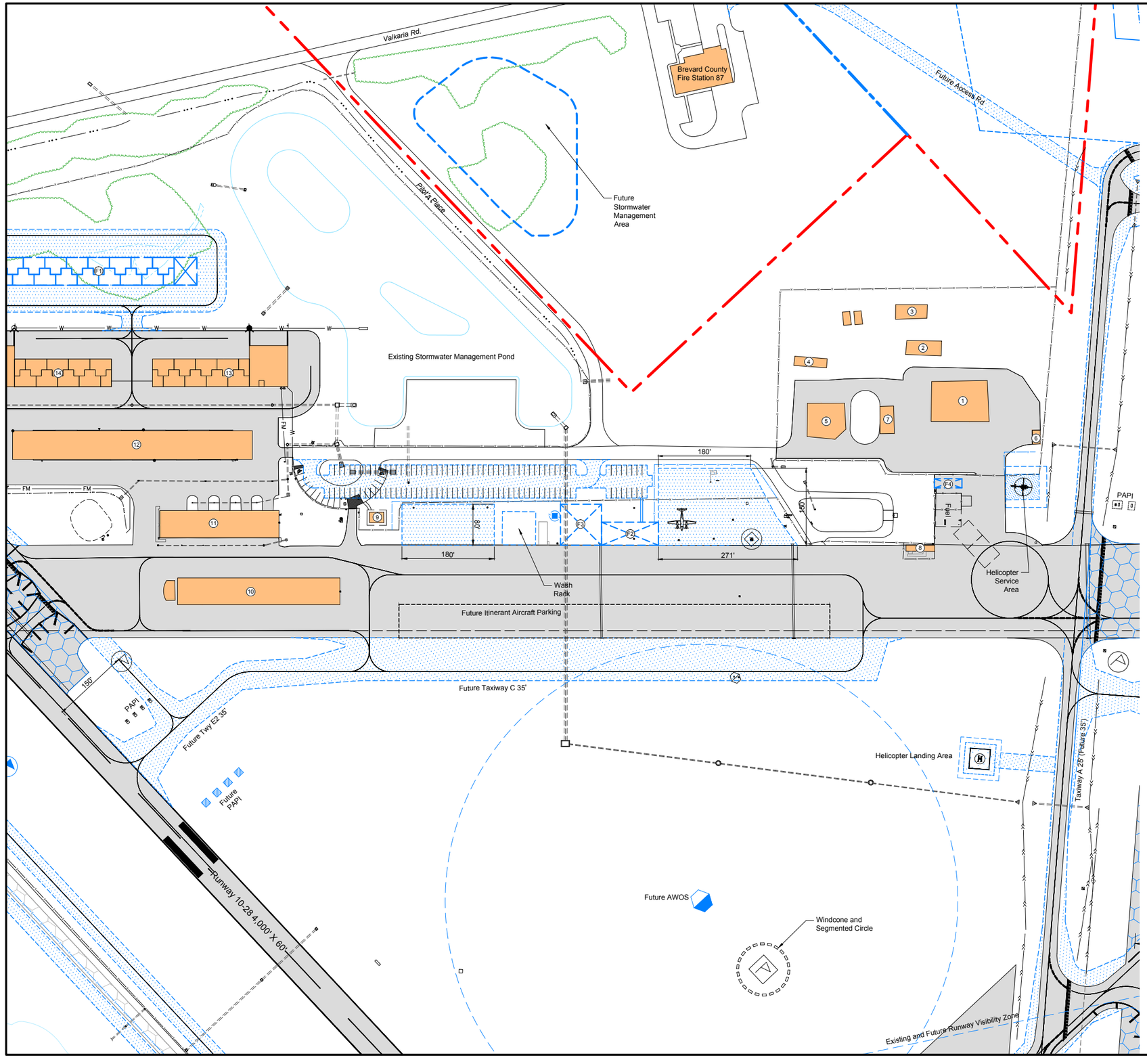

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 50' 100' 200'
SCALE: 1"= 100'

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Facilities Table

#	Facility Description	Top Elevation
1	Mosquito Control Hangar	45'
2	Mosquito Control Covered Auto Parking	37'
3	Mosquito Control Covered Auto Parking (2)	39'
4	Mosquito Control Storage Facility	39'
5	Mosquto Control Admin. & Maint. Building	45'
6	Mosquito Control Helicopter Landing Facility	39'
7	Mosquito Control Residence Mobile Home	39'
8	Airport Manager Trailer	39'
9	Picnic Pavilion	33'
10	Hangar A	45'
11	Hangar B	45'
12	Hangar C	45'
13	Hangar D	45'
14	Hangar E	45'
F1	Hangar F	45'
F2	Administration Building	45'
F3	Box Hangar 1	52'
F4	Ground Service Equipment Covered Parking	35'

EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
	FENCE	
	ROADS	
	BUILDINGS	
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VALKARIA AIRPORT

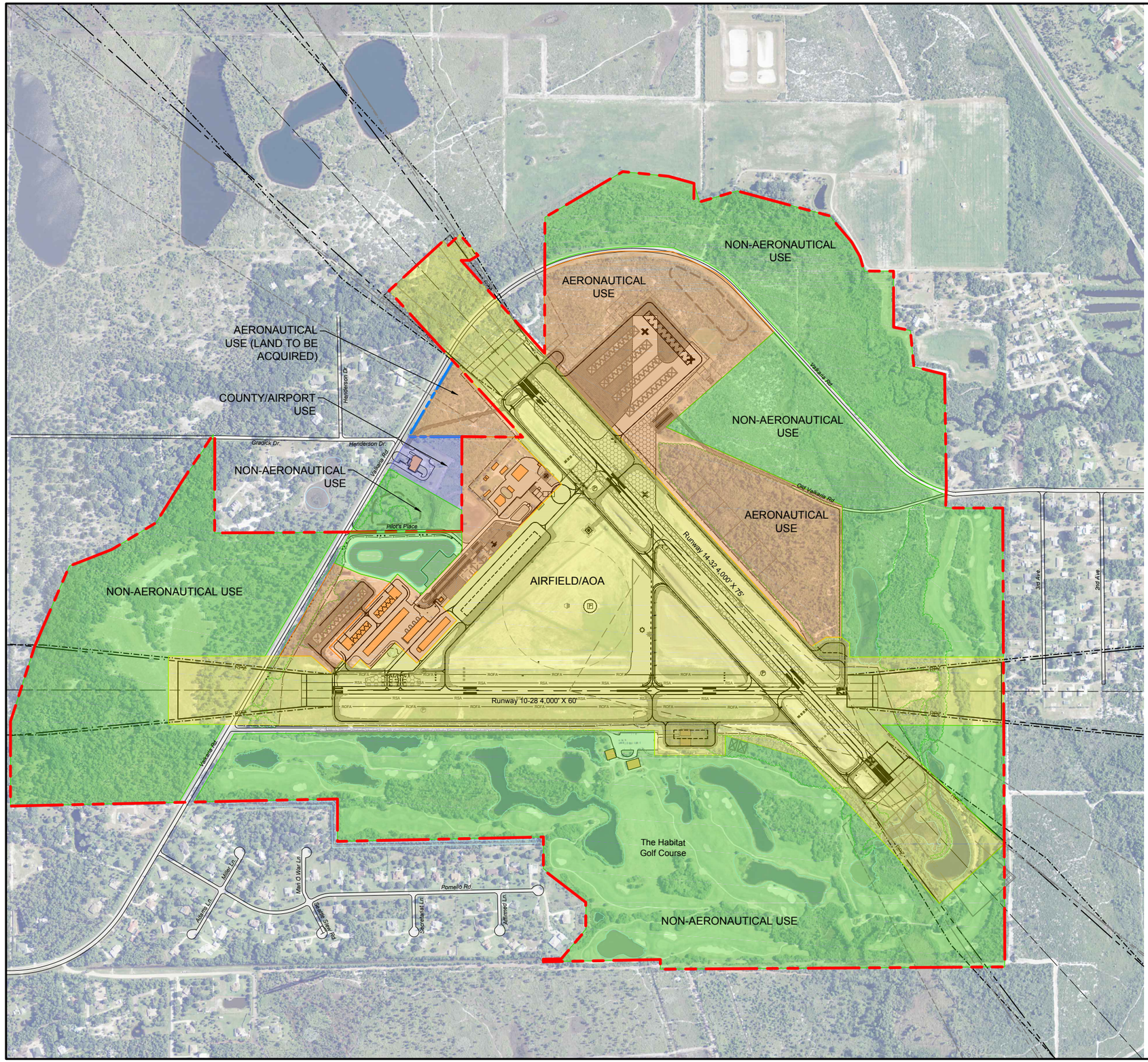
AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV
0				

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 10-TERM.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

TERMINAL AREA DRAWING



MAGNETIC NORTH
TRUE NORTH

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 200' 400' 800'
SCALE: 1"= 400'

LEGEND

- AIRFIELD/AOA
- AERONAUTICAL USE
- NON-AERONAUTICAL
- COUNTY/AIRPORT USE

GENERAL NOTES

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EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
—X—	FENCE	—X—
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
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	RUNWAY VISIBILITY ZONE	
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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 11-LANDUSE.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

AIRPORT LAND USE DRAWING

MAY 05, 2015 3:33 PM HARRI01115
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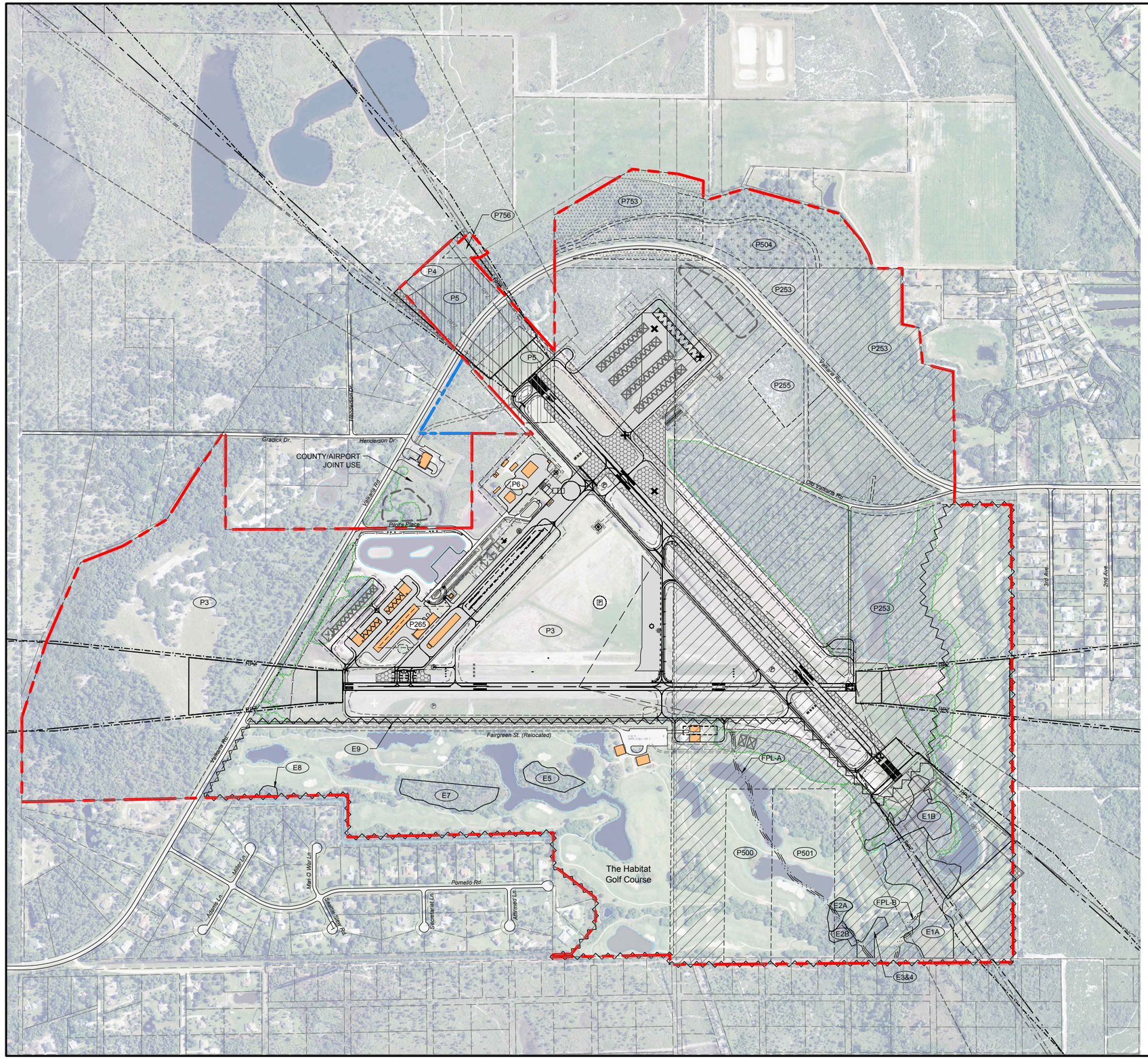

MAGNETIC NORTH
TRUE NORTH

MAGNETIC DECLINATION: 6° 32.4' W (10/2014)
ANNUAL RATE OF CHANGE: 5.4' W/ YEAR
EPOCH YEAR 2010

0' 200' 400' 800'
SCALE: 1"= 400'

PROPERTY MAP NOTES

1. AIRPORT PROPERTY MAP PREPARED USING INFORMATION SHOWN ON "VALKARIA AIRPORT PROPERTY MAP" PREPARED BY BONSET INTERNATIONAL, LLC AND DATED FEBRUARY 2010.
2. SEE "AIRPORT PROPERTY MAP DATA TABLES" SHEET FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. ALP PREPARED USING DESIGN CRITERIA FROM FAA ADVISORY CIRCULAR 150/5300-13A, CHANGE 1 "AIRPORT DESIGN" AND FAR PART 77 "OBJECTS AFFECTING NAVIGABLE AIRSPACE".
2. THERE ARE NO OFZ PENETRATIONS.
3. GROUND CONTOUR INTERVALS SHOWN ARE 2-FOOT. CONTOURS GENERATED FROM USGS NATIONAL ELEVATION DATASET (NED) 3m DIGITAL ELEVATION MODEL.
4. AERIAL PHOTOGRAPHY OBTAINED FROM USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP), 2013.
5. BASE MAPPING FROM VALKARIA AIRPORT AND HANSON PROFESSIONAL SERVICES (VARIOUS PROJECTS).

REFERENCE

1. LATITUDE AND LONGITUDE ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83). AS APPLICABLE. CONVERSIONS MADE FROM FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE.
2. VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. ELEVATIONS SHOWN ARE IN "MEAN SEA LEVEL" (MSL) UNLESS NOTED OTHERWISE, AND ARE NOT INTENDED FOR DESIGN PURPOSES.
4. ALL ELEVATIONS AND DIMENSIONS IN FEET, UNLESS NOTED OTHERWISE.

EXISTING	LEGEND	FUTURE
	AIRPORT PROPERTY LINE	
	FENCE	
	ROADS	
	BUILDINGS	
	AIRFIELD PAVEMENT	
	AVIGATION EASEMENT	
	PRECISION APPROACH PATH INDICATOR (PAPI)	
	RUNWAY END IDENTIFIER LIGHTS (REIL)	
	ROTATING BEACON	
	LIGHTED WIND CONE/WIND TEE	
	AIRPORT REFERENCE POINT (ARP)	
	THRESHOLD SITING APPROACH SURFACE	
BRL	BUILDING RESTRICTION LINE (BRL) FOR 35' BLDG.	BRL
	FAR PART 77 SURFACE	
ROFA	RUNWAY OBJECT FREE AREA (ROFA)	ROFA
TOFA	TAXIWAY OBJECT FREE AREA (TOFA)	TOFA
	RUNWAY OBSTACLE FREE ZONE (ROFZ)	
RPZ	RUNWAY PROTECTION ZONE (RPZ)	RPZ
RSA	RUNWAY SAFETY AREA (RSA)	RSA
TSA	TAXIWAY SAFETY AREA (TSA)	TSA
	RUNWAY VISIBILITY ZONE	
	40:1 DEPARTURE SURFACE	
	PAVEMENT REMOVAL	
	CONSERVATION EASEMENT	
	GOLF COURSE EASEMENT	
	PROPERTY PARCEL BOUNDARY	
	FPL EASEMENT	
X	PROPERTY PARCEL NUMBER	

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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 12-PROP-MAP.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

AIRPORT PROPERTY MAP - SHEET 1

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VALKARIA AIRPORT PROPERTY DATA TABLE

PARCEL #	BREVARD COUNTY APPRAISER PARCEL ID#	USE CODE*	TAX ACCOUNT #	OWNER NAME	DATE OF ACQUISITION	FEDERAL AID PROJECT FDOT / OTHER	TYPE OF OWNERSHIP	PARCEL ACREAGE	LEGAL DESCRIPTIONS OF PARCELS	NOTES
3	29-38-18-00-00003.0-0000.00	8610	2954672	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, Government Surplus	309.38	PART OF SEC 18 AS DESC IN ORB 171 PG 493 EXC ORB 3094 PG 4844; PARCEL 00-265 AS DESC IN LEASE DATED 2-4-82 & ON LEGAL PANEL OF SAID 00-265 & PARCEL 00-6 AS DESC IN LEASE DATED 9-18-90	
4	29-38-18-00-00004.0-0000.00	8600	2959061	BREVARD COUNTY	12/1990	N/A	FEE SIMPLE, $12,400, Radencic/Gradick to BC	1.13	PART OF NW ¼ OF NE ¼ AS DESC IN ORB 3102 PG 2681	Land acquired by airport to be used as a RPZ for Runway 14
5	29-38-18-00-00005.0-0000.00	8600	2959162	BREVARD COUNTY	12/1991	N/A	FEE SIMPLE, $184,000, Buehler to BC	14.85	PART OF SEC AS DESC IN ORB 3175 PG 3993	Land acquired by airport to be used as a RPZ for Runway 14
6	29-38-18-00-00006.0-0000.00	8600	2960398	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, 1958 Lease to BCMC	4.81	PART OF SEC 18 LYING IN THE NE ¼ AS DESC IN LEASE EXECUTED SEPT. 1990	
253	29-38-17-00-00253.0-0000.00	8610	2954516	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, Government Surplus	256.16	PART OF W ½ AS DES IN ORB 171 PG 493 EX ORB 1162 PG 529 PAR 254	
255	29-38-17-00-00255.0-0000.00	8600	2954517	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, Government Surplus	5.00	PART OF NW ¼ LYING SW'LY OF VALKARIA RD AS DES IN ORB 1162 PG 528	Deeded to BCMC 02/1971, returned to BC 01/2005: ORB 5413/5887
265	29-38-18-00-00265.0-0000.00	8600	2959393	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, Government Surplus	2.00	FROM CL OF RUNWAY 9/27 GO N 321° TO NW'LY LINE OF NE'LY RUNWAY & POB; THENCE W 270.77'; THENCE NE'LY PARALLEL TO RUNWAY 440'; THENCE E 270.77'; THENCE SW'LY ALONG RUNWAY 440' TO POB	
500	29-38-17-00-00500.0-0000.00	8600	2954526	BREVARD COUNTY	4/1976	N/A	QUITCLAIM DEED, BOR to BC	11.72	W 379 FT OF E 900 FT OF SW ¼ OF SW ¼	
501	29-38-17-00-00501.0-0000.00	8600	2954527	BREVARD COUNTY	11/1990	N/A	FEE SIMPLE, $186,500, Pascucci to BC	15.78	E 520.46 FT OF S/W ¼ OF S/W ¼	
504	29-38-06-00-00504.0-0000.00	8600	2953406	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, Government Surplus	18.80	PART OF S ½ OF SW ¼ AS DES IN LIS PENDENS BOOK 7 PG 497 & ORB 171 PG 493 PAR 506	
753	29-38-07-00-00753.0-0000.00	8600	2953374	BREVARD COUNTY	9/1958	N/A	QUITCLAIM DEED, Government Surplus	14.70	PART OF SE ¼ AS DES IN DB LIS PENDENS BOOK 7 PG 497	Located in Township: 29 Range: 38 Section 07
756	29-38-07-00-00756.0-0000.00	8600	2959154CO	BREVARD COUNTY	12/1990	N/A	FEE SIMPLE, $13,500, Radencic/Gradick to BC	0.69	PART OF SW ¼ OF SE ¼ AS DESC IN ORB 3102 PG 2681	Land acquired by airport to be used as RPZ for Runway 14

* Brevard County Code related to Parcel Information Table: 8600 = C-VACANT COUNTY OWNED LAND - (THAT DOES NOT QUALIFY IN ANOTHER CODE); 8610 = C- COUNTY OWNED LAND-IMPROVED - (THAT DOES NOT QUALIFY IN ANOTHER CODE)

VALKARIA AIRPORT EASEMENT DATA TABLE

EASEMENT #	FROM / TO	EASEMENT ACREAGE	ORB / PAGE	NOTES
E1A	FROM BC TO ST. JOHN'S RIVER WMD	5.7522	4057 / 1249	CONSERVATION EASEMENT / WETLAND 1A
E1B	FROM BC TO ST. JOHN'S RIVER WMD	3.2744	4057 / 1253	CONSERVATION EASEMENT / WETLAND 1B
E2A	FROM BC TO ST. JOHN'S RIVER WMD	0.6864	4057 / 1245	CONSERVATION EASEMENT / WETLAND 2A
E2B	FROM BC TO ST. JOHN'S RIVER WMD	0.4802	4057 / 1247	CONSERVATION EASEMENT / WETLAND 2B
E3 & 4	FROM BC TO ST. JOHN'S RIVER WMD	0.7670	4057 / 1243	CONSERVATION EASEMENT / WETLAND 3 & 4
E5	FROM BC TO ST. JOHN'S RIVER WMD	1.3969	4057 / 1241	CONSERVATION EASEMENT / WETLAND 5
E7	FROM BC TO ST. JOHN'S RIVER WMD	0.2870	4057 / 1239	CONSERVATION EASEMENT / WETLAND 7
E8	FROM BC TO ST. JOHN'S RIVER WMD	0.2394	3901 / 2693	CONSERVATION EASEMENT / WETLAND 8 / AMENDED 8/1999
E9	FROM BC TO ST. JOHN'S RIVER WMD	211.111	3379 / 4711	CONSERVATION EASEMENT / HABITAT GOLF COURSE LEASEHOLD
FPL-A	FROM BC TO FPL	1.2427	3135 / 2945	
FPL-B	FROM BC TO FPL	0.2560	3135 / 2947	

ABBREVIATIONS

BC: BREVARD COUNTY
BCMC: BREVARD COUNTY MOSQUITO CONTROL
BOR: BUREAU OF OUTDOOR RECREATION
FPL: FLORIDA POWER AND LIGHT COMPANY
WMD: WATER MANAGEMENT DISTRICT

GENERAL NOTES

1. ALL PROPERTY MAP DATA IS BASED ON OFFICIAL BREVARD COUNTY DOCUMENTATION AND RECORDS. THE NORTHERN PORTION OF THE AIRPORT PROPERTY DOES NOT PROPERLY MERGE AND IS RECOMMENDED TO BE ASSESSED BY BREVARD COUNTY IN THE FUTURE AND SHOULD ANY FORM OF LAND ACQUISITION BY THE AIRPORT BE REQUIRED.
2. ALL HATCHED AREAS REPRESENT AREAS THAT INCLUDE MULTIPLE PARCELS WITH THE SAME COUNTY PARCEL IDENTIFICATION NUMBER.
3. ON JANUARY 26, 1987, THE FAA RELEASED A 1.11-ACRE PARCEL FOR AN INDUSTRIAL ACCESS ROAD LOCATED ON THE NORTHERN PORTION OF THE AIRPORT'S BOUNDARY. THE EXACT LOCATION COULD NOT BE FOUND IN COUNTY RECORDS.
4. TWO (2) PARCELS TOTALING 14.80 ACRES WERE RELEASED BY THE FAA ON THE SAME DATE AS ABOVE PARCEL FOR THE DEVELOPMENT OF VALKARIA ROAD. THE EXACT LOCATION COULD NOT BE FOUND ON THE COUNTY RECORDS.
5. ON JANUARY 30, 1991, THE FAA APPROVED A PROPOSED LEASE INVOLVING 211.111ACRES TO BE USED AS A GOLF COURSE (THE HABITAT). A 30-YEAR LEASE AGREEMENT WAS EXECUTED BETWEEN THE BREVARD COUNTY BOARD OF COMMISSIONERS AND THE BREVARD COUNTY DEPARTMENT OF PARKS AND RECREATION.
6. ALL THE CONSERVATION EASEMENTS ARE LOCATED WITHIN THE GOLF COURSE CONSERVATION EASEMENT. THESE EASEMENTS PROHIBIT CONSTRUCTION, DUMPING, PLACING OF FILL, REMOVAL OF VEGETATION, EXCAVATION, SURFACE USE, ACTIVITIES DETRIMENTAL TO DRAINAGE, AND ACTS OR USES DETRIMENTAL TO THE PRESERVATION OF HISTORICAL, CULTURAL, OR ARCHEOLOGICAL SIGNIFICANCE.
7. FPL ELECTRICAL EASEMENT-A ENDS CLOSE TO GOLF COURSE LEASE BOUNDARY. FPL DOCUMENTATION SHOWS CABLE TRAVERSING TO THE NORTHWEST.

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VALKARIA AIRPORT

AIRPORT LAYOUT PLAN

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: MAY 05, 2015
PROJECT NO: 12A0007
CAD FILE: 13-PROP-TBL.DWG
DESIGN BY: MLH 03/04/2015
DRAWN BY: MLH 03/04/2015
REVIEWED BY: TSH 04/24/2015

SHEET TITLE

AIRPORT PROPERTY MAP - SHEET 2

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