

## CHAPTER TWO Current Conditions

### Overview

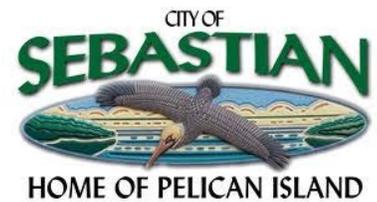
Since an airport does not operate in a stagnant environment, a periodic inventory of existing conditions including airfield and landside facilities, operations, fleet mix, etc. is required. For example, since the previous ALP Drawing Set was approved by the FAA in May 2010, several projects were completed at Sebastian Municipal Airport (X26) including construction of two large clear span hangars and site preparation for a third large hangar, both runways were remarkered from 4-22 to 5-23 and 8-26 to 10-28 due to changes in magnetic declination, a swoop pond was constructed to support skydiving operations, and the Airport is currently designing new Taxiways C, D and E. Therefore, the baseline information in this chapter serves as the foundation for future steps in the planning process.

### General Airport Conditions

X26 is located in North Indian River County on the East Coast of Florida. The airport supports a variety of general aviation activity including: corporate/business activity, aircraft sales and manufacturing, flight training, as well as recreational and sport activity including skydiving and motorized gliders. The airport currently is equipped with two intersecting runways, designated as 5-23 and 10-28. The primary runway 5-23 has a published length of 4,023 and weight bearing capacity of 22,000 lbs. single wheel. This length is adequate to support multi-engine piston and turboprop aircraft as well as lighter jet aircraft (e.g. Phenom 300) under dry, uncontaminated pavement conditions.

The airport was initially constructed by the United States Navy in 1943 for flight training during World War II. The 1,025 acre airport was initially known as Roseland Satellite Field, and support naval flight training from Naval Air Station Vero Beach and Naval Air Station Melbourne. The airport was constructed with four runways: 13-31, 18-36, 4-22 (now 5-23) and 8-26 (now 10-28) along with partial parallel taxiways as illustrated in **Exhibit 2-1**.

# Sebastian Municipal Airport Master Plan Update



## Exhibit 2-1 Roseland Satellite Field Original Construction Photograph

Source: City of Sebastian, Sebastian Municipal Airport Website, <http://www.sebastianairport.com>



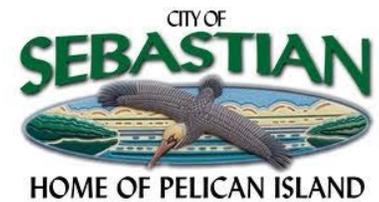
At the time, the U.S. Military paid \$1,300 for the property, and then was transferred by the War Assets Administration as part of the Surplus Property Act of 1944. On January 29, 1959, the United States transferred the property to the City of Sebastian. As part of the Federal Surplus Property Act, the airport would be used without unfair discrimination solely for aviation purposes. In any case of proven non-compliance with the terms and conditions of the deed, the property would revert back to the United States.<sup>1</sup>

In 1981, a championship public golf course, Sebastian Municipal Golf Course, and restaurant facility was constructed on 155 acres of the current airport property. The airport receives revenue from this leasehold, and has since constructed an Airport terminal building and associated apron, fuel facilities, T-hangar storage, as well as corporate style clear span storage hangars in the southwest quadrant of the airport. The fixed based operator (FBO) at X26 is currently Pilot's Paradise which has facilities located on the west side of the airfield, and Sebastian Sky Diving facilities are also located on the west northwest quadrant of the airport.

---

<sup>1</sup> Historical data obtained from Airport Website, [www.sebastianairport.org](http://www.sebastianairport.org), and Wikipedia and google scholar websites, February 2017

# Sebastian Municipal Airport Master Plan Update



According to the FAA's 5010 (Airport Master Record) database, dated January 9, 2016, the airport property consists of 620 acres. The airport elevation above mean sea level (MSL) is surveyed at 21.5 feet, and the airport reference point (ARP) is latitude 27-48-47.70000 north, estimated, and longitude 080-29-44.1000 west. The airport is attended Monday through Friday from 0800 to 1700. The City of Sebastian and Pilots Paradise provide 100LL fuel with the City also providing a self-service fuel station adjacent to the Terminal Apron.

The Sponsor has and is in the process adding infrastructure at the Airport to support interested parties and existing demand. Projects completed over the years included:

- Closing of Runway 13/31 and Re-Opening of Runway 10-28
- Reconstruction of portions of Runway 5-23 as well as pavement reseal and rejuvenation (1997)
- Installation of Low Intensity Runway Lights on Runway 5-23
- Closure of Runway 18/36 as an active runway and converting to taxiway and apron.
- Installation of new AWOS II at the airport with dual frequencies (est. 2017)
- Design and Construction of Taxiways C, D and E (est. 2016-2019), and
- West quadrant apron expansion and shade hangar installation (est. 2017-2018)

There is also been interest in developing helicopter parking facilities on the airport to support transient and potential based helicopter operations (sight-seeing and/or medical). Therefore, helicopter parking facilities near the proposed Hangar C and Taxiway C is currently being evaluated. It was recommended that an approach and departure helicopter procedures be implemented by FAA to both Runways 5-23 and 10-28. Proposed helicopter parking design would allow for wheeled taxi or hover taxi helicopter operations.

## Airport National Aeronautical Role

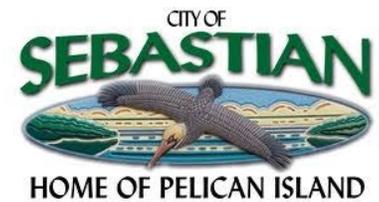
General Aviation (GA) airports are a critical component of the National Aviation System. To show the importance of these facilities, the FAA developed two studies: *General Aviation Airports: A National Asset* (2012) and *Asset 2: In-Depth Review of 497 Unclassified Airports* (2014). Both reports document the role that GA airports 'play in our society, economy and aviation system'<sup>2</sup> and defined four categories of airports: National, Regional, Local and Basic, based on their existing activity levels.

This data was then incorporated into the FAA's National Plan of Integrated Airport System (2017-2021) report to congress, which is used to identify Airport Improvement Program (AIP) funding needs over the next 5 years. To date, the NPIAS identified 3,340 public-use airports (3,332 existing and 8 proposed) that are important to the national air transportation system. The report estimates a need for

---

<sup>2</sup> FAA *General Aviation Airports, A National Asset Study*, 2012, pg. 6

# Sebastian Municipal Airport Master Plan Update



approximately \$32.5 billion in AIP-eligible airport projects to support the National Airspace System between 2017 and 2021.

According to FAA data, 88 percent (88%) of NPIAS airports are classified as non-primary and primarily serve general aviation activity. General Aviation encompasses a diverse range of commercial, governmental, and recreational uses. In other words, anything other than scheduled commercial airline operations.

Recent national airport survey data shows that 29.5 percent of general aviation aircraft operations are associated with personal or recreational use. However, 54.8 percent of national GA operations are used for non-personal use, such as flight instruction, corporate, business, aerial observation, sight-seeing, air medical and other. The remaining 15.7 percent of national GA activity, according to the 2017 NPIAS is associated with on-demand Title 14 CFR Part 135 operations, such as air taxi, air tours and Part 135 medical operations.

Since the majority of civilian pilots are now trained through civilian programs rather than the military, and there continues to be high worldwide demand for pilots, instructional GA activity represents the second largest GA use category. Pilot training is best conducted away from commercial service airports to preserve commercial airport capacity and safety between differing types and approach speed of aircraft. Therefore, instructional flight training will remain focused on general aviation airports.

X26 is classified as a public use-local airport within the FAA system. Local use airports “supplement local communities by providing access primarily to intrastate and some interstate markets.”<sup>3</sup> Most of the operations are represented by piston engine aircraft. FAA criteria used to define a local airports is: 10+ instrument operations and 15+ based aircraft; or 2500+ passenger enplanements. According to 2017-2021 NPIAS report, X26 has 36 based aircraft and will require \$5,513,889 in AIP funding over the next 5 years.

## Treasure Coast Continuing Florida Aviation System Plan Process (CFASPP) Region

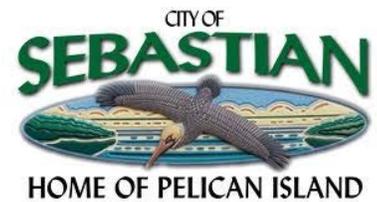
The Florida Department of Transportation Treasure Coast CFASPP Region (Region 8) encompasses Indian River, Martin, Okeechobee, St. Lucie counties. The region continues to see growth from population going north from the Miami-Dade and Palm Beach area as well as from Flagler and Volusia Counties. According to the Florida Aviation System Plan 2012 population within the Treasure Coast Region may be upwards to 1 million people by 2040.

Aviation activity remains fairly strong due to corporate/business activity as well as extensive flight training activity associated with Flight Safety International and Paris Air at Vero Beach Regional Airport, Aviator College at Treasure Coast International Airport, and Treasure Coast Flight Training at Witham

---

<sup>3</sup> Federal Aviation Administration, General Aviation Asset Study, Vol. 1, 2012

# Sebastian Municipal Airport Master Plan Update



Field. In addition, several aircraft manufacturers are based in the region including Piper Aircraft, Velocity, Inc. and LoPresti Aviation. A breakdown of historical activity associated with each of the Public Airports in the Treasure Coast region is illustrated in **Table 2-1**.

TABLE 2-1 TREASURE COAST REGIONAL AIRPORTS 2014 ACTIVITY				
FACILITY	GA BASED AIRCRAFT	PERCENTAGE OF REGIONAL GA AIRCRAFT	GA OPERATIONS	PERCENTAGE OF REGIONAL GA OPERATIONS
Indiantown Airport	59	7.54%	5,000	0.87%
New Hibiscus Airpark	13	1.66%	22,000	3.82%
Okeechobee County Airport	26	3.32%	50,000	8.68%
Sebastian Municipal Airport*	40	5.11%	37,240	6.47%
Treasure Coast International Airport	214	27.33%	157,308	27.32%
Vero Beach Regional Airport	231	29.50%	222,128	38.58%
Witham Field	200	25.54%	82,094	14.26%
TOTAL	783		575,770	
<i>*Note: Sebastian Based Aircraft and Operations were taken from the 2016 TAF historical data</i>				
<i>Sources: Florida Aviation System Plan, 2015-2040 and FAA Terminal Area Forecasts (TAF), 2016</i>				

Sebastian Airport is located on the far Northeast corner of the Treasure Coast region. As a result, it attracts activity from FDOT identified Treasure Coast airports as well as the East Central Florida CFASPP Region. Since the East Coast of Florida supports extensive aeronautical and aerospace research as well as flight training related to the Kennedy Space Center, Florida Institute of Technology (FIT) and Embry-Riddle Aeronautical University (ERAU), the Airport can and does draw flight activity from both CFASPP regions.

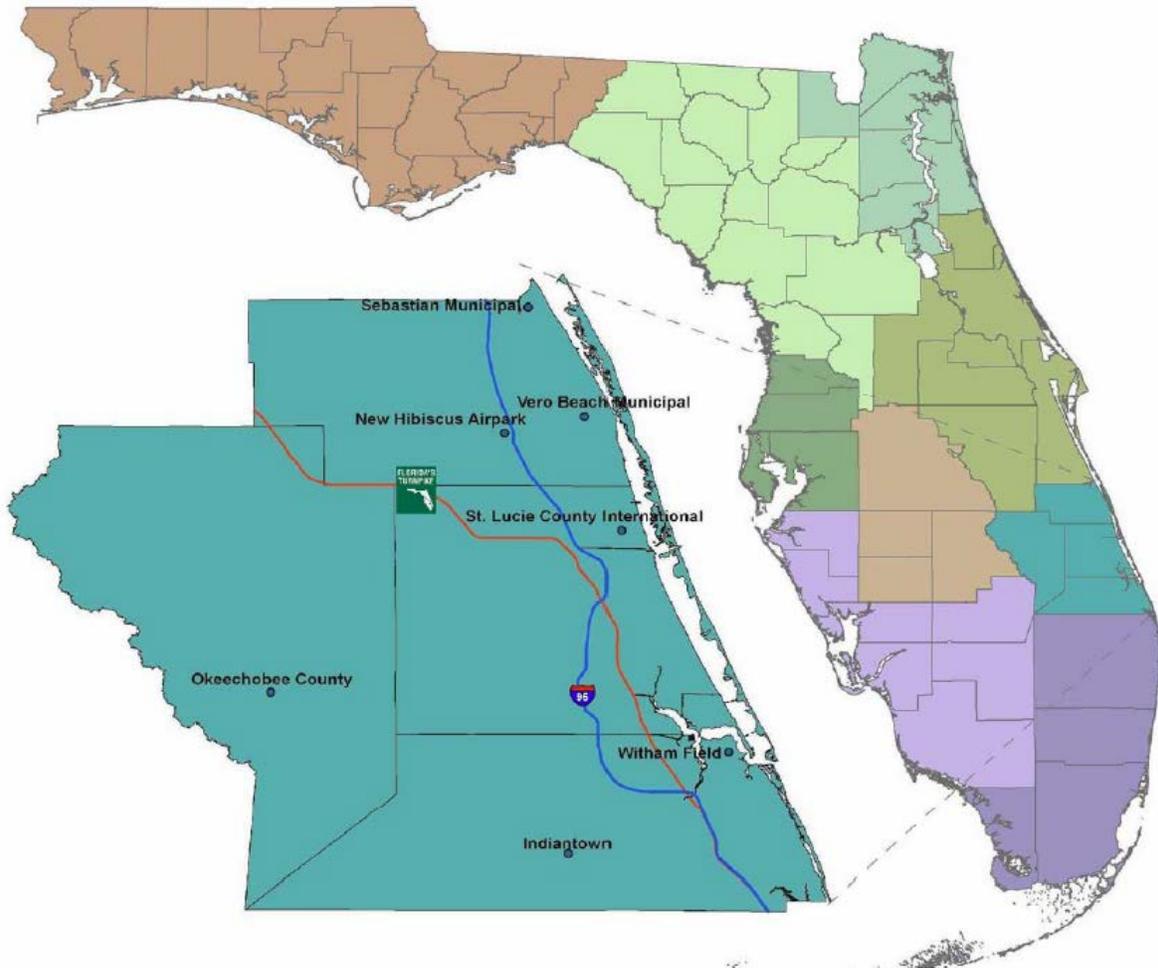
# Sebastian Municipal Airport Master Plan Update



Figure 2-1

Treasure Coast CFASPP Region

Source: 2012 Florida Aviation System Plan, Florida Department of Transportation



# Sebastian Municipal Airport Master Plan Update

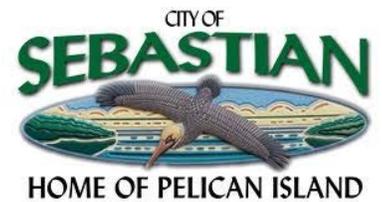
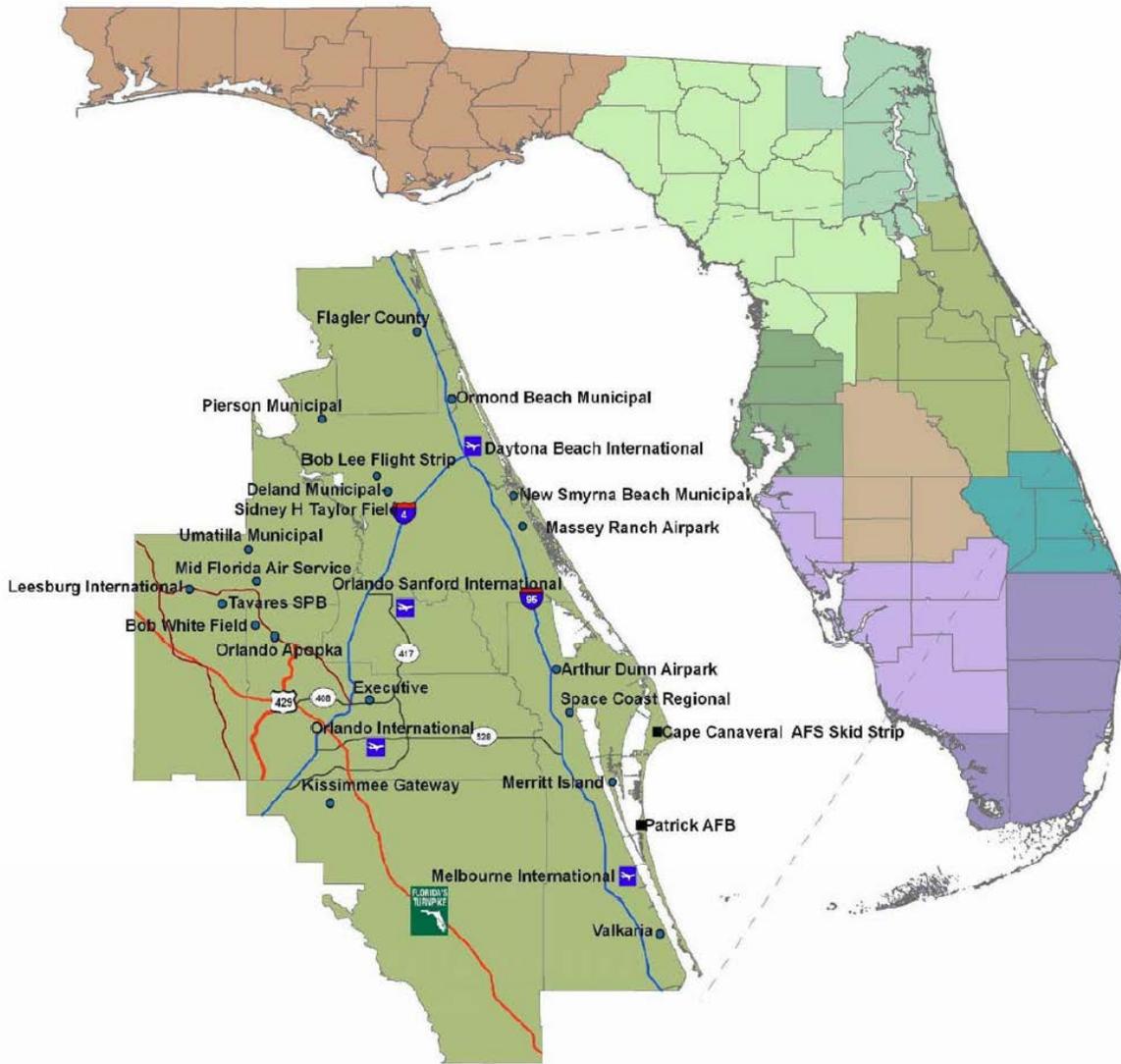


Figure 2-2

## East Central CFASPP Region

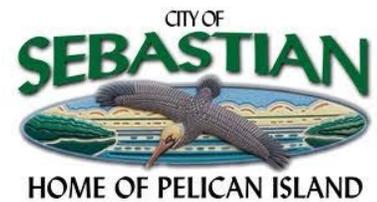
Source: 2012 Florida Aviation System Plan, Florida Department of Transportation



## Economic Benefit to the Community

The Florida Department of Transportation (FDOT) in 2014 completed a Statewide Economic Impact Study in addition to individual airport summary reports to illustrate both the direct, indirect and induced impacts of the local airports to local and regional economies. Economic benefits identified include total

# Sebastian Municipal Airport Master Plan Update



economic activity, employment and earnings. Since the Statewide Economic Impact Study is tied to the Florida Aviation System Plan, new data may become available during preparation of this plan. At that time, the new data will also be provided.

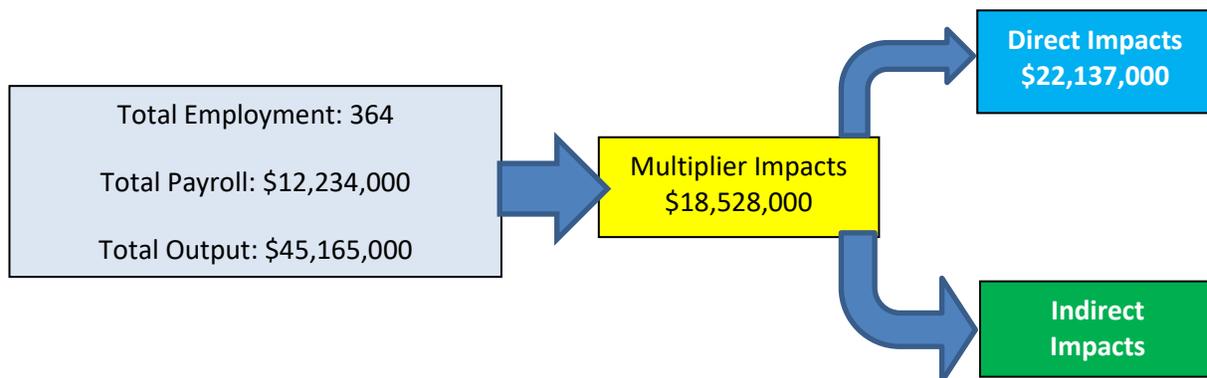
As noted earlier, X26 is home to two aircraft manufacturers, Velocity Inc. and LoPresti Aviation. The airport also supports several other businesses including National Aperture, Sebastian Aero/Pilot’s Paradise, Skydive Sebastian, Sheltair, Sebastian Municipal Golf Course and All About Storage. This is in addition to providing on-site aircraft storage for personal and recreational aircraft. These tenants provide varying revenue streams which all contribute to the Airport’s local and regional impact.

Direct economic impact for the airport is based upon employment, payroll and financial output including any construction projects associated with the Airport and its tenants. Indirect impacts were determined based upon likely spending from visitors who arrive in the area via general aviation aircraft. According to FDOT’s 2014 Economic Impact Analysis, direct economic impacts from X26 are \$22,137,000 and indirect impacts are \$4,500,000.

Figure 2-3

## Airport Economic Impacts

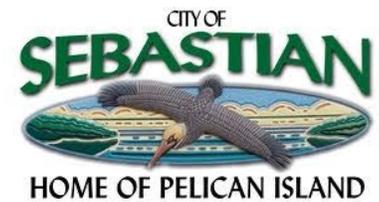
Source: Florida Department of Transportation Impact Study



## Current Airport Activity

Throughout this master plan process, the project team met and spoke with users and current tenants to identify their current facilities and needs for the future. Initial inventory meetings were held in November and December 2016 with management of Skydive Sebastian, LoPresti Aviation, National Aperture, and Sebastian Aero/Pilot’s Paradise. Calls to Velocity, Inc., Sheltair, Mr. Ken Mischler and All

# Sebastian Municipal Airport Master Plan Update



About Storage were never returned. Therefore, a general meeting with current tenants and users to obtain their input will be scheduled on the same day as the Technical Advisory Committee, City Council or other meetings at the Airport.

Approximately 45 percent of the airport's based aircraft are owned and operated by local businesses. The remainder of the traffic is related to recreational including some sight-seeing and flight training operations associated with Florida Institute of Technology (FIT), Paris Air and Flight Safety International students. An overview of activity as well as information obtained from the late 2016 meetings are provided in the following sections.

## Skydive Sebastian

Skydive Sebastian is one of the Airports major tenants. Their facilities are located on approximately 7 acres in the west quadrant of the airport. Buildings include their main hangar, a large team building including bathroom and shower facilities as well as an on-site restaurant and Tiki Hut. Contiguous to the parking lot adjacent to Airport Road West is a wooded area used for Skydive Sebastian users for camping (see **Exhibits 2-2 and 2-3**).

During the project team's initial discussion with this tenant, there is strong interest in expanding both their airside and landside facilities including adding another building. Further, with the City adding the Swoop Pond near the jump zone north of Runway 10-28, the business continues to see an increase in skydiving demand especially from Europe. In 2016, the Airport supported a skydiving event at the airport. This type of activity based upon our discussion with the operator is expected to continue to grow. Currently, skydiving activity occurs seven days a week throughout the year.

# Sebastian Municipal Airport Master Plan Update

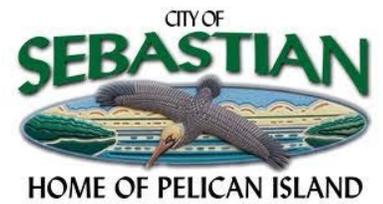


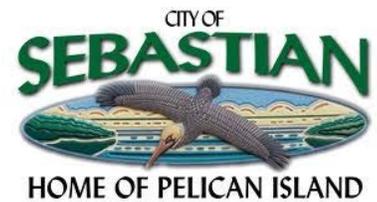
Exhibit 2-2

Skydive Sebastian Camping Area

Source: TKDA December 2016



# Sebastian Municipal Airport Master Plan Update



## Exhibit 2-3

### Skydive Sebastian

Source: Google Earth Aerial Image, Europa Technologies, 2016

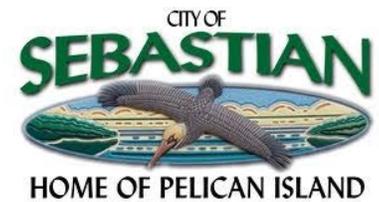


### On-site Aviation Businesses

In addition to Skydive Sebastian, other major aviation tenants include LoPresti Aviation, Velocity Inc, Sebastian Aero/Pilot's Paradise and Sheltair. LoPresti Aviation, a manufacturer of airport accessories, moved to X26 in 2009. They currently lease a 'wing' in the Airport Administration/Terminal building as well as lease Hangar A, a 15,000 sf hangar with offices built in 2009. LoPresti has a 15 year lease with the airport for that facility.

Velocity Inc. is an aircraft manufacturer of single and twin engine "sport" aircraft. Velocity currently has five models of aircraft available, all designed with a pusher propeller system. According to the company, the aircraft have a range of 1,000 NM with four passengers and baggage and top speed of 200 knots. Velocity has seen strong growth, and currently leases three facilities on the airport. Their manufacturing hangar and other facilities are located on the west ramp, and they recently leased corporate hangar B, on the southeast side of the field. This facility includes both hangar and office space and is approximately 12,000 sf. It is used as the showroom and administrative offices for the Velocity Inc. One of the issues mentioned during our discussion with airport management was that there is no internal road; therefore, Velocity personnel tend to drive across the runways and taxiways between the west and southeast facilities. However, the Airport and the City rectified this issue by constructing an interior milled road to help eliminate runway crossing.

# Sebastian Municipal Airport Master Plan Update



Sebastian Aero Services is under new management under the name of Pilot's Paradise. Pilot's Paradise is designated as the airport's fixed based operator (FBO). This company provides pilot facilities, fuel, aircraft maintenance, flight instruction, aircraft rentals and charter flights. Their office, maintenance and fuel facilities are located off of Airport Drive West and Taxiway A in the west airport quadrant north of Runway 10 and Taxiway B. During initial inventory discussion, management was potentially interested in expanding their facilities and negotiating a new lease agreement with the Airport.

Sheltair does not have office space at the Airport but handles the lease administration of the two, 20-unit t-hangars located on the southwest apron area. Initial phone discussions with this tenant were limited. However, according to airport management, there is demand for aircraft storage facilities but at a lower fee than what is currently charged for the t-hangars bays. As part of this master plan, the project team will work with the client to identify alternative storage options, costs and locations to support this demand.

Another business tenant at X26 is Mr. Ken Mishler. Mr. Mishler currently leases two gray metal hangars in the Northwest quadrant of the airport, north of Skydive Sebastian's facilities. The two buildings are approximately 3,000 sf and are currently subleased to two individuals.

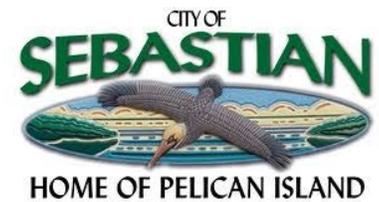
## Flight Training

X26's location to both Melbourne International and Vero Beach Regional Airports makes it a prime location for flight training. Students from FIT in Melbourne, Paris Air and Flight Safety International, both from VRB, regularly use the airport to practice training maneuvers including touch and go procedures. Because of the extensive low altitude flight training, the Airport has implemented voluntary noise abatement procedures and does not allow touch and go operations on Sundays. An issue of the extensive flight training is that students use the facilities but do not purchase any fuel or provide any other economic benefits to the community. In addition, other airport users have mentioned that during peak operating hours, it may be difficult to operate at X26 because of the extensive flight training operations. During the project team's initial air traffic inventory in January 2017, approximately 50 percent of daily operations were attributed to flight training activity. The impacts of flight training on the airport's facilities as well as mitigation options will be discussed in later sections of the report.

## Non-Aviation

Non-aviation businesses that are currently based at the airport include National Aperture Inc, All About Storage, as well as the Sebastian Municipal Golf Course facilities. National Aperture Inc. leases space in one of the "wings" of the airport administration building. They are manufacturers of precision micro-apertures, pinholes, slits, bar patterns and custom configurations used in manufacturing for applications such as spatial filtering, gas/liquid flow control, spectrometry, astronomy, and general optics. They specialize in micro-miniature pinholes and slits.

# Sebastian Municipal Airport Master Plan Update



The project team met with the owners and management of National Aperture to determine the existing and future needs. They noted that their facilities are adequate to fit their needs and that they hope that the airport doesn't grow too large. Some of their customers fly to the airport because of the Florida Atmosphere and usually spend a few days in town when here on business.

All About Storage is a franchise business that rents property between Roseland Road and Airport Drive West on the southwest side of the airport. These facilities have no direct access to the airport operating area and are outside the security fence. This facility provides storage for large trucks, recreational vehicles, boats and trailers as well as other large vehicles.

Sebastian Municipal Golf Course is an 18-hole championship golf course located on 155 acres of airport property primarily in the south quadrant of the airport. Access to the golf course and facilities is off of Airport Drive East and East Airport Road. The course includes a pro shop as well as Eagle Nest Restaurant. Rates fluctuate depending upon the season, but the highest rate is \$50.00 for all 18-holes including a cart. The golf course operates seven days per week until 5:30 and 6:00 pm EST. The majority of the course is south of Runway 5-23. However, portions of the course wrap around the approach ends of Runway 28 and 23. The Golf Course has a long-term lease for this property.

## Historical Aviation Activity

Historical activity as reported to the FAA through the Terminal Area Forecasts and Airport Master Record 5010 for the Airport were different than operational and based aircraft recorded in the most recent Florida Aviation System Plan (FASP) and in the Florida Aviation Database (FAD). Airport management also provided a list of based aircraft for 2016 which was significantly higher than that reported in either the FAA or FDOT databases.

Because of these discrepancies, on-site inventory of week-long operations were performed in early January 2017 and again in April 2017. During the January inventory, flight training associated with Paris Air and Flight Safety, both based at Vero Beach Regional Airport, was recorded as the majority of operations. Skydive Sebastian performed at least 6 operations daily during the week, approximately every two hours, but their operations increased to every half hour on Saturday. In discussions with Ms. Owens, Skydive Sebastian Management, January is still the slow season. Operations will begin to significantly increase starting in late February through April.

Therefore, based upon operations observed, data provided by management, as well as discussions with existing tenants about their operations, baseline data was established for the year 2016. Calendar year (CY) 2016 was established as the baseline for future activity forecasts at X26, which is provided in Chapter 3, Aviation Activity Forecasts, of this document.

# Sebastian Municipal Airport Master Plan Update

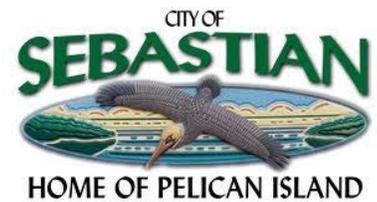


TABLE 2-2 HISTORICAL BASED AIRCRAFT AND OPERATIONS		
YEAR	OPERATIONS	BASED AIRCRAFT
2012	38,631	42
2013	39,346	42
2014	40,073	40
2015	40,815	38
2016	41,570	62
<b>2017</b>	<b>46,477</b>	<b>78</b>

*Notes: \*2017 data was based upon on-site inventory of based aircraft and annual operations  
Sources: 2012-2015 data was obtained from the Florida Aviation System Database, FAA Terminal Area Forecasts, Airport Master Record, and TKDA 2017*

An inventory of current based aircraft at X26 during Spring 2017 revealed:

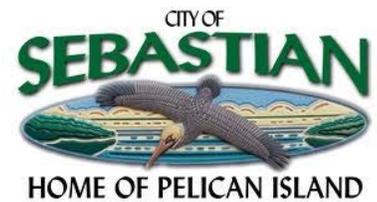
- 55 Single engine piston,
- 4 Multi-engine piston
- 3 Turboprop
- 0 Jets
- 0 Rotorcraft (helicopters)
- 10 Experimental
- 6 Light Sport and
- 0 other aircraft are currently based at X26

Discussions with the Sponsor, tenants and other users showed a high need for additional aircraft storage facilities including conventional, corporate, T-Hangar and shade hangar facilities. Therefore, as part of the master plan process, locations for expanded aircraft storage to support current and anticipated demand were evaluated. One option includes expanding the west apron area to support 14 aircraft shade hangars. Since design for taxiways C, D and E are currently ongoing with plans to construct in FY 2018 and 2019, possible apron and other short term pavement needs to support additional aircraft storage should be included in the taxiway grants in order to mitigate impacts to the environment and overall project costs.

## Weather Data

The local climate of an airport is important because it impacts aircraft takeoff and landing performance. An analysis of historical wind data helps determine if existing runways provide adequate coverage for aircraft activity (defined as 95 percent coverage), and is also used to establish preferred alignments for

# Sebastian Municipal Airport Master Plan Update



new runways. Temperature, airport elevation (21.5 feet AMSL at X26), and runway pavement conditions affect the length required for aircraft takeoff and landing. In general, as temperature and elevation increase, aircraft require additional runway length to operate.

According to National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC), the hottest month is typically July and the coldest is typically January as illustrated in **Table 2-3**.

TABLE 2-3 X26 AVERAGE HIGH AND LOW TEMPERATURES 2005-2010 (LAST YEAR OF DATA)			
MONTH	AV HIGH TEMP (°F)	AV LOW TEMP (°F)	MONTHLY AVERAGE (°F)
<b>January</b>	71.8	<b>51.3</b>	61.6
February	73.7	54	63.8
March	76.7	57.7	67.2
April	80.2	61.1	70.7
May	84.4	67.3	75.9
June	87.8	72.1	79.9
<b>July</b>	<b>90.1</b>	73.6	81.9
August	89.1	73.7	81.4
September	87.6	73.2	80.4
October	83.8	68.2	76
November	78.5	61.2	69.8
December	73.7	54.9	64.3
Average	81.4	64.0	72.7

*Source: Vero Beach Weather Station GHCND:USC00089219, NCDC Climate Data Online, 2005-2010\* (last date available)*

Wind data was calculated for X26 using the ASOS from Vero Beach Regional Airport. Although X26 is equipped with a SuperAWOS, it was not transmitting or recording information. Since the airport supports aircraft less than 12,500 lbs. and supports extensive flight training operations, a 10.5 knot and 13 knot crosswind conditions were modeled based upon historical data. **Table 2-4** illustrates our findings.

# Sebastian Municipal Airport Master Plan Update

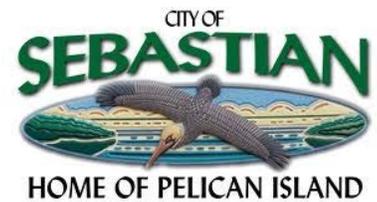


TABLE 2-4 WIND COVERAGE			
RUNWAY	CROSSWIND COMPONENTS		CONDITIONS
	10.5 KNOT	13 KNOT	
5-23	90.27%	95%	All Weather
10-28	90%	91%	All Weather
Both Runways	97.02%	98.01%	All Weather

Sources: VRB ASOS Data 2007-2016, NOAA/NCDC database and TKDA 2017

## Existing Airfield Conditions

This section presents an overview of X26’s existing airfield components including the Airport Reference Code (ARC), runway and taxiway system, surrounding airspace, and relevant support equipment. Specific design standard features, such as Runway Protection Zones (RPZ) and Runway Safety Areas (RSA), are described during the facility requirements analysis.

### Airport Reference Code (ARC)

Airside facilities are designed to support the movement and operation of the most demanding (critical) aircraft which meets the substantial use threshold of 500 annual operations. **FAA Advisory Circular (AC) 150/5300-13, Airport Design**, determines the ARC based upon operational and physical attributes of the critical design aircraft. The ARC consists of two components: aircraft approach category (i.e., approach speed in knots), which is designated by a letter and airplane design group (i.e., wingspan and tail height in feet), which is designated as a Roman numeral. The ranges for each category are provided in **Tables 2-5 and 2-6**.

TABLE 2-5 AIRCRAFT APPROACH CATEGORIES	
GROUP CATEGORY	APPROACH SPEED (IN KNOTS)*
A	less than 91 knots
B	91 knots or greater but less than 121 knots
C	121 knots or greater but less than 141 knots
D	141 knots or greater but less than 166 knots
E	166 knots or greater

Source: AC 150/5300-13a, Airport Design.  
\*Based upon 1.3 times aircraft stall speed in landing configuration at maximum landing weight.

# Sebastian Municipal Airport Master Plan Update

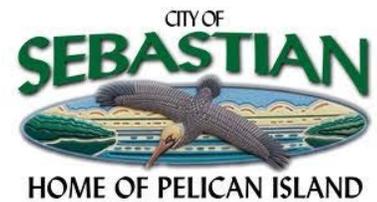


TABLE 2-6 AIRPLANE DESIGN GROUP		
GROUP NUMBER	TAIL HEIGHT (FT)	WINGSPAN (FT)
I	<20	< 49
II	20-<30	49 ≤ 79
III	30-<45	79 ≤ 118
IV	45-<60	118 ≤ 171
V	60-<66	171 ≤ 214
VI	66- <80	214 ≤ 262

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

The conditionally approved 2010 Airport Layout Plan Update denoted that the current critical aircraft, most demanding aircraft regularly using the runway, for Runway 5-23 was the DH6-300, Twin Otter Aircraft, which is owned and operated by Skydive Sebastian. The Twin Otter has an aircraft reference code (ARC) of A-II, based upon wingspan and approach speed.

The established critical aircraft for Runway 10-28 was the King Air B-100 with an ARC of B-I small (i.e. supports aircraft less than or equal to 12,500 lbs.). The Airport Reference Code along with critical aircraft operating requirements and new taxiway design group criteria drives specific facility requirement dimensions at an airport. Although some facilities may be designed to support smaller or larger aircraft, the airfield itself is designed to support the most demanding operations. For this reason, the current airport reference code and airfield design criteria for X26 is B-II, based upon the combination of the most demanding characteristics of the critical aircraft operating at the airport.

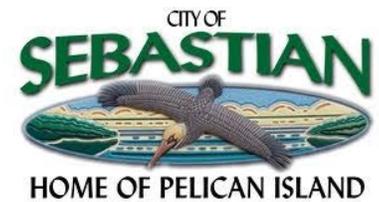
A complete discussion of existing and critical aircraft demand is provided in **Chapter 3, Aviation Activity Forecasts**, and determination of facility needs to support anticipated demand is provided in **Chapter 4, Airport Demand Capacity and Facility Needs**. The information provided these chapters in addition to the existing airport inventory data is used to create airport alternatives and recommended short and long-term airport development.

## Existing Airfield System

### Runways and Taxiways

When originally constructed, X26 included 4 runways. Today it is equipped with two intersecting, asphalt runways designated as 5-23 and 10-28. Runway 5-23 is 75 feet wide and 4,023 feet long. It has a single wheel weight bearing capacity of 22,000 lbs., and the runway pavement was rehabilitated in 2009. The runway is equipped with low intensity runway lights, two-light precision approach path indicators (PAPIs) on the left side of both Runway 5 and 23 as well as is equipped with a GPS/RNAV approach. Because of the addition of the GPS/RNAV approach, the runway markings are shown as non-precision.

# Sebastian Municipal Airport Master Plan Update



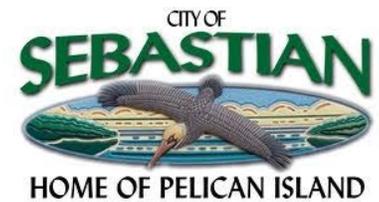
Although the runway is not currently equipped with a parallel taxiway, plans are on-going to add a partial parallel taxiway on the Northeast end of Runway 23 as well as a full parallel taxiway on the north side of Runway 5-23.

Runway 10-28 is an asphalt runway with 3,199' x 75' dimensions. The runway strength is unpublished; therefore a single wheel minimum strength of 12,500 lbs. was estimated. Although depending upon when the last rehabilitation occurred, it could exceed that weight limit. The runway is not equipped with any edge lighting and is marked for a visual approach only (i.e. basic markings). Both runway ends are equipped on the left side with 2-light precision approach path indicator systems (PAPIs). However, it is important to note that unlike Runway 5-23, the PAPIs do not operate at night on Runway 10-28.

Runway 10-28 is equipped with a parallel taxiway designated Taxiway B, which is approximately 35 feet wide and a centerline separation of 240 feet. The taxiway is marked with hold lines and is equipped with a paved run-up area adjacent to Runway 28. Pavement is in good shape, and the runway was numbers were remarked to comply with new magnetic declination data.

Taxiway A is the edge taxiway that runs along the apron area on the west side of the airfield. It provides access to and from Runway 5 and Runway 10. The west apron area including Taxiway A originally was a runway that has now been converted to apron and a taxiway to support GA demand. This taxiway is approximately 35 feet wide and spans the entire west side of the airfield, approximately 3,600 feet in length. Near the intersection of Taxiways B and A on the Runway 10 end, there is another paved run-up pad. Taxiway A is also equipped with two taxiway connectors to Runway 5 as illustrated in **Exhibit 2-4**. Another paved run-up pad was constructed at the end of Taxiway A, and it is equipped with a magnetic compass rose painted on the pavement.

# Sebastian Municipal Airport Master Plan Update



## Exhibit 2-4

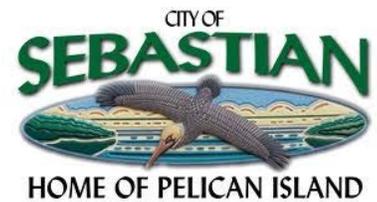
### Taxiway A Connectors and Compass Rose

Source: Google Earth Aerial Image, Europa Technologies, 2016



Paved portions of other closed runways are used to provide taxiway access to the Airport Administration apron facilities as well as new large corporate hangar facilities on the southeast side of the airfield. As noted in **Exhibit 2-5**, Skydive Sebastian initially wanted to rent proposed Hangar C to support their operations and aircraft. However, due to an accident that reduced their aircraft fleet from two twin otter aircraft to one, they chose to not pursue. The site work has already been completed for this new 15,000 SF hangar, and the airport and sponsor are looking for perspective tenants to lease this facility.

# Sebastian Municipal Airport Master Plan Update



## Exhibit 2-5

### Corporate Hangar Area – Southeast Airport Quadrant

Source: Google Earth Aerial Image, Europa Technologies, 2016



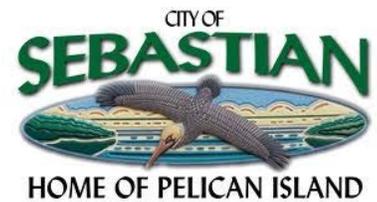
In addition to runways, taxiways and apron facilities, X26 has also designated an on-airport landing area or parachute drop zone on the airport. The drop zone is located north of Taxiway B and east of Taxiway A and west of the swoop pond as shown by the blue circle in **Exhibit 2-3**, which is also used for parachute activities. According to DOT/FAA/AR-11/30, *Development of Criteria for Parachute Landing Areas on Airports*, specific recommendations are provided for installing a jump zone on an airport. The parachute landing areas (PLA's) must be hazard free. Hazards include: telephone and power lines, water features, trees, buildings, fencing, paved surfaces (ramps/aprons, taxiways and runways), aircraft tie-down areas, and equipment necessary for airport operations. The size of the PLA is dependent upon the parachutists experience and type of activity.

### Parachute Landing Area

According to Skydive Sebastian Management, all sky diving personnel must provide appropriate credentials before the company allows them to jump or perform tandem jumps. Tandem PLA dimensions and experienced/certified PLA dimensional recommendations are listed as follows:

- Tandem PLAs and requires  $(50 \text{ meter radius from hazards})^2 \times \pi \approx 84,500 \text{ SF}$ 
  - 292- by 292-ft square

# Sebastian Municipal Airport Master Plan Update



- 328-ft-diameter circle
- 340- by 250-ft rectangle
- Any other shape with an area equaling 84,500 sq. ft.
- All Other Activity PLAs and requires  $((12\text{-m radius from hazards})^2 \times \pi \approx 5000 \text{ sq. ft.})$ .
  - 70- by 70-ft square
  - 80-ft-diameter circle
  - 85- by 60-ft rectangle
  - Any other shape with an area equaling 5000 sq. ft.

The edge of the PLA must be located at a minimum of 40 feet from any hazard. PLAs should not be located within a runway safety area or object free areas.

Existing airfield facilities and published dimensional data is summarized in **Table 2-7**.

TABLE 2-7 EXISTING RUNWAY AND TAXIWAY SYSTEM				
PAVEMENT	EST. DIMENSIONS	CONDITION	LIGHTING	NOTES
Runway 5	El. 18.4' AMSL	Good	PAPI-2L	Nonprecision Markings; Runway Usage 55%
Runway 23	El. 21.5' AMSL	Good	PAPI-2L	Nonprecision Markings; Runway Usage 10%
Runway 10	El. 18.3' AMSL	Good	PAPI-2L	Basic Markings; Runway Usage 20%
Runway 28	El. 20.8' AMSL	Good	PAPI-2L	Basic Markings; Runway Usage 15%
Runway 5-23	4,023' x 75'	Good	LIRL	ARC B-II, Strength: 22 SW
Runway 10-28	3,199 x 75'	Good	None	ARC B-I (light aircraft only), Est. Strength: 12.5 SW
Taxiway A	~3600' x 45'	Good and Fair	None	Runs along the apron edge of the west quadrant. Provides access to Runway 5 and Runway 10. Note former runway.
Taxiway B	~4,000' x 35'	Good	None*	Parallel Taxiway to Runway 10-28
Taxiway C	In Design	NA	Reflectors	Planned partial parallel to Runway 5-23
Taxiway D	In Design	NA	Reflectors	Planned parallel taxiway to Runway 5-23
Taxiway E	In Design	NA	Reflectors	Connector taxiway Runway 23 and 28
Taxilane	~540' x 34'	Good	None	Taxilane to Terminal/Administration Area
Taxilane	~900' x 34'	Good	None	Taxilane to southeast corporate facilities
Jump Zone		Good	None	Grassy area north of Taxiway B and east of Taxiway A

*\*Note: Taxiway lighting is not required for airports with non-lighted or low intensity runway lights (LIRLs)*  
*Sources: Airport Management, AIRNAV.com Website, 2016 Airport Master Record and TKDA 2017*

# Sebastian Municipal Airport Master Plan Update

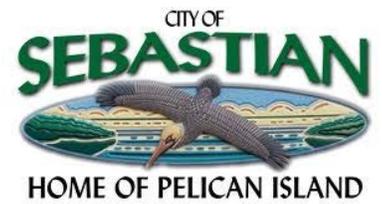


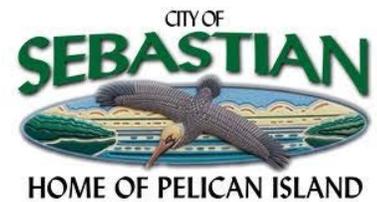
Exhibit 2-6

Existing Airfield Facilities

Source: Google Earth Aerial Image, Europa Technologies, 2016



# Sebastian Municipal Airport Master Plan Update



## Instrument Approaches and Support Equipment

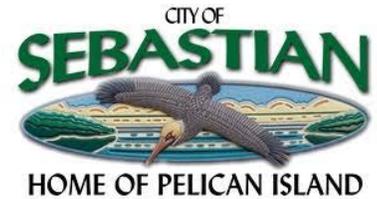
X26 traditionally supports smaller single engine piston and multi-engine piston and turbine engine aircraft. The airport does support some limited rotorcraft transient traffic, but to date, no rotorcraft are based at X26. Only Runways 5 and 23 are equipped with GPS approaches, which allows lower approach minima and decision altitude requirements. Runway 5-23 is the only runway equipped with edge lighting in addition to 2-light PAPIs which assist pilots in discerning the runway threshold during low light conditions. Although approach minimums are provided for AAC C type aircraft, it is unlikely an aircraft with this higher approach speed will use a 4,000 foot runway. **Table 2-8** outlines the instrument, missed approach and visual approach requirements for Runways 5-23 and 10-28.

TABLE 2-8 EXISTING APPROACH CHARACTERISTICS				
RUNWAY END	APPROACH	TYPE	MINIMUMS (AAC A & B AIRCRAFT)	NOTES
5	GPS/RNAV	LNAV MDA	400-1	Lateral Navigation with minimum 1-mile visibility and minimum decision altitude of 400 feet
5	GPS/RNAV	LP MDA	380-1	Lateral approach with minimum 1-mile visibility and minimum descent altitude of 380 feet (newer GPS approach)
5	GPS/RNAV	Circling	520-1	Associated with missed approach procedures– 1 mile visibility and minimum altitude of 520'
23	GPS/RNAV	LNAV MDA	400-1	Lateral Navigation with minimum 1-mile visibility and minimum decision altitude of 400 feet
23	GPS/RNAV	LP MDA	380-1	Lateral approach with minimum 1-mile visibility and minimum descent altitude of 380 feet (newer GPS approach)
23	GPS/RNAV	Circling	520-1	Associated with missed approach procedures – 1 mile visibility and minimum altitude of 520'
5	PAPI	Visual	< 1 mile visibility	At night, pilot controlled* Use PAPI glideslope
23	PAPI	Visual	< 1 mile visibility	At night, pilot controlled* Use PAPI glideslope
10	PAPI	Visual	< 1 mile visibility	The PAPI equipment is off at night; Use PAPI glideslope during daytime hours only
28	PAPI	Visual	< 1 mile visibility	

*Sources: AirNav.com, published approach procedures, February 2, 2017-March 2, 2017, and 2016 Airport Master Record*

X26 is a non-towered airport, but in 2008, it was one of the first airports to install an ADS-B antenna. An automatic dependent surveillance-broadcast (ADS-B) system is part of the FAA's NextGen system. It is a type of surveillance technology in which an aircraft equipped with an ADS-B can determine its position

# Sebastian Municipal Airport Master Plan Update



via satellite navigation. The antenna periodically broadcasts this information providing aircraft that can receive this data situational awareness and self-separation with other aircraft. The FAA is requiring some aircraft to be equipped with an ADS-B receiver by 2020, and most new aircraft are equipped with an ADS-B cockpit receiver. Ultimately, the ADS-B transmissions will allow for less separation between aircraft and increased airport capacity.

Other support equipment at X26 include a lighted airport beacon located in the airport midfield area and is 25 feet above ground level, lighted wind cone and segmented circle to designate wind direction, and magnetic compass rose. The airport at the time of this writing has a SuperAWOS (Airport Weather Observation System) on the airport that is supposed to provide current weather conditions, cloud ceiling height, etc., and this information would be broadcast over CTAF Frequency 123.05. However, the SuperAWOS is not operational and has been providing intermittent weather data for some time. As a result, the Airport requested and has received FDOT funding to remove the old equipment and install a new AWOS II which will be equipped with dual frequencies, thus allowing pilots to not have to double click the communications to get different information.

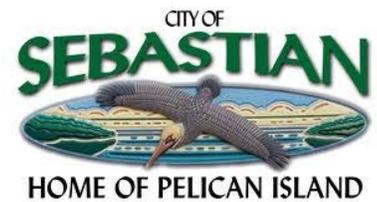
<b>TABLE 2-9 ADDITIONAL AIRPORT SUPPORT EQUIPMENT</b>
Lighted Wind Cone and Segmented Circle
Magnetic Compass Rose
AWOS II, dual frequency – installed 2017
Lighted Airport Beacon
ADS-B Tower – installed 2008

## Air Traffic Management

The Sebastian Municipal Airport has instituted voluntary flight procedures for operations on Runways 5-23 and 10-28 (see: [www.sebastianairport.com/flightprocedures](http://www.sebastianairport.com/flightprocedures)). The Sponsor has designated that the Airport and surrounding properties are noise sensitive. Air operations are recommended to occur between 0700 to 2100 daily with Touch and Go operations limited to Monday through Saturday 0900-1700.

All takeoff operations are recommended to use the “best rate of climb (V<sub>v</sub>)” to 1,000 feet above ground level (AGL) or 1,021 feet above mean sea level (MSL) at a minimum. The airport also supports extensive skydiving operations north of Runway 10-28. It is requested that flight operations not associated with skydiving remain clear of this area. To monitor operations at the airport, pilots should use and monitor the Sebastian Unicom frequency 123.05.

# Sebastian Municipal Airport Master Plan Update



The sponsor and airport recently updated their voluntary noise abatement brochure, so pilots should review the new documentation prior to utilizing the airport. The current takeoff, local area or touch and go (T&G) and landing criteria recommendations for Runway 5, 23, 10 and 28 are provided below.

<b>TABLE 2-10 NOISE ABATEMENT PROCEDURES</b>				
<b>Operations</b>	<b>Runway 5</b>	<b>Runway 23</b>	<b>Runway 10</b>	<b>Runway 28</b>
<b>Graphic</b>	<b>Figure 2-4</b>	<b>Figure 2-5</b>	<b>Figure 2-6</b>	<b>Figure 2-7</b>
Takeoff	Fly 060 deg. As Soon As Practical, No Further Turns Until 1000' AGL, Or Shoreline Whichever Occurs Last	Fly 240 Deg. As Soon As Practical, No Further Turns Until West Of Sebastian River	Fly 060 Deg. As Soon As Practical, No Further Turns Until 1000' AGL, or Shoreline Whichever Occurs Last	No Turns Until West Of Sebastian River
T&G/Local Area	Adjust "Crosswind" To Arrive At Traffic Pattern Altitude (1021' MSL) over Lagoon And Prior To Turning Downwind.	Adjust "crosswind" To Arrive Over Sebastian River, "eastbound Downwind" At Traffic Pattern Altitude (1021' MSL).	Adjust "crosswind" To Arrive At Traffic Pattern Altitude (1021' MSL) Prior To Shoreline "Westbound Downwind".	Adjust "Crosswind" To Arrive Over The Sebastian River, "Eastbound Downwind", At Traffic Pattern Altitude (1021' MSL).
Landing	"Base Leg Turns" west of Sebastian River	"Base Leg" Over Railroad Tracks.	"Base Leg Turns" West of Sebastian River	"Base Leg" Over Railroad Tracks With Angling "Dog Leg" To Final. Remain Clear of Residential to East
Source: Sebastian Municipal Airport, Voluntary Noise Procedures Brochure, August 2016 ( <a href="http://www.sebastianairport.com">www.sebastianairport.com</a> ) *the noise brochure is currently being updated in conjunction with this study and the environmental permitting plan.				

# Sebastian Municipal Airport Master Plan Update

Figure 2-4

## Runway 5 Voluntary Noise Procedures Pattern

Source: *Sebastian Airport Voluntary Noise Brochure, August 2016*



Figure 2-5

## Runway 23 Voluntary Noise Procedures Pattern

Source: *Sebastian Airport Voluntary Noise Brochure, August 2016*



# Sebastian Municipal Airport Master Plan Update

Figure 2-6

## Runway 10 Voluntary Noise Procedures Pattern

Source: *Sebastian Airport Voluntary Noise Brochure, August 2016*



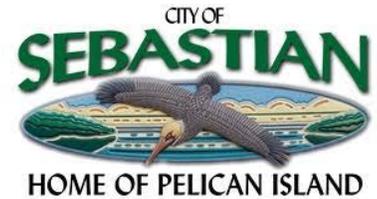
Figure 2-7

## Runway 28 Voluntary Noise Procedures Pattern

Source: *Sebastian Airport Voluntary Noise Brochure, August 2016*



# Sebastian Municipal Airport Master Plan Update



Acquiesce with voluntary noise abatement procedures are appreciated, but not at the cost of safe aircraft operations.

## Surrounding Airspace

X26 is not equipped with an Air Traffic Control Tower, but it is located between two airports that are equipped with Air Traffic Control Facilities (Melbourne International and Vero Beach Regional Airports). Therefore, airspace above the airport, designated Class E, is somewhat controlled. Class E airspace begins 700 feet above ground level (AGL) and extends upward to 17,999 feet above mean sea level (AMSL), where it meets controlling Airspace A. X26 is designated as an uncontrolled airport, which does not have any specific operating rules, pilot requirements or equipment requirements. The airport is equipped with a CTAF, Common Traffic Advisory Frequency, on VHF Unicom frequency 123.05 MHz which provides air-to-air communication between aircraft operating at and in the vicinity of X26.

The airspace environment in and adjacent to the airport is influenced by military operating areas (MOAs) associated with Department of Defense or other government facility operations and victor airways, airspace corridors, associated with VOR approaches to Vero Beach Regional Airports. With the implementation of NextGen in the coming years, ground based navigational equipment such as VORs (VHF Omnidirectional Range) antenna are being phased out. **Table 2-11** and **Figure 2-8** illustrate the airspace surrounding the airport.

TABLE 2-11 AIRSPACE CLASSIFICATIONS					
CLASS AIRSPACE	ENTRY REQUIREMENTS	EQUIPMENT	MINIMUM PILOT CERTIFICATION	AERONAUTICAL CHART	NEAREST TO X26
A	ATC clearance	IFR equipped	Instrument rating	Jetways – all flight above 18,000 AMSL	Patrick AFB
B	ATC clearance	Two-way radio, transponder with altitude reporting	Private	Surrounds nation's busiest airports	Orlando (MCO)
C	Two-way radio communications prior to entry	Two-way radio, transponder with altitude reporting	No specific requirement	Airports served by radar approach control	West Palm Beach (WPB)
D	Two-way radio communications prior to entry	Two-way radio	No specific requirement	All other towered airports	Vero Beach (VRB)
E	None for VFR	No specific requirement	No specific requirement	Varies	X26
G	None	No specific requirement	No specific requirement	All undesignated airspace	N/A

*Sources: Pilot's Handbook of Aeronautical Knowledge and TKDA February 2017*

# Sebastian Municipal Airport Master Plan Update

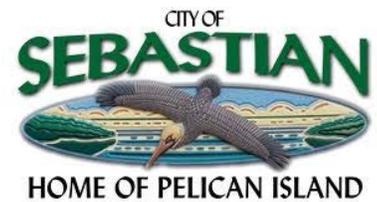
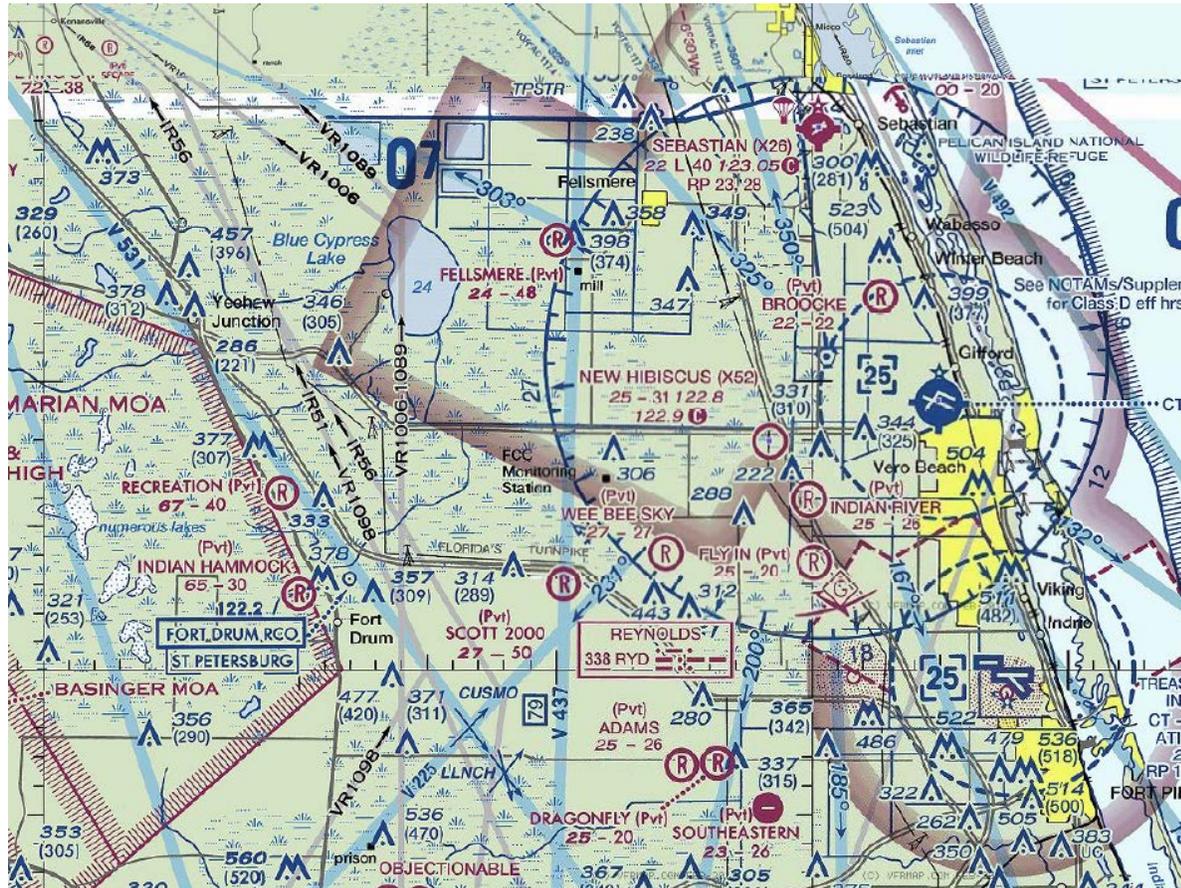


Figure 2-8  
Surrounding Airspace  
VFR Sectional Chart, 2016



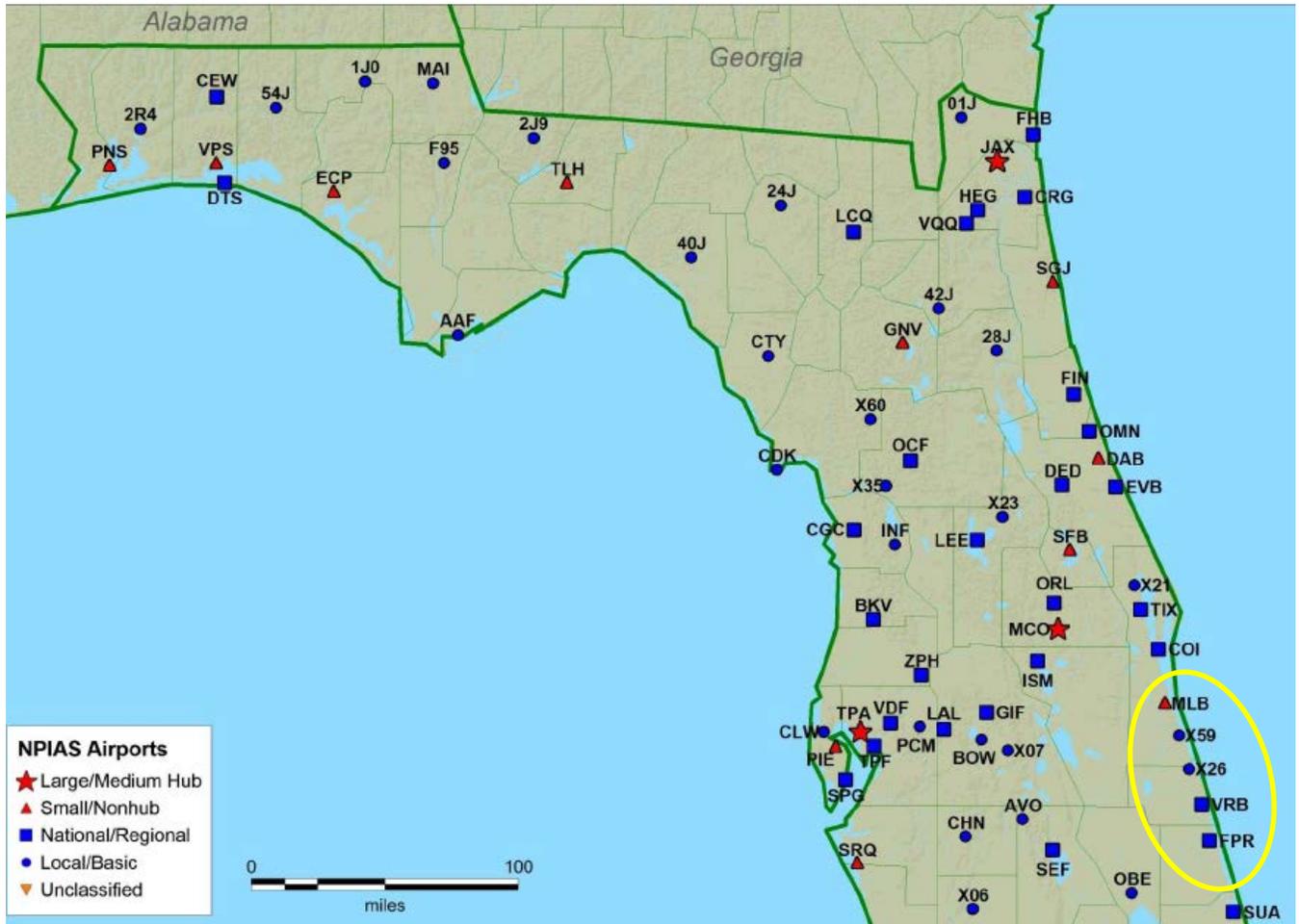
## Nearby Airports

Sebastian Municipal Airport is located almost halfway between Vero Beach Regional and Melbourne International Airport, which are both equipped with Air Traffic Control Towers. Other airports located within a 35 nautical mile (NM) radius of X26 that have instrument approach capabilities are Treasure Coast International, Patrick Air Force Base and Merritt Island Airport. Patrick Air Force Base and its immediate surrounding airspace is used to support military operations. Pilots must contact air traffic control for permission to enter Patrick AFB's terminal airspace. **Table 2-12** lists characteristics of nearby airports with instrument capability.

# Sebastian Municipal Airport Master Plan Update



Figure 2-9  
Nearby NPIAS Airports  
FAA NPIAS, 2017-2021, October 2016



# Sebastian Municipal Airport Master Plan Update



TABLE 2-12 ALTERNATE AIRPORTS WITH INSTRUMENT CAPABILITY						
AIRPORT	FAA CODE	NPIAS DESIGNATION	DISTANCE FROM X26 (NM)	RUNWAYS	PUBLISHED INSTRUMENT APPROACH PROCEDURES	ATCT
Vero Beach Regional Airport*	VRB	Regional - GA	10 NM SE	12R/30L (Asphalt): 7,314' x 106' 4/22 (Asphalt): 4,974 x 100' 12L/30R (Asphalt): 3,504' x 75'	RNAV (GPS) – RWYs 04, 12R, 22 and 30L VOR/DME RWY 30L VOR- RWY 12R	Yes
Melbourne International Airport	MLB	Primary Airport – Non-Hub	19 NM NW	9R/27L (Asphalt): 10,181' x 150' 9L/27R (Asphalt): 6000' x 150' 5-23 (Asphalt): 3001' x 75'	ILS or LOC – RWY 9R RNAV (GPS) – RWYs 09L, 09R, 27L, 27R LOC BC: RWY 27L VOR: RWY 9R	Yes
Treasure Coast International Airport	FPR	National - GA	20 NM South	10R/28L (Asphalt): 6,492' x 150' 14/32 (Asphalt): 4755' x 100' 10L/28R (Asphalt): 4000' x 75'	ILS or LOC – RWY 10R RNAV(GPS) – RWYs 10R, 14, 28L, 32 VOR/DME – RWY 14 NDB – RWY 28L	Yes
Patrick AFB	COF	Military - Private	26 NM North	3/21 (Concrete): 9,003' x 200' 11/29 (Asphalt): 3,992 x 200'	ILS or LOC/DME – RWYs 03 and 21 VOR/DME – RWY 3 TACAN RWYs 3 and 21	Yes
Merritt Island Airport	COI	Regional - GA	33 NM North	11/29 (Asphalt): 3,601' x 75'	RNAV (GPS) – RWY 11	No
<i>Notes: * Vero Beach Regional Airport although shown as Regional-GA actually provides limited scheduled commercial service.</i>						
<i>Sources: AirNav.com and FAA NPIAS Report, 2017-2021</i>						

# Sebastian Municipal Airport Master Plan Update



## EXISTING LANDSIDE CONDITIONS

The existing landside facilities at Sebastian Municipal Airport are illustrated in **Figures 2-10, 2-11 and 2-12**. The primary on-airport landside functions include: 1) skydiving, 2) general aviation, and 3) aviation businesses. Each function and service is described in this section as it pertains to X26's landside facilities, including existing buildings, aircraft parking aprons, and other relevant components.

Figure 2-10

### Airport Administration and Corporate Facilities

Source: Google Aerial Imaging, Europa Technologies, 2016



# Sebastian Municipal Airport Master Plan Update

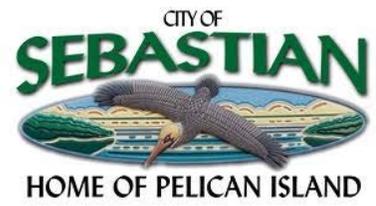


Figure 2-11

## Southwest Quadrant Airport Facilities

Source: Google Aerial Imaging, Europa Technologies, 2016



# Sebastian Municipal Airport Master Plan Update

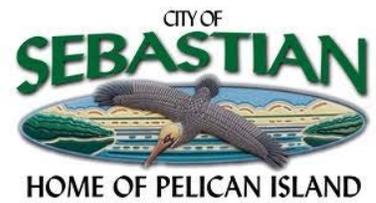


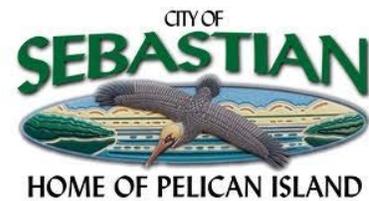
Figure 2-12

Northwest Quadrant Airport Facilities

Source: Google Aerial Imaging, Europa Technologies, 2016



# Sebastian Municipal Airport Master Plan Update



**TABLE 2-13  
LANDSIDE FACILITIES**

BUILDING #	DESCRIPTION	ELEVATION (AMSL)	BASE DIMENSIONS
1	Aircraft Storage Hangar (SheltAir)	47'±	TBD
2	Skydive Sebastian Facilities – Multiple Facilities	41'±	TBD
3	Sebastian Aero Services	43'±	TBD
4	Velocity Aircraft	47'±	TBD
5	Airport Terminal	40'±	TBD
6	Velocity Service Center	36'±	TBD
7	2 - T-Hangar Buildings (40-Units)	40'±	TBD
8	Golf Course Maintenance	38'±	TBD
9	Golf Course Club	45'±	TBD
10	Electrical Vault	38'±	TBD
11	Police Evidence Compound	35'±	TBD
12	Airport Maintenance	35'±	TBD
13	Aircraft Storage Hangar – Hangar A (LoPresti Aviation)	50'±	Est. 15,000 SF
14	Aircraft Storage Hangar – Hangar B (Velocity Service Center)	50'±	Est. 12,000 SF
Terminal Apron	Parking (10 aircraft tie-downs) and Maneuvering	NA	TBD
West Apron	Parking (40 aircraft tie-downs) and Maneuvering	NA	TBD
Avgas Aboveground	Pilot's Paradise Owned and Sell	Full service, West Apron	10,000 Gallons
Avgas Aboveground	County-Owned and Sell	Administration Building Apron (full and self service)	10,000 Gallons
Jet A	Skydive Sebastian – Private Use	West Apron	TBD Gallons

*Source: Note: Building numbers shown are for reference only and do not represent the airport's actual numbering scheme.*

## Access, Circulation and Auto Parking

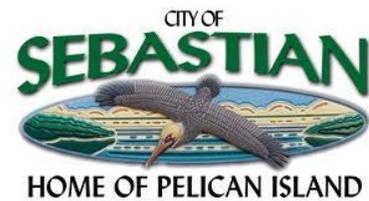
Direct access to airport facilities on the south and west quadrants of the Airport are provided via Airport Drive East and Airport Drive West, respectively. Airport Drive East extends from Main Street and heads north providing access to the Administrative/Terminal Building as well as Hangars A and B.

Approximately 50 parking spaces are available adjacent to the Terminal building.

Airport Drive West is access from Roseland Road and parallels west quadrant development. Parking facilities were established off of Airport Drive West to support aviation businesses as well as the T-Hangar users.

Access to both Roseland Road and Main Street via Fleming Road is provided by Sebastian Blvd (also known as Fellsmere Road and County Road 512). County Road 512 is a four lane highway which provides direct access to I-95 North and South.

# Sebastian Municipal Airport Master Plan Update



---

## Airport and City Public Works Storage

The City Public Works department is responsible for on-airport maintenance with the exception of individual leaseholds. Airport and City public works equipment storage facilities are located in a large metal building on the east side of the East Airport Drive. The building is in poor shape, and plans are to relocate this equipment to another location. The City is currently working on demolishing the building and prepping the site for future development. Utilities are available along Airport Drive East, which may allow the Airport and Sponsor to be able to redevelop or lease this property for non-aeronautical use.

## Aircraft Rescue and Firefighting Support

The airport is not a commercial facility, so there are no requirements to have on-airport aircraft rescue and firefighting facilities (ARFF). Fire services are provided by the Indian River County Emergency Services Special District. This district provides fire, rescue, emergency medical, and other services to the persons and property within the district.

Indian River County Special District is equipped with 1,200 and 5,000 gallon water tanker trucks. Fire service provides all fire suppression, airport crash response, fire inspection and prevention operations at X26.

## Fuel Storage and Dispersal

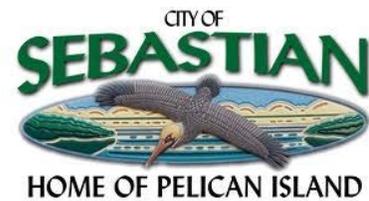
100LL/Avgas is available from two suppliers on the airfield. Sebastian Aero/Pilot's Paradise supplies full fuel services on the west side of the airport. The City of Sebastian provides additional full service and self service facilities, which are both located on the administration building/terminal ramp. Both facilities are supported by 10,000 gallon fuel tanks as well as fuel trucks. Fuel prices are fairly similar for full service, and self-service fuel costs are similar to others in the area. The self-service facility is open 24 hours and 7 days per week. Skydive Sebastian services and fuels its own planes. They are the only tenant on the airport who currently uses Jet A, and it is not for sale to any other user or operator.

With continuing concerns about the impacts of leaded fuel on air quality and human health, there is a movement to phase out 100LL fuel and replace it with some type of biofuel substitute. In addition, turbine aircraft, which utilize jet fuel, run cleaner than their piston counterparts. Because of this, FAA noted in its most recent FAA Aerospace Forecast 2016-2036 forecast an increase in turbine engine aircraft and decrease in piston engine aircraft during the next 20-years. This analysis was based upon new aircraft technology as well as climatological and health concerns. An analysis of likely future fleet mix and fuel demand is provided in Chapters 3 and 4 of this report.

## Electrical Vault

The electrical vault was built adjacent to the Administrative Building Parking Facilities along Airport Drive East. It supports the terminal and other on-airport facilities including airport lighting, navigational

# Sebastian Municipal Airport Master Plan Update



aids as well as houses the security recording equipment. From inventory of the airport facilities, the electrical vault has capacity to support continued development at the Airport in the near future.

## Airport Security

The airport is equipped with a 6 foot perimeter fence and automated gate access is obtained through an ID 'swipe card' system. The airport is also monitored by a number of security cameras which provide coverage and recording of the airport environment. Additional cameras were added to the facility in 2013 to provide coverage for the new corporate facilities. Trespass signage is clearly marked on the perimeter fence, but the main gate near the Airport Administration/Terminal Building remains open during normal airport operating hours of 0800 to 1700.

Following the attacks on September 11, 2001, numerous laws were passed to enhance airport security based upon the threat levels. Security improvements will be provided in conjunction with recommended development throughout the master plan process. Documents used to support our analysis will include, but not be limited to:

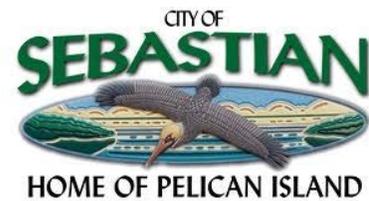
- Florida Statute 330 Regulation of Aircraft, Pilots, and Airports
- Recommended Security Guidelines for Airport Planning, Design, and Constructions TSA
- Title 49 Code of Federal Regulations, Part 1542 Airport Security, and
- Title 49 Code of Federal Regulations, Part 1540 Civil Aviation Security: General Rules

## Airport Utilities

**Article V, Appendix A, Franchises**, of the City of Sebastian Municipal Code established the agreements between utility organizations (phone, electrical, natural gas, cable, water and waste management). This municipal code also applies to all utilities in and on the airport property. Airport infrastructure construction and improvements will require expansion or upgrades to existing on-airport utilities to support proposed development. In discussions with Airport Management, existing utilities (i.e. water, electric, sewer, etc.) is available in the west quadrant of the airport and additional infrastructure may be tied into utilities running adjacent to Airport Drive West, Central Airport Drive and Corporate Airport Drive.

However, property north of Corporate Airport Drive and in the northeast quadrant of the airport adjacent to the 100 foot Scrub Jay buffer and former runway 18/36 is not equipped with any utilities. Therefore, any development proposed in this area will need to consider the cost of extending and expanding utility lines to this area as well as other site preparation as part of any proposed development. The project team is and will continue to work with airport utility providers to determine where current utility lines are on the airport as well as the cost of potential expansion.

# Sebastian Municipal Airport Master Plan Update



## *Electric*

In 1951, the City of Sebastian entered an agreement with Florida Power and Light to provide all street lighting services and electrical services to the City of Sebastian and its corporate areas (including the airport). As part of this agreement, the City allows FPL to “construct, operate and maintain in, under, upon, along, over and across the present and future roads, streets, alleys, bridges, easements, right-of-ways and other public places”<sup>4</sup> throughout the existing and future incorporated areas.

Underground electrical lines run along Airport Drive East and East Airport Road providing electricity to the Sebastian Municipal Golf Course and Airport facilities on the Southeast side of the airfield. The FPL lines tie into the airport electrical vault which is located adjacent to the terminal auto parking. A two phase power line also extends across Runway 5-23 to the west side of the Airport. Additional power lines extend along Airport Drive West to provide power to GA tenants.

## *Waste Management*

Waste Management services, according to Ordinance No. O-03-12, adopted June 2003, was granted exclusively to Waste Management Inc. Waste Management Inc. would provide both solid waste collection and recycling services to the residential and commercial incorporated communities within the City of Sebastian. Another ordinance was adopted in June 2013, which continued to grant Waste Management, Inc. of Florida an exclusive contract, which also includes an automatic five year renewal unless either party notifies the other in writing. Solid waste and recycling products are brought the Indian River Solid Waste District for disposal and recycling. Solid waste and recyclables produced by the airport with the exception of green waste is taken by Waste Management Inc. for disposal at the Indian River Solid Waste District.

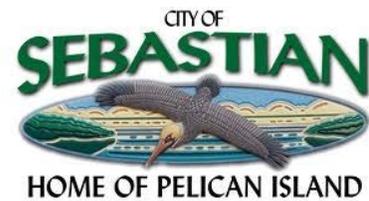
## *Water and Wastewater*

The Indian River County utilities department provides water and wastewater connections and transfer services to existing and new developments within the area. Water at the airport was initially provided via a series of on-site wells, and some leaseholds were equipped with septic systems. In conjunction with various projects at the airport, water and sewer lines were added along Airport Drive West and East to support the airport facilities. The on-site wells were closed and the septic systems were removed. According to management, water and wastewater utilities have been extended the whole length of the Western Airport Quadrant to allow additional development in this area. No water or wastewater utilities are found north of the closed runway. Water and wastewater lines extend to the Airport Golf Course facilities as well as up Airport Drive East to provide facilities to the Terminal and corporate leaseholds. The terminal building and other larger facilities are equipped with water meters, and some leasehold agreements include costs for water and wastewater management. The Airport has minimum

---

<sup>4</sup> Sebastian, Florida - Code of Ordinances, Appendix A, Franchises, Article VII, Florida Power and Light – Electric, Section 1, Grant.

# Sebastian Municipal Airport Master Plan Update



standards in place which include the disposal of hazardous materials, so as not to contaminate the water system.

## Drainage and Stormwater Management

The City of Sebastian Public Works – Roads and Drainage Division oversees the City’s drainage ditches, canals, waterways, as well as manages the storm water park, airport drainage system and provides in-house water quality sampling and testing. Stormwater at the Airport is maintained by a series of underground drains and some shallow ditches. Water from the North and South infield area are also piped west under the north-south taxiway by way of two large pipes. The water continues west to open drainage ditches and canals and ultimately outfalls into the Sebastian River. During heavy downpours, water appears to be draining partially to the conservation easement area and partially to the golf course property where several retention ponds are located. As additional infrastructure including aprons, taxiways, buildings, etc. are added, stormwater impacts will be evaluated and mitigation options will be proposed in conjunction with approximate cost estimates.

## Land Use and Zoning

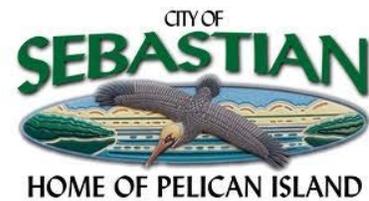
As a federally obligated airport facility, the land use both on-airport and contiguous to the airport property, including approach and departure surfaces, should be compatible with aeronautical activity. Construction of facilities that within five miles of the airport should be evaluated to determine if possible hazard to air navigation. The FAA provides an obstruction evaluation and Airport airspace analysis tool (OE/AAA) at their website, <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>, to allow sponsors, contractors or their representatives to determine if development could negatively impact airport operations.

The City of Sebastian has also implemented Ordinance No. O-16-05, enacted August 10, 2016, to provide requirements for land development within the City and incorporated areas. Article IV provides the requirements for land use and Article V relates to existing and future zoning. Both Articles were designed to provide a comprehensive land development code in compliance with local, state and federal needs.

Under **Article IV, Sec. 54-2-4.5**, “No building or structure shall be erected, reconstructed or structurally altered, nor shall any building, land or water be used for any purpose other than a use permitted in the district in which...(it) is located.” **Figure 2-13** illustrates current land use both on and adjacent to the airport.



# Sebastian Municipal Airport Master Plan Update



## On-Airport Conservation and Easements

As illustrated in **Figure 2-13**, a 32.3 acre Conservation Easement is located in the Northwest quadrant of the Airport property. A 50 foot vegetative buffer located just inside the airport property boundary surrounds the on-airport conservation area. This conservation area was established based upon protected habitat requirements as well as endangered species finding as well as the additional 100 foot easement on the Northeast side of the airport perimeter to protect Scrub Jay habitat. Conservation areas typically consist of environmentally sensitive natural resources or habitat. However, according to FAA, conservation on an airport should be avoided. Therefore, as part of the environmental studies being conducted in concert with the master plan update, an analysis of the established conservation areas will be evaluated to determine if this property may be utilized for airport development. The project team will work with applicable state and federal agencies to determine if mitigation and/or reuse is possible.

## Airport Zoning

Airport zoning is critical to protect airport property including aeronautical surfaces and approach and departure paths from incompatible land use. The City of Sebastian has established land use ordinances to comply with federal and state aviation requirements as well as limit noise and other negative impacts to nearby residents. However, FAA regulations will govern airport land use, specifications and placement of structure within the Airport Operating Area (AOA). Development outlined in this master plan must comply with local land use zoning requirements and recommended actions incorporated into the City's land use and zoning comprehensive plan. Airport zoned property is shown as "AI" in **Figure 2-14**.

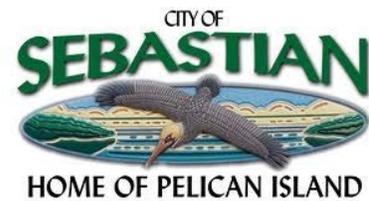
The Public Service District (PS) was established to allow for recreational and institutional development. Development within the PS district must comply with the City's comprehensive plans and airspace height limitations. Permitted uses, as outlined in **Sec. 54-5.8** include: Parks and Recreation Areas and public accessory uses. Currently the PS zoned property surrounding adjacent to the airport is used for the 18-hole Sebastian Municipal Golf Course, which is an accepted and compatible land use with the airport environment.

The Industrial District (IN) is a compatible use near an airport unless it causes a hazard to air navigation. Therefore, the City has designated that no salvage yards or junk yard are permitted within the City limits. Permitted uses may include: utilities, business and professional offices, commercial retail, storage facilities, trades and skilled services, including marine-related, wholesale trades and services as well as other light industrial and commercial development.

All development in the IN, PS and AI Districts must comply with the City's Comprehensive Plan and land development regulations.



# Sebastian Municipal Airport Master Plan Update



update. The Exhibit A provides a snapshot in time of current airport property as well as identifies parcels for either acquisition, direct fee or easement, or sale to support future airport development.

To accurately provide this information, the project team is working with a local land service company to provide ownership and property encumbrance data for the airport and surrounding properties, which is to be used to populate the Exhibit 'A' Property Map and is used to evaluate airport alternative development options, evaluate compatible land use as well as develop cost estimates and airport 20-year Capital Improvement Program (CIP). The company is currently gathering historical, existing and potential future property title, interest (i.e. easements, right of first refusal, and other rights), and grant history data.

The encumbrance data is summarized in the Airport Layout Plan, Exhibit A Property Map, data sheet. Support information associated with existing property data is provided in Appendix

## Environmental Considerations\*

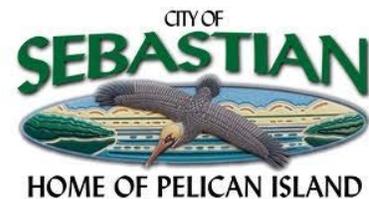
An important element of an Airport Master Plan is identifying and documenting environmental issues that can affect existing airport facilities as well as proposed short- and long-term developments. These considerations are important because both state and Federal requirements can play a major role in how these issues are addressed or considered. Environmental considerations must be identified and assessed to help the airport sponsor thoroughly evaluate development alternatives and expedite subsequent environmental processing. Of importance is understanding the differences in environmental processes for projects that are funded by the FAA or FDOT. Both of these processes are further described in this section. Another important consideration is that any environmental considerations identified during the master planning process should set the stage for future state and Federal environmental processes that may be needed. It is not the intent of the Master Plan to include the full NEPA or FDOT PD&E process; rather, the information collected during the Master Plan should identify and set the stage for understanding what future environmental processes may be needed.

## Environmental Overview

As a component of the inventory effort, an environmental overview was conducted to identify environmental considerations that could affect future airport development. This overview was based on a review of available resource materials and literature. The environmental information was collected based upon the guidelines set forth in **FAA Order 5050.4B**, entitled *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, which includes 23 categories of potential areas of impact that must be addressed in compliance with NEPA.

For the purpose of this overview, only the environmental categories that were deemed applicable to X26 were addressed, with the goal of identifying features that could affect proposed development projects identified as a product of this Master Plan Update study.

# Sebastian Municipal Airport Master Plan Update



Since an environmental study and habitat conservation plan (HCP) were performed in conjunction with this master plan update, the findings and recommendations are provided in **Chapter 6** of this report. This allowed an evaluation of potential impacts and opportunities related to recommended airfield and landside development proposed for the twenty-year planning period.

## Wildlife Hazard Site Visit\*

FAA now requests that all airports perform at a minimum a three day wildlife hazard site visit to determine if there are wildlife issues and attractants that have and could negatively impact X26's operations. Further, a portion of the existing airport property is designated conservation for Scrub Jays as well as a conservation buffer which extends around most of the airport property. February 8 – 10, 2017, a FAA Qualified Wildlife Biologist and a Wildlife Biologist performed the three day site visit and their findings are summarized in **Chapter 6, Airport Environmental Analysis**, and associated support documentation is provided in **Appendix E** of this report. Data from this information along with the environmental and habitat conservation plan were used to evaluate, modify and determine likely costs associated with airport recommended development graphically depicted on the 2018 Airport Layout Plan. , their findings will be noted later in this report.

## Summary

While concise, the overview above does not provide an exhaustive inventory of every specific facet of Sebastian Municipal Airport. The purpose of the inventory chapter is to provide general facility data which will be used as a basis for more detailed evaluation in later chapters of this report.