



# **Valkaria Airport Airport Master Plan and Airport Layout Plan Update**

**FDOT Item No. 435317-1-94-01  
FAA AIP No. 3-12-0144-007-2014**

## **DRAFT Executive Summary**

**May 6, 2015**

**Submitted to:  
Stephen Borowski, Aviation Director  
Brevard County**

**Prepared by:  
Hanson Professional Services Inc.**

## EXECUTIVE SUMMARY

### 1 INTRODUCTION

Valkaria Airport (X59) is a public use airport owned and operated by Brevard County, Florida under the terms of a 1958 quit claim deed from the U.S. Government. The Brevard County Board of County Commissioners is the Airport Sponsor. The County employs a full-time, professional airport manager and staff.

X59 is a non-towered, basic utility airport serving general aviation aircraft, flight training and a limited number of military operations. The Federal Aviation Administration (FAA) classifies X59 as a Local Airport. As such it is identified as an airport with moderate levels of activity serving critical community, business, personal and recreational transportation needs as well as facilities required for emergency preparedness and response. In addition, X59 is included in the National Plan of Integrated Airport Systems (NPIAS) which identifies existing and proposed airports that are deemed significant to the national air transportation system. Listing in the NPIAS is required in order to be eligible to receive federal Airport Improvement Program (AIP) grants. The airport is recognized as an asset to the Florida airport system providing an important connection to the larger aviation system and access to its respective communities.

This Master Plan Update (MPU) is intended to serve as a guide for the growth and development of the airport during the planning period 2015-2034 in a manner consistent with the needs and goals of Brevard County. The MPU is intended to update the existing master plan (2006) and to build upon that document. The MPU has been formulated in cooperation with Brevard County's residents and government and in accordance with state and federal guidelines and regulations. The MPU is consistent with state and federal policies and procedures as described in the following:

- Florida Department of Transportation (FDOT) *Guidebook for Airport Master Planning*;
- FDOT *Public Involvement Handbook*;
- FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*;
- FAA 150/5300-13A, Change 1, *Airport Design*; and,
- Code of Federal Regulations (CFR), Title 14, Part 77, *Safe, Efficient Use and Preservation of Navigable Airspace*.

In building upon the previous master plans it is important to recognize the numerous projects that have been completed in response to those efforts. In the recent months the following projects, identified in the 2006 plan have been completed:

- 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 Taxiway A, a 4,000 foot parallel taxiway, serving Runway 14-32

- Construction of two, 10-unit T-hangars with connecting box hangars including necessary stormwater management facilities and improvements to Skyman Park
- Runway Safety Area improvements including mitigation of hazards
- Recommendations from a Wildlife Management Plan implemented
- Runway 10-28 rehabilitated including installation of precision approach path indicators (PAPIs)
- Security Enhancements

**Scope of the Study:** The primary elements of this master plan update included:

- An inventory and assessment of the existing facilities
- Assessment of historic and current activity and a forecast of future demand
- Analysis of facilities required to meet demand
- Analysis of facility alternatives and selection of preferred alternatives
- Review of potential environmental issues
- Develop Capital Improvement Plan including financial feasibility review
- Production of an Airport Layout Plan set of drawings
- Conduct public meetings

**Public Involvement:** The objective of the public involvement process was to provide all interested individuals an opportunity to learn about the results of the study, to hear the recommendations, to ask questions and to offer input. Two public information/input meetings were held in the Atlantic Room at the Brevard County Government Center at key study milestones. Each meeting, advertised in accordance with state and local policies and regulations, consisted of a formal presentation followed by a question and answer session.

- Meeting 1 was held on February 25, 2015, attended by 37 stakeholders. This meeting consisted of a formal presentation covering the Inventory of facilities and activity section and the results of the Forecast of aviation activity.
- Meeting 2 was held March 26, attended by 23 stakeholders. This meeting consisted of a formal presentation covering the Facility Requirements to meet the forecast aviation demand, a summary of environmental issues, a discussion of alternatives and the recommended long-term facility layout.

In addition to the two formal public participation meetings key elements of the MPU are posted on the Brevard County website. The website currently contains this Executive Summary, the presentations from the two public meetings and the minutes from those meetings.

## 2 INVENTORY

Valkaria Airport is a 659-acre facility located in a low-density rural residential area in southern Brevard County. The airport is within the corporate limits of the Town of Grant-

Valkaria and on the southern edge of the Town of Malabar. Originally built by the U.S. Navy in 1942 ownership was transferred to Brevard County in 1958 through quit-claim by the War Assets Administration. X59 is one of five publicly owned civil airports in Brevard County.

FAA records indicate 1,225 aircraft are registered with a Brevard County address. This number represents 5.9% of the total number of aircraft registered in Florida. In 2014 the airport was the base for 127 of the counties' registered aircraft. In 2006, 49 of the nearly 1,100 county registered aircraft were based at X59.

**Runways and Taxiways:** X59 has two asphalt runways designated 10-28 and 14-32 summarized below and in Table E.1

- Runway 10-28 underwent a complete reconstruction in 2014 resulting in a 4,000 foot long by 60 foot wide asphalt runway design to serve single-engine and light twin engine piston powered aircraft that fall within the FAA's B-I designation. This runway does not have a supporting parallel taxiway. Airplane access to and from the runway is accomplished through one of four connecting points that lead to the hangar complex or the west parking apron. One of these, currently designated C-1, does not meet FAA configuration standards.
- Runway 14-32 is also a 4,000-foot long asphalt runway. This runway however is 75 feet wide in order to comply with the FAA B-II design standard. This runway is supported by a full length parallel taxiway with six access connectors, one of which does not currently meet FAA configuration design standard.

**Table E.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

**Instrument Approach Procedures:** The airport does not have FAA published instrument approach procedures to any runway for flight operation conducted under low cloud cover and/or visibility conditions.

**Airspace:** X59 is a non-towered airport located in FAA designated Class G airspace extending from the ground to a height of 1,200 feet. There are no overlapping airspaces from other airports. Pilots communicate air-to-air or air-to-ground using a standard Unicom frequency 122.725. There are four public use airports within 24 nautical miles of X59: Melbourne; Patrick Air Force Base; Vero Beach and Merritt Island.

**Airfield Lighting & Navigation Aids:** Both runways are equipped with Threshold (runway end) lights. The runways and taxiway do not have edge lights. The airport has a rotating beacon and lighted wind indicator (windsock) and all four runways ends are equipped with a precision approach path indicator (PAPI).

**Landside Facilities:** Located on the west side of the airport the landside facilities consist of an aircraft parking apron; hangar complex, airport administration office, and automobile parking area. The aircraft parking apron provides parking and tie-down stations for up to 30 local based and itinerant aircraft. This asphalt parking apron, recently repaved and marked, is in good condition.

The hangar complex in the southwest portion of the landside area consists of five separate T-hangars with a total of 67 individual units. In addition there are four box hangars of various sizes attached to four of the T-hangars. Combined this hangar complex provides storage for 115 aircraft. These five hangar units range in age from 1992 to 2013 and are in good to excellent condition.

On the north end of the landside area is the airport administration office and an automobile parking area providing 10 marked parking spaces. The administration office is a 55 x 10 foot modular trailer that is in poor condition. The airport does not currently provide a public location for flight planning, pilot briefing or passenger amenities.

**Fuel Storage:** The airport provides a self-serve fueling facility that defines the north end of the landside facility area. The fueling facility has one 12,000 gallon storage tank for aviation gasoline (Avgas) and one 5,000 gallon tank for Jet-A fuel. Annual fuel sales of Avgas in the 5-year period 2010-2014 averaged 50,409 gallons.

**Based Aircraft:** Based aircraft is the term used to identify aircraft that are permanently stationed at an airport. They are an important source of revenue through the payment of hangar or tie-down rental and the purchase of fuel. The number of Based Aircraft at X59 has grown substantially since 2006, from 49 to 127 in 2014. In response to demand for space the airport constructed three T-hangar buildings between 2011 and 2013. Table E.2 shows the annual growth in Based Aircraft 2006-2014.

**Table E.2 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

**Operations:** X59 does not have an air traffic control tower therefore; hourly counts of landings, takeoffs and touch-and-gos (operations) are not constantly recorded. Airport management staff however frequently takes time to record operations and makes note of the type of aircraft using the airport. These airport records are assembled and calculations are made to annualize the numbers for comparison and analysis of trends. Table E.3 below assembles the annual operations data 2006-2014 and compares the actual operations to those contained in the FAA’s Terminal Area Forecast (TAF) and the 2006 Master Plan.

**Table E.3 Total Airport Operations, By Type, Valkaria Airport**

Year	Airport Records				FAA - TAF			
	Local	Itinerant	Military	Total Operations	Local	Itinerant	Military	Total Operations
2014	39,140	13,290	730	<b>53,160</b>	23,990	9,100	10	<b>33,100</b>
2013	31,875	10,839	436	<b>43,150</b>	23,990	9,100	10	<b>33,100</b>
2012	26,735	9,100	365	<b>36,200</b>	23,990	9,100	10	<b>33,100</b>
<b>Forecast (2006 Airport Master Plan)</b>								
<b>2011</b>	<b>25,550</b>	<b>9,125</b>	<b>0</b>	<b>34,675</b>	<b>23,990</b>	<b>9,100</b>	<b>10</b>	<b>33,100</b>

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

Annual aircraft operations at X59 increased 86.7% during the nine year period 2006-2014. These operations breakdown into the following classifications: 74% local, a landing or a takeoff by an aircraft that will return to the airport without landing at another location; 25% itinerant, these aircraft depart for or land from a different airport; and, 1% military.

### 3 ACTIVITY FORECAST

The purpose of the forecasts is to estimate future aviation activity at X59 for the period 2014-2034. These forecasts will then form the basis for evaluating the ability of the existing airport facilities to serve that activity. The forecasts are the foundation of effective decision-making in airport planning, forming the milestones that will require specific facility development. The five year 2019 forecast (short-term) carries a high level of confidence; less certainty with the ten year (2024) forecast; and, much less certainty for the 20-year 2034 forecast. The 2034 year forecast however is important as it will define facility requirements in the long-term enabling Brevard County to make sound land use decisions.

The county wide factors that affect GA activity and growth are very positive. Community measures and trends such as population growth, income and employment levels, educational standards, area attractions and aviation activity throughout the county are very strong. The current and forecast aviation activities reflect these trends.

Three forecast categories form the foundation of this MPU: the number of Based Aircraft; the Annual Operations; and, the identification of the Design Aircraft. The results of the forecast are:

- The number of Based Aircraft is expected to nearly double to a total of 236 during the 20-year planning period 2014-2034. This represents an additional 109 aircraft.
- Operations (landings, takeoffs and touch-and-gos) are expected to increase to 64,865 by 2034 over the current 53,160, an annual increase of 11,705. This represents an additional of 32 operations per day 2034 over 2014.
- The future design aircraft is the Beech Super King Air 200 (B200) a small twin turboprop aircraft. By FAA definition a *small* airplane is any airplane with a Maximum Takeoff Weight (MTOW) of 12,500 pounds or less.

The aviation growth forecast in this study, particularly for based aircraft, reflects a healthy and robust airport and is consistent with the health of aviation throughout the region. This forecast reflects an increase in aviation activity that considers the substantial improvements that have been made to the facility since the conduct of the 2006 Master Plan. These improvements have led to the airport surpassing the 10-year (2016) forecasts for based aircraft and operations contained in that 2006 Master Plan.

The ten year forecast from the 2006 master plan anticipated 69 based aircraft in 2016. At the time of the inventory for this MPU (2014) the number of based aircraft was already at 127, more than double the previous forecast. Similarly the 2006 master plan anticipated total annual operations would reach up to 39,785 in 2016 whereas the actual 2014 number of operations was 53,160 a difference of 133.6%. These new forecasts adjust for the recent increase in activity and will provide the justification and definition of airport facility improvements to satisfy the aviation demand.

#### **4 DEMAND/CAPACITY ANALYSIS**

The demand-capacity analysis examined the ability of the existing runway, taxiway, navigational aids and airspace elements to satisfy forecast aviation operational demands. This analysis was conducted in accordance with the methodology outlined in FAA AC 150/5060-5, *Airport Capacity and Delay*. Results of this analysis are summarized as follows:

- The configuration of Runways 10-28 and 14-32 has a combined capacity exceeding the forecast.

- The combination of Runways 10-28 and 14-32 are necessary to satisfy the FAA recommended 95% wind coverage for the safe operation of B-I and B-II aircraft.
- Based on weather observations from Melbourne International Airport (NOAA 2005-2014), instrument meteorological conditions (IFR) for flight exist 7.7% of the time.
- The existing taxiway system does not adequately support the runway system. The construction of parallel taxiways with adequate and properly spaced exits will decrease runway occupancy time and significantly improve efficiency and safety
- The airspace structure around X59 presents no constraints to capacity.

In summary, the airport should not experience capacity issues during the 20-year period 2015-2034.

## 5 FACILITY REQUIREMENTS

This phase of the master plan contains the consultant's general recommendations for facility improvements or additions to the airport necessary to accommodate the 20-year forecast demand. Identification of required facilities to address safety standards, security, capacity, efficiency and demand for services provide the foundation of the facility layout and the supporting capital improvement plan. The nature of these recommendations take into account the forecast demand, the Brevard County Government and community's vision of the airport and on the regulations and standards promulgated by federal and state agencies.

The two primary forecast categories that drive the majority of the required facilities are the 236 based aircraft and the 64,865 annual operations expected in the year 2034. The following primary facility requirements have been identified:

- Construct an Airport Administration/Pilot Services Building
- 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 design standards.
- Extend the Primary Runway to a length of 4,250 feet.
- Install runway edge lights and light existing airfield signs and navigational aids.
- Conduct an Approach Survey and request publication of non-precision instrument approaches to the primary runway.
- Construct 97 new hangar units and 24 tie-down positions for based aircraft.
- Construct/upgrade airport perimeter security/wildlife fence.
- Construct additional stormwater management facilities.

Although each of these recommendations is important and is driven by demand, in the consultant's opinion two of the listed projects carry an additional level of importance. The current and anticipated itinerant operations and the increasing number of special events hosted at the airport make the construction of an airport administration/pilot services facility a critical project. Today pilot briefing rooms, rest facilities and passenger



waiting areas are non-existent and the current airport administrative office is undersized and beyond its useful life.

The second item involves a combination of projects that collectively will result in a system of taxiways meant to increase safety and efficiency throughout the airfield. During the public meetings held to brief stakeholders a number of pilots expressed concern about the need to back-taxi on the runway or to extend the ground roll to locate a suitable exit from the runway. Development of a comprehensive system of taxiways will resolve those concerns.

Also during the public meetings users of the airport identified runway edge lights as a safety priority. Pilots reference safety, the inconvenience and the loss of airport utility when marginal weather or darkness precludes flight operations. In addition, the vast majority of operations conducted by the Brevard County Mosquito Control helicopters are conducted at night.

The runway and taxiway edge lights appropriate for X59 would be a pilot activated radio-controlled system that would remain on only for a preset period of time (approximately 8 minutes). It is predicted that night traffic would increase only moderately with the addition of runway edge lights. However, the safety factor would increase dramatically.

## 6 DEVELOPMENT ALTERNATIVES

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.

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.

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

## 7 ENVIRONMENTAL CONSIDERATIONS

A focus on the environment and sustainability plays an increasing role in the development and operation of aircraft and the management of airports. In the master planning process the goal of the environmental review is to assist the airport owner in the evaluation of development alternatives and to provide information that will expedite subsequent environmental processing. It is not necessary to evaluate each facility recommendation using all environmental categories but to identify those resources likely to be affected.

This study reviewed each of the 19 resource impact categories identified by the FAA in Order 1050.1, *Conducting Preliminary Environmental Review*, Appendix A. This overview is not intended to replace specific environmental analysis that occurs with the planning and design of specific projects but to identify issues that may affect facility siting requirements. During this review three of these categories were identified that will influence facility development:

- **Water Quality:** Although water quality is generally not an issue for general aviation airports the management of stormwater is a part of the category. The construction of additional facilities and the addition of impervious surfaces will result in stormwater runoff exceeding the capacity of the existing facility.

Additional locations must be preserved to accommodate required metering and storage of stormwater.

- **Wetlands:** During the last 5 years the airport has implemented wetland mitigation through participation and acquisition of credits in approved wetland banks. There are currently three areas of wetlands that will alter facility development or will require future mitigation.
- **Wildlife:** The primary wildlife issue associated with the development of new facilities is the possible presence of the Gopher Tortoise. Listed as Threatened in Florida, both the tortoise and the burrow are protected under state law. If present at a development site, Brevard County is licensed to capture and relocate.

## 8 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.

**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.

**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.

**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.

**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.

**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.

**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. .

**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.

**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.

**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.

## 9 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 \$28,766,300 in 2015 dollars (Table E.4). 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 E.4 Summary of Development Costs (2015 Dollars)**

Planning Period	Cost Estimate	Airport Portion <sup>1</sup>
Short Term 2015 - 2019	\$9,514,000	\$1,072,680
Mid Term 2020 - 2024	\$12,932,300	\$2,116,660
Long Term 2025 - 2034	\$6,320,000	\$544,000
<b>Total Planning Period</b>	<b>\$28,766,300</b>	<b>\$3,733,340</b>

<sup>1</sup> Airport (Local) funding is estimated assuming current 2% and/or 20% share remains unchanged

**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.

**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.

**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.

**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. All local matching funds were derived from airport revenue; no county general funds were used. 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.

**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

**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

**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

**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.

## 10 SUMMARY AND CONCLUSIONS (PROJECT STATUS – MAY 2015)

This MPU and the associated Airport Layout Plan will be presented to the Brevard County Board of Commissioners for approval on May 26, 2015. The documentation will then be submitted to the appropriate offices of FDOT and FAA for their review and acceptance. Following the action of those agencies the Master Plan and the Airport Layout Plan will be published in final form.