

## CHAPTER TWO

### INVENTORY OF EXISTING FACILITIES

The “Guidebook for Airport Master Planning” published by the Florida Department of Transportation was used during the development of this Master Plan Update for Flagler County Airport. Federal Aviation Administration (FAA) advisory circulars were also used. FAA Advisory Circular 150/5070-6A, *Airport Master Plans* outlines the necessary steps in the development of an airport master plan. The initial step, Inventory, is the collection of data pertinent to the Airport and the area it serves. The objective of the inventory task for this Airport Master Plan Update is to provide background information necessary for subsequent phases of analysis.

An inventory incorporates a broad spectrum of information including data on landside and airside facilities, surrounding land uses, weather conditions, area airspace, historical activity levels, and socioeconomic factors. The data collected as part of the inventory effort sets the groundwork for the remainder of the Master Plan Update.

The information summarized in this chapter was obtained through on-site visits, discussions with Airport and County Administration staff, and review of various planning documents pertaining to Flagler County Airport. The inventory is described in the following sections:

- Airport Role
- Airport Location and Access
- Comparison of Vicinity Airports
- Existing Airport Facilities
- Airspace/Approaches
- Historical Airport Activity
- Existing Land Use
- Summary

#### 2.1 AIRPORT ROLE

Flagler County Airport (Location Identification: X47) is one of Florida’s busiest general aviation facilities. The Airport fulfills a vital role for flight training and business activity as well as for recreational and sport aviation activities. Approximately 70 percent of the Airport’s annual operations are related to flight training, which is offered by two schools operating out of Daytona Beach International Airport: Embry-Riddle Aeronautical University (Embry-Riddle) and Phoenix East Aviation. While the Airport does not report any based military aircraft, it does accommodate transient military operations as necessary, accounting for less than 2 percent of the total annual activity. Visiting Coast Guard and National Guard helicopters are credited for the majority of these military operations.

Corporate and business users are becoming increasingly common at the Airport, as population growth and economic development increases within the County. Local companies that use the

Airport's general aviation facilities include Sea Ray Boats, Palm Coast Holdings, and Palm Coast Resort, among others. Currently, approximately 5 percent of the Airport's based aircraft are owned by local businesses. While there is no industrial park associated with the Airport at present, the Airport property is designated as an "Enterprise Zone," and the County is working toward the development of a marketing strategy to attract tenants for a business/industrial park.

Evidence of the potential for economic development at the Airport includes the addition of several tenants that will be located on site by the end of 2004. These tenants include *Cakes Across America*, *The Ginn Company* and *Embry-Riddle Aeronautical University*. The construction of Airpark Phase A and Flight Training Complex was initiated in March 2004, which includes the construction of several landside and airside facilities, representing a significant private investment at the Airport. Representatives from Flagler County are working with private interests toward development of facilities that will meet the needs of the tenants while complementing the long-term goals and objectives of the Airport.

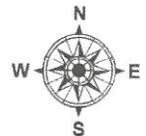
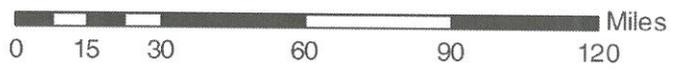
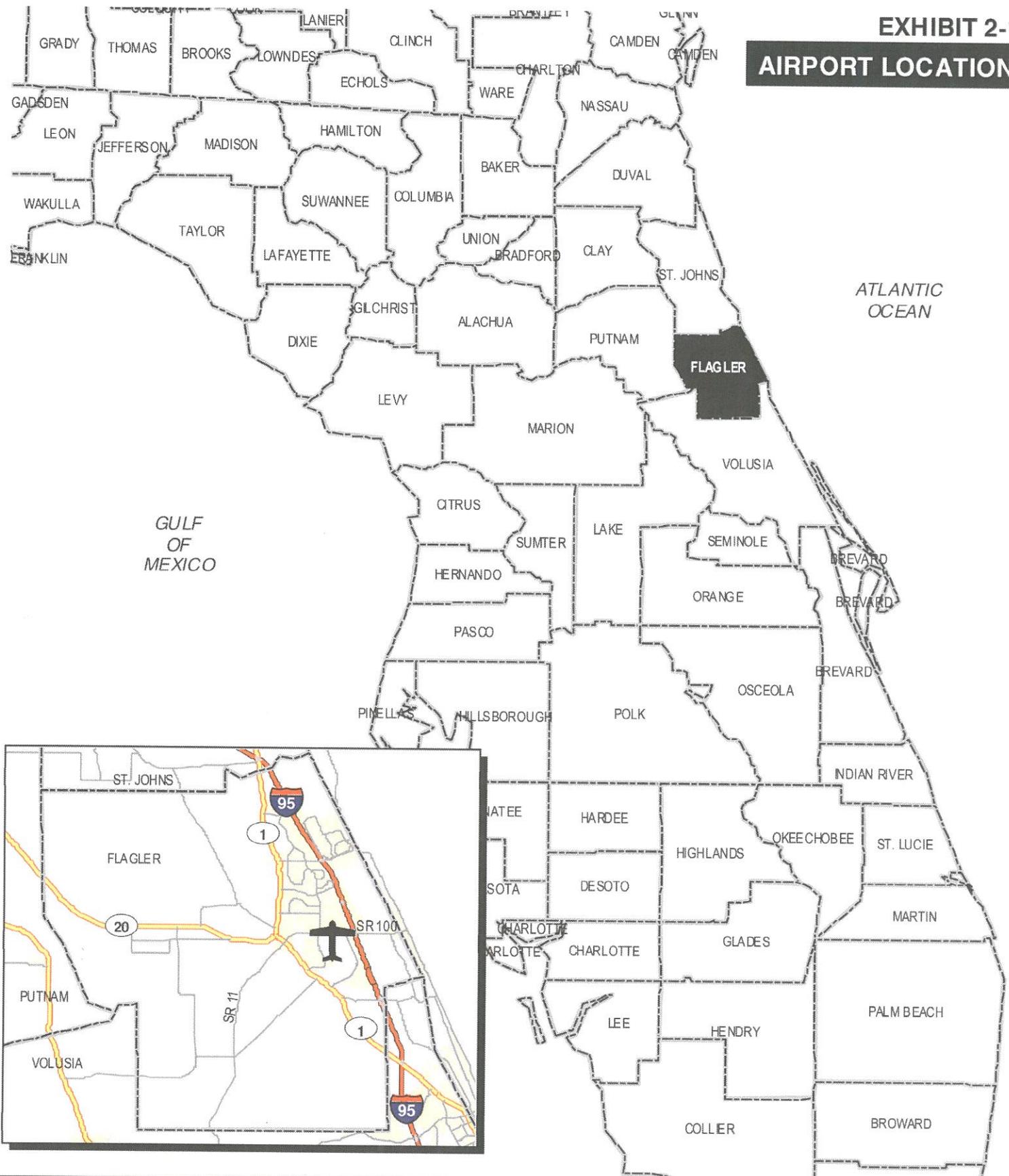
The Airport does not have a certified FAA charter operator at this time; however, there is potential for such an operation if the County continues to experience high levels of residential and commercial growth. This activity can be expected to elevate demand for increased use by affluent residents and corporations, which may spike an increase in based aircraft and annual jet operations. The Airport does not currently experience any commercial service activity and, due to the proximity of Daytona Beach International, Jacksonville International, and Orlando International Airports, the possibility of attracting commercial air service at Flagler County Airport is considered remote at this time.

Based on recent developments such as the Embry-Riddle Commercial Airline Training Program project, plans for additional conventional hangars, and continued inquiries regarding the availability of T-hangar space, the Airport's future role as a business-class general aviation airport is promising. Regional growth and development estimates support the ongoing efforts of the County Board of Commissioners and local business leaders to attract quality economic development to the area. These groups understand the role of the Airport in the future success of the County, indicating that the emergence of Flagler County Airport as a regional business-class airport is imminent.

## 2.2 AIRPORT LOCATION AND ACCESS

Flagler County is located along Florida's eastern coast, approximately 31 miles northwest of the City of Daytona Beach and 60 miles south of the City of Jacksonville. As illustrated in **Exhibit 2-1**, the County is bordered by St. Johns County to the north, Volusia County to the south, and Putnam County to the west. The eastern boundary is formed by the Atlantic Ocean beachfront, extending for 18 miles. The City of Bunnell, the County Seat and associated city of the Airport, is located at the intersection of US Route 1 and State Route (SR) 100 – just 3 miles west of the Airport. Over 65 percent of the County population resides in the City of Palm Coast, which was incorporated in late 1999 and surrounds the Airport.

**AIRPORT LOCATION**



**FLAGLER COUNTY AIRPORT**

**MASTER PLAN**

Prepared by: Wilbur Smith Associates  
 Source: Environmental Systems Research Institute, 2002  
 Geographic Coordinate System: North American 1983  
 Printed Date: 28 January 2004

Flagler County Airport, with a reference north latitude of 29° 28' 2.6" and west longitude of 81° 12' 22.8", is located in eastern Flagler County along SR 100, between the cities of Bunnell and Flagler Beach. It is situated just one mile west of the I-95 interchange, and is roughly equidistant from the metropolitan areas of Orlando and Jacksonville. The Airport is also less than one-half mile from the planned new town center for the City of Palm Coast, as proposed in the City's 2020 Comprehensive Plan.

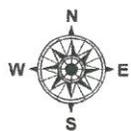
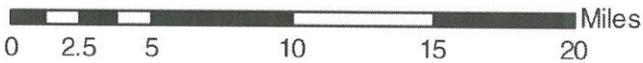
Ground access to the Airport is provided primarily via I-95 and SR 100, which connect to a network of other major roadways including US Route 1, and State Routes 11 and 13 in the City of Bunnell. Two local roadways, Belle Terre Parkway and Seminole Woods Parkway, serve as north-south connectors between the Airport and residential/commercial areas to the north and south.

### 2.3 COMPARISON OF VICINITY AIRPORTS

A comparative analysis of the five public-use airports within an approximate 30-mile radius of Flagler County Airport provides an understanding of the facility's competitive environment, and the potential level of service that can be offered at the Airport. All of the airports included in this section serve the needs of regional general aviation users; however, they exhibit wide variations in facility levels and services provided. The airports discussed are as follows:

- Daytona Beach International
- DeLand Municipal
- Bob Lee Flight Strip
- Ormond Beach Municipal
- Pierson Municipal

**Exhibit 2-2** depicts the location of Flagler County Airport, as well as airports in close proximity. As shown, all five of these airports are located to the south, in neighboring Volusia County. A comparison of general characteristics is presented in **Table 2-1**.



**FLAGLER COUNTY AIRPORT  
MASTER PLAN**

Prepared by: Wilbur Smith Associates  
 Source: Environmental Systems Research Institute, 2002  
 Geographic Coordinate System: North American 1983  
 Printed Date: 28 January 2004

**TABLE 2-1  
 COMPARISON OF VICINITY AIRPORTS**

<b>Airport Name</b>	<b>Owner</b>	<b>Number of Runways</b>	<b>Longest Runway</b>	<b>Instrument Capability</b>	<b>Distance from Flagler</b>
Flagler County	Flagler County	2	5,000 ft/ Asphalt	Non-Precision	-
Daytona Beach International	Volusia County	3	10,500 ft/ Asphalt	Precision	22 Miles SSE
DeLand Municipal	City of DeLand	2	6,000 ft/ Asphalt	Non-Precision	28 Miles S
Bob Lee Flight Strip	Private	1	3,300 ft/ Turf	Visual	26 Miles SSW
Ormond Beach Municipal	City of Ormond Beach	2	4,004 ft/ Asphalt	Non-Precision	13 Miles SSE
Pierson Municipal	City of Pierson	1	2,600 ft/ Turf	Visual	21 Miles NW

Source: Flagler County Airport Master Plan, 1997

Daytona Beach International

Daytona Beach International is located 22 miles southeast of Flagler County Airport, and is the nearest airport offering scheduled commercial service to the area. Carrier service is provided by Delta, Continental and Vintage (scheduled charter carrier) via a 160,000-square-foot domestic terminal with six gates. Established as an international facility in 1992, the airport utilizes three asphalt runways with lengths of 3,195 feet, 6,000 feet and 10,500 feet. The longest runway, Runway 7R/25L, accommodates a Boeing 737 regularly. All three runways are served by full-length taxiways. In its current role, the airport focuses primarily on flight training activities with roughly 90 percent of the airport’s annual operations related to flight training. While commercial service accounted for just over 8,100 operations in 2001, continued modest growth in the coming years is anticipated. The airport reports 281 based aircraft, and maintains a waiting list for hangar space showing 30 aircraft.

DeLand Municipal

DeLand Municipal Airport is located 28 miles south of Flagler County Airport in Volusia County, just 3 miles northeast of the DeLand downtown business district, the County Seat. In its current role, DeLand Municipal Airport focuses primarily on flight training and sport aviation/recreational flying, these activities account for approximately 50 percent and 30 percent of annual operations, respectively. The airport accommodates these operations using two runways, each served by full-length parallel taxiways.

The airport currently has a fixed-base operator as well as long-time tenant Skydive DeLand, one of the most active parachuting centers in the Southeast having operated at the airport for more than 25 years. This activity has generated the development of significant parachute

manufacturing activities, as well as team training and jumping in the DeLand area. Business-related operations are credited with 10 percent of annual operations, of which some can be attributed to a 200-acre onsite industrial park. The airport also reports a small percentage (approximately 5 percent) of its operations is related to air taxi/charter service. While there is no commercial airline activity, the airport reports 195 based aircraft, and maintains a waiting list for hangar space and tie-downs showing 25 aircraft.

### Bob Lee Flight Strip

Bob Lee Flight Strip is located 26 miles southwest of Flagler County Airport, north of DeLand, and just east of US 17. Opened in 1960 by a private owner, the airport maintains one 3,300-foot long turf runway and is utilized for local general aviation operations only. In its current role, the airport focuses primarily on recreational flying and support, which comprises nearly 99 percent of annual operations.

The airport reports 23 based aircraft, several of which are experimental and vintage aircraft. While a small number of current tenants may use their aircraft for an occasional business trip, their primary use is recreational in nature. The airport's vision for the future is to continue catering mostly toward recreational flying, with the addition of better hangar facilities and an improved access road. This vision, however, was setback due to a catastrophic fire in 2002. The event destroyed several hangars, 12 aircraft and airfield maintenance equipment.

### Ormond Beach Municipal

Ormond Beach Municipal Airport is the nearest general aviation facility to Flagler County Airport, located just 13 miles south along US 1 and east of I-95. The airport facility includes two active runways and six taxiways, all of which are fully lighted. In addition, there are two non-precision instrument approaches and a VHF omni-directional range/tactical air navigation (VORTAC) facility. A VORTAC is a unified navigational aid that incorporates more than one operational frequency and antenna systems to provide at one site. Aviation management and other flight support services are provided through private operations, including two full-service FBOs, an aircraft paint shop and maintenance facility, as well as limited service FBOs that offer flight training and aircraft sales. The airport reports 164 based aircraft and approximately 250,000 annual operations.

Flight training is a major component of general aviation activity, accounting for roughly 80 percent of the airport's annual operations. There are three businesses that provide flight training employing 20 flight instructors and maintaining 31 aircraft dedicated to flight training. The airport estimates that 4 percent of its annual general aviation operations are business-related, where 8 percent of all visiting general aviation aircraft fall into the business jet category. The airport also supports the Airport Business Park, where 29 businesses presently operate in excess of 731,900 square feet of light industrial space, with total employment of approximately 1,900 workers.

In its current role, the airport focuses primarily on serving the needs of general aviation, with little emphasis on recreational activity. The airport does accommodate flight training activity and

envisions an increased role as a provider of flight training services. There are currently no Part 135 operators at the airport. The airport anticipates modest growth in the coming years, and envisions itself as a first-class general aviation airport facility.

### Pierson Municipal

Pierson Municipal Airport is located 21 miles southwest of Flagler County Airport, roughly 19 miles northwest of DeLand along US 17. Founded in 1944 on just 20 acres, the airport facility maintains one turf runway of 2,600 feet and is funded by the general fund of the City of Pierson.

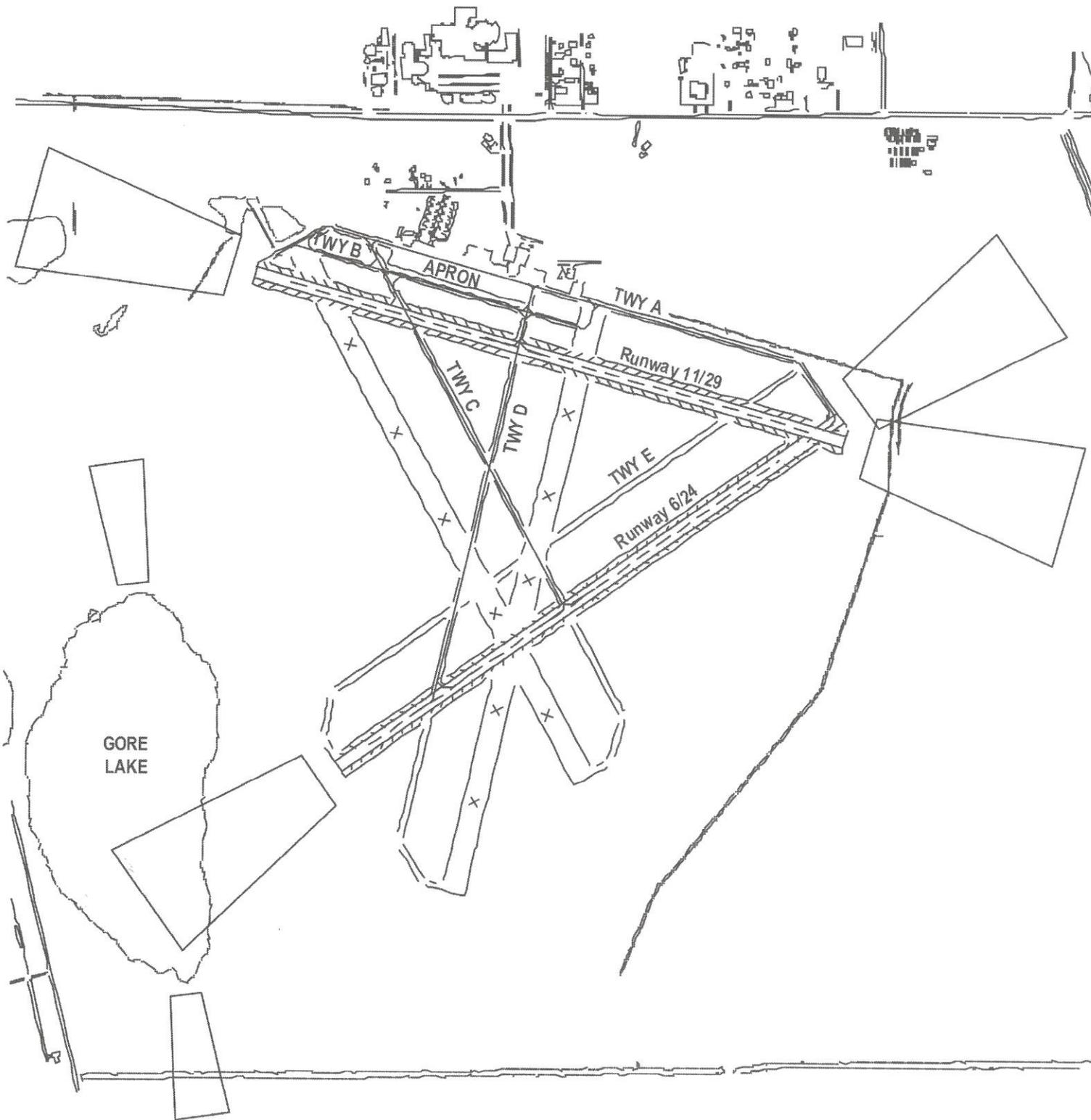
In its current role, the airport focuses primarily on general aviation activities, including flight training and sport aviation/recreational flying. An estimated 20 percent of the airport's annual operations are related to flight training, although the airport does not offer training onsite. The airport experiences approximately 1,000 instances of "simulated emergency landings" annually, although there is no actual touchdown.

The airport anticipates modest growth in the areas of flight training and sport aviation/recreational flying activities in the future. There are 6 based aircraft at this facility.

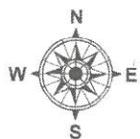
## **2.4 EXISTING AIRPORT FACILITIES**

A thorough inventory of existing facilities at Flagler County Airport was accomplished through on-site visits, discussions with Airport staff, and a review of Airport plans and related studies. Flagler County Airport covers approximately 1,145 acres with its two-runway system, as depicted in **Exhibit 2-3**.

For planning purposes, existing airport facilities are divided into two categories: airside and landside facilities. Airside facilities, including runways, taxiways, ramp areas, and navigational aids (NAVAIDS) are facilities related to aircraft operations. Landside facilities consist of all facilities pertaining to aircraft storage, FBOs, vehicular traffic flow, and automobile parking. The Airport's existing airside and landside facilities are discussed below.



# FLAGLER COUNTY AIRPORT MASTER PLAN



Prepared by: Wilbur Smith Associates  
Source: Wilbur Smith Associates  
Geographic Coordinate System: North American 1983  
Printed Date: 28 January 2004

**2.4.1 Airside Facilities**

The location and orientation of runways are fundamental to the safety, efficiency, and economics of an airport. Factors such as critical aircraft, meteorological conditions, the surrounding environment and land use, topography, and the expected volume of aircraft activity can all affect the location, orientation, length, and strength of runways.

Runways

The Airport’s existing airside facilities include two intersecting asphalt runways and one seaplane landing area on Gore Lake. The primary runway, 11/29, measures 4,999 feet in length and 100 feet in width and is served by a full-length parallel taxiway. The second runway, 6/24, measures 5,000 feet in length and 100 feet in width, and is served by a partial taxiway. The asphalt surfaces of both runways are rated for aircraft equipped with dual-wheel type landing gear configurations and have gross pavement strength of 60,000 pounds. Runway data is summarized for comparison in **Table 2-2**.

**TABLE 2-2  
 RUNWAY DATA**

	Runways		
	11/29	6/24	18/36
Length (ft.)	4,999	5,000	3,000
Width (ft.)	100	100	500
Surface Material	Asphalt	Asphalt	Water
<u>Load Bearing Capacity by Gear Type</u>			
SWL (lbs.)	60,000	60,000	None
DWL (lbs.)	60,000	60,000	None
<u>Approach Aids</u>			
PAPI-2	Yes	Yes	No
Lighting	MIRL	MIRL	No
Marking	Non-Precision	Non-Precision	None

Source: Airport Management, On-site visits  
 United States Government Flight Information Publication, Airport/Facility Directory, Southeast U.S.

An overlay was applied to Runway 11/29 in 1989 and Runway 6/24 was rehabilitated in 1996. Based on the *Florida Airport Pavement Evaluation Report for Flagler County*, an effort conducted by the Florida Department of Transportation in 1998, the condition of the asphalt on

Runway 6/24 is rated as excellent. The condition of Runway 11/29 is rated as good, but can be characterized by regular wear and tear causing increased roughness, cracking and rutting. Runway 11/29 is scheduled for pavement strengthening in 2005. The seaplane landing area, Runway 18/36, measures 3,000 feet in length and 500 feet in width. Access to Runway 18/36 is available via a ramp on the east side of Gore Lake, which can be found at the end of an unpaved road extending from runway end 6.

The primary (11/29) and secondary (6/24) runways are equipped with medium intensity runway lights (MIRL) and all four runway ends have precision approach path indicators (PAPI) featuring two identical light units placed on the left side of the runways (P2L). Not shown in Table 2-2 are two closed runways, oriented 2/20 and 15/33, which were constructed of asphalt and are in poor condition.

### Taxiways

Taxiways provide a link between any number of independent airport elements such as runways, aircraft storage and parking areas, or fuel facilities. For this reason they require careful planning for optimum airport safety and efficiency. A taxiway system should provide free movement to and from the runways, parking areas, and aircraft service areas. The Airport's taxiway system consists of three parallel and two perpendicular taxiways.

Taxiway "A" is parallel to and north of Runway 11/29 and extends the entire length of the runway. Taxiway "B," constructed in 1992 at a width of 35 feet, extends from closed runway 2/20 westward to runway end 11. Taxiways "A", "C", "D" and "E" were constructed as parallel taxiways to the original four airport runways, at a width of 50 feet. Taxiway "C" is parallel to and east of closed runway 15/33. Taxiway "D" is west of and parallel to closed Runway 2/20. Taxiway "E" is parallel to active Runway 6/24.

A cursory inspection of the taxiway system indicated that both Taxiways "A" and "B" are in good condition. At this time, there are no immediate plans to make any improvements to these taxiways. The section of Taxiway "C" between Runway 11/29 and Taxiway "B" received an overlay when Taxiway "B" was constructed and is generally in good condition; however, sections north of Taxiway "B" and south of Runway 11/29 are in fair condition, with areas of pavement cracking. Taxiway "C" is scheduled for an application of a pavement overlay in fiscal year 2008/2009. Most of Taxiway "D" north of Runway 11/29 is in fair condition south of Runway 11/29, however there are some areas of severe cracking along with isolated areas where pavement failure is occurring in the vicinity of drainage pipes. Taxiway "D" is identified for a pavement overlay in fiscal year 2006/2007. The portion of Taxiway "E" north of Runway 11/29 was reconstructed at a width of 35 feet when the overlay of Runway 11/29 was constructed in 1989. Taxiway "E" is scheduled for a pavement overlay in fiscal year 2004/2005.

### Apron

The aircraft parking apron is approximately 24,700 square yards and is located on the northern part of the airfield, between taxiways "A" and "B." The original apron pavement is now over 50 years old; however, it is generally in good condition. At the time of the 1997 Master Plan, the

report indicated that the slabs showed some longitudinal and transverse cracking; however, there was very little of the spalling or corner breaks that would be expected. In 1991, approximately 19,370 square yards of asphalt apron was installed to expand the aircraft parking area to a total area of 24,700 square yards. This pavement was sealed with a coal-tar emulsion and is still in good condition. At this time, there are no plans to make any improvements to the apron.

### Lighting

Airport lighting is a crucial factor during hours of darkness or reduced visibility. Without it, the safe and efficient movement of aircraft during landing, takeoff and taxiing maneuvers would be severely impaired, if not impossible. Several lighting systems are utilized and coordinated to assist pilots with the safe operation of their aircraft. The *runway lighting* system consists of two types of lights, edge lights and threshold lights. Threshold lights are sets of three or four lights placed in a straight line on both sides of the extended runway centerline parallel to the runway end. These lights have two color (green/red) lenses, which are positioned such that the pilot of an approaching aircraft would see green, indicating the beginning of the usable landing area. On departure run or landing roll-out, the pilot would see red, indicating the end of the usable runway. Runway edge lights at Flagler County are clear through 360 degrees and provide the pilot visual reference for speed, alignment and distance. Runways 11/29 and 6/24 both have medium intensity runway lights (MIRL). The MIRL were installed in 1989 on Runway 11/29 and in 1991 on Runway 6/24; both systems are in good condition.

*Taxiway lights* act to direct the pilot from the active runway and toward the aircraft parking area. These blue lights are omni directional and are located off the edge of the taxiway. Medium intensity taxiway lights (MITL) were installed in December 2002 on Taxiway "A," Taxiway "C," and Taxiway "E." This was a significant upgrade to taxiway lighting for the Airport, as it greatly assists in directing aircraft toward active taxiways, discouraging the use of two closed runways. Signs were also installed to assist aircraft in the identification of runways and taxiways that they are approaching.

The airport *rotating beacon* is used to facilitate the location of the airport at night. A lighted civilian beacon emits two rotating beams of light (green and white) in opposite directions. The beacon at Flagler County Airport has a 36 inch lens and is located on a tower in the terminal area, approximately 775 feet north of the centerline of Runway 11/29. The beacon was installed in 1990 and is in good condition.

Three surface *wind direction indicators* are available to pilots at Flagler County Airport. A lighted wind cone is located at the center of a segmented circle east of the aircraft parking ramp between taxiways. The segmented circle is used to help visiting pilots locate the wind indicator. Markers around the segmented circle can also be used to convey non-standard airport traffic pattern information to pilots. An unlighted wind cone is located at the north edge of the ramp, in front of High Jackers Airport Restaurant. A lighted tetrahedron (or wind "tee") is located north of Taxiway "D" and north of Runway 6/24.

### Visual Approach Indicators

Various types of visual glideslope indicators consist of a combination of light units, which are usually located on the left runway edge, as viewed by the pilot on approach. These units project two color (red and white) light beams, which enable a pilot to determine whether the approach to the runway is being made above, on or below the projected course angle. Runways 11 and 29 have precision approach path indicators (PAPI-2), which were installed in 1990. PAPI-2 units were also installed to serve Runways 6 and 24 in 1997. All units were recently repaired and were completely functional at the time of this inventory.

### Electronic Navigational Aids

A VOR is a very high frequency omni-directional radio range, which essentially gives a pilot a course to fly to a given point. A circling instrument approach procedure is available at Flagler County Airport using the Ormond Beach VOR. A global positioning system (GPS-A) approach is also available. A GPS is a satellite navigation system whereby signals from a satellite are transmitted to a receiver on the ground that computes positions in three dimensions. Published minimums are a ceiling of 500 feet and 1-mile visibility. With the appropriate equipment in the aircraft, distance-measuring equipment (DME) will indicate to the pilot the aircraft's distance from the VOR station.

Flagler County Airport does not have an air traffic control tower (ATCT). However, a project is proposed to develop a tower in the near future.

## **2.4.2 Landside Facilities**

Landside facilities at the Airport include all areas not considered part of the runway, taxiway, and NAVAIDs system. Existing landside facilities include terminal, administration, and maintenance buildings; aircraft storage facilities; fuel storage; and vehicular access and parking.

### Aircraft Storage

Aircraft storage areas generally fall into one of two categories, space for aircraft stored in hangars and space for aircraft that are tied down on the parking apron. Flagler County Airport currently provides tie-down space for approximately 42 aircraft using the apron north of Runway 11/29. This area is available for use by based and transient aircraft.

Hangar storage is accommodated in several locations at the Airport. There are currently 36 T-hangar units at the Airport. There are also six conventional hangars located on the north edge of the aircraft parking apron. Aircraft are also stored in three storage/maintenance hangars occupied by aviation tenants.

### Terminal Building

The terminal building consists of 3,200 square feet of office space located on the west side of the hangar leased to SPS of Palm Coast and Ryan Aviation. The terminal space includes the Airport

manager's office, counter space, a pilot's lounge area and public restrooms. Approximately 800 square feet of space is leased to Lunsford Air and Enterprise Rent-A-Car. Flagler County is the exclusive seller of aviation fuel on the Airport. The County's fuel business is also operated from the terminal building.

### Aviation Tenants

Several aviation-related tenants currently operate at Flagler County Airport. These tenants provide a variety of services to the general aviation community of pilots, businesses, and aircraft owners. *Mudry Aviation* occupies a 4,900-square foot hangar with 1,400 square feet of office space, with aircraft maintenance provided by *Precision Aviation*. Flight training is also offered by *Lunsford Air*, which leases office space in the terminal building. *International Wing & Rotor* offers flight training in helicopters and fixed wing aircraft, while providing for aircraft rentals, and pilot supplies. *SPS of Palm Coast* occupies the 6,400-square foot hangar adjacent to the terminal building and offers single and multi-engine seaplane training as well as basic flight training and aircraft sales. Seaplane flight training is also offered on a single-engine floatplane, with instruction provided by *Ryan Aviation*.

As mentioned previously, the most recent addition to the list of aviation tenants is *Embry-Riddle Aeronautical University*. With completion expected in the Fall of 2004, Embry-Riddle's Commercial Airline Pilot Training program will occupy a 19,100-square foot structure that will be located north of Runway 29 and connected to the airfield via an extension of Taxiway E near the end of Taxiway A. The training center will consist of 7,000 square feet for a maintenance hangar; 7,000 square feet of classroom and office space; 2,100 square feet for use as a dispatch center; and, 3,000 square feet of administrative space. Included in the development are: 10,000-square foot paved apron to accommodate 20 aircraft tie-down positions; paved parking for 125 automobiles; and overflow grass parking for 25 automobiles. Embry-Riddle has plans for adding up to 15 based aircraft at the Airport.

Another new tenant is *The Ginn Company*, a private real estate development and management firm that recently moved its corporate headquarters to Orlando. The Ginn Company has plans to build a 10,000-square foot conventional hangar at Flagler County Airport in 2004. The new hangar will be located along Taxiway A and will accommodate a business jet.

In addition to these tenants, *Command Aircraft Recovery* operates an aircraft salvage and sales business, including aircraft recoveries for insurance companies. The *East Flagler Mosquito Control District* occupies a new hanger located at the east end of Taxiway "A," which is approximately 4,200 square feet. Other tenants include: SAS Aviation, which provides maintenance; Airborne Data, which provides aerial photography services; and Palm Coast Aviation, which provides flight training services.

### Non-Aviation Tenants

*High Jackers Restaurant* is located adjacent to the aircraft parking apron, across the parking lot from the terminal building. It is open for from 11:00AM to 10:00PM, providing lunch and dinner daily. Automobile rental is available from *Enterprise Rent-A-Car*, located in the terminal

building. *Flagler County Chamber of Commerce* and *Flagler County EMS Station* are also located on the Airport, along the entrance road.

Airport staff is currently working to finalize plans with *Cakes Across America*, another tenant that has plans to develop on site during 2004. *Cakes Across America* is a cake delivery service that is teamed with a network of the finest bakers in the United States to provide personalized cakes for customers throughout the world. Flagler County Airport and *Cakes Across America* representatives have developed plans for a call center to be located along Airport Road. Plans indicate that the call center will be constructed to 3,000 square feet initially, with future expansion possible up to 12,000 square feet.

#### Auto Parking

The primary public automobile parking area is located between the Airport administration building and High Jackers Restaurant. Approximately 25 spaces are available, with an additional 10 spaces located on the north side of the administration area. Mudry Aviation also provides approximately 15 paved automobile parking spaces.

#### Fuel Storage

Two above ground fuel storage tanks were constructed on the west end of the terminal area in 1990. One tank stores 100LL aviation gas (avgas) and the other stores Jet A fuel - each with a capacity of 12,000 gallons. Additional fuel capacity is provided with two trucks. Both trucks, each with 1,800-gallon capacity, are used for avgas. The Airport has identified the need for additional fuel capacity and has indicated that a 700 gallon fuel truck will be purchased in 2004. Three 4,000-gallon underground tanks were recently removed from the grassy area adjacent to the aircraft parking apron, just west of the Airport manager's office. The avgas fuel pump operated by Flagler County is located on the west end of the airfield near the storage tanks, and a self-fuel avgas pump is also in operation.

#### Flagler County Emergency Medical Service (EMS) Station

Flagler County recently constructed a fire and emergency medical services (EMS) station on the northern end of the Airport property. The Airport Fire/EMS Station has an engine/pumper with 1,000 gallons of water and a 1,250 gallons-per-minute pump. It should be noted that the engine is EMS equipped with Advanced Life Support equipment and has a paramedic as part of the three man crew. The station has a Woods Truck which carries 1,000 gallons of water. There are also two Medical Attack Vehicles (ambulances) assigned to the station, each with a crew of two medical staff per shift. The station operates on a 24/7 basis. A firefighting skidder is assigned to the station for fighting fires in rough terrain environments. There is also a FireFlight Helicopter stationed at the Airport with capabilities in fire suppression, aerial surveillance, and air ambulance transports. It should be noted that while the facility and equipment are located at the Airport, it is intended to serve the community at large. There is currently no equipment approved for airport fire prevention (i.e., crash truck, foam or dry chemicals) and firefighters have not been trained to provide such services.

## 2.5 AIRSPACE/APPROACHES

Approaching or departing aircraft at an airport are subject to a system of controls designed to safely separate one aircraft from another while in flight. Aircraft that fly in the United States are subject to varying degrees of control, depending on the specific airspace and meteorological conditions in which they operate. This system of Air Traffic Control (ATC) is the responsibility of the Federal Aviation Administration (FAA), which has the statutory duty to establish, operate, and maintain air traffic control facilities and procedures.

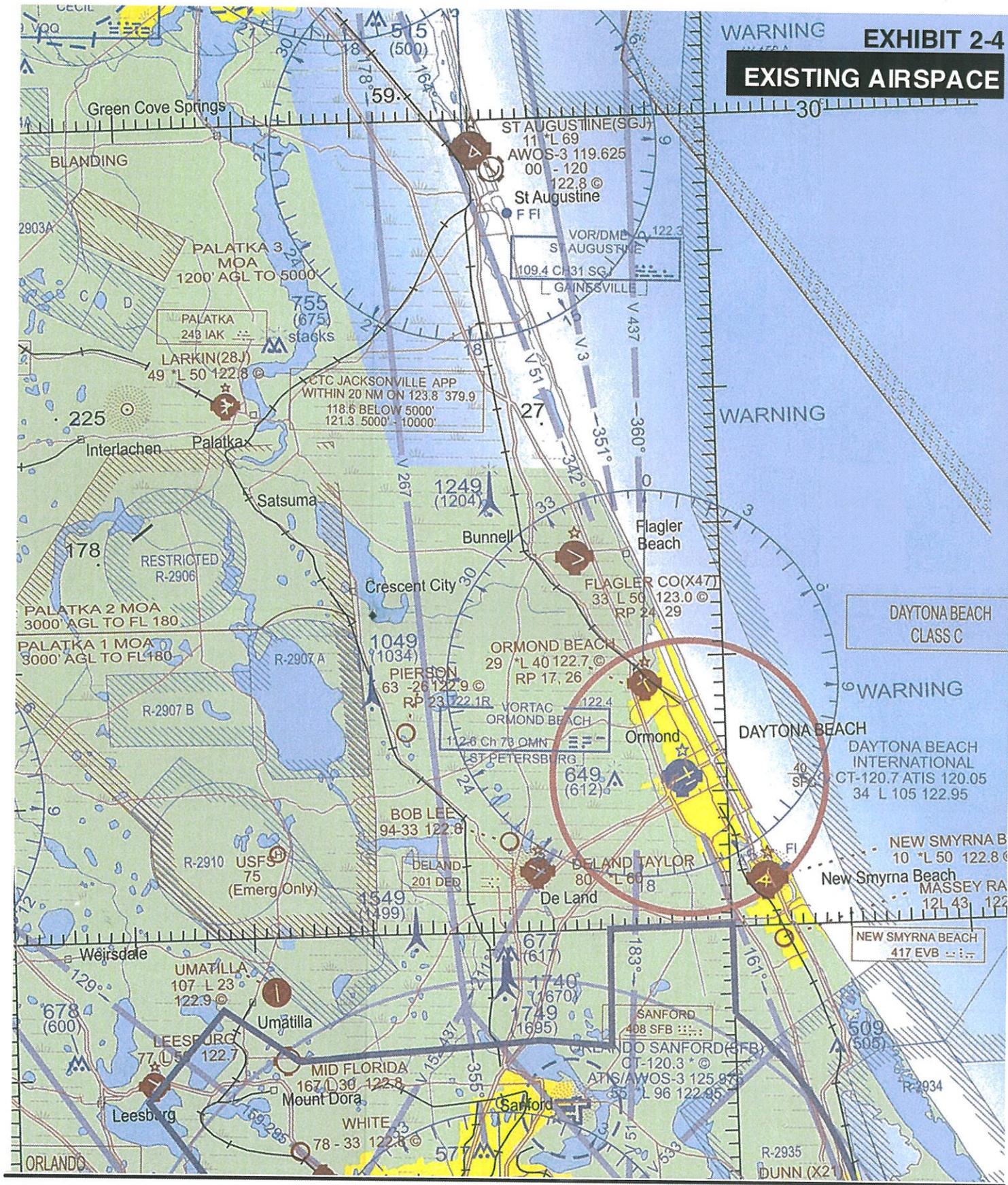
As shown in **Exhibit 2-4**, the operations at Flagler County Airport occur in uncontrolled airspace, Class G, as categorized by FAA regulations following international standards of classification. This airspace classification affects the requirements for radio communication, minimum pilot ratings, and visual flight rule (VFR)/instrument flight rule (IFR) operations. VFR operations depend primarily on the “see and be seen” principle for separation, while those operating under IFR depend upon radar detection for separation for ground controllers. IFR flights are controlled from takeoff to touchdown, while VFR flights are controlled only in the vicinity of airports. Aircraft utilizing Flagler County Airport operate under VFR conditions.

Federal Aviation Regulation (FAR) Part 77 dictates three dimensional airport imaginary surfaces, which vary depending upon runway lengths and instrument approach capabilities. The existing imaginary surfaces are shown on **Exhibit 2-5**. Objects that penetrate these surfaces, whether natural or man-made, are obstructions to Part 77 and must be studied further to determine if a hazard to air navigation exists. Evaluation of existing or proposed objects under FAR Part 77 should always consider the future development plans of an airport.

The *approach surface* is centered on the extended runway centerline and extends outward and upward from the end of the primary surface. The dimension of this surface depends upon the type of approach available or planned for each runway end. The existing approach surfaces to the four existing paved runway ends are all classified under FAR Part 77 as "other than utility with a visual approach" and require a 20:1 approach slope. The approach surfaces to water Runway 18/36 are "utility with a visual approach" and also require a 20:1 approach slope.

According to the last inspection conducted for the Airport Master Record on May 7, 2002, trees were noted to penetrate the Part 77 imaginary surfaces for all six runway ends.

**EXHIBIT 2-4  
EXISTING AIRSPACE**

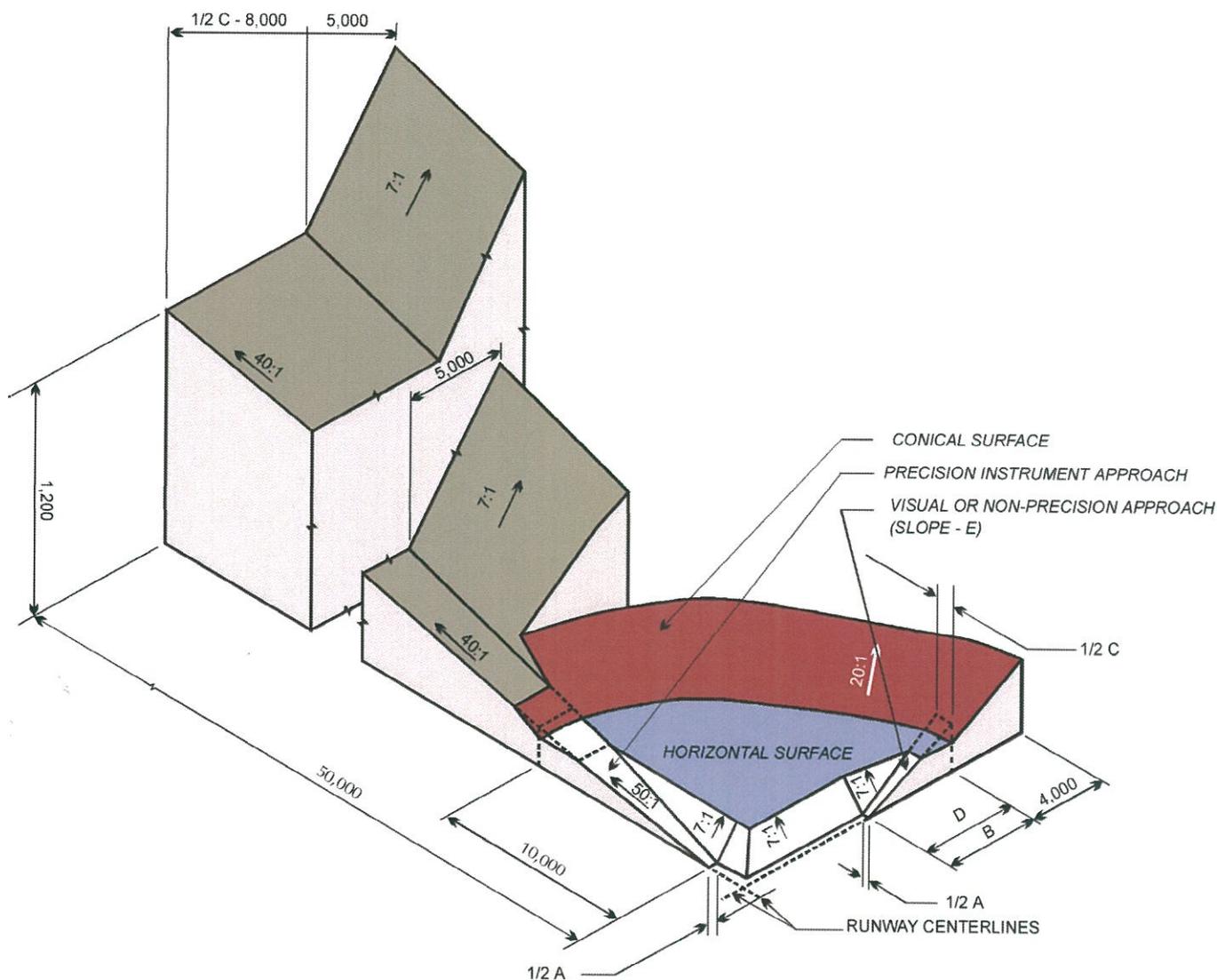


Prepared by: Wilbur Smith Associates  
 Source: Florida Department of Transportation  
 Geographic Coordinate System: North American 1983  
 Printed Date: 28 January 2004

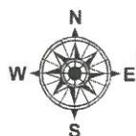
IMAGINARY SURFACES

DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B		
					C	D	
A	WIDTH OF PRIMARY SURFACE & APPROACH SURFACE AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT RUNWAY
		A	B	A	B		
						C	D
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

A - UTILITY RUNWAYS  
 B - RUNWAYS LARGER THAN UTILITY  
 C - VISIBILITY MINIMUMS GREATER THAN 1/4 MILE  
 D - VISIBILITY MINIMUMS AS LOW AS 1/4 MILE  
 \* - PF



FLAGLER COUNTY AIRPORT  
 MASTER PLAN



Prepared by: Wilbur Smith Associates  
 Source: FAA FAR PART 77,  
*Objects Affecting Navigable Airspace*, 1978  
 Geographic Coordinate System: North American 1983  
 Printed Date: 28 January 2004

## 2.6 HISTORICAL AIRPORT ACTIVITY

To understand the growth trends experienced by Flagler County Airport, a review of historical aviation activity is helpful. Historical activity is measured in terms of operations and based aircraft. An aircraft operation is defined as either the landing or takeoff of an aircraft, with each flight including at least two operations – one takeoff and one landing. Based aircraft are those that are stored at an airport facility, either in hangars or using tie-down space. It is these aircraft that are most likely to utilize the airport for operations or other related services such as fuel purchase, maintenance, or training. These figures as well as others are used as the basis for the aviation activity forecasts presented in the next chapter.

**Table 2-3** presents the historical operations and based aircraft at the Airport from 1970 through 2000. As shown, the level of based aircraft has fluctuated over the past 30 years. In 1970, the Airport reported 13 aircraft. Based aircraft continually increased to 96 by 1997; however, it decreased sharply to 70 in 1999. Since 1999, the Airport has maintained a relatively constant number of based aircraft. This fluctuation can be attributed to changes and growth in the regional economy and population increases in the County.

**TABLE 2-3  
 HISTORICAL OPERATIONS  
 AND BASED AIRCRAFT**

Year	Total Operations	Based Aircraft
1970	24,000	13
1980	67,120	39
1990	155,110	73
1991	155,110	79
1992	160,110	77
1993	160,110	77
1994	160,110	72
1995	160,110	72
1996	190,110	79
1997	190,110	96
1998	190,110	96
1999	195,645	70
2000	201,180	70
2001	202,834	69

Source: FAA-APO Terminal Area Forecast (TAF)

The number of operations at the Airport increased significantly between 1970 and 1990, when the Airport accommodated 155,110 operations. Operations have increased steadily each year since 1990, approaching 203,000 in 2001. There was a significant increase between 1995 and 1996. Numerous factors contributed to these increases in operations over this time period, not the

least of which has been the significant levels of flight training activity offered by Embry-Riddle Aeronautical University and Phoenix East Aviation.

## **2.7 EXISTING LAND USE**

The existing land use characteristics in the area surrounding the Airport have been inventoried to allow a preliminary assessment of land use/Airport compatibility. Existing land use plays a major role in the development of the Airport and the capability to expand the airfield and landside facilities. As a result of the aircraft noise that may be produced at airports, sensitive land uses such as residences, schools, and hospitals are often considered incompatible with airports. The FAA considers land uses such as industrial, commercial, retail, agricultural, and undeveloped land compatible with airports.

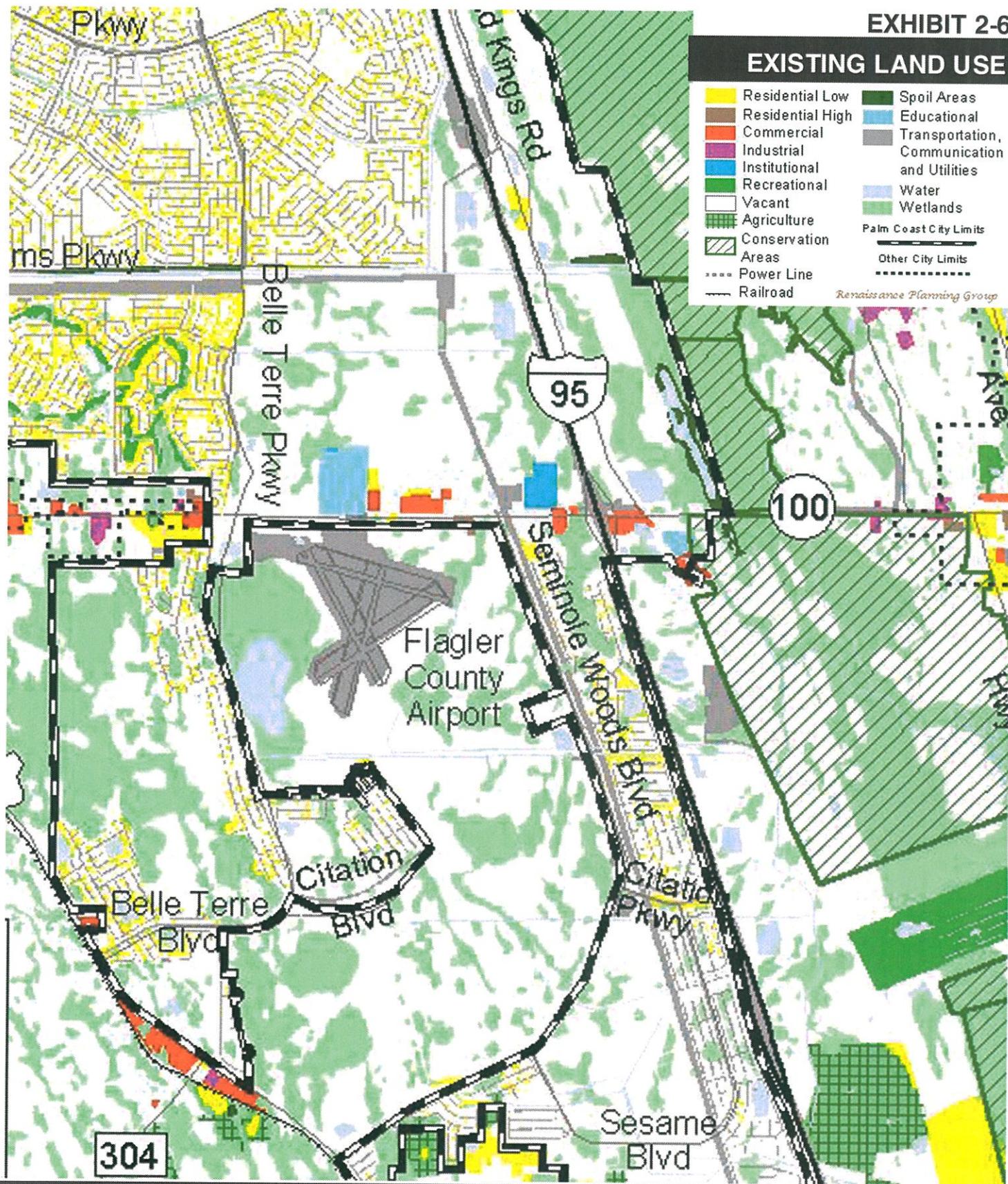
In areas immediately adjacent to the airfield, a significant amount of undeveloped land is now considered to be wetlands. Flagler County is conducting a wetlands delineation project to accurately identify and define these areas. The conclusion of the effort will result in the identification of land that is suitable for development, with specific implications for the potential construction of a business park on the south side of the Airport property.

In terms of population density and commercial activity, Flagler County exhibits two very different sets of attributes. Most of the urban development that has occurred in County over the past decade has been in the coastal area, bound by US 1 on the west, which occupies approximately 35 percent of the total land area. This area contains the incorporated cities of Flagler Beach, Beverly Beach, Marineland, and a majority of Bunnell. Also included in this area is the City of Palm Coast and Plantation Bay, where most of the residential development in Flagler County is occurring.

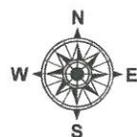
The area west of U.S. 1, comprising approximately 65 percent of County land area, is characterized by farming and timber production. The region is sparsely populated and contains no municipal governments or significant residential communities. The existing land use in the vicinity of Flagler County Airport includes a variety of land use designations, as shown on **Exhibit 2-6**.

EXISTING LAND USE

- |  |   |
|--|---|
|  Residential Low    |  Spoil Areas                                 |
|  Residential High   |  Educational                                 |
|  Commercial         |  Transportation, Communication and Utilities |
|  Industrial         |  Water                                       |
|  Institutional      |  Wetlands                                    |
|  Recreational       |  Palm Coast City Limits                      |
|  Vacant             |  Other City Limits                           |
|  Agriculture        |  Railroad                                    |
|  Conservation Areas |   |
|  Power Line         |   |
|  Railroad           |   |
- Renaissance Planning Group*



**FLAGLER COUNTY AIRPORT  
MASTER PLAN**



Prepared by: Wilbur Smith Associates  
 Source: City of Palm Coast, FL; Comprehensive Plan  
 Geographic Coordinate System: North American 1983  
 Printed Date: 28 January 2004

Flagler County Airport is bound on three sides by roadways: SR 100 to the north; Belle Terre Parkway to the west; and Seminole Woods Parkway to the east. Aside from portions of SR 100, none of these roads abut the Airport property line. Immediately adjacent to the Airport property lies predominantly undeveloped lands. On the northern boundary, across SR 100, rests Flagler Palm Coast High School and school administration facilities. On the west side of the Airport, the area of land between the Airport property and Belle Terre Parkway is primarily vacant. On the west side of Belle Terre Parkway land is zoned for single-family residential uses. Similarly, areas to the south and southeast are also zoned for residential, commercial, and agricultural uses. On the east side of the Airport, areas of land between the Airport property line and Seminole Woods Parkway are zoned for industrial uses. Areas east of Seminole Woods Parkway are zoned for single-family residential development. These lands - specifically those on the northern side of SR 100, on the west of Belle Terre Parkway, and to the east of Seminole Woods Parkway - reside almost entirely within the City of Palm Coast, and outside of County control.

Incorporated on December 31, 1999, Palm Coast is taking proactive steps to plan for the continued growth of Flagler County coastal area. The City recently completed the 2020 Comprehensive Plan, a document intended to construct a framework for future growth and development within the City. Included among many elements of study and analysis were recommendations for future land uses – some of which are located in proximity to Flagler County Airport. The following projects are either planned or under construction:

- Pinnacles Professional Park: Non-Residential Development  
Location: Southeast Corner of SR 100 and Seminole Woods Parkway
- Seminole Woods Commerce Park: Non-Residential Development  
Location: Seminole Woods Parkway
- Town Center at Palm Coast: Mixed Use Development  
Location: North of SR 100, West of I-95, and East of Belle Terre Parkway

While these projects may not portray the precise picture of the future of Palm Coast, it is realistic to expect similar developments to continue in the area for some time. These projects will likely have significant direct or indirect impacts on the activity levels at Flagler County Airport, which may lead to an expanded list of desired airfield improvements. Anticipated effects may include increases in based aircraft, increases in operations, new hangar development, introduction of additional services, as well as accelerated development of the Airport Business Park.

## **2.8 SUMMARY**

While all of the elements considered in this Chapter will affect Flagler County Airport, several items surface as the most significant in their current and future impact on the Airport. Most notable are the recent tenant additions such as Embry-Riddle Aeronautical University; The Ginn Company corporate hangar that will house one business jet; and the Cakes Across America call center. These projects are the direct result of a growing awareness in the community that Flagler County Airport plays a key role in the economic development of the County. They also point toward an elevated role for the Airport in the future, and the recognition that the County can be an active agent in the realization of such successes.

State Route 100 provides direct access to the Airport from all areas in the western portions of the County, and from the Airport to the fast-growing coastal areas in and around Palm Coast. Currently, the Florida Department of Transportation is designing a widening project for SR 100 from US 1 to I-95. This will greatly increase the capacity and safety of this corridor.

Due to the considerable sensitive wetland areas contained on Airport property, Flagler County is undertaking a thorough wetlands delineation project. Precise measurement and analysis of each of these areas is necessary in order to thoroughly understand the limitations on the future growth and development of the Airport. Based on existing knowledge and preliminary results, it is clear that any significant airside or landside improvement projects will likely include wetland mitigation efforts.

The potential development of a business park on the south side of the Airport property is of particular interest to the County, as staff and officials hope to take full advantage of the high demand for similar development in the area. To this end, the County has undertaken the conduct of a site development analysis to create a plan for the most effective use of the property. It is the County's hope to then be able to develop a marketing strategy, which will facilitate the attraction of quality commercial and office development in the area.

The data provided in this chapter forms the basis for the Master Plan Update for Flagler County Airport. Subsequent elements will draw upon this information in order to fully develop a set of appropriate alternatives for consideration by the Airport.