

ORDINANCE NO. 07-007

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2  
3 AN ORDINANCE OF THE BOARD OF COUNTY COMMISSIONERS OF ST.  
4 LUCIE COUNTY, FLORIDA, CHANGING THE TEXT OF THE  
5 TRANSPORTATION ELEMENT OF THE ST. LUCIE COUNTY  
6 COMPREHENSIVE PLAN TO INCLUDE AS PART OF THE  
7 TRANSPORTATION ELEMENT THE ST. LUCIE COUNTY INTERNATIONAL  
8 AIRPORT MASTER PLAN; PROVIDING FOR FINDINGS OF CONSISTENCY;  
9 AUTHORIZING TEXT CHANGE AMENDMENTS TO THE TRANSPORTATION  
10 ELEMENT OF THE ST. LUCIE COUNTY COMPREHENSIVE PLAN DELETING  
11 TRANSPORTATION ELEMENT OBJECTIVE 2.7.1 AND POLICIES 2.7.1.1,  
12 2.7.1.2, AND 2.7.1.3, ADDING A NEW OBJECTIVE 2.7.1 PROVIDING FOR AN  
13 AIRPORT MASTER PLAN TO BE CONSISTENT WITH THE  
14 COMPREHENSIVE PLAN, COUNTY POLICY, AND ADJACENT LAND USES  
15 AND ADDING A NEW POLICY 2.7.1.1 INCORPORATING THE AIRPORT  
16 MASTER PLAN INTO THE COMPREHENSIVE PLAN BY REFERENCE AS A  
17 TRANSPORTATION SUBELEMENT AND RENUMBERING THE FOLLOWING  
18 POLICIES TO MAINTAIN A CORRECT NUMERICAL SEQUENCE;  
19 PROVIDING FOR CONFLICTING PROVISIONS; PROVIDING FOR  
20 SEVERABILITY; PROVIDING FOR APPLICABILITY; PROVIDING FOR FILING  
21 WITH THE FLORIDA DEPARTMENT OF STATE; PROVIDING FOR FILING  
22 WITH THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS; PROVIDING  
23 FOR AN EFFECTIVE DATE; AND PROVIDING FOR ADOPTION.  
24

25  
26 **WHEREAS**, the Board of County Commissioners of St. Lucie County, Florida,  
27 has made the following determinations:

- 28  
29 1. The Director of the St. Lucie County International Airport presented a  
30 petition for a change in the St. Lucie County Comprehensive Plan  
31 Transportation Element to add the Airport Master Plan as a  
32 Transportation subelement.  
33  
34 2. On July 20, 2006, the St. Lucie County Local Planning Agency held a  
35 public hearing on the petition, after publishing notice in the Ft. Pierce  
36 Tribune at least 10 days prior to the hearing and notifying by mail all  
37 owners of property within 500 feet of the subject property, and  
38 recommended that this Board approve the hereinafter described request  
39 for a text change amendment to the Transportation Element of the  
40 Comprehensive Plan to incorporate the Airport Master Plan as a  
41 subelement;  
42  
43 3. On September 19, 2006, this Board held a public hearing for transmittal of  
44 the Comprehensive Plan Amendment to the Department of Community  
45 Affairs, after publishing a notice in the Ft. Pierce Tribune at least 10 days  
46 prior to the hearing and notifying by mail all owners of property within 500  
47 feet of the subject property.  
48

March 27, 2007

Page 1

Ordinance 07 - 007

EDWIN M. FRY, Jr., CLERK OF THE CIRCUIT COURT  
SAINT LUCIE COUNTY  
FILE # 3052513 05/09/2007 at 09:05 AM  
OR BOOK 2813 PAGE 2703 - 2708 Doc Type: ORDN  
RECORDING: \$52.50

4. On September 19, 2006, this Board authorized the transmittal of this petition to the Florida Department of Community Affairs for further agency review in accordance with the provisions of Chapter 163, Florida Statutes;
5. On December 1, 2006, the Department of Community Affairs found the proposed comprehensive plan amendment to be in compliance with State Statutes and raised no objections to the proposed amendment package; and
6. On March 5, 2007, This Board held a public hearing on the adoption, after publishing a notice in the Ft. Pierce Tribune of such hearing at least 10 days prior to the hearing and notifying by mail all owners of property within 500 feet of the subject property, and continued the hearing to March 27, 2007.
7. On March 27, 2007, held a public hearing on the adoption, after publishing a notice in the Ft. Pierce Tribune of such hearing at least 10 days prior to the hearing and notifying by mail all owners of property within 500 feet of the subject property.

**NOW, THEREFORE, BE IT ORDAINED** by the Board of County Commissioners of St. Lucie County, Florida:

**A. CHANGE IN TRANSPORTATION ELEMENT TEXT**

The Transportation Element of the adopted St. Lucie County Comprehensive Plan shall be revised by deleting the words shown in strike-through type and adding the words shown in underlined type, as follows:

~~Objective 2.7.1~~

~~By July 2002 St. Lucie County shall prepare and adopt an Update of the existing Airport Master Plan which will include specific recommendations for airport operation and development.~~

~~Policy 2.7.1.1~~

~~The Master Plan shall guide the County in the development of a state-of-the-art facility serving general aviation and the air transportation needs of the community, consistent with the approved Business Plan for the St. Lucie County International Airport (SLCIA).~~

~~Policy 2.7.1.2~~

~~The Master Plan shall thoroughly review the scope of proposed airport development, as described in the approved Business Plan for the St. Lucie County International Airport in order to minimize environmental impacts, mitigation requirements and contain significant noise impacts within the airport's boundaries.~~

~~Policy 2.7.1.3~~

March 27, 2007

Ordinance 07 – 007

1  
2 ~~The Master Plan shall recognize the fundamental industrial/commercial nature of the~~  
3 ~~airport; allow for appropriate recreational uses on the airport property that do not conflict~~  
4 ~~with airport operations or safety issues and provide for adequate buffering/mitigation of~~  
5 ~~these surrounding uses that could be adversely effected through the development of St.~~  
6 ~~Lucie County International Airport.~~

7 Objective 2.7.1

8  
9 Provide for a periodically updated Airport Master Plan that directs airport growth  
10 consistent with this Comprehensive Plan, County Policy, and adjacent land uses.  
11 Updates of the Airport Master Plan are to be accomplished by amendment to the St.  
12 Lucie County Comprehensive Plan.

13  
14 Policy 2.7.1.1

15  
16 The Airport Master Plan adopted December 1993 and last revised August 2002,  
17 attached hereto as Exhibit A, is hereby incorporated into the Transportation Element of  
18 the adopted St. Lucie County Comprehensive Plan as a Transportation Subelement.

19  
20 Policy 2.7.1.4 2.7.1.2

21  
22 All aviation master plans and related development activities shall be consistent with the  
23 St. Lucie County Comprehensive Plan and applicable regional, state and federal plans.

24  
25 Policy 2.7.1.5 2.7.1.3

26  
27 The St. Lucie County International Airport shall be developed and operated in  
28 conformance with all applicable local, state, and federal regulations.

29  
30 Policy 2.7.1.6 2.7.1.4

31  
32 St. Lucie County shall work to assure that the surface transportation needs of the St.  
33 Lucie County International Airport are considered in and are consistent with the goals,  
34 objectives and policies in the St. Lucie County Comprehensive Plan.

35  
36 Policy 2.7.1.7 2.7.1.5

37  
38 The Master Plan for the St. Lucie County International Airport shall be updated every five  
39 years to evaluate concurrency of actual airport development with the Master Plan and to  
40 determine future development concurrent with plans of the Florida Department of  
41 Transportation (FDOT), Federal Aviation Administration (FAA), Florida Aviation System  
42 and any other plans prepared pursuant to Chapter 380, F.S.

43  
44 **B. FINDING OF CONSISTENCY**

45  
46 This Board specifically determines that the approval of this change in the Transportation  
47 Element is internally consistent with the policies and objectives contained in the St. Lucie  
48 County Comprehensive Plan.

49  
50 **C. CONFLICTING PROVISIONS**

1  
2 Special acts of the Florida Legislature applicable only to unincorporated areas of St.  
3 Lucie County, County Ordinances and County Resolutions, or parts thereof, in conflict  
4 with this Ordinance are hereby superseded by this Ordinance to the extent of such  
5 conflict.

6  
7 **D. SEVERABILITY**

8  
9 If any portion of this Ordinance is for any reason held or declared to be unconstitutional,  
10 inoperative or void, such holding shall not affect the remaining portions of this  
11 Ordinance. If this Ordinance or any provision thereof shall be held to be inapplicable to  
12 any person, property, or circumstances, such holding shall not affect its applicability to  
13 any other person, property or circumstances.

14  
15  
16 **E. APPLICABILITY OF ORDINANCE**

17 This ordinance shall be applicable to the St. Lucie County International Airport.

18  
19  
20  
21 **F. FILING WITH THE DEPARTMENT OF STATE**

22 The Clerk is hereby directed forthwith to send a certified copy of this Ordinance to the  
23 Bureau of Laws, Department of State, The Capitol, Tallahassee, Florida, 32304.

24  
25  
26  
27 **G. FILING WITH THE DEPARTMENT OF COMMUNITY AFFAIRS**

28 The Growth Management Director shall send a certified copy of this Ordinance to the  
29 Department of Community Affairs, 2555 Shumard Oak Boulevard, Tallahassee, FL  
30 32399-2100.

31  
32  
33  
34 **H. EFFECTIVE DATE**

35 This Ordinance shall take effect upon the issuance by the State Land Planning Agency  
36 of a Notice of Intent to find the adopted amendment in compliance in accordance with  
37 Section 163.3184(9), or Section 125.66(4)(a), Florida Statutes, or upon the  
38 Administration Commission issuing a final order finding the adopted amendment in  
39 compliance in accordance with Section 163.3184(10).  
40  
41  
42

1 **I. ADOPTION**

2  
3 After motion and second, the vote on this Ordinance was as follows:

4 Chairman Chris Craft	Aye
5	
6 Commissioner Joe Smith	Aye
7	
8 Commissioner Doug Coward	Aye
9	
10 Commissioner Paula Lewis	Aye
11	
12 Commissioner Charles Grande	Aye
13	
14	

15 **PASSED AND DULY ADOPTED this 27<sup>th</sup> day of March, 2007.**

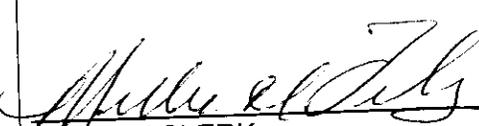
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22 **BOARD OF COUNTY COMMISSIONERS**  
23 **ST. LUCIE COUNTY, FLORIDA**

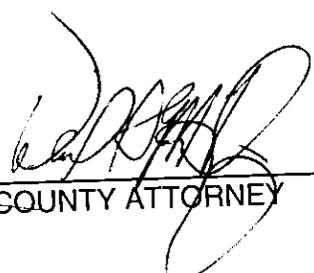
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29 BY  \_\_\_\_\_  
30 **CHAIRMAN**

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37 ATTEST:



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43 APPROVED AS TO FORM AND  
44 CORRECTNESS:

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46 **DEPUTY CLERK**

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**COUNTY ATTORNEY**

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**EXHIBIT A**

St. Lucie County International Airport Master Plan Adopted December 1993, last revised August 2002

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**EXHIBIT A**

St. Lucie County International Airport Master Plan Adopted December 1993, last revised August 2002

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**EXHIBIT A**

St. Lucie County International Airport Master Plan Adopted December 1993, last revised August 2002

# ST. LUCIE COUNTY INTERNATIONAL AIRPORT AIRPORT MASTER PLAN UPDATE

St. Lucie County  
**INTERNATIONAL AIRPORT**  
on Florida's Treasure Coast



## BOARD OF COUNTY COMMISSIONERS

John D. Bruhn, District 1  
Doug Coward, District 2  
Paula Lewis, District 3  
Frannie Hutchinson, District 4  
Cliff Barnes, District 5

NOV 3 2005

Douglas Anderson, County Administrator  
Dan McIntyre, County Attorney  
Heather Young, Assistant County Attorney  
Paul Phillips, A.A.E., Airport Director  
Ronald Hall, C.M., Airport Operations Manager

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Michael Cohen  
Mayor Ed Enns  
Roger Orr, Esquire

*This Master Plan Update was prepared by:  
Hoyle, Tanner & Associates, Inc.*

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**APPENDIX A - Abbreviations and Meeting Minutes**

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**Chapter 1**  
*Inventory*

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## Chapter One: Inventory

### 1.0 GENERAL

The Federal Aviation Administration Advisory Circular (FAA AC) 150/5070-6A, "Airport Master Plans" and the Florida Department of Transportation (FDOT) "Airport Master Plan Guidelines," outline 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 St. Lucie County International Airport is to provide background information for subsequent phases of analysis.

The development of a Master Plan for St. Lucie County International Airport required the collection and evaluation of data relating to the airport and surrounding area. This information was obtained through on-site investigations of the airport; interviews with the airport management, fixed base operators, air traffic control, representatives of the County Office, and the collection and analyses of previous reports and studies. A survey of tenants' facilities and future plans was conducted throughout the on-site interviews. The inventory is described in the following sections:

- *Airport Setting*
- *Airside Facilities*
- *Landside Facilities*
- *Airspace Structure*
- *On-Airport Land Use*
- *Community Inventory*
- *Socioeconomic Data*
- *Climate*

The key issues to be dealt with in this Chapter, as identified by the Master Plan Study Group (MPSG), are listed below with a note as to the section in which the issue is addressed.

<u>Aviation</u>	<u>Environment/Community</u>	<u>Existing Commitments</u>
Security	Noise	Standardized Leases
Signage/Marking	Economic Analysis	Rules & Regulations
ATCT	Preliminary Drainage Plan	
Run-up Areas		

### 1.1 AIRPORT SETTING

St. Lucie County International Airport is owned and operated by St. Lucie County. An Airport Director, who is appointed by the St. Lucie County Administrator, manages the airport. Information pertaining to St. Lucie County International Airport can be found in airport reference documents under Fort Pierce, Florida. Databases for these documents are organized alphabetically by the airport's closest located city.

Subsequent paragraphs in this Section describe the Airport's Service Level and Role, location, airport access, and airport history.

### 1.1.1 Role/Service Level

St. Lucie County International Airport is designated by the Federal Aviation Administration as a publicly owned, public-use facility. Under the Airport and Airways Improvement Act, the Secretary of Transportation is required to publish a national plan for the development of public-use airports. This national airport development plan is published through the National Plan of Integrated Airport Systems (NPIAS). Development planned to receive federal funding is identified in the NPIAS for each eligible public-use airport. St. Lucie County International Airport is included in the National Plan of Integrated Airport Systems (NPIAS). The NPIAS is prepared in close coordination with the FAA's ten-year plan to improve the air traffic control system and airway facilities; therefore, projects eligible for federal funding include safety and airway efficiency projects. Congress bases an airport's eligibility for funding on that Airport's Service Level and Role, as defined by the NPIAS.

The NPIAS has five basic airport service levels that describe the type of service that the airport is expected to provide to the community at the end of the 5-year planning period. The service levels also represent funding categories for the distribution of Federal Aid. These levels are:

PR	Commercial Service - Primary
CM	Commercial Service - Non-primary
CR	Commercial Service Airport that also serves as a Reliever (included with CM in statistical summaries)
RL	Reliever
GA	General Aviation Airport

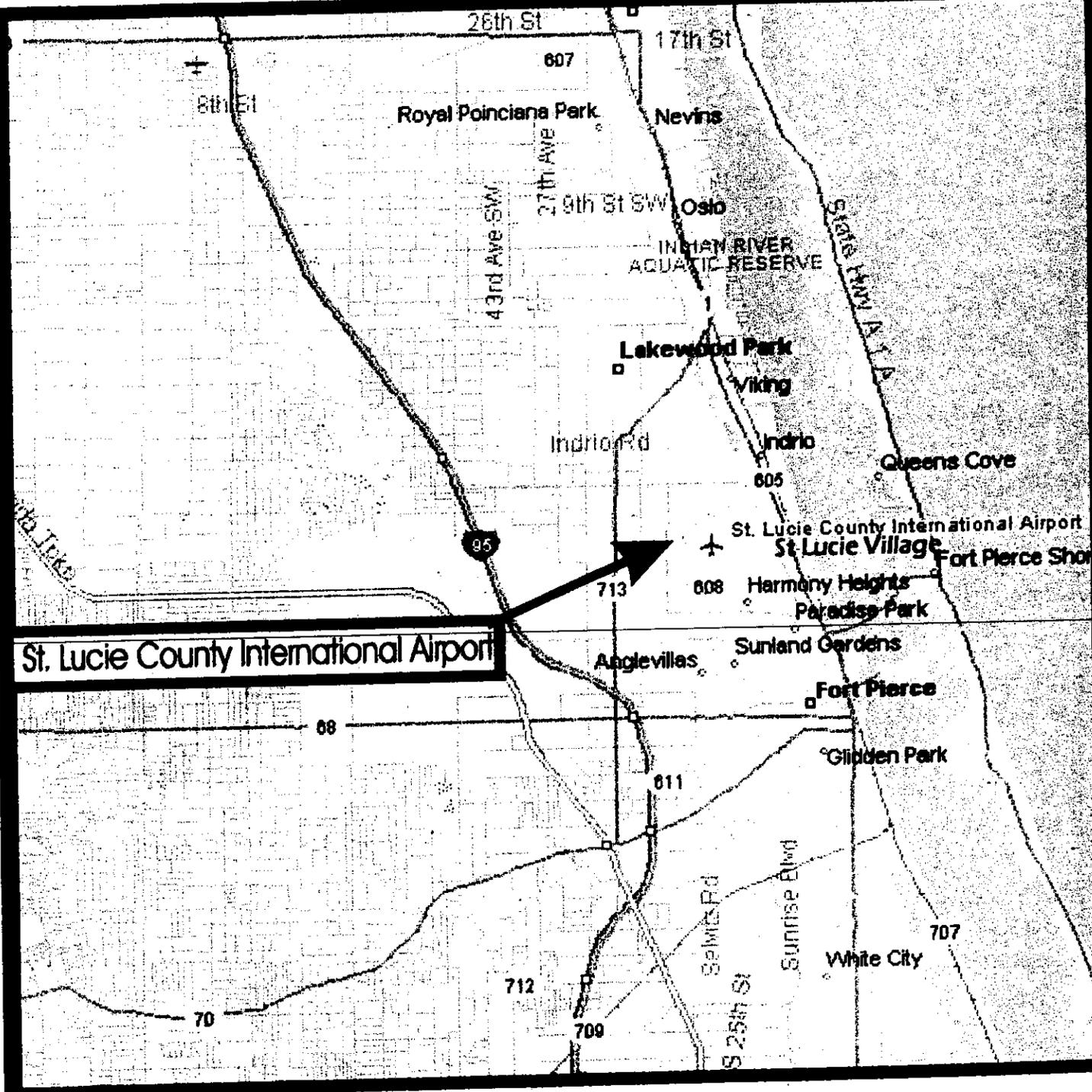
The NPIAS defines an Airport's Service Level by the type of public service the airport provides to its community. St. Lucie County International Airport's Service Level is defined as General Aviation (GA).

The Role of an airport is defined in the NPIAS in terms of the type of aircraft it can accommodate and its associated required design specifications. The NPIAS classifies St. Lucie County International Airport's Role as a Transport Type (TR) airport. A Transport Type airport can accommodate general aviation business jets aircraft that have maximum gross takeoff weights of more than 12,500 pounds.

### 1.1.2 Location

St. Lucie County International Airport is located 3 miles northwest of the City of Fort Pierce and only an hour north of West Palm Beach on the southeast coast of sunny Florida. The Airport Vicinity Map, Exhibit 1-A, depicts the location of the airport in its regional setting. At 25 feet Above Mean Sea Level (AMSL), the Airport Reference Point (ARP) is situated on latitude 27-29-42.2N and longitude of 80-22-05.8W. The ARP is defined as the approximate geometric center of all useable runway surfaces.

The airport is comprised of approximately 3,660 acres of land, and is located east of Interstate 95 and west of Highway US 1. As part of this Master Plan, an airport property boundary survey is being conducted. The boundary survey will meet current minimum technical standards of the State of Florida. Exact acreage of the airport property and a defined property boundary line will be shown as a result of the property survey and will be reflected on the Airport Property Map in the Airport Layout Plan (ALP) set.



**St. Lucie County International Airport**

**St. Lucie County International Airport  
Airport Master Plan**

**AIRPORT VICINITY MAP**

**Exhibit  
1-A**

1.1.3 Access Roadways

Major arterial roads serving the area include Interstate 95 and Highway US 1. Interstate 95 passes north and south through St. Lucie County (west of the airport), and US 1 runs north and south through the County just east of the airport. Both arterial roads follow the general direction of the Atlantic Coast shoreline.

Access to the airport and businesses located on the airport's property are available in a variety of ways. Curtis King Boulevard is the main entrance to the Airport & Airport Terminal Area. It can be accessed in the following ways:

- Coming from the north on I-95 take Exit 67 going east on Indrio Rd approximately 3 miles to N. Kings Hwy heading south for 2.5 miles, turn east on St. Lucie Boulevard for 2.0 miles then turn north on to Curtis King Boulevard
- Coming from the south on I-95 take Exit 66 going west for about ½ mile, turn north on N. Kings Hwy heading north for 2.5 miles to St. Lucie Boulevard for 2.0 miles then left on to Curtis King Boulevard
- Coming from the north on US 1 turn west onto St. Lucie Boulevard heading west for 1.5 miles to Curtis King Boulevard turning north into the airport
- Coming from the south on US 1 turn west onto St. Lucie Boulevard heading west for 1.5 miles to Curtis King Boulevard turning north into the airport
- Coming from the west take the Florida Turnpike to I-95 and follow the same directions coming from the south as heading north on I-95

Other roads that allow access of to the businesses located on the airport are as follows:

- Jet Center Terrace, coming west off Industrial 33<sup>rd</sup> Street intersects with St. Lucie Boulevard allows access on the eastern side of the airport.
- The entrance to an Air Charter facility is approximately .35 miles west of 33<sup>rd</sup> Street. If you are heading east it is approximately .15 miles east of Curtis King Boulevard on the northern side of St. Lucie Boulevard.
- Airman's Drive can be accessed by coming east off of Hammond Road which comes north off St. Lucie Boulevard approximately .55 miles west of Curtis King Boulevard.

These access roads are used to access the airport facilities and tenants located on airport property. A list of airport tenants is provided in Table 1-1.

Fort Pierce Air Center	Trade Winds International Flight School
Maverick Boat Company	Ari-Ben Aviator
BlueWater Boat Company	Mirabella Yachts
Air Charter of Florida / Jet Service Center	Mobarak Aircraft
Able American Jets / Able Ambulance	Aircraft Service Center, Inc,
Airport Tiki	Airport Ground Equipment
Flight Deck Cafe	Navtech
Florida Coastal Airlines	Air and Sea Recovery
MICCO Aircraft Company	Airborne Express
PanAm International Flight Academy	Treasure Coast Jet Center
DHL Delivery	Fed Ex
Treasure Coast Avionics	AeroCadd

### 1.1.4 St. Lucie County History

St. Lucie County is filled with Florida's history. Although incorporated in 1901, Fort Pierce history begins in 1837 during the Seminole Indian War. U.S. Army Lt. Col. Benjamin Kendrick Pierce established the original fort used as the army's headquarters. After the war, the Seminoles took refuge in the Everglades in 1842 leaving Fort Pierce free to develop as a permanent settlement. Fort Pierce became center of the town's activity and gathering place for the early settlers. One of the earliest settlements in St. Lucie County lies within the area that is presently incorporated as the Town of St. Lucie Village, immediately east of the airport. The St. Lucie Village Historic District is listed on the National Register of Historic Places and contains approximately two dozen historic homes dating back to 1875.

Today, St. Lucie County plays a key role as the area's commercial development. In the western side of town you can find many acres of grapefruit and orange groves covering the land as well as many cattle ranches. The coastline provides many beautiful beaches that draw vacationers as well as local residents. The Fort Pierce Inlet provides access from the Inter-coastal waterway out to the Atlantic Ocean. Fishing, scuba diving, and snorkeling are just a few of the things found within the county. All this, together with a yearly average temperature of 73.7 degrees, makes St. Lucie County an ideal residential, retirement, and vacation community.

### 1.1.5 Project Status Update

The last Master Plan for St. Lucie County International Airport was completed in 1993. A description of the development that has occurred at the airport since 1993 is as follows:

<u>Year Completed</u>	<u>Description of Development</u>
1995	Able American Jets developed 3,000 square foot office facility
1998	Able American Jets developed 12,000 square foot hangar facility Airport developed airport entry road - Curtis King Boulevard
1999	Able American Jets developed 12,000 square foot hangar facility Air Charter developed 3,500 square foot restaurant
2000	Pan Am begins development of their flight training facilities
2001	Airport developed 1000 square foot office building Airport developed 1600 square foot manufacturing building Airport developed 3000 square foot maintenance building

1.2 AIRSIDE FACILITIES

Airside facilities at St. Lucie County International Airport include runways, taxiways, lighting, and navigational aids. Drawing 2 - Existing Facilities, depicts an overview of the existing airfield facilities. This section describes the airport's existing airfield facilities in terms of location, configuration, size, and use characteristics.

1.2.1 Runways

St. Lucie County International Airport is currently being served by two active Runways; Runway 9-27 and Runway 14-32. Table 1-2 provides a summary of facility data for each Runway at the airport.

Table 1-2  
 Runway Data

	Runway Ends			
	9	27	14	32
Length (ft.)	6,492		4,756	
Width (ft.)	150		100	
Surface Material	Asphalt		Asphalt	
Surface Treatment	Not Grooved		Not Grooved	
<b>Load Bearing Capacity by Gear Type</b>				
SWL (lbs.)	30,000		15,000	
DWL (lbs.)	60,000			
Markings	Precision	Non-Precision	Non-Precision	
Markings Condition	Good	Good	Good	Good
Traffic pattern	Left	Left	Left	Left
Approach Aids- VORTAC	No	No	No	No
Approach Aids - VASI-4	Yes	Yes	No	No
Visual Glide Path Angle	3 degrees	3 degrees	NA	NA
Displaced Threshold (ft.)	0	0	0	0
Touchdown Point	Yes	Yes	Yes	Yes
Touchdown Elevation	23.6 ft.	23.4 ft.	23.8 ft.	23.8 ft.
Lighting	MIRL/REIL		MIRL	
Obstructions	BRUSH	TREES	TREES	PLINE

Source: Airport Facilities Directory, 2002.

The primary Runway, Runway 9-27, is oriented in an east-west direction. This Runway measures 6,492 feet long by 150 feet wide. It is made of asphalt and is in good condition. The FAA published gross weight pavement strength of the Runway is 30,000 pounds single-wheel (SWL) and 60,000 pounds dual-wheel (DWL). The Runways 9-27 are both equipped with a VASI-4 on the left sides of each runway, and have medium intensity runway edge lights (MIRL).

Runway 14-32 is oriented in a northwest to southeast direction and measures 4,756 feet long by 100 feet wide, and is equipped with medium intensity runway edge lights (MIRL). This Runway has basic type Runway marking indicating it is used for Non-Precision Instrument approaches. Runway 14-32 is made of asphalt and is in poor condition. The gross weight pavement strength of the Runway is 15,000 pounds SWL.

1.2.2 Taxiways

The airport's taxiway system consists of five taxiways. All of these Taxiways are 50 feet wide and are lighted with medium intensity taxiway edge lights (MITL), except for Taxiway "E".

Taxiway "A" is a parallel taxiway 6,000 ft. in length and 50 ft. in width; it is located 500 ft. centerline to centerline south of Runway 9-27. The Taxiway is in two sections. The original 4,500 ft. section is made of asphalt and is in fair condition. The other 1,500 ft. was constructed to accommodate the Runway 9-27 extension and that is composed of bituminous asphalt and is in excellent condition.

Taxiway "B" is a parallel taxiway 5,000 ft. in length and 50 ft. in width; it is located 500 ft. centerline to centerline northeast of Runway 14-32. The taxiway is composed of bituminous asphalt and is in fair condition.

Taxiway "C" is 4,700 ft in length and 50 ft in width; it is located 400 ft centerline to centerline of Runway 14-32. The original 1,700 ft of taxiway is composed of bituminous asphalt and is in fair condition, while the northern 3,000 ft of taxiway composed of bituminous asphalt and is in very good condition.

Taxiway "C1" is 1,200 ft in length and 50 ft in width, it connects Runway 14-32 with the general aviation facilities to the southeast. The taxiway is composed of bituminous asphalt and is in good condition.

Taxiway "D" is 5,000 ft. long and 50 ft. wide and is composed of bituminous asphalt in good to fair condition. It is perpendicular to Runway 14-32 and runs from Taxiway "E" to the approach end of Runway 9-27.

~~Taxiway "E" is 2,400 ft in length and 50 ft in width. Created from abandoned Runway 4-22 it is located west of the existing terminal area. Composed of bituminous asphalt the taxiway is in fair condition near the apron area, and is in excellent condition where it intersects perpendicular to Runway 14-32.~~

The FDOT has commissioned the firm of Eckrose, Green & Associates of Madison, WI to develop and update a system of pavement inspection and evaluation. The system that was developed is known as Pavement Condition Index (PCI). The pavement is evaluated according to its type, flaws, and a Corrected Deduct Value (CDV), which is utilized in cases of multiple flaws. The PCI is supported by FAR 150/5380-6. Table 1-3 shows all of the airside pavement conditions at St. Lucie County International Airport.

Table 1-3  
 Airfield Pavement Conditions

RUNWAYS	PAVEMENT TYPE	PCI	DISTRESSES PRESENT
9-27 (CENTER 100')	Asphalt	VERY GOOD	LONG & TRANS CRACKING, RAVELLING/WEATHERING, SWELLING
9-27 (OUTER 25' WINGS)	Asphalt	FAIR-POOR	BLOCK CRACKING, LONG & TRANS CRACKING, RAVELLING/WEATHERING, SWELLING
9-27 EXTENSION (CENTER 100')	Asphalt	EXCELLENT	LONG & TRANS CRACKING, RAVELLING/WEATHERING
9-27 EXTENSION (OUTER 25' WINGS)	Asphalt	EXCELLENT	LONG & TRANS CRACKING, SWELLING
14-32	Asphalt	FAIR-POOR	BLEEDING, LONG & TRANS CRACKING, RAVELLING/WEATHERING, SWELLING

TAXIWAYS			
A (Original)	Asphalt	FAIR-POOR	ALLIGATOR, BLOCK CRACKING, LONG & TRANS. CRACKING, PATCHING, RAVELLING/WEATHERING, LONG & TRANS. CRACKING, SWELLING
A (Extension)	Asphalt	EXCELLENT	ALLIGATOR, BLOCK CRACKING, LONG & TRANS. CRACKING, RAVELLING/WEATHERING
A-2	Asphalt	VERY POOR	BLOCK CRACKING, RAVELLING/WEATHERING, SWELLING
A5	Asphalt	FAIR	LONG & TRANS. CRACKING, SWELLING
A-3	Asphalt	EXCELLENT	BLOCK CRACKING, LONG & TRANS CRACKING, RAVELLING/WEATHERING
A-3	Asphalt	FAIR	BLOCK CRACKING, LONG & TRANS CRACKING, RAVELLING/WEATHERING
B (AT OLD R/W PAVEMENT)	Asphalt	FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
B	Asphalt	FAIR-POOR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING
B (AREA DJACENT TO T/W F)	Asphalt	VERY POOR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
D (FROM T/W E TO T/W D)	Asphalt	FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
D(FROM T/W C TO R/W 32)	Asphalt	FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
D(FROM R/W 32 TO T/W B)	Asphalt	GOOD	ALLIGATOR CRACKING, BLOCK CRACKING, LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
D(FROM T/W B TO R/W 27)	Asphalt	GOOD-FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
D(AREA ADJACENT TO R/W 27)	Asphalt	GOOD	BLOCK CRACKING, LONG & TRANS. CRACKING, PATCHING, RAVELLING/WEATHERING, SWELLING
C-1	Asphalt	FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
C(FROM C-1 TO D)	Asphalt	GOOD-FAIR	LONG & TRANS. CRACKING
C (FROM T/W A TO T/W D)	Asphalt	EXCELLENT	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
C-2	Asphalt	FAIR	NONE
C-3	Asphalt	EXCELLENT	NONE
C-4	Asphalt	EXCELLENT	LONG & TRANS. CRACKING, PATCHING, RAVELLING/WEATHERING, SWELLING
C-4 (AT INTERSECTION OF 14-32 AND TWY A)	Asphalt	VERY GOOD	LONG & TRANS. CRACKING
C CONNECTOR TO RAMP	Asphalt	EXCELLENT	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
C AT RAMP	Asphalt	FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
C-1	Asphalt	VERY GOOD	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING

E (FROM T/W D TO T/W C)	Asphalt	FAIR	BLOCK CRACKING, LONG AND TRANS. CRACKING, PATCHING, RAVELLING/WEATHERING
E (FROM R/W 14-32 TO APRON)	Asphalt	EXCELLENT	NONE
E (FROM R/W 14-32 TO T/W B)	Asphalt	GOOD	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
E	Asphalt	VERY POOR	BLOCK CRACKING, LONG & TRANS. CRACKING, RAVELLING/WEATHERING
<b>Aprons</b>			
607	Asphalt	EXCELLENT	NONE
4105	Asphalt	EXCELLENT	BLEEDING, LONG & TRANS. CRACKING, SWELLING
4110	Concrete	VERY GOOD	JOINT SEAL DAMAGE, LARGE PATCH
4112 RAMP	Concrete	VERY POOR	CORNER BREAK, LTD CRACKING, JOINT SEAL DAMAGE, SHATTERED SLAB, JOINT SPALLING
4115	Asphalt	EXCELLENT	OIL SPILL
4120	Asphalt	EXCELLENT	NONE
4125	Asphalt	POOR	BLOCK CRACKING, LONG & TRANS. CRACKING, RAVELLING/WEATHERING
4127	Asphalt	FAIR	BLOCK CRACKING, LONG & TRANS. CRACKING, RAVELLING/WEATHERING
4205	Asphalt	GOOD	LONG & TRANS. CRACKING, PATCHING, RAVELLING/WEATHERING, SWELLING
4210	Asphalt	FAIR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
4212	Asphalt	POOR	LONG & TRANS. CRACKING, RAVELLING/WEATHERING
4215	Asphalt	GOOD	LONG & TRANS. WEATHERING, RAVELLING/WEATHERING
4220	Asphalt	POOR	DEPRESSION, LONG & TRANS. CRACKING, RAVELLING/WEATHERING, RUTTING
4225	Asphalt	GOOD	LONG & TRANS. CRACKING, RAVELLING/WEATHERING, SWELLING
5105	Asphalt	EXCELLENT	LONG & TRANS. CRACKING

### 1.2.3 Run-Up Areas

Aircraft engine run-ups at St. Lucie County International Airport are usually conducted at the approach ends of all parallel Taxiways. Only one specific area has been designated a run-up area on the airfield.

### 1.2.4 Lighting

Lighting at airport facilitates identification, approaches, landing and taxiing operations at night and in adverse weather conditions. A variety of lighting aids are available at St. Lucie County International Airport. These include runway edge lighting, Runway End Identifier Lights, and taxiway lights. Runway End Identifier Lights (REIL's) provide positive runway end identification. Runway edge lighting is used

to outline the edges of a runway during darkness and times of restricted visibility. These systems are identified by white lights and their intensity of illumination. Medium Intensity Runway Lighting (MIRL) is appropriate for a non-precision runway. Taxiway lighting is blue colored and is identified in accordance to their intensity of illumination in the same manner as runway edge lighting. Runways 9-27 and 14-32 are equipped with MIRL. Currently, only Runway 9 is being equipped with REILs.

Runway 9-27 approaches are equipped with Visual Approach Slope Indicators (VASI-4) on both ends. VASI devices are used to provide vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red. St. Lucie County International Airport has two-bar VASI's (VASI-4). The correct approach path provides the pilot with obstacle clearance and accurate guidance for a safe landing.

Medium Intensity Taxiway Lighting (MITL) is installed on Taxiways "A", "B", "D", & "C-1", and is considered to be in fair condition. The only unlit taxiway is the original perimeter Taxiway "E". Medium Intensity Runway Edge Lights (MIRL) are installed on both runways and are considered in fair condition.

Other lighting at the airport includes a rotating beacon. The location and presence of an airport is universally identified at night by an airport rotating beacon (designated by alternating green and white light for civil airports). The rotating beacon is located near the terminal area of the airport. A Non-Directional Beacon is located to the east of the intersection of Taxiway "D" and Taxiway "E". The lighted wind cone and segmented circle at St. Lucie County International Airport is located in the middle of the airfield, just east of the intersection of Taxiway "A" and Taxiway "B". Table 1-4 shows the conditions of the airfield lighting at the airport.

Table 1-4  
 Lighting Condition  
 St. Lucie County International Airport  
 Master Plan Update

Surface	Size	Type of Lighting	Date of Last Rehabilitation
<b>Runways</b>			
9-27 (Original)	5,000' x 150'	MIRL	Apr-88
9-27 (Extension)	1,500' x 150'	MIRL	Jun-90
14-32	4,776' x 100'	MIRL	Apr-88
<b>Taxiways</b>			
A (Original)	4,500' x 50'	MITL	Dec-85
A (Extension)	1,500' x 50'	MITL	Jun-90
B	4,400' x 50'	MITL	Dec-85
C	4,800' x 50'	MITL	Dec-85
D (Original)	1,700' x 50'	MITL	Dec-85
D (New)	3,000' x 50'	MITL	1989
C-1	1,200' x 50'	MITL	Jun-84
E	2,400' x 50'	NONE	--
AA	1,750' x 25'	NONE	1991

<b>Aprons</b>			
Passenger Terminal	10,000 s.y.	NONE	1980
FIS Building	6,200 s.y.	NONE	1980
Ft. Pierce Air Center	9,725 s.y.	NONE	1990
Sheriff's Department	2,586 s.y.	NONE	1991
East GA Apron	24,000 s.y.	MITL (Entrances)	1991
West GA Apron	67,225 s.y.	MITL (Entrances)	1991

### 1.2.5 Navigational Aids

Navigational Aids (Nav aids) include any visual or electronic devices, either airborne or on the ground that provide point-to-point guidance information or position data to aircraft in flight.

St. Lucie County International Airport is a towered airport. The Air Traffic Control Tower is located southwest of the Runways. At St. Lucie County International Airport there are precision approaches. The Precision Instrument Approach at St. Lucie County International Airport is for Runway 9, which is equipped with an ILS/DME. The remaining runway approaches, Runway 27 and Runways 14 and 32 are all Non-precision Instrument Approaches. St. Lucie County International Airport is also equipped with a Non-Directional Radio Beacon (NDB) which is located southwest of Taxiway E. The electronic en-route navigational guidance system, or VORTAC, used by St. Lucie County International Airport is located at Vero Beach Airport to the north. This system provides the airport with its Non-Precision Approaches, as well as providing instrument guidance to other airports.

The U.S. Department of Commerce, the National Oceanic and Atmospheric Administration, and the National Ocean Service publish the approaches at St. Lucie County International Airport in the U.S. Terminal Procedures for the Southeast (SE-3). The precision approach minimum for Aircraft Approach Categories A and B at St. Lucie County International Airport are 3/4 of a mile at 223 feet AMSL for Runway 9. The non-precision approach minimums for Aircraft Approach Categories A and B at St. Lucie County International Airport are one mile at 400 feet AMSL for Runway 14, one mile at 520 feet AMSL for Runway 27, and one mile at 480 feet MSL for Runway 32. These minimums mean that the landing or approaches to the specific runway can be safely executed into the airport when cloud cover is at or above those stated heights and visibility is at or above the stated distance.

### 1.2.6 Helipads

St. Lucie County International Airport has no areas designated as helipads on the airfield. Such an area would have yellow-painted encircled 'H' which designates these areas as public-use helipads. The circle designates that the helipad is a helicopter parking spot as well as a landing area. Currently, helicopters utilize the infield area northeast of Taxiway "C" as a landing / ascent area.

## 1.3 LANDSIDE FACILITIES

Landside facilities at St. Lucie County International Airport are divided into the following categories: Fixed Base Operators (FBO), airport facilities and private hangars.

1.3.1 Fixed Based Operators

There are two major tenants on the airport that lease land from St. Lucie County. These tenants are composed of Fixed Base Operators (FBOs) and Flight Schools. The major tenants on the airport sublease land to other tenants at the airport. The services and/or facilities of the major tenants at the airport are discussed in the following paragraphs and presented in Table 1-5.

Table 1-5  
 Summary of FBO Services and Facilities

Service / Facilities	Fort Pierce Air Center	*Ari-Ben	**PanAm	Air Charter of Florida / Jet Service Center	Totals
Total Area (acres)	86	8	11	20	125
Total Building Space (S.F.)	11,020	5,000	80,000	3,500	99,520
<b>FBO - Based Aircraft</b>					
Single-Engine	42	7	24	26	99
Multi-Engine	10	6	7	11	34
Turbo Prop	2	-	-	-	2
Jet	5	-	-	2	7
Rotor	-	-	-	-	-
<b>Total</b>	59	13	31	39	142
<b>Aircraft Tie-Down</b>					
Local & Itinerant	30	20	50	50	150
Area (S.Y.)	14,500	8,900	9,500	16,700	49,600
<b>Conventional Hangars</b>					
Storage Area (S.F.)	700	3,500	-	19,000	23,200
Maintenance Area (S.F.)	18,000	-	-	3,300	21,300
<b>T-Hangars</b>					
Units	30	-	-	-	30
Area (S.F.)	20,000	-	-	-	20,000
<b>Fuel Storage - AVGAS</b>					
No. of Tanks	1	-	-	2	3
Tank Capacity Avgas (gal)	20,000	-	-	24,000	44,000
<b>Fuel Storage - JET A</b>					
No. of Jet A Tanks	1	-	-	1	2
Tank Capacity JetA (gal)	20,000	-	-	12,000	32,000
<b>Fueling Trucks</b>	2	-	-	1	3
<b>Auto Parking Spaces</b>	60	55	320	35	470

\* Designates business as a sublease of Air Charter of Florida  
 \*\* Designates business as a sublease of Fort Pierce Air Center

*Air Charter of Florida / Jet Service Center*

Air Charter of Florida is located on 20 acres on the southeast side of the airport. There are two access roads provided for Air Charter from the south side parallel to the main entrance of the airport. There is also an access road on the east side of the airport.

Services offered by Air Charter of Florida include aircraft fueling, aircraft storage, flight school/flight training (sublease to Ari-Ben Aviator), restaurant, aircraft painting, aircraft interiors, public telephone, restrooms, aircraft modifications, and aircraft Maintenance.

Air Charter of Florida facilities include:

- a 3,500 square foot restaurant
- Two (2) – 9,600 square foot maintenance hangars

#### ***Fort Pierce Air Center***

Fort Pierce Air Center is located east of Curtis King Boulevard in the FBO Complex and southwest of Runway 14-32. This FBO began operations in 1994 and in the year 2000, the FBO had 11 full-time employees and 8 part-time employees. The FBO provides a centrally located customer lobby surrounded by support services such as vending machines, Avgas and Jet A aircraft fuel, aircraft rental, aircraft parking, pilot lounge, restaurant, and vehicular parking. The FBO also owns and operates a 6,800 square foot aircraft maintenance facility. Fort Pierce Air Center has a total of 30 tie-down positions, with 20,000 square feet of T-Hangars, a 12,000 square foot Corporate Hanger, and 18,000 square feet of maintenance hangar space (60 x 60's).

Fort Pierce Air Center has two (2) 20,000 gallon storage tanks that are stored above ground. One (1) 20,000 gallon tank is for Avgas and one (1) 20,000 gallon tank that is for Jet A. In 1999, the FBO pumped 435,439 gallons of Avgas and 435,438 gallons of Jet A. Last year, the Avgas sales for this FBO were at 341,930 gallons and Jet A sales were at 635,020 gallons.

#### ***PanAm International Flight Academy***

PanAm International Flight Academy is located just west of Curtis King Boulevard in the FBO Complex. PanAm recently relocated operations from Vero Beach, Florida on May 31, 2000 to St. Lucie County International Airport to handle their expansion requirements and the increase in airport traffic that will result. The expansion plans at St. Lucie County International Airport to accommodate PanAm include student dormitories, an aircraft and maintenance hangar, plus amenities such as tennis and volleyball courts and a swimming pool. PanAm has 4 buildings that consist of the flight school, dormitories currently with 128 beds, and the hangars. Students also live in off-airport apartment complexes.

FAR Part 141 and Part 61 flight training is provided by PanAm International Flight Academy. This flight school currently consists of 82 student, 22 CFI's, 5 mechanics, and 31 training aircraft.

#### ***Able American Jets***

Able American Jets is an airline, which is specialized in air ambulance services. Starting back in 1987, the airline consisted of 1 turboprop aircraft, 3 employees, in 1 building consisting of 8,000 square feet. Since 1987, the company has been steadily growing. In 1993, Able Air had 4 jets, 20 employees and an additional 2,000 square feet of building space. In 1998 and 1999 Able added two hangars each 12,000 square feet in size.

Able American Jets' aircraft consists of 6 Lear jets, 2 King Air, 1 Cessna 210, and 1 Maule. Total operations for Able consists of approximately 6000 operations per year with approximately 25 % of those operating out of St. Lucie. The aircraft are divided between two facilities, St. Lucie County International Airport and a facility in St. Petersburg that is also operated by Able American Jets. Able American Jets is in a sub-lease on a month-to-month basis with Air Center, who is also their fuel supplier.

Able American Jets' facilities include:

- 3,000 square foot office for the airline
- 8,000 square foot office for the ambulance division
- 250 square foot hazmat drop
- 900 square foot engine shop (capable of handling 4 jet engines)
- Two(2) 12,000 square foot hangars (1 for storage, 1 for maintenance)

Able American Jets has concerns with the current airport facilities that consist of the vehicular parking around their facility, and proper drainage for vehicular parking areas. They are in support of radar being acquired along with a second parallel runway to accommodate the noise sensitive areas.

### 1.3.2 Airport Facilities

On airport property there are several facilities that are directly maintained by the Airport. They include the General Aviation Air Terminal Building, the FIS and Customs Building, eight (8) Experimental Aircraft Association (EAA) hangars, a maintenance building, six (6) industrial park manufacturing buildings, the electrical vault and associated systems, and the rotating beacon. The Airport has been continually upgrading the electrical vault and regulators on an annual basis. Some of the oldest electrical wiring along the taxiways and Runway 14-32 requires the most maintenance. The Rotating Beacon, as mentioned earlier, is dated and requires replacement. Table 1-6 shows all buildings (occupant, location and size - refer to **Drawing #4**) that are at the airport.

Table 1-6  
 St. Lucie County International Airport Building Inventory List

Site No.	Building Facility	Area	Site No.	Building Facility	Area
1	To Be Removed	-	41	Pan Am - 4211 to 4219 Pan Am Blvd.	9500
2	To Be Removed	-	44	Federal Inspection Facility	-
3	To Be Removed	-	45	FAA AICT - 3300 Hammond	500
4	To Be Removed	-	46	Mirabella - 3170 Airmans Drive	41000
5	To Be Removed	-	47	Micca - 3150 Airmans Drive	41500
6	To Be Removed	-	48	Micca - 3100 Airmans Drive	6200
7	Pan Am - 4202 to 4208 Pan Am Blvd.	9500	49	Able Air - 3070 Airmans Drive	7000
8	Pan Am - 4210 to 4216 Pan Am Blvd.	9500	50	Able Air - 3050 Airmans Drive	2500
9	Pan Am - 4220 Pan Am Blvd.	15000	51	Able Air - 3060 Airmans Drive	15000
10	Pan Am - 4230 Pan Am Blvd.	7300	52	Able Air - 3040 Airmans Drive	12000
11	Pan Am - 4240 Pan Am Blvd.	13000	53	Hangar - 3101 Airmans Drive	5000
12	Terminal Building - 3000 Curtis King Blvd.	3380	54	Hangar - 3105 Airmans Drive	5800
13	US Customs Building - 2990 Curtis King Blvd.	6500	55	Hangar - 3108 Airmans Drive	10000
14	Iki Restaurant - 2982 / 2978 Curtis King Blvd.	2800	56	Pan Am - 4200 Pan Am Blvd.	3200
15	Hangar - 2974 Curtis King Blvd.	11000	57	Hangar - 2946 Curtis King Blvd.	1400
16	Hangar - 2970 Curtis King Blvd.	6200	58	Hangar - 2858 Curtis King Blvd.	6100
17	Hangar - 2956 Curtis King Blvd.	3700	59	Hangar - 3820, 3816, 3812, 3808 St. Lucie Blvd.	3000
18	Hangar - 2952 Curtis King Blvd.	3700	60	Hangar - 3860 St. Lucie Blvd.	1500
19	Hangar - 2950 Curtis King Blvd.	6700	61	Hangar - 3864 St. Lucie Blvd.	1500
20	Hangar - 2954 Curtis King Blvd.	3600	62	Hangar - 3868 St. Lucie Blvd.	3100
21	Hangar - 2958 Curtis King Blvd.	3500	63	Hangar - 3872 St. Lucie Blvd.	3900
22	Hangar - 2960 Curtis King Blvd.	4800	64	Aircraft Service Center - 3780 St. Lucie Blvd.	13000
23	Hangar - 2920 Curtis King Blvd.	3600	65	Hangar - 3147 Jet Center Terrace	3500
24	Hangar - 2924 Curtis King Blvd.	3500	66	Hangar - 3143 Jet Center Terrace	3500
25	Hangar - 2928 Curtis King Blvd.	5500	67	Jet Service Center & Rest. - 3167 Jet Center Terrace	3500
26	Hangar - 2932 Curtis King Blvd.	2400	68	Hangar - 3187 Jet Center Terrace	1900
27	Hangar - 2926 Curtis King Blvd.	3100	69	Hangar - 3183 Jet Center Terrace	1900
28	Hangar - 2945 Curtis King Blvd.	5000	70	Hangar - 3179 Jet Center Terrace	1900
29	Hangar - 2910 Curtis King Blvd.	19000	71	Hangar - 3175 Jet Center Terrace	1900
30	Fire Station Number 4 - 2850 Curtis King Blvd.	4500	72	Hangar - 3171 Jet Center Terrace	1900
31	Hangars - 3840 to 3856 St. Lucie Blvd.	8000	73	Hangar - 3167 Jet Center Terrace	4100
32	Hangars - 3836 St. Lucie Blvd.	3500	74	Treasure Coast Fasteners - 3106 Industrial Ave #3	2500
33	Hangars - 3832 St. Lucie Blvd.	3500	75	Treasure Coast Fasteners - 3104 Industrial Ave #3	10200
34	Hangars - 3828 St. Lucie Blvd.	3500	76	FAA Hangars - 3100 Industrial Ave #3	8500
35	Hangars - 3824 St. Lucie Blvd.	9500	77	Phoenix Inc. - 3000 Industrial Ave #3	1600
36	Hangars - 3804 St. Lucie Blvd.	9500	78	Phoenix Inc. - 3000 Industrial Ave #3	12000
37	Air Charter - 3800 St. Lucie Blvd.	3800	79	Sheriff Dept - 2900 Industrial Ave #3	5000
38	Hangar - 3163 Jet Center Terrace	4100	80	Sheriff Dept - 2900 Industrial Ave #3	8500
39	Hangar - 3159 Jet Center Terrace	3900	81	Crome Inc. - 2800 Industrial Ave #3	2400
40	Hangar - 3155 Jet Center Terrace	3900	82	ASI - 2700 Industrial Ave #3	9300
41	Hangar - 3151 Jet Center Terrace	3900			
42	Pan Am - 4201 to 4209 Pan Am Blvd.	9500			

### 1.3.3 Airport Fueling

The airport's fueling facilities and fuel flowage volumes are described in the following paragraphs.

#### 1.3.3.1 Fuel Storage Facilities

There are a total of five (5) fuel storage tanks on the airfield. Air Charter of Florida has three (3) fuel storage tanks located on its leased property. These storage tanks consist of two (2) 12,000 gallon fuel storage tanks for Avgas 100LL and one (1) 12,000 gallon fuel storage tank for Jet A. One (1) of the Avgas fuel storage tanks is a self-fueler. All fuel storage tanks are above ground.

Air Center has two (2) fuel storage tanks located on its leased property. These storage tanks consist of one (1) 20,000 gallon fuel storage tank for Avgas and one (1) 20,000 gallon storage tank for Jet A. All fuel storage tanks are above ground.

1.3.3.2 Fuel Flowage

Fuel flowage at an airport is expressed as the volume of fuel purchased in gallons by the FBOs from their suppliers. Table 1-7a shows the total fuel flowage for the airport. Fuel flowage is shown quarterly from 1997 to 2000 for comparison purposes. Yearly totals for Avgas and Jet Fuel are shown in Table 1-7b for 1997 through 2000.

Table 1-7a  
 Quarterly Fuel Flowage Amounts (In Gallons)

		Fuel Flowage				Totals	
Year	Quarter	Air Charter		AriBen	Air Center		Totals
		Avgas	Jet A	Avgas	Avgas	Jet A	
1997	1st Quarter	26,100	17,399	—	142,803	61,201	168,903
	2nd Quarter	26,272	17,516	—	120,408	51,604	146,680
	3rd Quarter	26,064	17,377	—	90,600	38,828	116,664
	4th Quarter	26,363	17,574	—	89,757	38,467	116,120
1998	1st Quarter	21,171	14,115	—	131,471	70,792	152,642
	2nd Quarter	20,995	13,997	—	152,521	82,127	173,516
	3rd Quarter	20,857	13,905	—	108,841	56,607	129,698
	4th Quarter	26,012	17,341	—	124,362	66,964	150,374
1999	1st Quarter	25,758	17,172	—	123,799	123,799	149,557
	2nd Quarter	15,668	12,446	—	128,069	128,069	143,737
	3rd Quarter	25,661	17,107	17,779	85,528	85,528	128,968
	4 <sup>th</sup> Quarter	20,457	13,638	17,527	98,042	98,042	136,026
2000	1st Quarter	36,290	24,194	25,187	100,040	185,789	161,517
	2nd Quarter	20,154	13,435	34,607	92,151	171,137	146,912
	3rd Quarter	20,427	13,617	26,252	67,089	124,593	113,768
	4th Quarter	15,446	10,298	34,868	82,654	153,501	132,968

Source: St. Lucie County International Airport

Table 1-7b  
 Yearly Fuel Flowage of Avgas & Jet A

Year	Avgas	Jet A	Total
1997	548,367	259,966	808,333
1998	606,230	335,851	942,081
1999	558,288	495,801	1,054,089
2000	555,165	696,564	1,251,729

1.3.4 Public Safety Coverage

St. Lucie County provides security patrols, emergency medical services, and fire-fighting services for the airport. St. Lucie County Fire District has Fire Station #4 located on the east-side of the airport access road and responds to any airport emergencies, if they have not been previously dispatched to another call. The airport does not have any Airport Rescue and Fire Fighting (ARFF) services as defined by FAA

guidelines. The airport has communication, via radios and direct telephones, between the tower, Central Dispatch, the U.S. Coast Guard, and the Airport Director's office in the event an emergency occurs.

#### 1.4 AIRSPACE STRUCTURE

An Airport Traffic Control Tower was constructed at St. Lucie County International Airport in 1987. Originally operated as a non-contract tower, the FAA began operating and servicing the tower in 1989. Currently, the FAA operates and maintains the ATCT. The ATCT is in operation between 7:00 am until 9:00 PM seven days a week. The enroute-controlling center at Miami International Airport is responsible for approach and departure control, and all IFR traffic into and out of St. Lucie County International Airport.

There are three Military Operations Areas (MOA) about 25 miles to the west of the airport. These MOAs are Marion, Avon Park, and Basinger. Approximately 70 miles to the west is a Restricted Area (R-2901), which requires notification and permission prior to entering.

Aircraft flying through the region or to a neighboring airport usually follow designated transmitter or beacon air routes known as the Low Altitude Victor Airway system, which are generated by VHF Omni Range (VORs). These Victor Airways are eight nautical miles wide and are between 1,200 and 18,000 feet in altitude. Exhibit 1-B from the Miami Sectional Aeronautical Chart, depicts the airspace, Nav aids, frequencies, and aeronautical information, in and around St. Lucie County International Airport.

Other Nav aids in the area that are used for air navigation include the Melbourne VOR/DME and Vero Beach VORTAC.

Other public-use airports in the area include: Indiantown Airport located 27 nautical miles southwest, New Hibiscus Airpark located 12 nautical miles northwest, Okeechobee County Airport located 28 nautical miles west-southwest, Sebastian Municipal Airport located 20 nautical miles north-northwest, Valkaria Airport located 30 nautical miles north-northwest, Vero Beach Municipal Airport located 10 nautical miles north-northwest, and Martin County/Witham Field located 21 nautical miles south-southeast.

#### 1.5 ON-AIRPORT LAND USE

The St. Lucie County Land Development Code, which has been updated in 2000, provides for the development of public and/or private facilities such as the Airport - T/U Transportation/Utility. The purpose of this district is to provide appropriate sites for light industrial operations that do not have a heavy impact on the county utility systems.

#### 1.6 COMMUNITY INVENTORY

The following paragraphs describe the different aspects of the community inventory.

##### 1.6.1 Off-Airport Land Use

Chapter 163 of the Florida Statutes requires all local governments to develop comprehensive plans to "facilitate the adequate and efficient provision of transportation..." Governments with populations of 50,000 or greater are required to include a Port, Aviation, or related facility elements in their comprehensive plans.

The Florida State Legislature created the Safety and Land Use Compatibility Plan in 2001. This Plan ensures that Florida's airports have the capability to accommodate aviation demand while maintaining public safety. The Plan recommends the establishment of compatible land use around airports, and adequate protection of safety zones around airports. The State Legislation requires these recommendations be enforced at the County level.

The County has established a Comprehensive Plan that provides long-term goals, policies, and needs for the future of St. Lucie County. This plan is divided into individual elements essential to the long-term successful development. The airport is included in this Comprehensive Plan under the fourth element - Port, Aviation and Related Facilities. Goal 2.7 of the comprehensive plan states "... that the purpose of the airport is to provide airport facilities that are adequate to meet present and future demands and to operate general aviation facilities in a safe and efficient manner which will maximize ease of movement of people and goods and minimize conflicts with adjacent land uses and adverse environmental impacts."

Adequate protection of safety zones around airports includes keeping those safety zones, including Runway Protection Zones and Object Runway Free Areas, free and clear of objects. Compatible land use around airports includes industrial and commercial areas. Examples of incompatible land uses around airports include residential areas, schools, and churches.

### 1.6.2 Zoning

Off-Airport land-use around St. Lucie County International Airport consists of various different zoning districts ranging from commercial/industrial to agricultural. These zoning districts are regulated by the County's Land Development Code, which dictates the day-to-day requirements necessary for all land use within the county. Land use within the Town of St. Lucie Village, immediately east of the airport, is regulated by the Town's Comprehensive Plan and Zoning Ordinance and is primarily residential.

East of St. Lucie County International Airport is the Airport Industrial Park, along with other industrial and residential areas. Near the coastline and US 1, is the Town of St. Lucie Village and other unincorporated, mixed residential developments and commercial areas. The Town of St. Lucie Village is independent from the County. The County has no jurisdiction over land use and zoning in St. Lucie Village as well as in the City of Fort Pierce. Every municipality within St. Lucie County has the ability to control its own land use and zoning.

South of St. Lucie County International Airport on St. Lucie Boulevard there is some commercial development. Although the majority of the land immediately south of the airport is undeveloped, the land further south of St. Lucie County International Airport consists mostly of substantial residential subdivisions.

West of St. Lucie County International Airport land uses either consist of agricultural or undeveloped property. There are some small areas of low-density residential developments along St. Lucie Boulevard.

North of St. Lucie County International Airport is scattered with residential subdivisions.

### 1.6.3 Height Zoning

While the FAA does not exercise regulatory or permitting functions regarding structures that might penetrate navigable airspace, the FAA does rely on State and local zoning regulations to provide height and airspace protection. Such regulation around an airport limits encroachment of the Runway protection zones (RPZs), thus ensuring the safety of the airspace around the airport.

State of Florida Height Zoning regulations are established in Chapter 333 of the Florida Statutes. Subsection 333.03(1), requires that "every political subdivision having an airport hazard area within its territorial limits shall, by October 1, 1977, adopt, administer, and enforce, under the police power and in the manner and upon the conditions hereinafter prescribed, airport zoning regulations for such airport hazard areas".

St. Lucie County has developed the Tall Structure Height Planning Guide for St. Lucie County in 1990. This guide is intended to be used as a tool by developers and government agencies through the site development and permitting process. Much of this document was taken from the 14 CFR Part 77 Obstructions Affecting Navigable Airspace.

#### 1.6.4 Environmental Issues

At most airports, the primary environmental issues relate to aircraft noise, water quality, habitat, and land use compatibility. St. Lucie County International Airport is no exception. Growth of corporate jet activity and aircraft training flights as a result of the nation's prosperous economy has resulted in increased complaints from neighborhoods surrounding the airport. Airport management is responding to this development with voluntary procedures, pilot education efforts, and complaint response procedures.

Stormwater drainage is the primary water quality issue in Florida. As with any developed area in the state, run-off must be controlled and treated through the use of swales and detention areas. Any development which impacts surface water on the airport must be permitted and approved by the South Florida Water Management District. The airport is currently in the process of updating the existing Surface Water Management Plan, and anticipates its completion in 2002.

Land-use "buffer" areas on and around the airport is part of the analysis that will be undertaken before finalizing the Airport Layout Plan (ALP). The history of St. Lucie County International Airport includes many such efforts, which will be reflected in the results of this study. Examples are the creation of the golf course from former airport areas, the acquisition of land on the north side of the airport, and the Industrial Park along the west perimeter of the airport.

### 1.7 SOCIOECONOMIC DATA

A variety of historical data and socioeconomic data referencing the St. Lucie County area have been collected for use for various elements of this Master Plan Study. This information is necessary to form part of the basis for identification of projected aircraft activity at the airport. Socioeconomic data collected include economic, employment, and population data. Socioeconomic data for St. Lucie County are presented in the following sections.

#### 1.7.1 Economic Base

Retail, professional services, manufacturing, tourism, and health care sectors are prominent factors in St. Lucie County's economy. Agriculture is also a significant sector in the St. Lucie County economy, which include several cattle ranches and large citrus groves near the airport. The employment by industry sector for establishments with payroll and establishments with no paid employees for St. Lucie County is summarized in Table 1-8.

Table 1-8  
 Non-employer / Employer Sector Statistics  
 In St. Lucie County

NAICS code	Description	All Firms Taxable		Non-employers		Employers			
		Establish -ments	Sales, Receipts, or Shipments (\$1,000)	Establish -ments	Sales, Receipts, or Shipments (\$1,000)	Establish -ments	Sales, Receipts, or Shipments (\$1,000)		
		31-33	Manufacturing	287	548,815	163	6,154	124	542,661
		42	Wholesale trade	400	W	202	13,852	198	581,483
44-45	Retail trade	1,757	1,432,786	1,147	45,571	610	1,387,215		
53	Real estate & rental & leasing	1,128	126,230	950	40,310	178	85,920		
54	Professional, scientific, & technical services	1,642	122,089	1,385	30,479	257	91,610		
56	Admin. & waste management & remediation services	1,147	84,078	675	17,925	172	66,153		
61	Educational services	95	5,058	81	1,129	14	3,929		
62	Health care & social assistance	970	541,122	610	16,015	360	525,107		
71	Arts, entertainment, & recreation	351	28,165	312	6,327	39	21,838		
72	Accommodation & food services	366	154,025	121	6,382	245	147,643		
81	Other services (except public administration)	1,656	106,894	1,383	32,656	273	74,238		

W: Wholesale Receipts not comparable

Source: 1997 Economic Census

### 1.7.2 Employment

In December 31, 1999, the number of wage and salary jobs in St. Lucie County was estimated at 69,481 from a total work force of 74,788. Therefore, according to the St. Lucie County Chamber of Commerce, the overall unemployment rate in St. Lucie County is at 6.1%, as depicted in Table 1-9. The major employers in St. Lucie County for 2000 are depicted in Table 1-10, with a strong showing of trades and service oriented companies being the largest employers.

Table 1-9  
 Employment Information

Estimated Labor Force as of February, 2002	79,409
Total Employed as of February, 2002	74,564
Unemployment Rate as of February, 2002	6.1%

Source: St. Lucie County Chamber of Commerce

Table 1-10  
 Employment by Company  
 Top 20 Companies

Company	Number of Employees	Company	Number of Employees
St. Lucie County School	3400	Aegis Communications	460
Lawnwood Regional Medical Center	1400	Walmart	456
Publix Supermarkets	1260	Indian River Comm. College	446
St. Lucie County (except Sheriff)	1009	Convergys	421
QVC	911	Club Med/Village Hotels of Sandpiper	400
St. Lucie Medical Center	600	New Horizons Health Care	351
Florida Power & Light	790	City of Fort Pierce	350
Winn Dixie Supermarkets	650	BellSouth	350
City of Port St. Lucie	535	St. Lucie County Fire District	329
Sheriff's Department	527	Tropicana	320
		Fort Pierce Utilities Authority	283

Source: St. Lucie Chamber of Commerce/St. Lucie County

### 1.7.3 Per Capita Income

Table 1-11 illustrates the historical relationship of per capita income between St. Lucie County, Florida and the United States. Personal per capita income in St. Lucie County has consistently been at levels lower than the national average and lower than the average for the State of Florida.

Table 1-11  
 Personal Per Capita Income Comparison

	1996	1997	1998	1999
St. Lucie County	19,399	20,485	21,486	22,189
Florida	23,834	25,645	26,159	27,781
United States	\$24,651	\$25,924	\$26,909	\$28,546

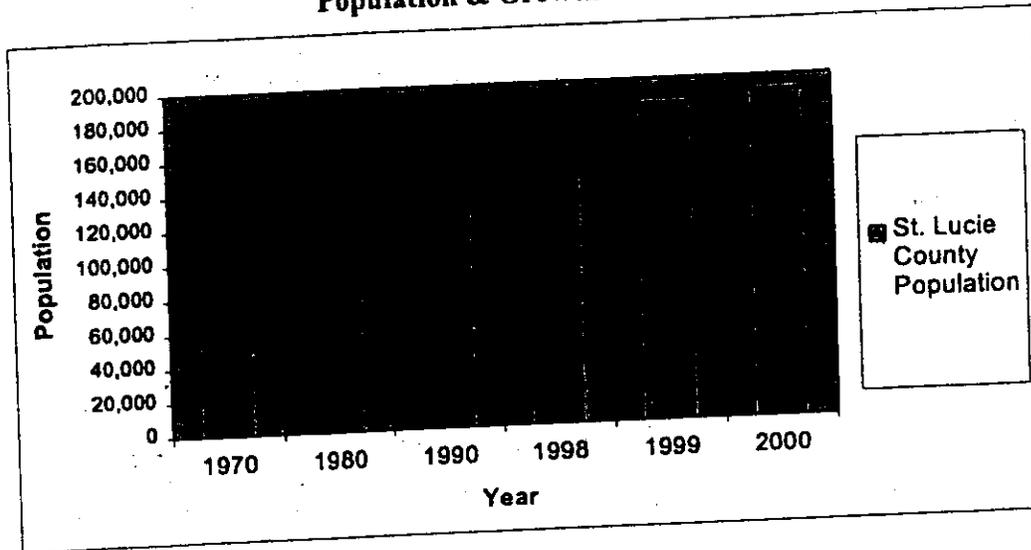
Source: Florida Statistical Abstract 2000 & U. S. Dept. of Commerce 2001

### 1.7.4 Population

Information on population was obtained from the U.S. Census Bureau. St. Lucie County has experienced steady growth in their population in the last decade. For example, the County's population was 152,451 in 1990 and 192,695 in 2000. This translates to an annual increase of approximately 2.52 percent in population growth. With an 8.4% increase in population in 1999 calculating into almost 16,000 new residents, St. Lucie County is growing faster than ever. Refer to Figure 1-1.

The two largest segments of this population growth include persons between 15 – 44 years of age and 45 – 65 years of age. Indicating a balance shift of persons of the working age with families moving into the County giving St. Lucie County residents an average age of 40.46 years old in 2001.

Figure 1-1  
 St. Lucie County  
 Population & Growth Statistics



In 1997, the Bureau of the Census reported the County's population at 177,446. In 2000, the County's population was reported at 192,695. The population is subject to some seasonal fluctuations. As depicted in Table 1-12, the population growth in the last 10 years for St. Lucie County has stayed below the aggressive Florida-wide population growth by 4.08% but has showed a steady increase each year.

Table 1-12  
 Population Growth 1990-2010

Year	St. Lucie County	Florida
1990	152,451	12,937,926
1991	157,065	13,195,952
1992	161,013	13,424,416
1993	164,013	13,608,627
1994	168,774	13,878,905
1995	171,207	14,149,317
1997	177,446	14,712,922
2000	192,695	15,512,940
2010*	237,700	17,927,835
Annual Percent Change	2.52%	6.6%

Source: Population Estimates Program, Population Division, U.S. Census Bureau, Washington, DC

## 1.8 CLIMATE

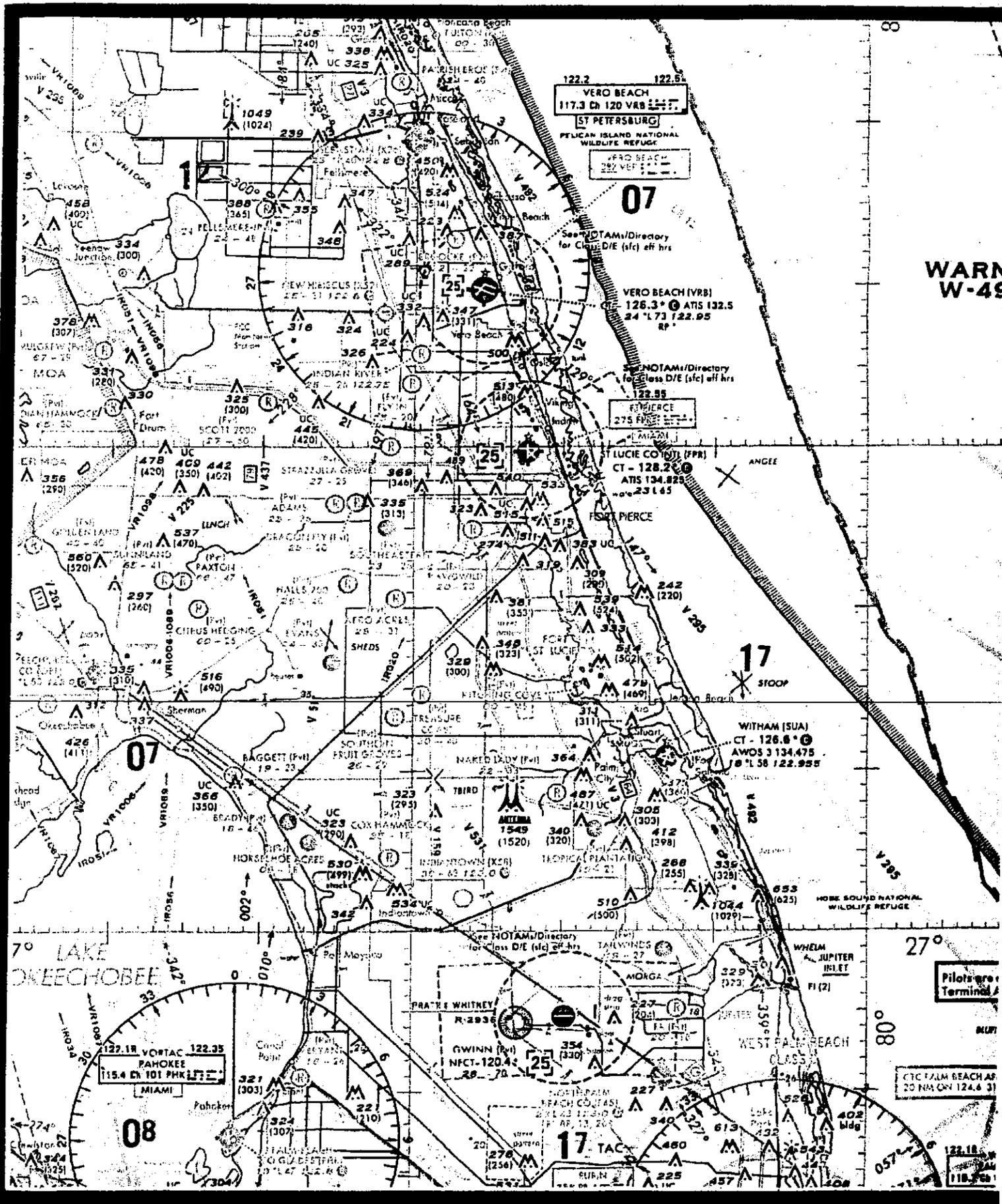
Weather conditions influence operational capacity and capital development of an airport. For example, temperature is an important factor in determining runway length required for aircraft operations. Wind speed and direction determine operational flow characteristics. The percentage of time when visibility is impaired due to cloud coverage is a major factor in determining the use of instrument approach aids.

The climate of St. Lucie County is best described as being humid subtropical. It is affected by prevailing northeast winds in the fall and winter months, and southeast winds in the spring and summer. For All-Weather and IFR Wind Rose Tabulations, please see Exhibit 1-C and Exhibit 1-D. Average annual precipitation is 64 inches, with 50% of the precipitation occurring in June, July and August. The mean annual temperature is 73.2 degrees Fahrenheit, with a spread of 16.7 degrees Fahrenheit in both the winter and summer. St. Lucie County has an average temperature of 89.9 degrees in the peak of summer and an average temperature of 56.5 degrees in the peak of winter. This weather information was obtained from the National Climatic Data Center.

For this Master Plan, the most current wind data was ordered for the most closely located station to the St. Lucie County International Airport, which is located in St. Lucie County. As depicted on the Wind Rose Exhibits, the maintenance of two (2) runways allows the airport to operate in crosswind weather conditions more than 95% of the time.

## 1.9 SUMMARY

The information presented and discussed on the previous pages provides a foundation upon which the remaining elements of the master planning process will be constructed. The information on general aviation facilities and tenant utilization of the airport, in conjunction with additional analyses and data collection such as, socioeconomic factors, will serve as the basis for the development of forecasts of aviation activity. This information will, in turn, provide guidance to the assessment of aviation facilities needed to meet the needs of the St. Lucie County International Airport, the Regional Airport System, and National Airport System.



**WARN W-49**

**Pilots are Terminal**

**CTC PALM BEACH AP**  
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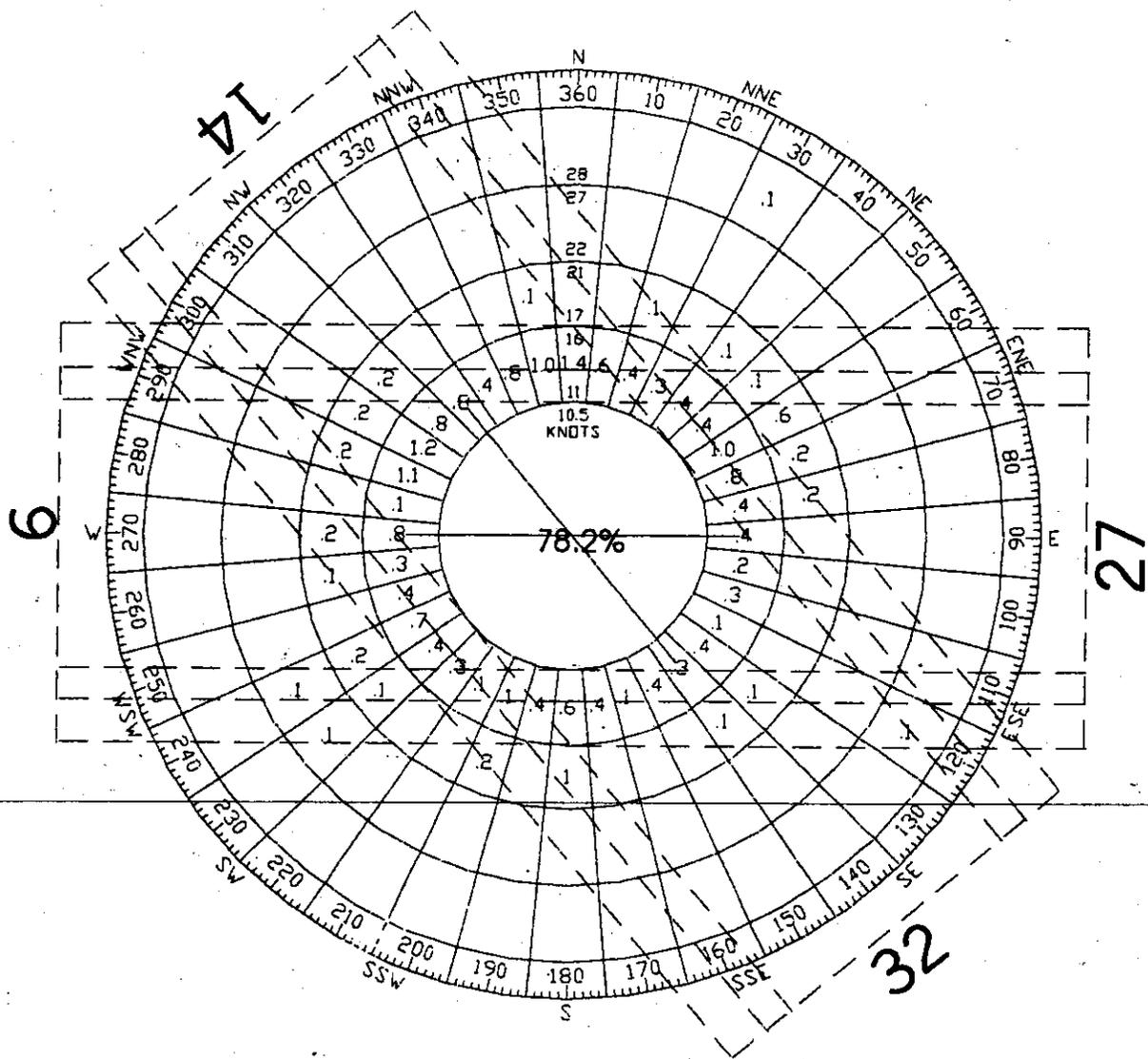
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**St. Lucie International Airport Master Plan**

**MIAMI SECTIONAL AERONAUTICAL CHART**

**Exhibit 1-B**

# IFR WEATHER WIND ROSE

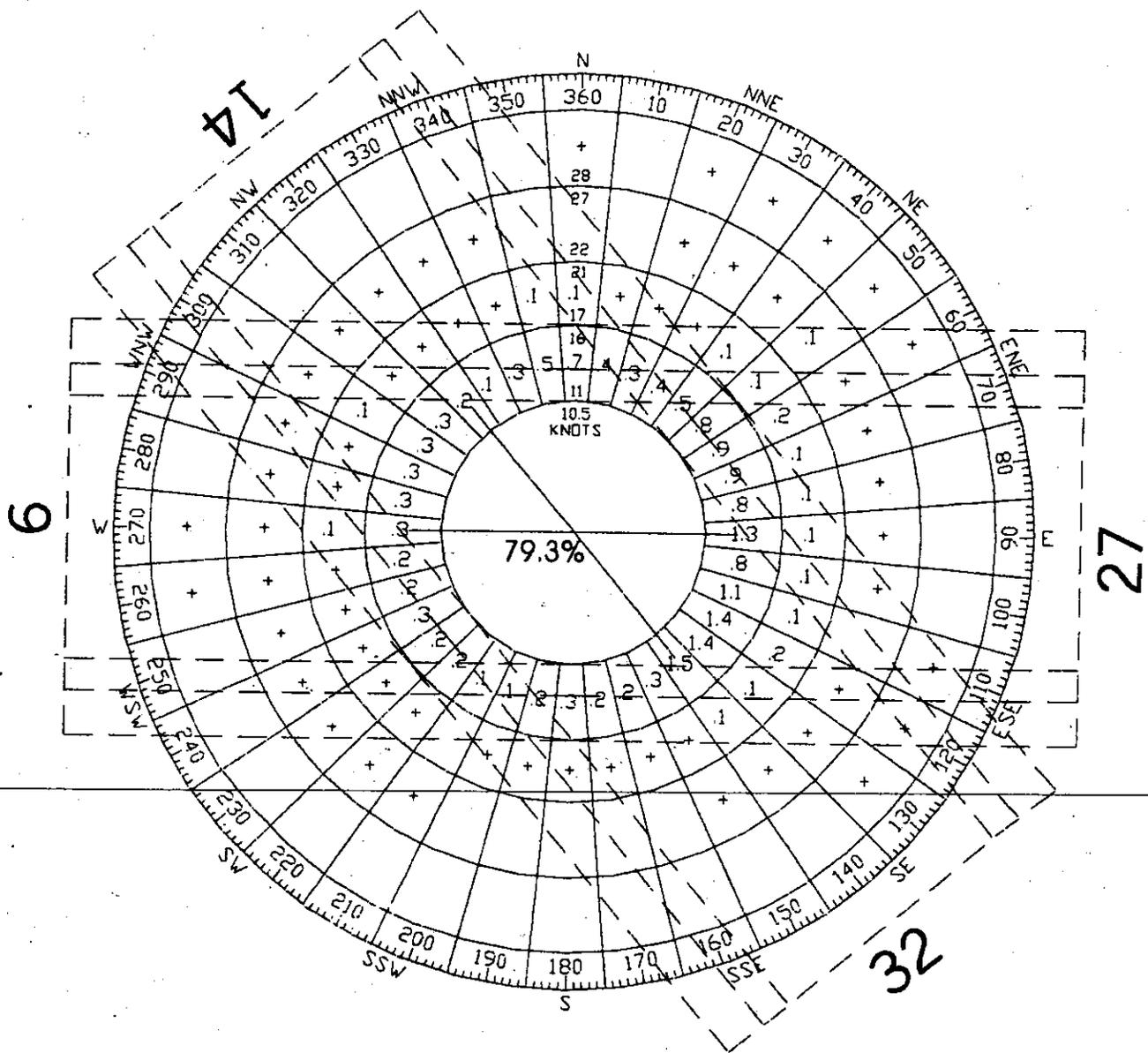


## WIND DATA SUMMARY

Crosswind Component (Knots)	R 14-32	R 9-27	R14-32 & R9-27 Combined
10.5	90.21%	91.17%	96.73%
13.0	94.84%	95.18%	98.55%
16.0	98.16%	99.35%	99.70%

Station: Ft. Pierce - St. Lucie # 72210  
 Source: National Climatic Data Center/National Oceanic and Atmospheric Administration  
 Period of Observation: 1989 - 1998  
 Observations: 37,909

# ALL WEATHER WIND ROSE



## WIND DATA SUMMARY

Crosswind Component (Knots)	R 14-32	R 9-27	R14-32 & R9-27 Combined
10.5	90.56%	94.11%	98.01%
13.0	94.30%	97.16%	99.46%
16.0	98.61%	99.32%	99.93%

Station: Ft. Pierce - St. Lucie # 72210  
 Source: National Climatic Data Center/National Oceanic and Atmospheric Administration  
 Period of Observation: 1989 - 1998  
 Observations: 38,034

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**Chapter 2**  
*Aviation Forecast*

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## Chapter Two: Aviation Forecasts

### 2.0 GENERAL

This Chapter presents projections of aviation activity at the St. Lucie County International Airport for three future time periods: years 2005, 2010, and 2020. These time periods represent the short-, intermediate-, and long-term planning period for the development of the Airport in this Airport Master Plan (AMP). The aviation forecasts were developed based on historical data from the early 1980s through 2000.

The purpose of this Chapter is to establish and present the forecasted aviation activity. The forecasts serve as the basis for planning the facilities needed to meet the area's aviation demand. These forecasts will replace the projections presented in the 1993 Master Plan Update.

To adequately determine the types and sizes of facilities needed, forecasts for different elements are necessary. These elements are as follows:

- **Based Aircraft**
- **Aircraft Operations**
  - Total
  - Local/Itinerant
  - Military
  - Instrument
- **Fuel Flowage**
  - Avgas (100LL)
  - Jet-A

#### 2.0.1 Unconstrained Forecasts and Controlled Growth

Forecasts are only estimates of future activity levels. The numbers projected for each of the categories above are not a policy statement as to the level of activity that should be at the Airport. The projections are estimates of future activity based on indicators such as population growth, income growth, etc., that historically track closely with aviation activity.

In these forecasts, a close correlation to the FAA's national forecasts for general aviation and ATCT data were used. The FAA bases their forecasts on the same kind of indicators. The forecasts are unconstrained, meaning that no limiting influences are applied. The activity levels are an unconstrained estimate of the total demand within the Airport's market. The identification of the unconstrained demand is the first step in developing a facility plan for the Airport.

Facility requirements to service the unconstrained demand are subsequently calculated and their impact analyzed. At that point, consideration can be given to influencing the demand growth through the types of facilities that are, or are not, developed. By analyzing the unconstrained development first, all parties can see what the effects will be of any controls.

Future development at the Airport will build on the existing facilities, agreements and policies that have been developed over the almost seventy years of Airport operations. The runway configuration, service facilities and operating agreements in place have established a base for current activity levels. Policies such as the voluntary touch and go limitations, or the FBO lease agreements, will have an effect on future levels. The Master Plan elements subsequent to these forecasts undertake this process of analysis and selection.

## 2.1 BASED AIRCRAFT FORECAST

Prior to generating the forecast, all available historical based aircraft information was collected and reviewed. The information obtained from each of these sources is outlined in Table 2-1.

Year	FAA Terminal Area Forecast
1980	100
1985	161
1990	172
1995	131
1996	119
1997	119
1998	119
1999	147
2000	174

Typically, based aircraft information is more accurate than other airport activity measures, such as annual operations. This is because the number of based aircraft is easier to track than daily aircraft operations. However, it is still common to have different reports of based aircraft, depending on the source. Discussions with Fixed Based Operators indicate that the activity at the Airport does not show high seasonal variations, except for aircraft training periods.

The information reported in the 1993 AMPU for 1980 – 1993, and reported by Airport Management and the FBOs for the subsequent years 1993 – 2000 are believed to be the most reliable sources of historical information since they were obtained directly from Airport records. These based aircraft counts were used as the historical based aircraft data for the forecast.

With the recent arrival of Pan Am International Flight Academy to St. Lucie County International Airport, the Airport has seen a significant increase in based aircraft. Since Pan Am arrived in 1999, they have added 31 aircraft. In the short term, Pan Am is expecting to top out with 75 aircraft. An increase of 44 aircraft from Pan Am, plus the normal growth to St. Lucie County International Airport is expected to take place in a short period of time. Such a change only occurs with the arrival of an additional flight school, such as Pan Am, or a Fixed Based Operator. After discussions with the Airport Director, no additional changes of this size were predicted in the near future. In order to accommodate for this brief increase, all of the forecasting methods must have a significant increase in the first two years and then

level off accordingly. To do this, the forecasts will begin with the most current number of based aircraft, being 181. For the years 2002 and 2003, 24 aircraft will be added each year. This was determined by the initial increase from Pan Am and continuing the normal growth of the airport. For all the forecasts determined, the number of based aircraft for the years 2002 and 2003 will be 205 and 229 respectively.

**2.1.1 FAA Aviation Forecast – Based Aircraft**

Each year the FAA develops and publishes its national aviation forecast. This forecast looks at all segments of aviation including commercial, air taxi, general aviation, and air cargo. In March of 2000, the FAA published its current edition of this forecast (*FAA Aerospace Forecasts, Fiscal Years 2000-2011*).

The FAA's general aviation forecast was developed through review of historical trends. The FAA describes a turnaround in the general aviation industry attributed to the U.S. economic expansion that began in 1993 and the passage of the General Aviation Revitalization Act in 1994. In support of that statement, they report that the general aviation fleet and activity have increased annually since 1994. General aviation shipments and billings have more than doubled since 1994, with shipments of 928 aircraft in 1994 increasing to 2,220 aircraft in 1998. This is an increase of almost 140%. During the first three quarters of 1999, shipments were up an additional 13.4 %.

In 1999, operations at FAA and Contract Air Traffic Control Tower (ATCT) Airports were up 5.2 %. This is the third consecutive year that general aviation activity has increased at Air Traffic Control (ATC) facilities. Instrument operations have also increased 15.5 % in the last three years. The FAA also reported increases in recreational and instructional flying, the number of active pilots, and for the third consecutive year, the number of active student pilots. All elements of aviation activity are on the rise.

The FAA projects this growth trend to continue, with the active general aviation fleet projected to increase at an average annual growth rate of 0.9 % until 2011. Business use of general aviation aircraft is expected to grow at a more rapid pace than personal use due to continued growth in fractional ownership programs. This expected growth in business use is reflected in the FAA's fleet mix forecast. They expect the turbine-powered fleet to grow at a rate four times that of the piston engine fleet. The FAA's projections for fleet mix growth are shown in Table 2-2.

**Table 2-2  
 FAA Fleet Mix Growth Projections**

Aircraft Type	FAA Projected Growth Rate from years 2000-2011
SE Piston	1.7%
ME Piston	0.3%
TurboProp	1.2%
Jet	7.6%
Rotor	2.5%

Source: FAA Aerospace Forecasts, Fiscal Years 2000-2011.

For long-term planning purposes, the FAA also published the *FAA's Long-Range Aerospace Forecasts, Fiscal Years 2011-2020*. These projections are one year older than the short-term projections contained in *FAA Aerospace Forecasts, Fiscal Years 2000-2011*. However, due to the long-term nature of these projections, they are still valid.

The FAA projects that the overall general aviation fleet will continue to increase at an average annual growth rate of 0.8 % in the long-term planning period. Piston engine fixed wing aircraft are projected to increase at an average annual growth rate of 0.8%, while turbine powered aircraft are expected to increase at an average annual growth rate of 2.0%. The long range forecast does not provide projections for rotorcraft. Therefore, the FAA's short-term projections for rotorcraft were extrapolated through 2020. The FAA's short-term and long-term projected growth rates, as outlined above, were applied to the 2000 based aircraft fleet. The resulting forecast is shown in Table 2-3.

**Table 2-3**  
**St. Lucie County International Airport**  
**FAA Fleet Mix Projections**

<b>Year</b>	<b>SE</b>	<b>ME</b>	<b>Jet</b>	<b>HE</b>	<b>Total</b>
<b>2001</b>	<b>129</b>	<b>44</b>	<b>5</b>	<b>3</b>	<b>181</b>
<b>2002</b>	<b>147</b>	<b>49</b>	<b>5</b>	<b>4</b>	<b>205</b>
<b>2003</b>	<b>165</b>	<b>54</b>	<b>6</b>	<b>4</b>	<b>229</b>
<b>2004</b>	<b>168</b>	<b>54</b>	<b>6</b>	<b>4</b>	<b>232</b>
<b>2005</b>	<b>171</b>	<b>54</b>	<b>7</b>	<b>4</b>	<b>236</b>
<b>2010</b>	<b>186</b>	<b>55</b>	<b>10</b>	<b>5</b>	<b>256</b>
<b>2015</b>	<b>195</b>	<b>57</b>	<b>12</b>	<b>5</b>	<b>269</b>
<b>2020</b>	<b>203</b>	<b>59</b>	<b>13</b>	<b>6</b>	<b>281</b>

**Notes:**

Forecast developed based on FAA fleet mix projections as published in FAA Aerospace Forecasts, Fiscal Years 2000-2011 and FAA Long-Range Aerospace Forecasts, Fiscal Years 2000-2020.

**2.1.2 The Florida Aviation System Plan – Based Aircraft**

The Florida Aviation System Plan (FASP) is a broad blueprint that guides the development of Florida's 103 publicly owned Airports. The FASP is necessary to ensure that Florida's airports will work together effectively as a statewide transportation system, provide a link to the global air transportation system, and effectively interface with regional transportation systems.

The statewide system of Airports is important to the quality of life and economic well being of Florida's citizens. The Florida Department of Transportation and the Federal Aviation Administration developed the Continuing Florida Aviation System Planning Process (CFASPP) to maintain and enhance Florida's aviation system. The purpose of the CFASPP is to develop the most cost-effective 20-year FASP possible, to justify public funding for Airports, and to direct funding to the Airports that need it most.

The latest version of the FASP (years 1992 to 2010) was based on historical data collected up to, and including 1991. An update of the FASP is ongoing and is expected to be published in June of 2001. The data used in the development of the FASP forecasts is not as current as the data used in the FAA's forecasts. However, the current FASP was reviewed as part of this study to determine the current validity of its findings.

In the FASP, the FDOT projected that based aircraft at St. Lucie County International Airport would increase 54% by 2010, increasing from 172 in 1990 to 265 in 2010. This was determined by an increase of 48 based aircraft from 2002 to 2003, with an average annual rate of 2.1%. Under this methodology, it

is assumed that the number of based aircraft at the Airport will continue to increase. Table 2-4 shows the forecast:

**Table 2-4**  
**St. Lucie County International Airport**  
**FASP Based Aircraft Forecast**

Year	Based Aircraft	Annual Growth Rate
2005	239	2.1%
2010	265	2.1%
2020	326	2.1%

**2.1.3 Multiple Regression Analysis – Socioeconomic Variables (Population) and Based Aircraft**

This socioeconomic methodology is a multiple regression analysis using time and population as the independent variables. It is similar to the methodology used in the 1993 St. Lucie County International Airport Master Plan Analysis. This analysis determined a 2.5% forecast rate, and is presented in Table 2-5.

**Table 2-5**  
**St. Lucie County International Airport**  
**Multiple Regression Analysis – Population, Based Aircraft, & Linear Regression**

Year	St. Lucie County Population	Based Aircraft	Years Continued	St. Lucie County Population	Multiple Regression	Linear Regression
1990	152,451	172	2001	195,605	181	181
1991	157,065	168	2002	200,534	205	205
1992	161,013	169	2003	205,588	229	229
1993	164,721	169	2004	210,769	235	230
1994	168,774	169	2005	216,080	241	231
1995	171,207	131	2010	244,718	272	237
1996	174,392	119	2020	313,865	348	248
1997	177,446	119				
1998	179,360	119				
1999	181,850	147				
2000	190,797	174				

**Bold = MP forecast planning years**

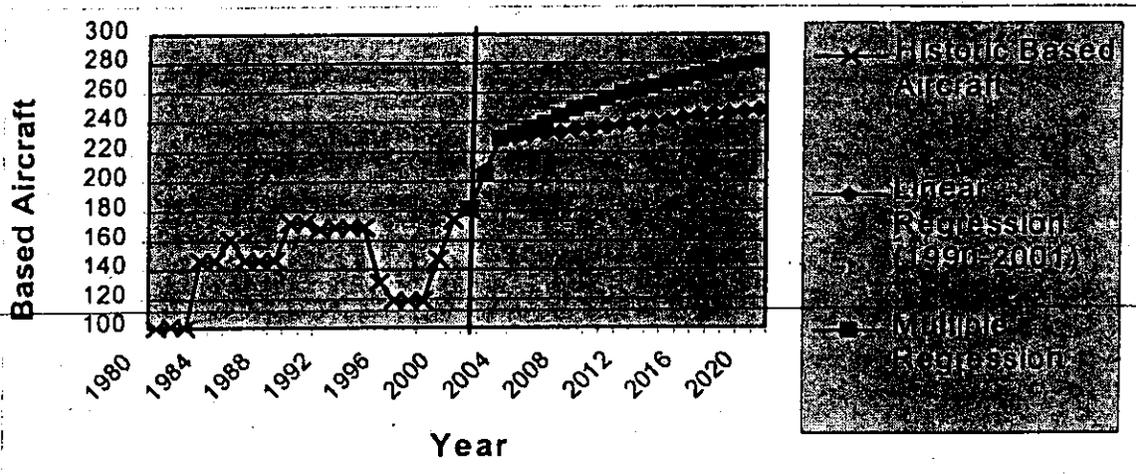
1. Actual & Projected population reported by the Population Estimates Program, Population Division, U.S. Census Bureau, Washington, D.C. (1990-1999) & Bureau of Economic & Business Research, University of Florida
2. Actual Based Aircraft Count, refer to Table 2-1 of this report
3. Historical based aircraft based on the TAF report

In the socioeconomic multiple regression analysis, the correlation was determined to be relatively inexact. This inexact correlation between based aircraft and population is evident in the trends of the last ten years. During 1990-2000, the population in St. Lucie County steadily grew from 152,451 to 190,797 respectively; an increase of approximately 2.5% annually. However, the number of based aircraft at the

Airport has been randomly rising and falling, currently peaking at 181 in 2001. Normally this methodology would not be considered, but after discussions with the Master Plan Study Group (MSPG) it was determined to be the preferred forecasting method. This determination was due to the high percent yield that the multiple regression gave.

The forecasts displayed in Figure 2-1 show a significant difference in the number of based aircraft between the Multiple Regression and the Linear Regression Forecast. The Multiple Regression Forecast determined that there would be 348 based aircraft in 2020, while the Linear Regression Forecast predicted that there would be 248 based aircraft in 2020. These two forecasts were determined on historical information from 1990 to 2000.

**Figure 2-1**  
**St. Lucie County International Airport**  
**Based Aircraft Forecast Comparison**  
**Between Multiple & Linear Regression**



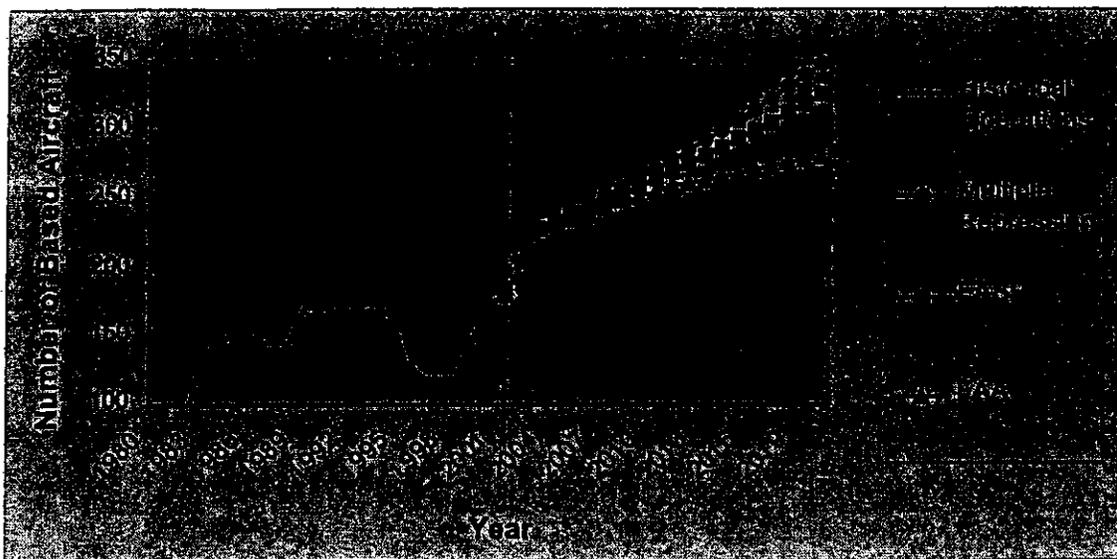
**2.1.4 Based Aircraft Forecast Summary**

The forecast based on the Multiple Regression projections was selected as the preferred forecast for this study. The sections below describe the reasons for selecting this forecast.

**Table 2-6**  
**St. Lucie County International Airport**  
**Based Aircraft Forecast Comparisons**

Year	FAA Projection	FASP Projection	Multiple Regression
2001	181	181	181
2002	205	205	205
2003	229	229	229
2004	232	234	235
2005	236	239	241
2010	256	265	272
2020	281	326	348

Figure 2-2  
St. Lucie County International Airport  
Based Aircraft Forecast



The growth rates based on the FAA Fleet Mix forecast were discounted, because the MPSG understood this methodology to be significantly lower than the actual operational growth of the airport. Since the FAA Fleet Mix Forecast is determined on a national level, the MPSG felt that the State of Florida, and specifically St. Lucie County, has a larger number of flight schools and ideal weather all year round. Therefore, giving the airport a higher level of growth than the national trend.

The forecast developed based on the FASP growth rate, projected growth level of over 16% above the national trends over the 20-year time frame of the study. This would normally suit most General Aviation (GA) Airports adequately, but with the arrival of the Pan Am International Flight School and the recent trends at St. Lucie County International Airport, this method was seen as too moderate. For these reasons, the FASP forecasting methodology was discounted by the MPSG.

The forecast developed based on a Multiple Regression Analysis projected a growth level of over 23% above the national trends over the 20-year timeframe of the forecasting study. The trend at St. Lucie County International Airport over the last 10 years has been relatively conservative, but with the arrival of Pan Am and the large increase in the demand for pilots the MPSG opted for a higher growth rate. With an average annual growth rate of 2.5%, it was determined that the Multiple Regression Analysis was the preferred forecasting methodology considering the dramatic growth rate within the county.

## 2.2 AIRCRAFT OPERATIONS

Aviation activity records were gathered for the development of the annual operations forecast as shown in Table 2-8. There were several sources of conflicting data, but the TAF report was deemed most reliable. The annual operations forecast percentages for each of the methodologies are shown in Table 2-7.

Table 2-7  
 St. Lucie County International Airport  
 Forecast % Comparisons

FAA Fleet Mix	FDOT-FASP	Multiple Regression
See Table 2-10, 2-11	2.1%	2.5%

According to the Airport Traffic Control Tower records, the percentage of aircraft training "touch & go's" have remained at a constant level for the last ten years. Approximately fifty percent (50%) of all the airport's aircraft operations are made up of aircraft flight training. This aircraft activity is classified as "Local" General Aviation operations, even though aircraft flight-training schools from other airports perform operations at St. Lucie County International Airport. It is also important to note that the operational numbers utilized are actual daytime FAA Tower hour numbers. Since the Tower is open from 7 AM to 9 PM daily, there may be a percentage of operations that are not taken into account. Since a vast majority of operations occur during Tower hours, there is no accurate means of obtaining an exact nighttime operations number, and in light of the fact that current operational numbers are significant, the MSPG felt that it was unnecessary to modify this data to include nighttime operations.

Aircraft training operations can be expected to increase dramatically due to the development of the new Pan Am Flight School. In the past year, this company has brought 31 additional training aircraft into St. Lucie County International Airport. Aircraft operations are currently at 186,000, or 81% of the airport's current capacity. For the forecasts developed, it is being assumed that Pan Am will reach its capacity of 75 training aircraft within approximately the next two years. It was calculated that one (1) Pan Am training aircraft will equal 986 operations, with Pan Am anticipating the arrival of 44 more aircraft within the next two years, operations are expected to increase by 43,387. This amount of operations was calculated into all of the forecasting methods to show the most realistic forecast possible. Although this percentage is not at the 80% level where the FAA recommends capacity enhancements, there are many times throughout the year that the airport cannot handle these operational demands. At these times, aircraft are forced by the ATCT to operate at alternative airport locations. The issues of Facility Needs & Demand Capacity will be discussed in Chapter 3. Refer to Table 2-8 and Figure 2-3 for the airport's historical operational data.

Table 2-8  
 St. Lucie County International Airport  
 Historical FAA Terminal Area Forecasts of Aircraft Operations

Year	Itinerant Operations			Local Operations		Total*
	Air Taxi	GA	Military	GA	Military	
1988	1,071	66,000	100	120,000	0	187,171
1989	3,161	78,189	559	115,744	0	197,653
1990	2,094	57,699	100	135,722	6	195,621
1991	3,052	58,022	159	115,602	29	176,864
1992	2,075	69,441	211	85,131	16	156,874
1993	2,307	81,490	165	89,328	4	173,294
1994	2,540	77,484	277	73,535	64	153,900
1995	2,350	75,886	94	71,554	2	149,886
1996	2,210	64,449	34	68,531	2	135,226
1997	1,545	72,554	359	69,614	0	144,072
1998	1,503	71,974	40	70,876	0	144,393
1999	1,477	71,974	133	73,656	29	155,461
2000	1,349	88,430	180	83,969	29	173,957
Average % Of Total Ops	0.78%	50.83%	0.10%	48.27%	0.02%	100%
Total Percentage	51.71%			48.29%		100%

Source: FAA Terminal Area Forecast  
 Data is actual FAA Tower Hour (7 AM to 9 PM) only

Figure 2-3  
 St. Lucie County International Airport  
 Historical FAA Terminal Area Forecasts of Aircraft Operations

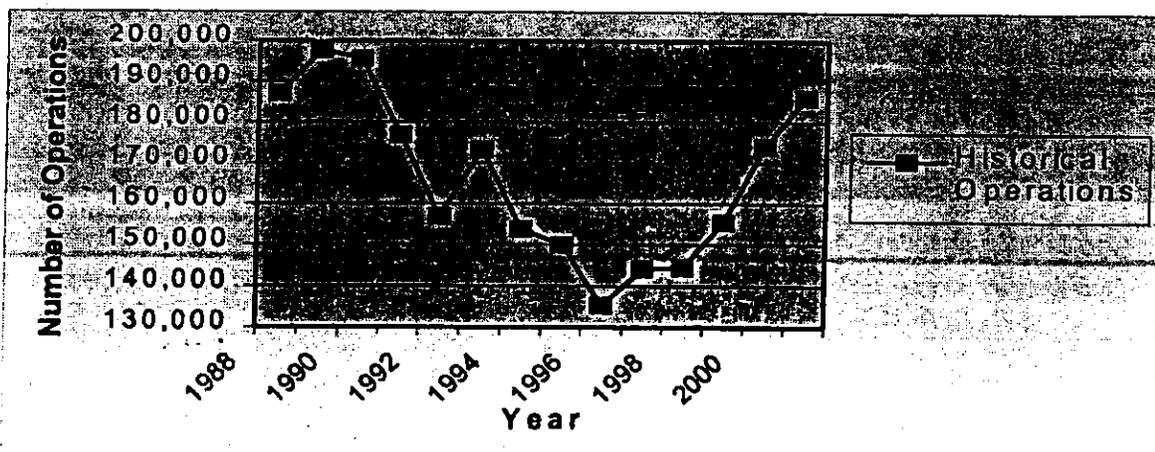


Table 2-9  
 St. Lucie County International Airport  
 Forecasted Aircraft Operations

Year	FAA Fleet Mix						FASP Total	Multiple Regression Total
	SE	ME	TP	JET	HE	Total	2.1% Annual Increase	2.5% Annual Increase
2001	137,640	11,160	20,460	7,455	9,316	186,031	186,031	186,031*
2002	153,693	12,462	22,846	8,324	10,402	207,726	207,726	207,726*
2003	169,746	13,763	25,233	9,193	11,488	229,423	229,423	229,423
2004	172,632	13,804	25,536	9,891	11,776	233,639	234,242	235,160
2005	175,566	13,846	25,842	10,643	12,071	237,968	239,162	241,040
2006	178,551	13,887	26,152	11,450	12,373	242,413	244,185	247,066
2007	181,586	13,929	26,466	12,320	12,682	246,983	249,313	253,242
2008	184,673	13,971	26,784	13,255	12,999	251,682	254,550	259,574
2009	187,813	14,013	27,105	14,261	13,325	256,517	259,895	266,064
2010	191,006	14,055	27,430	15,344	13,657	261,492	265,353	272,715
2011	194,253	14,097	27,760	16,509	13,999	266,618	270,926	279,533
2012	196,584	14,266	28,093	16,708	14,167	269,818	276,615	286,521
2013	198,943	14,437	28,430	16,909	14,337	273,056	282,425	293,685
2014	201,330	14,611	28,771	17,112	14,510	276,334	288,356	301,027
2015	203,746	14,786	29,116	17,318	14,684	279,650	294,411	308,552
2016	206,191	14,963	29,466	17,525	14,861	283,006	300,594	316,265
2017	208,666	15,143	29,819	17,763	15,039	286,403	306,906	324,172
2018	211,170	15,325	30,177	17,950	15,220	289,842	313,352	332,277
2019	213,704	15,509	30,539	18,165	15,403	293,320	319,932	340,583
2020	216,268	15,695	30,906	18,383	15,588	296,840	326,651	349,097

\* - Years 2001 & 2002 are calculated using anticipated growth of 44 based aircraft & 43,387 operations

### 2.2.1 FAA Aviation Operations Forecast

In addition to providing forecasts of the general aviation fleet, the FAA develops aviation activity projections in their publications *FAA Aerospace Forecasts Fiscal Years 2000-2011*, and *FAA Long-Range Aerospace Forecasts Fiscal Years 2010-2025*.

As discussed in Section 1.3.1, *FAA Fleet Mix Forecast*, the FAA has reported increases in general aviation active fleet over the past ten years, with significant increases in the general aviation active fleet since 1994.

For the period extending from 1990 through 1998, activity at towered Airports increased at an average annual growth rate of 0.9%. Although complete data was not available for 1999, the FAA reported that operations at towered Airports were up 5.2%, with itinerant and local operations up 4.3% and 5.6% respectively. 1999 is the third consecutive year of increases at towered facilities, with a 13.4% increase for the three-year period extending from 1997-1999.

Another important factor in the growth of annual operations is the number of general aviation and student pilots. 1999 marked the second consecutive year of an increase in the total number of active licensed pilots, and the third consecutive year of an increase in active student pilots. The FAA reports that this increase in active pilots will be one of the key factors impacting the growth of the general aviation industry.

The FAA projects that general aviation aircraft hours flown will increase at almost 2.7% annually until 2011, with turbojet activity showing the most significant increases. The FAA's projections for aircraft utilization are shown in Table 2-10.

In the FAA publication, *FAA Long-Range Aerospace Forecasts, Fiscal Years 2015, 2020 and 2025*, the FAA projects that after 2011 general aviation operations will continue to grow at an annual rate of 1.2%. However, in this publication (Long-Range Forecasts), the FAA does not identify the projected growth levels by aircraft type.

**Table 2-10**  
**FAA Projected Aircraft Utilization Growth**

Aircraft Type	Average Annual Growth Rate 1999-2011
SE	1.7%
ME	0.3%
TP	1.2%
Jet	7.6%
Rotor	2.5%

Source: FAA Aerospace Forecasts,  
 Fiscal Years 2000-2011

The level of activity conducted by each type of aircraft operating at the Airport was determined for the Integrated Noise Model (INM), which is discussed in *Environmental Overview Chapter*. The INM does not model helicopter activity. Therefore, the operational percentages that were used in the INM do not account for helicopter activity.

**Table 2-11**  
**Fleet Mix -- Percent of Annual Operations**

Aircraft Type	Percentage of Total Annual Operations
SE	74%
ME	6%
TP	11%
Jet	4%
HE	5%
<b>Total</b>	<b>100%</b>

The percentages shown in Table 2-10 were applied to the current annual operations in 2001 for each type of aircraft. The increase in operations by Pan Am were accounted for and taken into effect over the years 2002 and 2003. The FAA's average annual growth rates for each type of aircraft for 2000 through 2011 were applied to the 2001 annual operations total to project annual operations through 2011. The FAA's

long-range projection of 1.2% average annual growth was applied to the 2011 projected operations for each aircraft type to forecast the activity level through 2020. The resultant operations projection is shown in Table 2-12.

**Table 2-12**  
**St. Lucie County International Airport**  
**FAA-Based Annual Operations Forecast by Fleet Mix**

Year	SE	ME	TP	Jet	HE	Total
2001	137,640	11,160	20,460	7,455	9,316	186,031*
2005	175,566	13,846	25,842	10,643	12,071	237,968
2010	191,006	14,055	27,430	15,344	13,657	261,492
2020	216,268	15,695	30,906	18,383	15,588	296,840

\* - Years 2001 & 2002 are calculated using anticipated growth of 44 based aircraft & 43,387 operations

### 2.2.2 Florida Aviation System Plan – Annual Operations

The FASP forecasting method projected that annual operations at St. Lucie County International Airport would increase by 40.6% from the level of 186,031 in 2001 to 265,353 annual operations by 2010. The initial increase in operations was determined to increase 43,387 operations in 2002 – 2003 and an average annual growth rate of approximately 2.1%. Prior to the development of the FASP forecast prepared in 2001, the Airport has experienced several ups and downs in annual operations.

The FASP projected that the annual operations at St. Lucie County International Airport would grow at rates significantly above that of current national projections. The FASP forecast was developed prior to the turnaround that occurred in the aviation industry after 1994. Even with the growth that has occurred in the aviation industry as a whole, the annual operations that have occurred have been significantly less than was projected in the FASP forecast.

Continuation of the FASP's projected growth rates from 2000 to 2010 results in a projected activity level of 265,353 annual operations by 2010. This is a projected increase of over 42% from the 2001 activity level. Further projections of that growth rate to 2020 result in a forecast that is in excess of 75% above the 2001 activity level of 186,031 annual operations. This forecast is shown in Table 2-13.

**Table 2-13**  
**St. Lucie County International Airport**  
**FASP Annual Operations Forecast**

Year	Annual Operations
2001	186,031
2005	239,162
2010	265,353
2020	326,651

### 2.2.3 Multiple Regression – Annual Operations and Socioeconomic Variables (Population)

In Section 2.1.3, *Multiple Regression – Based Aircraft and Socioeconomic (Population)*, it was determined that an inexact correlation exists between the St. Lucie County population and the number of

based aircraft at St. Lucie County International Airport. An additional analysis was conducted to determine if there is a correlation with the St. Lucie County population and the total annual operations.

For this methodology, the evaluation reveals only slight correlation, because of the significant fluctuation in the annual operations while population was growing at a steady rate. However, after discussions with the Master Plan Study Group (MPSG), it was determined that the multiple regression analysis with the average annual increase of 2.5% was the best means of forecasting. Table 2-14 depicts the annual aircraft operations forecast based on population projection.

**Table 2-14**  
**St. Lucie County International Airport**  
**Population Analysis – Annual Operations Forecast**

<b>Year</b>	<b>Population</b>	<b>Annual Operations</b>
2001	195,605	186,031
2005	216,080	241,040
2010	244,718	272,715
2020	313,865	349,097

1. Estimated population provided By: Population Estimates Program, Population Division, U.S. Census Bureau, Washington, D.C.
2. Projected population developed by HTA by extending the growth trend of the U.S. Census Bureau

**2.2.4 Annual Operations Forecast Summary**

The annual operations projections are summarized in Table 2-15 and the historical and forecasted operations are depicted in Figure 2-4. Again, the Multiple Regression Analysis forecast was selected as the preferred forecast for this study, for reasons outlined in the sections below.

**Table 2-15**  
**St. Lucie County International Airport**  
**Annual Operations Forecast Summary**

<b>Year</b>	<b>FAA</b>	<b>FASP</b>	<b>Multiple Regression</b>
2001	186,031	186,031	186,031*
2005	237,968	239,162	241,040
2010	261,492	265,353	272,715
2020	296,840	326,651	349,097

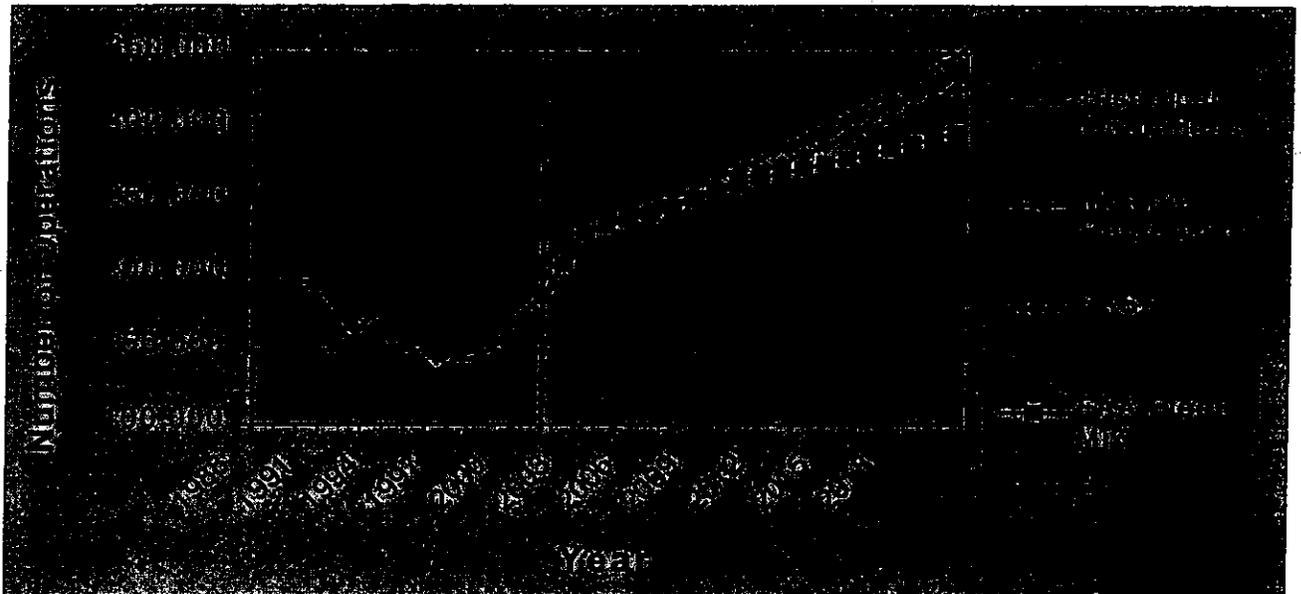
\* - Years 2001 & 2002 are calculated using anticipated growth of 44 based aircraft & 43,387 operations

Multiple Regression projected the highest level of growth, well above the FAA's national projections and the projections developed using the most recent trends at St. Lucie County International Airport.

Although not as drastic as in the early 1990's, the Airport is still experiencing fluctuations in levels of aircraft operations. The projection developed using the Multiple Regression Analysis was selected as the preferred forecast, since the growth rate is more consistent with recent growth trends at the Airport. The

Multiple Regression of aircraft operations projections are based on current circumstances at St. Lucie County International Airport.

Figure 2-4  
St. Lucie County International Airport  
Actual Operations Forecast



### 2.2.5 Itinerant & Local Annual Operations Based on the Preferred Forecast

Due to the number of flight training schools in the State of Florida, itinerant and local annual operations were forecasted to determine if any restrictions would need to be implemented. Itinerant and local operations are defined as follows:

- **Local Operations are performed by aircraft that:**
  1. Operate in the local traffic pattern within the sight of the airport (touch and go flights);
  2. Are known to be departing for, or arriving from flight in local practice areas located within a 20 nautical mile radius of the airport; or
  3. Executive simulated instrument approaches or low passes to the airport;
- **Itinerant operations are all aircraft operations other than local operations**

A projection of the future operations mix was conducted by applying the average percentage for each type of operation, as shown in Table 2-17. It was determined that approximately 48% of total operation are general aviation (GA) local operations, approximately 50% of total operations are general aviation (GA) itinerant operations, and the remaining 2% of operations was divided up between local and itinerant military operations and air taxi services. The resultant forecasts are shown in Table 2-16.

Table 2-16  
 Annual Operations – Itinerant and Local Operations

Year	Itinerant			Local		Total
	Air Taxi	GA	Military	GA	Military	
2001	1,488	94,488	186	89,838	31	186,031
2005	1,928	122,428	241	116,403	40	241,040
2010	2,181	138,516	273	131,699	46	272,715
2020	2,792	177,312	349	168,586	58	349,097

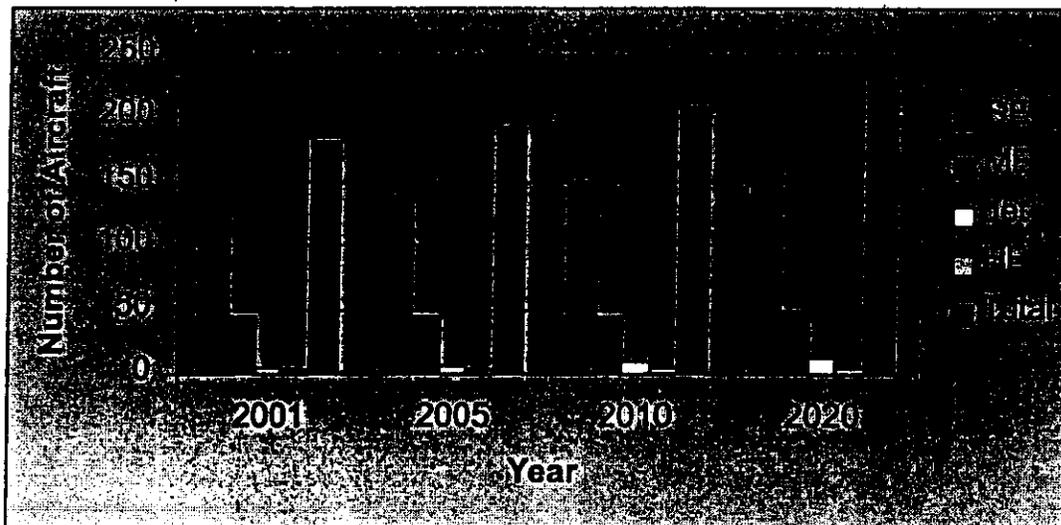
2.2.6 Operations Fleet Mix Forecast Based on the Preferred Forecast

The preferred forecast methodology for annual operations using operations and population history was determined by the Master Plan Study Group (MSPG) to be the Multiple Regression forecast method, using a 2.5% increase in annual operations. The fleet mix breakdown was then determined by using the percentages found in Table 2-11 and the preferred annual operations forecasted. The fleet mix results are shown in Table 2-17 and depicted in Figure 2-5.

Table 2-17  
 Operations Fleet Mix for the Preferred Forecast

Year	SE	ME	TP	Jet	HE	Total
2001	137,640	11,160	20,460	7,455	9,316	186,031
2005	178,340	14,460	26,510	9,660	12,070	241,040
2010	201,775	16,360	29,994	10,930	13,656	272,715
2020	258,289	20,942	38,394	13,991	17,481	349,097

Figure 2-5  
 Operations Fleet Mix for the Preferred Forecast



**2.2.7 Seasonal Variation - Annual Operations**

Due to the seasonality of operations at General Aviation Airports, fleet mix operation projections were considered being developed for each season (summer and winter). Interviews with the FBO's found that there is no definitive active and inactive season. Therefore, it will not be necessary to proceed with any seasonal/non-seasonal data comparisons.

**2.2.8 Military Operations**

Military operations accounted for an average of 0.12% of total annual aircraft operations in 2000. The FAA-TAF will be utilized since it is the only methodology available for calculating this activity. As shown in the FAA-TAF section of Table 2-8, all of the operations are itinerant, with a very low number of local military activity. Military operations are not expected to increase or decrease significantly. This is consistent with the projection for military operations shown in Table 2-16.

**2.2.9 Instrument Operations Forecast Based on the Preferred Forecast**

Instrument operations include Instrument Flight Rule (IFR) operations (those flights landing at the airport in accordance with an IFR flight plan) and instrument approaches due to weather conditions. The number of IFR operations occurring at FPR from 1993 through 2001, presented in Table 2-18, has remained relatively constant until 1999 when it had a significant jump in operations, primarily due to the increase in flight training activity.

**Table 2-18  
 Historical IFR Operations**

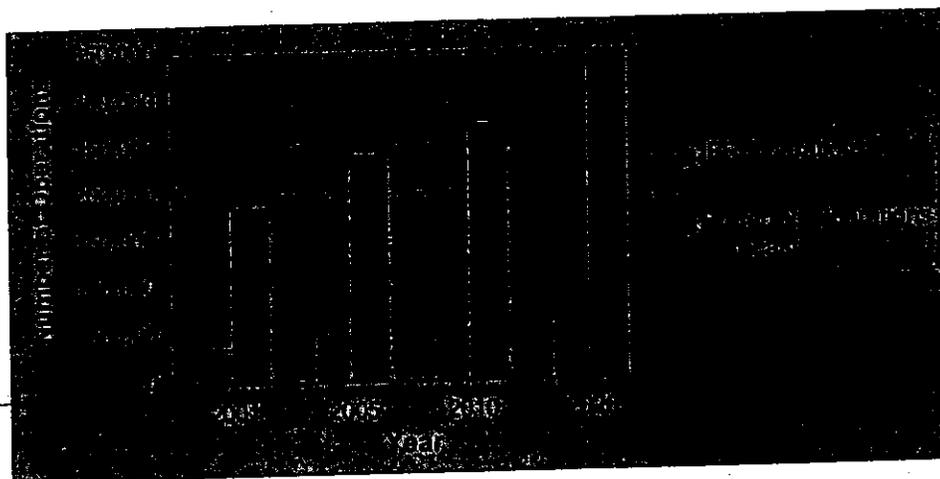
Year	IFR Operations
1993	11,393
1994	13,343
1995	15,999
1996	15,679
1997	18,748
1998	19,750
1999	25,473
2000	25,164
2001 (through June)	18,578
Est. of 2001	37,156

The IFR operations forecast was developed using the estimated IFR operations for 2001 and the preferred operations forecast (Multiple Regression Analysis). It was calculated that 19.98 % of the annual Preferred Operations equaled the annual IFR operations. Table 2-19 and Figure 2-6 shows the forecasts through the year 2020.

Table 2-19  
 IFR Operations Forecast

Year	Preferred Operations Forecast	IFR
2001	186,031	37,156
2005	239,162	48,152
2010	265,353	54,479
2020	326,651	69,738

Figure 2-6  
 IFR Operations Forecast



To make the IFR operations forecast as accurate as possible, the number of IFR operations in 2001 through June was doubled to show a current number for 2001. The percentage was then calculated in relation to the preferred forecasts. It was determined that in 2010 there would be over a 45% increase from the year 2001 with 54,479 operations. It was also determined that there would be 69,738 IFR operations in 2020, which equals over an 85 % increase from the 37,156 operations in 2001.

### 2.3 FUEL FLOWAGE

Fuel sale forecasts are developed to project the ability of the existing fuel facility to accommodate the future demands and to estimate the Airport revenues that will be received from fuel flowage fees. These projections were developed using historical fuel sales data provided from the Airport for a total of 100LL (Low Lead aviation fuel) and Jet-A fuel sales in 1999 and 2000, as presented in the Inventory Chapter.

The computations for developing future fuel flowage forecasts assume that there is a direct relationship between fuel sales and total annual operations. The fuel sale projections were developed by increasing the 1999 Avgas and Jet-A fuel sales at the same projected growth rates as were applied to piston and jet aircraft operations.

Using the preferred fleet mix projection shown in Table 2-3, the growth rates of annual operations for the single-engine, and multi-engine piston aircraft were applied to project Avgas fuel sales. The operational

growth rate of the turboprop, jet and helicopter aircraft was applied to determine the projected Jet-A fuel sales. The results of this forecast are shown in Table 2-20.

Table 2-20  
 St. Lucie County International Airport  
 Fuel Flowage Projections

Year	Avgas	Jet A	Total
2000 <sup>1</sup>	555,165	696,564	1,251,729
2005	593,066	757,645	1,350,711
2010	634,136	824,880	1,459,016
2020	726,908	980,677	1,707,585

1. Actual 2000 fuel flowage in gallons

2.4.1 FORECAST SUMMARY

Table 2-21 displays the forecast summary for the major forecast elements. Overall this represents a modest growth consistent with national trends projected by the FAA. These forecasts are the basis from which to determine the facility needs necessary to accommodate existing and future demand at St. Lucie County International Airport.

Table 2-21  
 Airport Forecast Summary

Activity	2001	2005	2010	2020
<b>Based Aircraft:</b>				
Single Engine Piston (SE)	129	172	194	248
Multi Engine Piston (ME)	44	59	66	84
Jet	5	6	7	10
Rotorcraft (HE)	3	4	5	6
<b>Total Based Aircraft</b>	<b>181</b>	<b>241</b>	<b>272</b>	<b>348</b>
<b>Annual Operations:</b>				
Single Engine Piston (SE)	137,640	178,340	201,775	258,289
Multi Engine Piston (ME)	11,160	14,460	16,360	20,942
Multi Engine Turboprop (TP)	20,460	26,510	29,994	38,394
Jet	7,455	9,660	10,930	13,991
Rotorcraft (HE)	9,316	12,070	13,656	17,481
<b>Total Annual Operations</b>	<b>186,031</b>	<b>241,040</b>	<b>272,715</b>	<b>349,097</b>
<b>Itinerant Operations:</b>				
Air Taxi	1,488	1,928	2,181	2,792
General Aviation	94,488	122,428	138,516	177,312
Military	186	241	273	349
<b>Local Operations:</b>				
General Aviation	89,838	116,403	131,699	168,586
Military	31	40	46	58
<b>Fuel Sales:</b>				
Avgas (100LL)	562,505	593,066	634,136	726,908
Jet-A	708,318	757,645	824,880	980,677
<b>Total Fuel</b>	<b>1,270,823</b>	<b>1,350,711</b>	<b>1,459,016</b>	<b>1,707,585</b>
<b>Total Annual Instrument Operations</b>	<b>37,156</b>	<b>48,152</b>	<b>54,479</b>	<b>69,738</b>



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1950

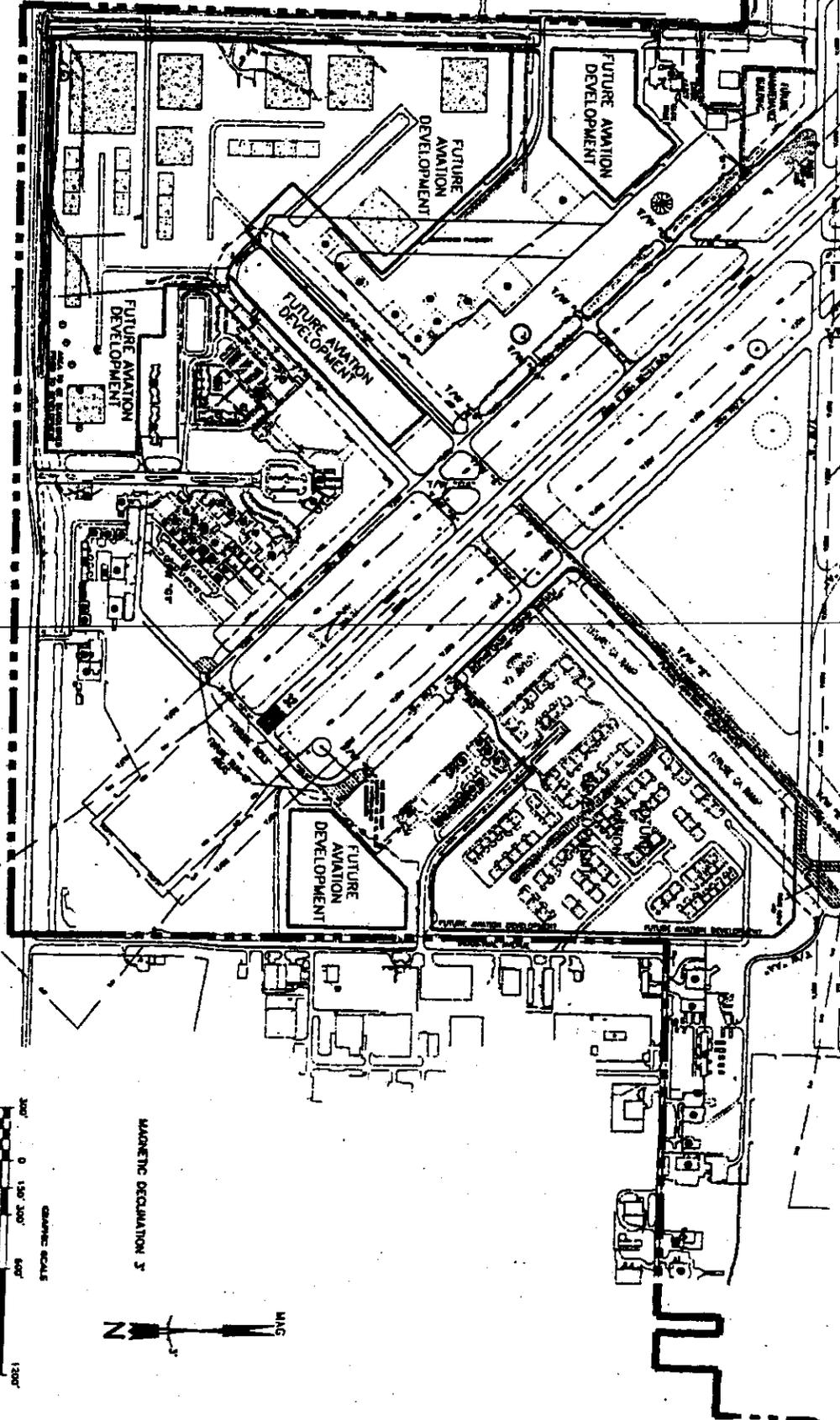
1951

1952

1953

# St. Lucie County International Airport Building Inventory List

Site No.	Building Facility	Aired									
1	...	...	1	...	...	1	...	...	1	...	...
2	...	...	2	...	...	2	...	...	2	...	...
3	...	...	3	...	...	3	...	...	3	...	...
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100	...	...	100	...	...	100	...	...	100	...	...



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**Chapter 3**  
*Facility Requirements*

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## Chapter Three: Facility Requirements

### 3.0 GENERAL

The previous chapter forecasted aviation demand, which presented the projected levels of growth for based aircraft, aircraft operations, aircraft fleet mix, and fuel flowage. If St. Lucie County is to accommodate the forecasted future demand through the planning period, specific components of the airport system must be evaluated.

The Facility Requirements are developed with Demand/Capacity calculations to determine the abilities of airport systems and facilities to accommodate the forecasted aviation-related demand. The demand/capacity analysis considers the effects of possible design features and additional facilities that may increase capacity to levels equal to or greater than forecasted demand. To be recommended for a development program, the recommended design features and additional facilities must undergo a benefit/cost analysis that shows the most benefit per estimated cost.

FAA procedures are used to alert airport management to initiate planning, design, land acquisition, and construction programs for all of the recommended programs, so as to maintain airport operations without extending periods of inefficient operations and delay. Planning, acquiring land, and designing required systems and facilities should begin when 60 percent of the existing facilities' capacity is reached. Construction should begin when 80 percent of existing capacity is reached.

The previous chapter showed reasons for recommending a parallel runway (9L-27R) of sufficient length, weight bearing and width capacity to accommodate general aviation aircraft training operations that are expected to cause total operations to exceed the capacity of existing runways. With the recent arrival of Pan Am International Flight Academy to FPR, the existing on and off airport flight schools, and the growing demand for student pilots, a parallel runway is still the optimum means to be considered in the benefit/cost ratio solution to an airfield capacity shortfall at FPR. The significant change in this study's recommendation to develop a parallel runway with infrastructure is the focus on safety, noise benefits, flight training and the need to separate these operations from the operations of higher speed and transient aircraft.

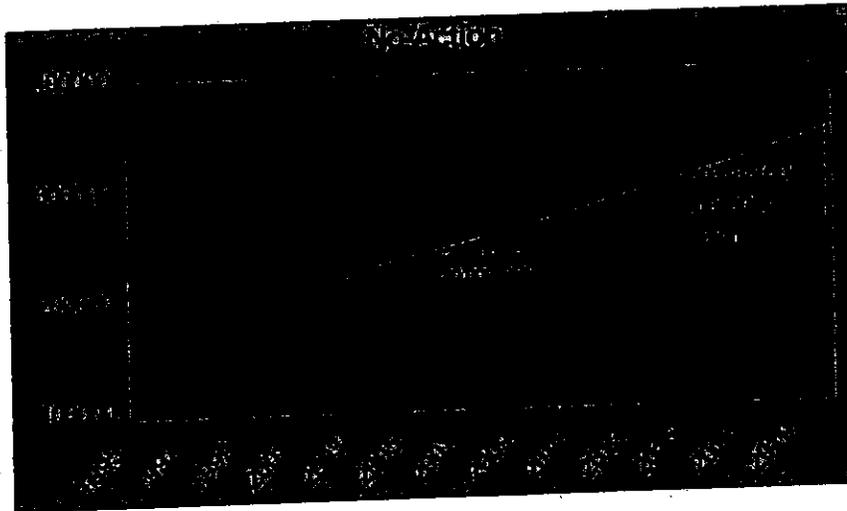
### 3.1 AIRFIELD

Demand/capacity analysis of airfield systems and facilities (runways/taxiways) result in calculations of hourly capacities under visual flight rules (VFR) and instrument flight rules (IFR) conditions plus an annual service volume (ASV) of aircraft operations that may be accommodated without excessive aircraft delays and operating expense.

#### 3.1.1 Airfield Capacity Analysis

The airfield capacity analysis for St. Lucie County International Airport was conducted to determine the capacity of the airfield and to identify any present or potential deficiencies in the airfield system. The demand/capacity analysis was conducted by calculating the capacity of the existing airfield layout and comparing it to the projected levels of aviation operations. A chart (Figure 3-1) comparing forecasted operations versus existing ASV shows a deficit in 2004 if no additional airport capacity is added.

Figure 3-1  
St. Lucie County International Airport  
Existing ASV Demand/Capacity Comparison



Source: FAA AC150/5060-5, Airport Capacity and Delay, 9-23-83 & Hoyle, Tanner & Associates, Inc.

### 3.1.2 Basis of Calculated Capacities

Calculated airfield capacities are developed by methods and capacity assumptions described in FAA AC 150/5060-5, Airport Capacity and Delay. An AC is utilized as a guideline to implement these improvements. In addition, this AC refines definitions of capacity and delay. Capacity is the throughput rate, i.e. the maximum number of operations that can take place in an hour. Delay is the difference in time between a constrained and an unconstrained aircraft operation. These definitions take into account that delays occur because of simultaneous demands on the facility. The acceptable level of delay will vary from airport to airport. Calculations are based on runway utilizations, which produce the highest sustainable capacity consistent with current air traffic control (ATC) rules and practices. Parameters and assumptions used in the calculations are discussed in the following sections.

### 3.1.3 Runway Use Configuration Alternatives

The existing (2001) runway-use configuration has Runway 9-27 and a skewed Runway 14-32, with the threshold of Runway 14 within the Runway 9-27 Runway Safety Area. The proposed configuration has a future general aviation runway parallel and north of Runway 9-27. These configurations approximate typical runway-use configurations for which calculations are based. The calculations assume that the airport is operated with the runway-use configuration, which produces the greatest hourly capacity 80 percent of the time. This assumption is supported by the wind rose analysis in Chapter 1 - Inventory.

Under VFR conditions, the largest annual average difference between total airfield wind coverage (96.73 percent) and wind coverage for Runway 9-27 only (91.17 percent) is 6.52 percent for 10-knot crosswinds. However, reports from ATCT personnel state that Runway 14-32 is used extensively during periods of high demand with usage approaching and at times exceeding 50 percent of total operations during high demand periods.

### 3.1.4 Aircraft Mix Index & Aircraft Approach Categories

The FAA has established a classification system for the various sizes, weights, and performance of aircraft as shown in Table 3-1. These classifications allow the calculation of a "mix index" for use in airfield (runway) capacity studies. The mix index is stated as a percent and is calculated as a percent of Class C aircraft operations plus three times the percent of Class D aircraft operations (C + 3D). Mix indices fall into five ranges for use with capacity calculations. These are 0 to 20, 21 to 50, 51 to 80, 81 to 120, and 121 to 180. There are no Class D aircraft (300,000 lbs.) operations at FPR (none forecasted) and a mix index above 0 to 20 requires that more than 20 percent of total operations are by Class C aircraft (12,500 to 300,000 lbs.). The current and forecasted activity does not indicate this level of Class C aircraft operations. The airport does have minimal operations by aircraft in the Class. It is, therefore, assumed that a mix index of 0 to 20 is appropriate for FPR capacity calculations for this planning period.

**Table 3-1**  
**St. Lucie County International Airport**  
**Aircraft Classification System For Airfield Capacity Analysis**

<u>Classifications</u>	<u>Type of Aircraft</u>
Class A	Small single-engine aircraft weighting 12,500 pounds or less.
Class B	Small twin-engine aircraft weighing 12,500 pounds or less Including Small corporate jets.
Class C	Large aircraft weighing more than 12,500 pounds but less than 300,000 pounds.
Class D	Heavy aircraft weighing more than 300,000 pounds.

Source: FAA AC 150/5060-5, Airport Capacity and Delay

The FAA groups aircraft in aircraft approach categories based on 1.3 times their stall speed in their landing configuration at the maximum certified landing weight. The categories are defined as follows:

- Category A: Speed less than 91 knots.
- Category B: Speed 91 knots or more but less than 121 knots.
- Category C: Speed 121 knots or more but less than 141 knots.
- Category D: Speed 141 knots or more but less than 166 knots.
- Category E: Speed 166 knots or more.

Aircraft with approach speeds within the range of Categories A and B include virtually all piston and turboprop driven aircraft and several of the popular business turbojet driven aircraft. Aircraft with approach speeds within the range of Categories C and D include the remainder of the current aircraft with the exception of some very high performance military aircraft.

FAA AC150/5300-13 specifies two sets or divisions of planning and design dimensional criteria. These sets of criteria are for (1) Categories A and B and for (2) Categories C and D. Many Category C and D aircraft that presently use Runway 9-27 at their maximum landing weights may also use Runway 14-32 when crosswinds for Runway 9-27 exceed 12 or 15 knots (aircraft dependent). Although some aircraft operating at landing weights and approach speeds requiring Runway 14-32 when these crosswind limitations are reached, the crosswind limitation for many

larger, heavier aircraft using a 150-foot-wide runway such as Runway 9-27 is 18 knots. With this crosswind limitation, Runway 14-32 increases the total wind coverage for the Category C and D aircraft by less than 0.1 percent. This would not justify extending Runway 14-32. Category A and B planning and design criteria are, therefore, recommended for Runway 14-32. Most elements of Runway 14-32 and its taxiway system currently maintain Category C and D design criteria. When the runway is extended or upgraded, these criteria should continue to apply. However, the future length of Runway 14-32 (5,400 feet) should continue to be based upon a minimum of 80 percent of the current length of Runway 9-27 (6,500 feet). It is also recommended that Category C be utilized for the design and construction of the future Runway 9L-27R to accommodate the training aircraft, which utilize St. Lucie County International Airport.

### 3.1.5 Airplane Design Group

Aircraft are also divided into airplane design groups (ADG) on the basis of their wingspan. Those ADG's are defined as follows:

Group I:	Up to but not including 49 feet (15m).
Group II:	49 feet (15m) up to but not including 79 feet (24m).
Group III:	79 feet (24m) up to but not including 118 feet (36m).
Group IV:	118 feet (36m) up to but not including 171 feet (52m).
Group V:	171 feet (52m) up to but not including 214 feet (65m).
Group VI:	214 feet (65m) up to but not including 262 feet (80m).

As was true for approach speed categories, it is feasible to have different ADG's for Runways 9R-27L and 9L-27R and their associated taxiway systems than for Runway 14-32 and its associated taxiway system.

Runway 9-27 meets runway width (150 feet) and runway to taxiway separation (400 feet centerline distances) criteria necessary for ADG V. However, lease lines shown on the current Airport Layout Plan adjacent to Runway 9-27 (Taxiway A) only meet ADG III (100 feet) criteria. The distances between taxiway centerline to fixed or movable objects for ADG's III are 93 feet. ADG III airplanes include the Gulfstream V (96-foot wingspan), the Global Express (94-foot wingspan), the Douglas DC-6 (117.5-foot wingspan) and smaller. Since many versions of ADG III aircraft do utilize the St. Lucie International Airport, it is recommended that ADG III criteria be utilized as a minimum in planning and designing for 9R-27L because of the existing runway to taxiway separation and the opportunity to preserve taxiway centerline to fixed or movable distances. It is also recommended that the future Runway 9L-27R be designed and constructed to meet the characteristics of the training aircraft at St. Lucie County International Airport, which is ADG II.

Runway to taxiway centerline separation distances for Runway 14-32 and its associated taxiways are 400 feet, which exceed ADG III criteria. Other existing facilities (apron edge aircraft parking areas) and property lease lines adjacent to Runway 14-32 are located at taxiway centerline to fixed or movable object separation limits specified for ADG III aircraft (118 feet). This means that a virtually unconstrained expansion adjacent to Runway 14-32 could be accommodated if ultimate demands should indicate that requirement. The 93-foot separation will accommodate Gulfstream V, Global Express, and Douglas DC-6 airplanes.

It is recommended that Runway 14-32 and its associated taxiway systems continue to be maintained and operated in conformance with ADG III criteria.

3.1.6 Airport Reference Code

The Airport Reference Codes recommended for planning and design of facilities for FPR, as previously discussed, are comprised of the Aircraft Approach Category and Airplane Design Group selected for each airfield element.

The most demanding ARC D-III (Aircraft Approach Category D – Airplane Design Group III) has been utilized as the design criteria for Runway 9R-27L, as it exists currently. It is understood that this design group is excessive for the type of aircraft that are and will be utilizing the St. Lucie County International Airport, and in an effort to reduce the level of airfield maintenance, it is recommended that it be reduced to ARC C-III. The ARC C-III includes aircraft with approach speeds under 141 knots and wingspans less than 118 feet.

Using ARC C-III for Runway 14-32 and its associated taxiway systems allows the aircraft with approach speeds under 141 knots and wingspans under 118 feet. Using this ARC precludes the necessity of extending Runway 14-32 beyond that total length recommended in the 1984 Master Plan (5,400 feet) while allowing ground movements of Gulfstream V, Global Express, and Douglas DC-6 sized airplanes.

Using ARC C-II for the parallel Runway 9L-27R and its associated taxiway systems allows the aircraft with approach speeds under 141 knots and wingspans under 79 feet. Using the ARC C-II allows for the operations and ground movements of the typical single and multi-engine trainers, as well as the Beech King Air sized airplanes.

3.1.7 Runway Criteria

Minimum physical dimensions, separation distances, and gradient limits applicable to planning and design criteria of FPR runway developments are shown in Table 3-2. Dimensional values shown are minimum criteria for the ultimate, unconstrained development of FPR. Interim or 20-year range developments may not require full conformance to some physical dimensions such as pavement and shoulder widths.

Table 3-2  
 St. Lucie County International Airport  
 Runway Criteria

Item	Runway Dimensions (feet)		
	9R-27L	14-32	9L-27R
Airport Reference Code	C-III	C-III	C-II
Runway Dimensions:	DIM /1/		
Runway Length	Refer to FAA A/C150/5325-4		
Runway Width	100 ft/2/	(same)	(same)
Runway Shoulder Width /3/	30 m/2/	(same)	(same)
	20 ft/2/	(same)	(same)
Runway Blast Pad Width	6 m/2/	(same)	(same)
	140 ft/2/	(same)	(same)
Runway Blast Pad Length	42 m/2/	(same)	(same)
	200 ft	(same)	(same)
Runway Safety Area Width /4/	60 m	(same)	(same)
	C	500 ft	(same)
	150 m		

(Table 3-2 Continued)

Runway Safety Area	P	1,000 ft	(same)	(same)
Length Beyond RW End /5/		300 m		
Obstacle Free Zone		200 ft	(same)	(same)
Width and Length		400 ft	(same)	(same)
Runway Object Free Area	Q	800 ft	(same)	(same)
Width		240 m		
Runway Object Free Area	R	1,000 ft	(same)	(same)
Length Beyond RW End /5/		300 m		

Minimum separation distances, safety areas, object free areas, and obstruction free zones must be observed. Those minimum operational and safety related dimensional criteria have little or no effect on constructed cost of development and result only in reservation of land areas. This reservation of land areas will preclude relocation or loss of facilities at some future date when aviation demands by larger, faster aircraft may develop.

### 3.1.8 Taxiway Criteria

Minimum physical dimensions, separation distances, and gradient limits applicable to planning and design criteria of FPR taxiway segments and systems are shown in Table 3-3. As for runways, values shown are applicable to ultimate, unconstrained development of FPR. Pavement widths may not require full compliance during interim or 20-year development programs. Minimum safety areas, separation distances, and distances to fixed or movable objects must be maintained.

Table 3-3  
 St. Lucie County International Airport  
 Taxiway Criteria

Item	Taxiway Dimensions (feet)		
	9R-27L	9L-27R	14-32
Airport Reference Code	C-III	C-III	C-III
Taxiway Width	50 ft/2/ 15 m/2/	(same)	(same)
Taxiway Edge Safety Margin /3/	10 ft/4/ 3 m/4/	(same)	(same)
Taxiway Pavement Fillet Configuration	-Refer to Table #-#		
Taxiway Shoulder Width	20 ft 6 m	(same)	(same)
Taxiway Safety Area Width	118 ft 36 m	(same)	(same)
Taxiway Object Free Area Width	186 ft 57 m	(same)	(same)
Taxilane Object Free Area Width	162 ft 49 m	(same)	(same)
Radius of Taxiway Turn /3/	100 ft	(same)	(same)

(Table 3-3 Continued)

	30 m		
Length of Lead-in to Fillet	150 ft	(same)	(same)
	45 m		
Fillet Radius for Tracking Centerline	55 ft	(same)	(same)
	16.5 m		
Fillet Radius for Judgmental Oversteering Symmetrical Widening /4/	68 ft	(same)	(same)
	20.4 m		
Fillet Radius for Judgmental Oversteering One Side Widening /5/	60 ft	(same)	(same)
	18 m		

### 3.1.9 Percent Arrivals

Total annual arrivals are typically assumed to always equal the total annual departures. Therefore, average daily arrivals and departures should also be equal. VFR and IFR busy hour operations may not be equal. Arrivals under IFR conditions may be less than departures as it is easier to utilize IFR departure procedures (assuming good weather at destinations) than to be equipped and rated for IFR approach procedures. The calculation data differentiates between arrival/departure percents of 40 and 60 percent for some operating conditions with the lower percentages resulting in the highest hourly IFR capacities. The difference between 40 and 50 percent is not great, and IFR capacities are only a small part of annual capacities. It is, therefore, reasonable to use 50 percent arrivals as the basis for calculations.

### 3.1.10 Percent of Training Operations

Runway capacity calculation methods and data recognize six ranges of percent of touch-and-go's including 0, 1 to 10, 11 to 20, 21 to 30, 31 to 40, 41 to 50, and 50+ with the highest percentage resulting in the highest capacity. This occurs because a touch-and-go operation, where an aircraft lands and then takes off without exiting the runway, counts as two operations and takes no more time than a combined landing and takeoff (one operation). The most recent counts by the Fort Pierce ATCT indicate that touch-and-go operations are 50 percent of total operations. A level of 50 percent has been utilized for capacity calculations for this Master Plan Update.

### 3.1.11 Taxiways

The highest runway capacities result when full-length parallel taxiways with ample runway entrance/exit taxiways with no taxiway crossing problems are available, as with the existing airport runway/taxiway systems at the Airport. An analysis of the current runway capacities shows that adequate taxiway systems are available, and the proposed future capacity improvements will also provide adequate capacity.

### 3.1.12 Runway Instrumentation

Calculated capacities are based on the existing aircraft training schools, the recent arrival of Pan Am International Flight Academy and the growing trends at St. Lucie County International Airport.

### 3.1.13 Weather

The calculations assume IFR weather conditions occur approximately 10 percent of the time.

### 3.1.14 Capacity Calculations

Capacity Calculations were performed using the described parameters and assumptions. Capacity calculations for the present configuration were based on the two "skewed" runways now in operation. The calculations for short- and long-term development were made for two parallel runways and the skewed runway. Runway 14-32 is approximately equal to Runway 9-27 in percent of wind coverage and is actually in use around 50 percent of the time due to current demand (ATCT observations). Calculated VFR and IFR hourly plus annual service volume capacities are presented and discussed below.

### 3.1.15 VFR Hourly Capacity

VFR hourly capacity will increase from 150 to 295 operations when the proposed parallel general aviation runway to the north (9L-27R) becomes available to accommodate training. These capacities were examined for the effects of designating the second runway for training. In this circumstance, no difference was found because of the low mix index and the use of Runway 9L-27R as a VFR runway only.

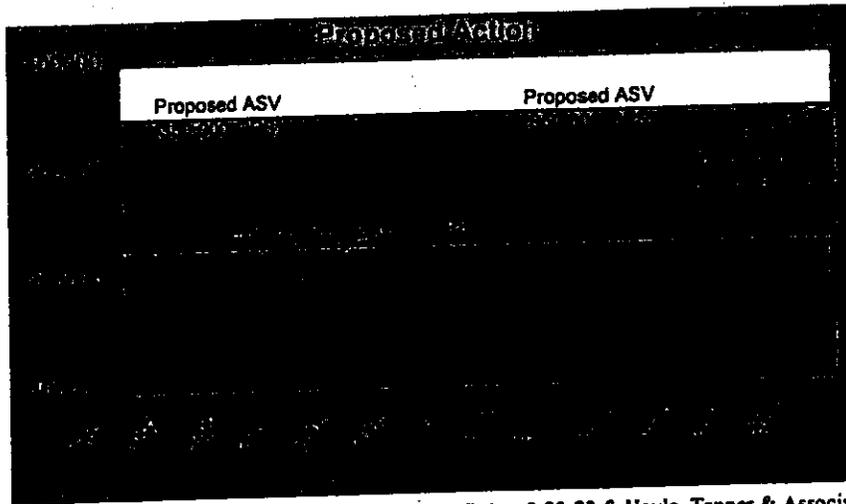
### 3.1.16 IFR Hourly Capacity

The IFR hourly capacity remains at 59 as long as there is only one ILS and the mix index remains low. A higher mix index would lower IFR capacity because of increased separation requirements when mixing large and small aircraft. An examination of the effects of designating one runway for small aircraft and the other for large aircraft when there are two ILSs with adequate separation for simultaneous approaches reveals that it would allow double the capacity available with one ILS. Simultaneous ILS approaches presently require a 4,300-foot separation while this Master Plan Update is proposing a 2,500-foot separation.

### 3.1.17 Annual Service Volume

The Annual Service Volume (ASV) will increase from 230,000 to 350,000 with the addition of the parallel runway. This increase is based on ample access taxiway systems and a low mix index. The parallel general aviation (GA) runway will best contribute toward this higher capacity increasing in safety and accompanying decrease in delays for itinerant traffic through designation as a training runway. For the purposes of this Master Plan, the concept of developing the airport into a future air-carrier, or regional hub, were not considered as the community has concerns regarding excessive growth and the noise issues with that type of growth. The future capacity levels for FPR are shown in **Figure 3-2**.

Figure 3-2  
 St. Lucie County International Airport  
 Future ASV Demand/Capacity Comparison



Source: FAA AC150/5060-5, Airport Capacity and Delay, 9-23-83 & Hoyle, Tanner & Associates, Inc.

**3.1.18 Runway Length**

A 4,000-foot Runway 9L-27R at a separation of 2,500 feet from Runway 9R-27L is recommended as a long-range development item for small general aviation aircraft training operations. Table 3-4 shows the runway lengths needed to accommodate certain aircraft. Operational demands have now increased so that the capacity to be gained by constructing this runway is required as a short-range item. The length requirement has been evaluated. The original recommendation of 3,100 feet would have accommodated approximately 75 percent of the fleet of small aircraft with less than 10 seats weighing 12,500 pounds or less. The effectiveness of a new, 4,000 foot Runway 9L-27R, to increase capacity will be much higher as that length will allow operations by 100 percent of that fleet, while accommodating 75 percent of the aircraft in the fleet of small aircraft with 10 or more seats, as can be seen in Table 3-4.

Table 3-4  
 St. Lucie County International Airport  
 Runway Lengths

<u>Critical Aircraft</u>	<u>Runway Length (ft.)</u>
<b>Small Airplanes With 10 or Less Seats (12,500 Pounds or Less)</b>	
75 Percent of Fleet	2,500
95 Percent of Fleet	3,075
100 Percent of Fleet	3,650
<b>Small Airplanes With 10 or More Seats (Table 3-5 Continued) (12,500 Pounds or Less)</b>	
Beech B80 Queen Air	4,225
Beech E90 King Air	
Beech B99 Airlines	

Beech A 100 King Air

**Large Airplanes**

(60,000 Pounds or Less)

75 Percent of Fleet, 60 Percent of Useful Load	4,650
75 Percent of Fleet, 90 Percent of Useful Load	6,800
100 Percent of Fleet, 60 Percent of Useful Load	5,400
100 Percent of Fleet, 90 Percent of Useful Load	8,400

**Piston and Turboprop-Powered Large Airplanes**

(60,000 Pounds or Less)

DC-3	4,000
DC-6A, 6B	6,300
Fairchild F-27A	6,000

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Source: FAA AC 150/5325-4A, Runway Length Requirements for Airport Design

Information concerning the size and location of the solid waste disposal site located between Runways 9R-27L and 9L-27R is also available. It indicates that the centerline spacing of 3,100 feet versus 3,800 feet may encroach into this site if the runway is placed directly north of the existing Runway 9-27. For the purposes of reducing residential noise impacts to the east and north, the new Runway 9L-27R will be placed west of the 1993 Master Plan locations. Specifically, the westerly orientation will allow construction of the runway and its taxiway system west of the former waste site without structural problems and removal expenses. Because of this westerly orientation, the clearance of trees and burial or rerouting of power transmission lines at Taylor Dairy Road will be required. Also, the narrower separation will allow the ATCT better visual access to the new runway.

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### 3.1.19 Plan, Design, and Construct

Total aircraft operations at FPR have exceeded the 60 percent of capacity criteria ( $0.6 \times 230,000 = 138,000$ ) for initiating planning and design of a second runway for several years. Total aircraft operations have also surpassed the FAA construction criteria of 80% ( $0.80 \times 230,000 = 184,000$ ). This has been confirmed by ATCT recorded data records and comments have been made by tower personnel concerning delays during busy hours.

The next level of capacity improvement is not expected to be exceeded during the 20-year planning period of this Master Plan Update. It may be reached by installing a second ILS on Runway 9L, which will allow the segregation or distribution of ILS training operations during VFR conditions and a doubling of IFR capacity during IFR conditions. This presumes a vast reduction in the required 4,300-foot runway separation, which will require close coordination with and approval by the FAA and FDOT.

### 3.2 AIRSPACE

FPR shares controlled airspace with Vero Beach Municipal Airport (VRB). A portion of the Miami Sectional Aeronautical Chart showing their relative location is included as in Exhibit I-B in Chapter 1 - Inventory. The amount of joint usage airspace has increased since the instrument landing system (ILS) at FPR became operational. The FAA will examine these relationships and will specify necessary revisions when pending ILS, Terminal Very High Frequency Omni-Directional Range (TVOR), Global Positioning System (GPS), or other equipment are installed and placed in operation at FPR.

### 3.2.1 Air Traffic Control Tower

The Air Traffic Control Tower constructed in 1987 is staffed by FAA personnel. Traffic counts and descriptions of operating characteristics supplied by tower personnel were a welcomed contribution to the development of this and all previous Master Plan Updates. Refer to Table 2.8.

### 3.2.2 Current Approaches

Approaches for FPR and VRB, shown in the United States Government Information Publication, U.S. Terminal Procedures, Southeast (SE), Volume 3 of 3, are within shared airspace but may be utilized independently. A minimum of 500 feet of elevation separation may be shown to exist where specified approach paths cross. Current approaches for these airports and their minimum decision heights/visibility limits are as follows:

<u>Airport</u>	<u>Approach</u>	<u>Ceiling (ft.)/Visibility (miles)</u>
FPR	NDB RWY 9 (9R)	600/1
	VOR/DME RWY 14	440/1
VRB	NDB RWY 11R	580/1
	VOR RWY 11R	380/1
	VOR/DME RWY 29L	480/1

### 3.2.3 ILS Approach

An instrument landing system (ILS) consisting of a localizer with DME, glide slope, middle marker, and outer marker has been installed and funded by the County and FDOT for Runway 9 since the last Master Plan. FAA Handbook 8260.3B, United States Standard for Terminal Instrument Procedures (TERPS) allows a precision approach to Runway 9.

### 3.2.4 Approach Slopes

The inner approach slope for Runway 9R is 50:1 with the ILS. To achieve this approach slope, the lines at Taylor Dairy Road will need to be lower or buried. An approach slope extending from the inner approach slope from 40,000 feet at a slope of 40:1 will also need to be protected.

The approach slope for proposed Runway 9L has changed from an initial 20:1 to 34:1 and ultimately 50:1. The slope changes and runway extensions will require further land acquisition, clearance of trees, and burial or rerouting of power transmission lines at Taylor Dairy Road.

### 3.2.5 Departure Procedures

Current U.S. Terminal Procedures specify IFR Take-Off Minimums and Departure Procedures for FPR. Standard IFR take-off minimums for FPR, applicable when specific departure procedures are not given, are 600 feet cloud height and one-mile visibility. Specific departure procedures for Runway 14 are to climb to 600 feet on the runway heading before turning right.

### 3.2.6 Obstructions

No obstructions are known to intersect with current horizontal, transitional, approach or runway protection zone surfaces for FPR. As previously discussed, power lines along Taylor Dairy Road must be buried or rerouted for clearance beneath ILS approach surfaces of 50:1 for Runway 9R and 9L. Even without an ILS, Runways 9R-27L and/or 9L-27R will require the burial or rerouting of these lines.

### 3.2.7 Airspace Limitations

Planning and design of airspace restrictions in the vicinity of FPR should be in accordance with FAA FAR Part 77 design criteria. Airspace reservations should be put into effect to preserve those areas described by the ultimate development. For the purpose of these calculations, it is assumed that there are no limitations on airspace utilization for approaches or missed approaches.

## 3.3 NAVAIDS AND LIGHTING

To achieve the calculated airfield capacities, in addition to improving the airfield pavements, improvements to the navigational aids (NAVAIDs) or airfield lighting must also be made. Many of the short-range and some of the long-range projects recommended in the 1993 Master Plan have been accomplished. Others will be retained and added to recommendations of this Master Plan Update.

### 3.3.1 Approach Lights

A medium intensity lighting system with runway alignment indicator lights (MALSR) were recommended for the approach to Runway 9R in order to allow Category I (Cat I) approaches at a decision height (DH) of 200 feet and one-half mile visibility in the 1993 Master Plan. This requirement has been eliminated since the larger aircraft type that were to be utilizing the airport are no longer a consideration.

### 3.3.2 Medium Intensity Runway Lights

The existing medium intensity runway lights (MIRL) on Runway 9R-27L are found to be adequate since the larger aircraft type that were to be utilizing the airport under the 1993 Master Plan are no longer a consideration. The proposed High Intensity Runway Lighting (HIRL) is required on all runways equipped with an ILS to achieve a Decision Height (DH) of 200 feet with one-half mile visibility. With the MIRL, the ILS approaches will remain at three-quarter mile visibility.

### 3.3.3 Runway Visual Range (RVR)

The proposed RVR on Runway 9R-27L are found to be adequate since the larger aircraft type that were to be utilizing the airport under the 1993 Master Plan are no longer a consideration. No additional RVR are found to be needed.

### 3.3.4 Precision Approach Path Indicator

As recommended in the 1993 Master Plan, when the existing 4-Box Visual Approach Slope Indicators (4-Box VASI) on approaches to Runways 9R and 27L reach their useful life, that they be replaced with precision approach path indicators (PAPI). The purpose of these visual aids is to

enhance airfield safety. PAPI's will also need to be installed on each end of existing Runway 14-32 and proposed Runway 9L-27R.

### 3.4 TERMINAL FACILITIES

Terminal facilities at FPR include the passenger terminal and the Federal Inspection Services Facility (FIS). These facilities are adjacent to each other because the FIS serves passengers and small cargo operators.

#### 3.4.1 Passenger Terminal

The 1993 Master Plan projected explosive growth in the number of annual passenger enplanements and operation forecasts. The projected forecasts supported improvements in the terminal building areas, aircraft positions, and auto parking areas. These estimates did not develop and are not anticipated within this Master Plan schedule and based on the historical analysis the existing facilities are adequate for the existing and future operations.

#### 3.4.2 Federal Inspection Services (FIS)

The projected passenger growth was evaluated, and it was determined that the physical size of the FIS building appears to be adequate to serve the forecasted demand. Therefore, this facility will not require any improvements within this planning period.

#### 3.4.3 Aviation Business

Air Cargo operations at FPR are currently limited to direct transfer between aircraft and trucks by several small cargo operators and larger cargo companies with small operations. It appears that this procedure will continue through the short term, but like many other airports similar to FPR, it has a potential for larger cargo to come in from a variety of areas (produce, assembly line products, etc.). Similarly, aviation support facilities, maintenance, and other operations could demand additional facilities.

### 3.5 HANGARS AND APRONS

Hangars, restaurant buildings, offices, and other facilities occupied by leases and within leased areas are normally developed and maintained by the lessee, for the term of the lease at which time they become the property of the Airport. Building maintenance remains the responsibility of the lessee or the building becomes Airport property. Development and maintenance of lessee occupied buildings and other facilities should be governed by St. Lucie County Airport as to size, location, style, and conformance to applicable codes, etc. The Airport is not required to develop such structures and, therefore, they are not included in the following development plans. The infrastructure (taxiways, utilities, roadways, etc.) for such facilities is typically provided by the landlord and will be part of the development plans of this document. Lessee sponsored hangar development and increases in available protective aircraft storage is expected to continue at a rate similar to the rate of increase in based aircraft.

Available apron tie-down spaces were dramatically increased by the addition of new east and west general aviation parking aprons. The number of paved tie-down spaces available with these aprons appears sufficient through short and intermediate development stages so that apron construction during those periods should be required only for specifically identified purposes. The majority of existing apron spaces are currently leased by FBOs. Expansion of aviation

building facilities on airport properties designated for aviation-related activities will require that tie-down aprons be provided in those areas, and at the St Lucie County International Airport these facilities have typically been developed as capital improvements of the tenants.

### **3.6 AIRCRAFT RESCUE AND FIREFIGHTING**

Requirements for a new ARFF facility remain as recommended in the 1984 and 1993 Master Plans. A new facility will be required on a site nearest the three runways. This recommendation will become more critical with the construction and operation of Runway 9L-27R as the distance and response time from the existing fire station will be increased.

### **3.7 AIRPORT MAINTENANCE FACILITIES**

Requirements for airport maintenance facilities also remain as in the 1984 and 1993 Master Plans. A site near the ATCT remains reserved for a maintenance shop, storage building, garage, and materials lay-down area. A secure perimeter fence has been provided in this area for both the ATCT and to restrict airfield access.

### **3.8 AIRPORT ACCESS**

Existing access to the airport and businesses located on airport property is supported in a variety of ways. Curtis King Boulevard is the main entrance to the Airport and Airport Terminal Area, which can be accessed in several ways from the east (from US 1) and the west (from I-95) as described in Chapter 1 - Inventory. Current access to the aviation facilities is adequate to support all development in the planning period.

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# **Chapter 4**

## ***Airport Alternatives***

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## Chapter Four: Airport Alternatives

### 4.0 GENERAL

In many airport planning situations, more than one potential solution or location to develop a needed airport improvement exists. Examples include selecting a site for a T-hangar facility or planning of a new runway. Such decisions are made by conducting an alternative evaluation, which considers various airport development concepts. Evaluation factors such as costs and environmental impacts are used in the decision making process. The evaluation and selection process should be as straightforward and streamlined as possible. In many cases, this can be accomplished by performing a comparison of realistic and viable alternatives.

This chapter describes the specific facilities identified in Chapter 3 - Facility Requirements that are required to meet the Chapter 2 - Aviation Forecasts Demands. Other facilities recommended on the basis of safety; operating efficiency; or to maintain, restore, and upgrade facilities to current standards are also described. FAA planning and design standards for the location, construction, and protection of those facilities are also presented.

### 4.1 PLANNING AND DESIGN CRITERIA

The FAA uses an Airport Reference Code (ARC) to relate airport planning and design criteria to the operational and physical characteristics of the aircraft intended to operate at an airport. This designator was discussed in the previous Chapter - 3 Facility Requirements under Section 3.1.16. The ARC relates to the design aircraft and is comprised of the following two components. The first is Aircraft Approach Category, a letter identifying the aircraft approach category and related to aircraft approach speeds. The second is Airplane Design Group, a Roman numeral that relates to the wingspan of an aircraft. While in some instances it may be desirable to design all applicable airport elements to the most demanding ARC; it is more practical to design some elements to a less demanding ARC on the basis of both operations and benefit/cost considerations. Therefore, it has been recommended that all of the airport runways be designed and maintained to ARC CIII level except the future Runway 9L-27R, which will be designed and maintained to CII.

### 4.2 RECOMMENDED DEVELOPMENT PROJECTS

The following descriptions are for those projects recommended on the basis of forecasts of aviation activity demands developed in Chapter 2 and the shortfall of facility capacities to meet those demands discussed in Chapter 3. The described projects are those that will be required to meet forecast growth of current activities. Recommended development schedules and cost estimates are developed for those projects in Chapters 5 - Environmental Overview and 6 - Capital Improvement Program, respectively.

These project descriptions are formatted so that they can be conveniently used for a variety of purposes including applying for federal funding. The project are listed in Table 4-1 and the method of notation used is as follows:

- A = projects which are primarily airfield pavement and associated lighting;
- N = projects which are primarily visual and navigational aid and airfield lighting independent of airfield pavement improvements;
- S = projects which are support facilities;

- T = projects which are new passenger and cargo facilities;
- L = Land Acquisition; and
- O = other development projects.

#### 4.2.1 Airfield Pavement and Lighting Projects

**New Parallel Runway 9L-27R Alternatives (A-1)** – It is recommended that a new parallel Runway 9L-27R be constructed to provide additional airfield/runway safety, capacity, and noise related benefits. The proposed 4,000-foot-long by 100-foot-wide runway will accommodate 100 percent of small aircraft with 10 or less seats weighing 12,500 pounds or less, and 75 percent of small aircraft with 10 or more seats weighing 12,500 pounds or less. The primary function of Runway 9L-27R will be for training flights. Using Runway 9L-27R for training will reduce current demand on Runways 9R-27L and 14-32, so that larger and faster aircraft operations can be accommodated more efficiently thereby significantly reducing aircraft operational fleet mix. It is recommended that the runway be placed any distance between 2,500-feet and 3,800-feet, if additional negative environmental impacts can be avoided by doing so.

Utilizing FAA criteria (AC 150/5060-5 - Airport Capacity And Delay) as a means of reducing aircraft incidents and to accommodate for the projected operational demand, a runway centerline separation distance of 2,500 feet or greater is needed to provide adequate increased Annual Service Volume (ASV). As a result, all alternative configurations for the new Runway 9L-27R that would provide less than an ASV of 355,000 operations were rejected from additional study.

All Runway 9L-27R alternatives are shown to be the same level of development and the same development criteria. The development criteria are based on FAA criteria (AC 150/5325-4A - Runway Length Requirements For Airport Design) that allows for short-range development and ~~use as a capacity improvement providing for general aviation training in small airplanes, and~~ separation of these aircraft from the larger and faster aircraft on Runway 9R-27L. These criteria are based on providing an extra measure of safety for pilots, aircraft and ground facilities since the primary function of the new runway would be the training of new pilots. The design criteria for new runway are as follows:

- Runway Length 4,000 feet
- Runway Width 100 feet
- Runway to Taxiway Centerline Separation 400 feet
- Runway Safety Area
  - Width 400 feet
  - Length Beyond Runway End 800 feet
- Runway Object Free Area
  - Width 800 feet
  - Length Beyond Runway End 800 feet

All of the runway alternatives developed are oriented westerly of the existing Runway 9R-27L in order to avoid noise sensitive areas east and north of the airport. By doing so, the eastern-most training traffic will be kept above airport property minimizing noise to the areas surrounding the airport. Also, this westerly orientation will enable the new runway to avoid an abandoned solid waste disposal site and the various potential structural and environmental problems that could be introduced. All approaches to the proposed alternative runways will have an approach slope of 20:1, and this runway should be marked for visual operations and lighted with medium intensity runway lights.

**Alternative 1: 2,500-foot Runway Separation (Master Plan Alternative)**

Alternative 1, depicted in Exhibit 1, consists of the construction of a new general aviation runway designated at 9L-27R, with a 2,500-foot centerline separation distance between existing 9R-27L and the proposed 9L-27R. The runway length would be 4,000 feet long and 100 feet wide. It would have a full-length parallel taxiway on the south side of the runway, with a centerline distance of 400 feet from the Runway 9L-27R. This alternative would also have a single taxiway connecting it to Runway 9R-27L. Both the runway and taxiways would be marked and lighted with medium intensity lighting (MIRL, MITL). No navigational aids would be installed for the new runway, but the east runway end, Runway 27R, would have a precision approach path indicator (PAPI).

**Alternative 2: 3,100-foot Runway Separation (Master Plan Alternative)**

Alternative 2, depicted in Exhibit 2, is the runway configuration depicted on the airport's current ALP. It consists of the construction of a new general aviation runway designated as Runway 9L-27R, with a 3,100-foot centerline separation distance between existing Runway 9R-27L and proposed Runway 9L-27R.

The runway length would be 4,000 feet long and 100 feet wide. It would have a full-length parallel taxiway on the south side of the runway, with a centerline distance of 400 feet from the Runway 9L-27R. This alternative would also have a single taxiway connecting it to Runway 9R-27L. Both the runway and taxiways would be marked and lighted with medium intensity lighting (MIRL, MITL). No navigational aids would be installed for the new runway, but the east runway end, Runway 27R, would have a precision approach path indicator (PAPI).

This runway configuration, depicted in the Master Plan, and on the airport's current ALP to optimize traffic, is not necessarily the alternative that will be recommended in the proposed Environmental Assessment (EA). Alternative 2, as well as other reasonable alternatives, will be subject to detailed environmental analysis in that report. After comparing the results of this analysis, the preferred alternative will be determined for submittal to the FAA for a Finding of No Significant Impact (FONSI).

**Alternative 3: 3,800-foot Runway Separation**

Alternative 3, depicted in Exhibit 3, consists of the construction of a new general aviation runway designated as Runway 9L-27R, with a 3,800-foot centerline separation distance between existing Runway 9R-27L and proposed Runway 9L-27R. The runway length would be 4,000 feet long and 100 feet wide and located 700 feet to the north of Alternative 2. With a separation distance of 3,800 feet between existing Runway 9R-27L and proposed Runway 9L-27R flight training traffic would be forced to take dramatic turns to avoid noise sensitive areas east and north of the airport. As in Alternative 2, this alternative would have a full-length parallel taxiway on the south side of the runway, with a centerline distance of 400 feet from Runway 9L-27R. Alternative 3 would also have a single taxiway connecting it to Runway 9R-27L. Both the runway and taxiways would be marked and lighted with medium intensity lighting (MIRL, MITL). No navigational aids would be installed for the new runway, but the east runway end, Runway 27R would have a precision approach path indicator (PAPI).

**Alternative 4: No-Action**

The No-Action Alternative consists of leaving the airport in its existing configuration and not undertaking the proposed new runway development. Under this alternative, the proposed runway, Runway 9L-27R, the proposed taxiway connector, and the proposed south parallel taxiway would not be constructed. Although the No-Action Alternative would not meet the air transportation needs of the airport or region, it will be retained for further study for comparative purposes.

**Taxiway Parallel to Runway 9L-27R (A-2)** – A taxiway parallel to the recommended Runway 9L-27R is recommended to prevent the need to taxi along the runway prior to takeoffs or after landings. Such taxi operations restrict runway capacities. The recommended taxiway may be either north or south of the runway. Placing the runway to the north will facilitate opening the area north of future Runway 9L-27R to aviation-related development.

**Connecting North-South Taxiways (A-3)** – Although the primary function of recommended Runway 9L-27R will be training operations, it is necessary that the runway be connected to the remainder of the airfield. It is recommended that a 50-foot-wide by 3,100-foot-long taxiway be constructed between Runways 9R-27L and 9L-27R as a westerly extension to Taxiway A turning north beyond the Runway 9R-27L RSA. This taxiway should be marked and equipped with MITL edge lights.

**Runway 14-32 Extension (A-4)** – It is recommended that Runways 14 and 32 be extended 850 feet (total runway length of 5,600 feet) to the northwest across Runway 9-27. This extension will enhance capacity and safety by providing a takeoff holding area outside the safety area of both runways. ~~This extension will require FAA standard marking and medium intensity runway lights (MIRL).~~ (See related Project A-5). Currently, Runway 14-32 does not serve as a certified second runway to Runway 9-27 due to limits on length and load bearing capacity, also the threshold of Runway 14-32 is within the RSA of 9-27, which has negative effects on capacity and safety. It is suggested that Runway 14-32 meet the 80% capacity criteria of Runway 9-27, so that it can be considered as a secondary runway and be able to support the existing and future capacity needs at St. Lucie International Airport.

**Extended Taxiway B (A5)** – It is recommended that Taxiway B be extended to the northwest to provide access to the threshold of extended Runway 14-32. The intersection with Runway 14 should be at 90 degrees to provide for good line-of-sight along Runway 14-32 and its approaches. FAA standard marking and MITL are also recommended.

**General Aviation Taxiway Southeast of Taxiway (C) (A-6)** – This taxiway is to be an extension of a Taxiway (C) and is to provide airside access to potential development in the east quadrant of the airport. It is shown to be approximately 2,500 feet by 50 feet.

**4.2.2 Visual/Navigational Aids, Independent Lighting Projects**

**Local Radar (N-1)** – It is recommended that a Local Radar with distance measuring equipment (TVOR/DME) be established on FPR. Primarily a safety issue, this will allow the ATCT to spot and direct aircraft (outside of visual range) in tight patterns to avoid noise sensitive areas.

**GPS/DME (N-2)** – It is recommended that Global Positioning System type equipment with distance measuring (GPS/DME) be established on FPR. This will eliminate confusion between

FPR and Vero Beach Airports which occurs occasionally with use of the Vero Beach VOR. Location of a GPS/DME on or off airport will also enable straight-in, non-precision approaches to all FPR runways.

**Install PAPIs on Runway 9, 27, 14 and 32 (N-3)** – This visual approach to Runway 32 is over a built-up area. The recommended addition of PAPIs for both approaches will enhance safety for aircraft using the airport as well as for the neighboring community. Replacement of the existing VASIs on Runway 9-27 once they have surpassed their useful life span is recommended also.

**Airport Beacon and Tower (N-4)** – It is recommended that the rotating beacon and supporting tower be rehabilitated. The existing beacon and tower were installed under an FAA project over 20 years ago. Due it's the age, replacement of both the pole and the head need to be considered. The tower, although structurally sound, is in need of preparation and painting to FAA marking standards.

**REILs (N-5)** – It is recommended that Runway End Identifier Lights (REILs) be installed on runway thresholds 9, 27, and 32 to better define the runway thresholds for nighttime operations. The lights will add to the operational safety of aircraft utilizing these runways for landings. REILs should also be installed on runway threshold 14 when it is extended. Threshold 14 REILs should be shielded from view by aircraft making approaches to Runway 9R.

**STARS (N-6)** – It is recommended to provide safety enhancement through the Air Traffic Control, that a low cost aircraft display system be installed in the ATCT. Standard Terminal Automation Replacement System (STARS) provides this display through an existing digital radar system.

#### **4.2.3 Passenger and Cargo Terminals**

**New Passenger Terminal Building Design (T-1)** – It is recommended that the existing passenger terminal building be renovated when necessary.

#### **4.2.4 Support Facility Projects**

**Airport Maintenance Building (S-1)** – The recommendation to establish an airport maintenance building and materials lay-down yard remains valid due to current and projected needs. A location north of the ATCT site is designed for airport maintenance facilities.

**Fencing (S-2)** – The airport is presently accessible to persons, vehicles and animals. In a number of instances, unauthorized access has occurred thorough numerous areas around the Airport. Therefore, the need to secure the airport by installing fencing has increased. It is thus recommended that perimeter fencing be provided for vulnerable and accessible areas of the airport operating area.

**ARFF Vehicle(s) (S-3)** – A rapid intervention vehicle is needed for safety of aircraft and passengers in the event of an emergency. A vehicle meeting the requirements of A/C 150/5220-14, Airport Fire and Rescue Vehicles, is recommended.

**ARFF Building (S-4)** – A new building is needed to house the recommended ARFF vehicle and other trucks presently located on FPR. The existing building is poorly located for airfield access. The proposed building will be located close to the primary and secondary runways plus the recommended parallel Runway 9L-27R in accordance with the Airport Layout Plan.

#### 4.2.5 Other Development Projects

**Improve Airfield Drainage Structures (O-1)** – Existing headwalls at two locations east of the intersection of Taxiways B and (D) are inadequate to prevent erosion that may result from heavy rains. The structures need to be modified and/or extended to allow stability of the surrounding soils and permit slope protection. Presently, the unstable soil is being washed into ditches causing a blockage of drainage through drainpipes. Efforts have been made to maintain the areas around the structures, but the recommended improvements are required to prevent further deteriorations.

**Rehabilitate Airfield Drainage – General (O-2)** – This project will complete the replacement of drainage structures and redesign the existing outfall ditches which were installed over 40 years ago to accommodate the original airfield configuration. Most of the drainage ditches serving the airport operations area will also be cleaned to provide adequate operation of the drainage outfall system. During the past 40 years, a significant amount of pavement and several buildings have been constructed. The two large FBO areas currently under development will add to the drainage outfall requirements. The future development project should include drainage features necessary for those projects.

**Update Master Drainage Plan (O-3)** – Currently underway. Suggest that this project be upgraded to an Environmental Resource Permit (ERP).

**“Fairgrounds” Road (O-4)** – A new roadway has been constructed from Hammond Road eastward to the fairgrounds boundary. This roadway provides access to the southwest quadrant of the aviation-related development area. It is recommended that this road be extended to Aviation Way. The routing of the road is dependent on when the fairground properties become Airport property. The roadway may either continue due east through the present fairgrounds or follow a right-of-way just north of the fairgrounds.

**Taylor Dairy Road Power Lines (O-5)** – It is recommended that power lines at Taylor Dairy Road be buried or rerouted and lowered beyond Kings Highway so that present ILS and future approaches may be established.

#### 4.3 LAND ACQUISITION

There are approximately 3,660 acres of land within current airport boundaries. The land area includes numerous parcels acquired through the previous Master Plans recommendations. This land is necessary under this Master Plan as property necessary for aircraft over-flights and the elimination of non-compatible land development beneath the proposed parallel runway's flight tracks. Land acquisitions required for development projects are programmed in this Master Plan. There are seven land parcels along the airport property that are candidates for acquisition for the ultimate development (create buffers to non-compatible land-uses and support current/future infrastructure of the airport) and are as follows:

##### **Parcels Acquisitions L-1, L-2 & L-3**

Acquisition of land necessary Parcels 17 & 24 acquired to create buffers, and Parcels 53, 59A, 40, 41, 42 & 65 acquired to complete the construction of the new parallel runway and support NAVAIDS.

**Table 4-1**  
**St. Lucie County International Airport**  
**Recommended Development Projects**

- I. Airfield Pavement And Related Lighting Projects (A)**
- A-1 New Parallel Runway 9L-27R  
(4,000' x 100')(w/Marking, MITL, PAPIs)
  - A-2 Taxiway Parallel to R/W 9L-27R  
(4,700' x 50')(w/Marking, MITL)
  - A-3 Connecting North-South Taxiway  
(3,675' by 50')(w/Marking, MITL)
  - A-4 Runway 14-32 Extension  
(450' x 100')(North of Runway 9-27)
  - A-5 Construct Taxiway Between Thresholds 9 and 14  
(2,200' x 50')(w/Marking, MITL)
  - A-6 FBO Access Taxiways (2)  
(2500' x 50')
- II. Visual/Navigational Aids and Independent Airfield Lighting Projects (N)**
- N-1 Local Radar  
(Safety and Noise)
  - N-2 GPS/DME  
Safety
  - N-3 Install PAPIs  
(Runways 9L, 27R, 14 and 32)
  - N-4 Airport Beacon and Tower  
(Rehabilitation)
  - N-5 REILS (R/W Ends 9L, 27R, and 32)
  - N-6 STARS-LITE
- III. Passenger Terminal (T)**
- T-1 Passenger Terminal Building  
Renovation

Table 4-1 (Continued)

<b>IV.</b>	<b><u>Support Facilities (S)</u></b>
S-1	Airport Maintenance Building
S-2	Fencing
S-3	ARFF Truck
S-4	ARFF Building
<b>VI.</b>	<b><u>Other (O)</u></b>
O-1	Improve Airfield Drainage Structures (East of T/W B & (D) Intersection)
O-2	Rehabilitate Airfield Drainage (General)
O-3	Update Master Drainage Plan
O-4	Construct Road Through or Around Fairgrounds to Aviation Way
O-5	Taylor Dairy Road Power Lines Burial or Rerouting
<b>V.</b>	<b><u>Land Acquisitions (L)</u></b>
L-1	Parcel 17 northeast corner of airport property
L-2	Parcel 24 northwest corner of airport property
L-3	Parcels 53, 59A, 40, 41, 42 & 65 west perimeter of airport property And approaches of 9L & 9R

Table 4-2  
 St. Lucie County International Airport  
 Runway & Airspace Criteria

Item	Runway		Approaches		V
	ILS	NPw/ILS	NP	Vw/NP	
<b>Runways:</b>					
2001	9	27	14	32	
2006	9R	27L	14	32	9L-27R
20-Year Program:	9R	27L	14	32	
Ultimate:	9R	27L	14	32	9L-27R
<b>Approach:</b>					
Length (feet) (Total)	50,000	10,000	10,000	10,000	10,000
Length (feet) (Inner Segment)	10,000	-----	-----	-----	-----
Inner Width (feet)	1,000	1,000	500	500	500
Intermediate Width	4,000	-----	-----	-----	-----
Outer Width (feet)	16,000	3,500	3,500	3,500	1,500
Slope (Inner Segment)	50:1	34:1	34:1	34:1	20:1
<b>Runway Protection Zones (RPZ):</b>					
Length (feet)	2,500	1,700	1,700	1,700	1,700
Inner Width (feet)	1,000	500	500	500	500
Outer Width (feet)	1,750	1,010	1,010	1,010	1,010
Area (Acres)	78.9	29.5	29.5	29.5	29.5
<b>Horizontal Surfaces:</b>					
Elevation	150 feet above the established airport elevation.				
Area	Construct surface with arcs centered on each end of the primary surface and connecting tangents.				
Outer Width (feet)	10,000	10,000	10,000	10,000	5,000
Arc Length (feet)	10,000	10,000	10,000	10,000	5,000
<b>Conical Surfaces:</b>	A surface extending outward and upward from the horizontal surface.				
Distance (feet)	4,000	4,000	4,000	4,000	4,000
Slope	20 to 1	20 to 1	20 to 1	20 to 1	20 to 1
<b>Primary Surface:</b>					
Elevation	Same as the elevation of the nearest point on the runway centerline.				
Length (feet)	200 feet beyond each end of the runway.				
Width (feet)	1,000	1,000	500	500	500
<b>Transitional Surfaces:</b>	A surface extending from the sides of approach and primary surfaces.				
Distance (Non-ILS)	Extends to intersection with other surfaces.				
Distance with ILS	Extends to 5,000 feet from edge of approach surface beyond horizontal and conical surfaces.				
Slope	7 to 1	7 to 1	7 to 1	7 to 1	7 to 1

Source: Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace  
 Legend: ILS = Instrument Landing System (Approach)  
 NPw/ILS = Non-precision approach with an ILS on the opposite end.  
 NP = Non-precision approach.  
 Vw/NP = Visual approach with NP on the opposite end.  
 V = Visual approach.

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**Chapter 5**  
*Airport Plans*

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## Chapter Five: Airport Plans

### 5.0 GENERAL

The Airport Layout Plan set for St. Lucie County International Airport is available in the office of the Airport Director. These plans have been designed to meet criteria established by the FAA in AC 150/5070-6A, "Airport Master Plans" and AC 150/5300-13 "Airport Design", and illustrate the current airport facilities and the proposed airport development.

The Airport Layout Plan set includes the following sheets:

➤ Cover Sheet	1 of 8
➤ Existing Airport Facilities Plan/ Airport Data	2 of 8
➤ Airport Layout Plan	3 of 8
➤ Terminal Area Plan	4 of 8
➤ Runway Approach and Protection Zones and Profiles Plan	5 of 8
➤ Existing Part 77 Airspace Surfaces	6 of 8
➤ Future Part 77 Airspace Surfaces	7 of 8
➤ Airport Property Map	8 of 8

Reduced 11"x 17" copies of these graphics are included at the end of this chapter.

The key issues to be dealt with in this chapter, as defined by the Master Plan Study Group (MPSG), are listed below with a note as to the section in which the issue is addressed.

<u>Aviation</u>	<u>Environment/Community</u>	<u>Existing Commitment</u>
Graphics	Copies Available at Public Location For Viewing	FAA & FDOT Graphic Criteria Incorporated In The Graphics  Selected Plan Existing and Proposed Airport Layout Plan

### 5.1 EXISTING AND PROPOSED AIRPORT LAYOUT PLAN

The Existing Airport Facilities Plan, **Sheet 2 of 8**, is provided as both a reference document to identify existing facilities (including Runways, Taxiways, buildings and other structures), and a presentation document to identify a beginning point to this study.

The Airport Layout Plan (ALP), **Sheet 3 of 8**, is a graphic depicting all of the existing facilities at the airport and the future development planned for the airport. This allows the viewer the opportunity to visually identify all future development relative to the existing facilities.

This airport plan graphic is intended to be used by the airport sponsor, airport operator, FBO's and other airport tenants for many uses. These uses include operational, safety, interim and alternatives planning, emergency and rescue, and planning for events.

The Airport Layout Plan must be approved by the FAA in order for St. Lucie County International Airport to be eligible for and receive airport improvement funding. Likewise, the plan must be approved by the Florida Department of Transportation (FDOT) for the airport to receive State funding of eligible airport development projects.

## **5.2 TERMINAL AREA PLAN**

The Terminal Area Plan illustrated on **Sheet 4 of 8**, focuses on the central aviation facilities.

There are three general areas encompassing aviation facility development. The existing facilities are located in the southern portion of the airfield. There are also some existing facilities on the eastern and western side of the terminal facility. Future facility development is being located in the eastern and western sides of the airport where space is available.

It is recommended that an Airport Rescue and Fire Fighting (ARFF) operation be constructed at the St. Lucie County International Airport to support the existing and anticipated safety needs of the aircraft operations. The exact location of this facility has not been determined; a study should be conducted so that the optimal location can be determined.

## **5.3 RUNWAY PROTECTION ZONES AND PROFILES PLAN**

The Runway Approach and Protection Zones (RPZ) plans, **Sheet 5 of 8**, illustrate the approach area immediately beyond the ends of the Runways at the airport. The areas within the RPZs should be kept free and clear of obstacles. This reduces any hazards to the aircraft or people on the ground in the approach and departing paths of the Runways.

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The RPZs for each of the Runways are shown in plan and profile to depict clearly any obstacles located within the existing and planned approaches to the Runways.

The approach surfaces to the St. Lucie County International Airport have varying glide slopes. Runway 9 is a precision instrument approach while Runways 27, 14, & 32 are all non-precision instrument approaches with a 34 to 1 glide slope. The approach surfaces to the future parallel runway will have a 20 to 1 glide slope.

## **5.4 FAR PART 77 AIRSPACE PLAN**

To protect aircraft from the hazard of manmade and natural obstructions in the airspace around the airport, the FAA relies upon imaginary surfaces on and around an airport, which are defined in FAR Part 77, Obstructions Affecting Navigable Airspace. Subpart C of FAR Part 77 establishes standards for determining obstructions to air navigation. Florida State Statute 333 supports the protection of these surfaces by prohibiting any objects from penetrating these surfaces. These regulations enable the establishment of imaginary surfaces, which no object, manmade or natural, should enter. These surfaces at St. Lucie County International Airport are described on **Sheets 6-7 of 8**.

FAR Part 77 surfaces are utilized in zoning and land use planning adjacent to the airport to protect the navigable airspace from encroachment by hazards, which would potentially affect the safety of airport operations. The FAR Part 77 Airspace Plan depicts the physical features of the area around the airport, the Part 77 surfaces, and identifies any obstructions to any of the surfaces.

There are several different Part 77 surfaces. These include the primary surface, the transitional surface, the horizontal surface, the conical surface, and approach surface.

**Primary Surface** - A rectangular area symmetrically located 250' each side of the Runway centerline (500' for a precision approach Runway) and extending a distance of 200 feet beyond each Runway threshold.

**Transitional Surface** - A sloping area beginning at the edge of the Primary and Approach Surface and sloping outward at a ratio of 7:1 perpendicular to the Runway and to the end of the Approach Slope.

**Horizontal Surface** - An oval-shaped level area situated 150 feet above the airport elevation, extending 5,000 - 10,000 feet outward, depending on the Runway category and approach procedure available.

**Conical Surface** - Extends outward for a distance of 4,000 feet beginning at the outer edge of the Horizontal Surface, and sloping upward at a ratio of 20:1.

**Approach Surface** - These surfaces begin at the end of the Primary Surface (200' beyond the Runway threshold) and slope upward at a ratio determined by the Runway category and type of instrument approach available to the Runway. The width and elevation of the inner end conforms to that of the Primary Surface while approach surface length and width of the outer end are governed by the Runway category and approach procedure available.

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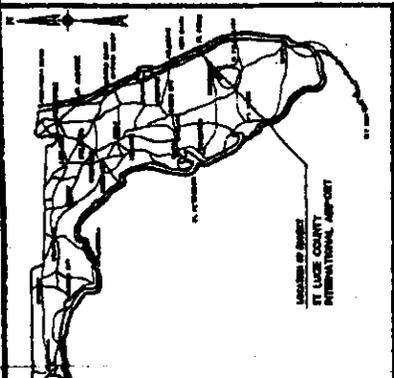
## **5.5 AIRPORT PROPERTY MAP**

The Airport Property Map - Exhibit "A", Sheet 8 of 8, is intended to accurately show the airport property boundary and all current lease boundaries. To develop this map, specific data was provided by the St. Lucie County International Airport.

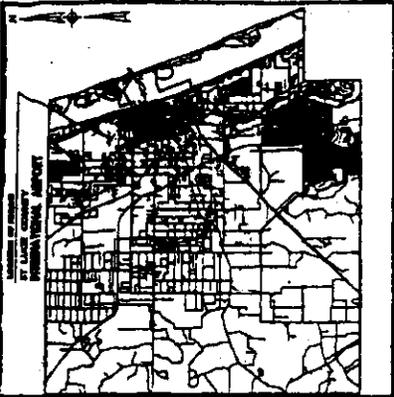
# ST. LUCIE COUNTY INTERNATIONAL AIRPORT FORT PIERCE, FLORIDA

## AIRPORT LAYOUT PLAN UPDATE (ALPU)

FDOT FIN No. 236701-1-94-01  
HTA JOB No. 853702



Location Map



Vicinity Map

**BOARD OF COUNTY COMMISSIONERS**

- John O. Brubn, - District 1
- Doug Coward, - District 2
- Paula Lewis, - District 3
- Frannie Hutchinson, - District 4
- Chf Barnes, - District 5

- Douglas Anderson, - County Administrator
- Dan McIntyre, - County Attorney
- Heather Young, - Assistant County Attorney
- Paul Phillips, - A.A.E., Airport Director
- Ronald Hall, C.M., - Airport Operations Manager



St. Lucie County  
**INTERNATIONAL AIRPORT**  
on Florida's Treasure Coast

**INDEX TO DRAWINGS**

SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING AIRPORT FACILITIES PLAN / AIRPORT DATA SHEET
3	AIRPORT LAYOUT PLAN
4	TERMINAL AREA PLAN
5	RUNWAY INNER APPROACH SURFACES DRAWING
6	PRESERT FAR PART 77 AIRSPACE SURFACES
7	FUTURE FAR PART 77 AIRSPACE SURFACES
8	AIRPORT PROPERTY MAP

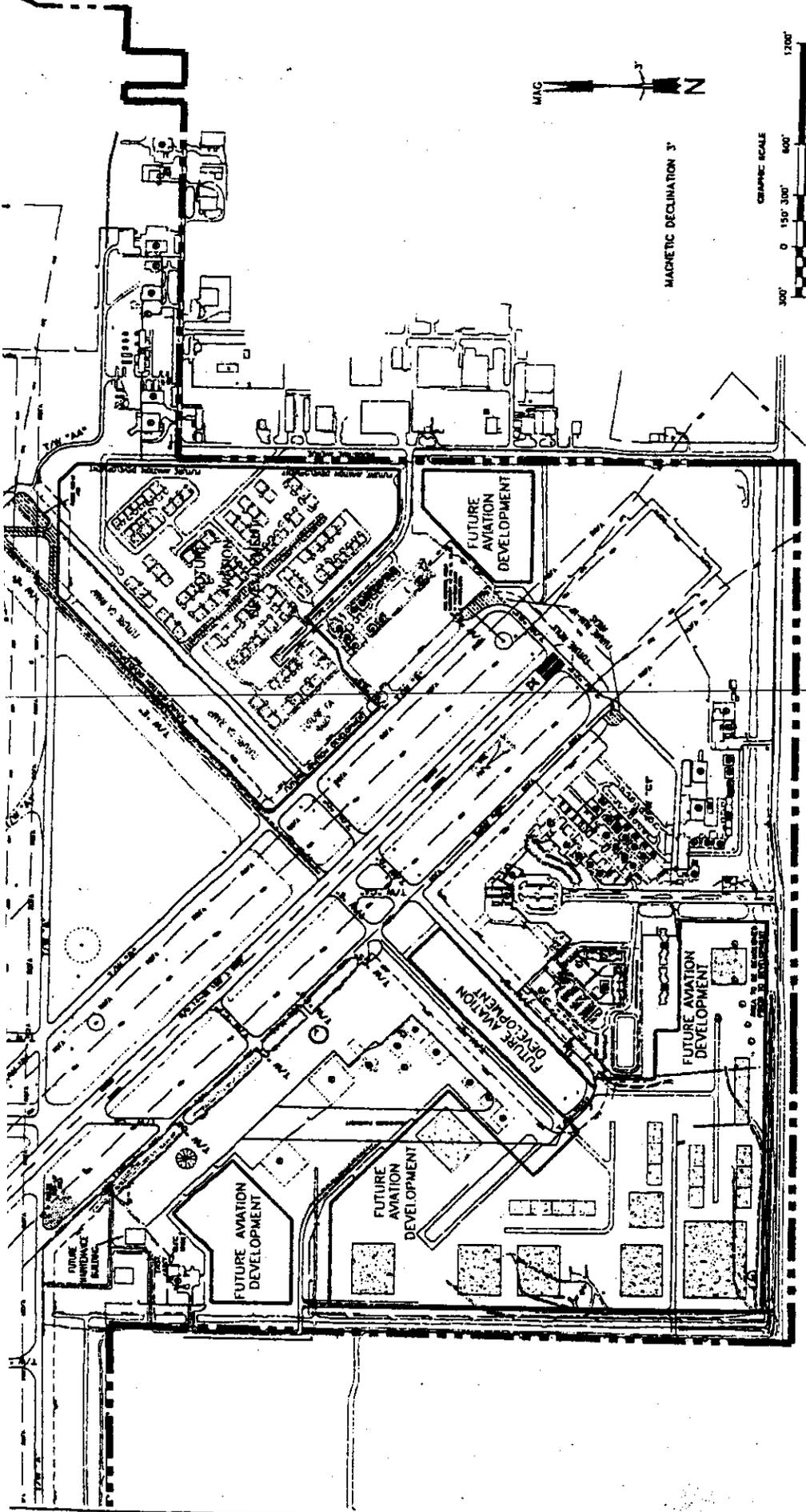
A PORTION OF THESE DOCUMENTS MAY BE  
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OF HTA, TAMMER & ASSOCIATES, INC.

AUGUST 2002

PLANS PREPARED BY:  
**Hoyle, Tanner & Associates, Inc.** HTA  
Orlando, FL







St. Lucie County International Airport Building Inventory List

Site No.	Building Facility	Area									
1	Terminal Building	100,000	2	Terminal Building	100,000	3	Terminal Building	100,000	4	Terminal Building	100,000
5	Terminal Building	100,000	6	Terminal Building	100,000	7	Terminal Building	100,000	8	Terminal Building	100,000
9	Terminal Building	100,000	10	Terminal Building	100,000	11	Terminal Building	100,000	12	Terminal Building	100,000
13	Terminal Building	100,000	14	Terminal Building	100,000	15	Terminal Building	100,000	16	Terminal Building	100,000
17	Terminal Building	100,000	18	Terminal Building	100,000	19	Terminal Building	100,000	20	Terminal Building	100,000
21	Terminal Building	100,000	22	Terminal Building	100,000	23	Terminal Building	100,000	24	Terminal Building	100,000
25	Terminal Building	100,000	26	Terminal Building	100,000	27	Terminal Building	100,000	28	Terminal Building	100,000
29	Terminal Building	100,000	30	Terminal Building	100,000	31	Terminal Building	100,000	32	Terminal Building	100,000
33	Terminal Building	100,000	34	Terminal Building	100,000	35	Terminal Building	100,000	36	Terminal Building	100,000
37	Terminal Building	100,000	38	Terminal Building	100,000	39	Terminal Building	100,000	40	Terminal Building	100,000
41	Terminal Building	100,000	42	Terminal Building	100,000	43	Terminal Building	100,000	44	Terminal Building	100,000
45	Terminal Building	100,000	46	Terminal Building	100,000	47	Terminal Building	100,000	48	Terminal Building	100,000
49	Terminal Building	100,000	50	Terminal Building	100,000	51	Terminal Building	100,000	52	Terminal Building	100,000
53	Terminal Building	100,000	54	Terminal Building	100,000	55	Terminal Building	100,000	56	Terminal Building	100,000
57	Terminal Building	100,000	58	Terminal Building	100,000	59	Terminal Building	100,000	60	Terminal Building	100,000
61	Terminal Building	100,000	62	Terminal Building	100,000	63	Terminal Building	100,000	64	Terminal Building	100,000
65	Terminal Building	100,000	66	Terminal Building	100,000	67	Terminal Building	100,000	68	Terminal Building	100,000
69	Terminal Building	100,000	70	Terminal Building	100,000	71	Terminal Building	100,000	72	Terminal Building	100,000
73	Terminal Building	100,000	74	Terminal Building	100,000	75	Terminal Building	100,000	76	Terminal Building	100,000
77	Terminal Building	100,000	78	Terminal Building	100,000	79	Terminal Building	100,000	80	Terminal Building	100,000
81	Terminal Building	100,000	82	Terminal Building	100,000	83	Terminal Building	100,000	84	Terminal Building	100,000
85	Terminal Building	100,000	86	Terminal Building	100,000	87	Terminal Building	100,000	88	Terminal Building	100,000
89	Terminal Building	100,000	90	Terminal Building	100,000	91	Terminal Building	100,000	92	Terminal Building	100,000
93	Terminal Building	100,000	94	Terminal Building	100,000	95	Terminal Building	100,000	96	Terminal Building	100,000
97	Terminal Building	100,000	98	Terminal Building	100,000	99	Terminal Building	100,000	100	Terminal Building	100,000

**RUNWAY 27 (FUTURE 27A)**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'

**RUNWAY 27 (FUTURE 27B)**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'

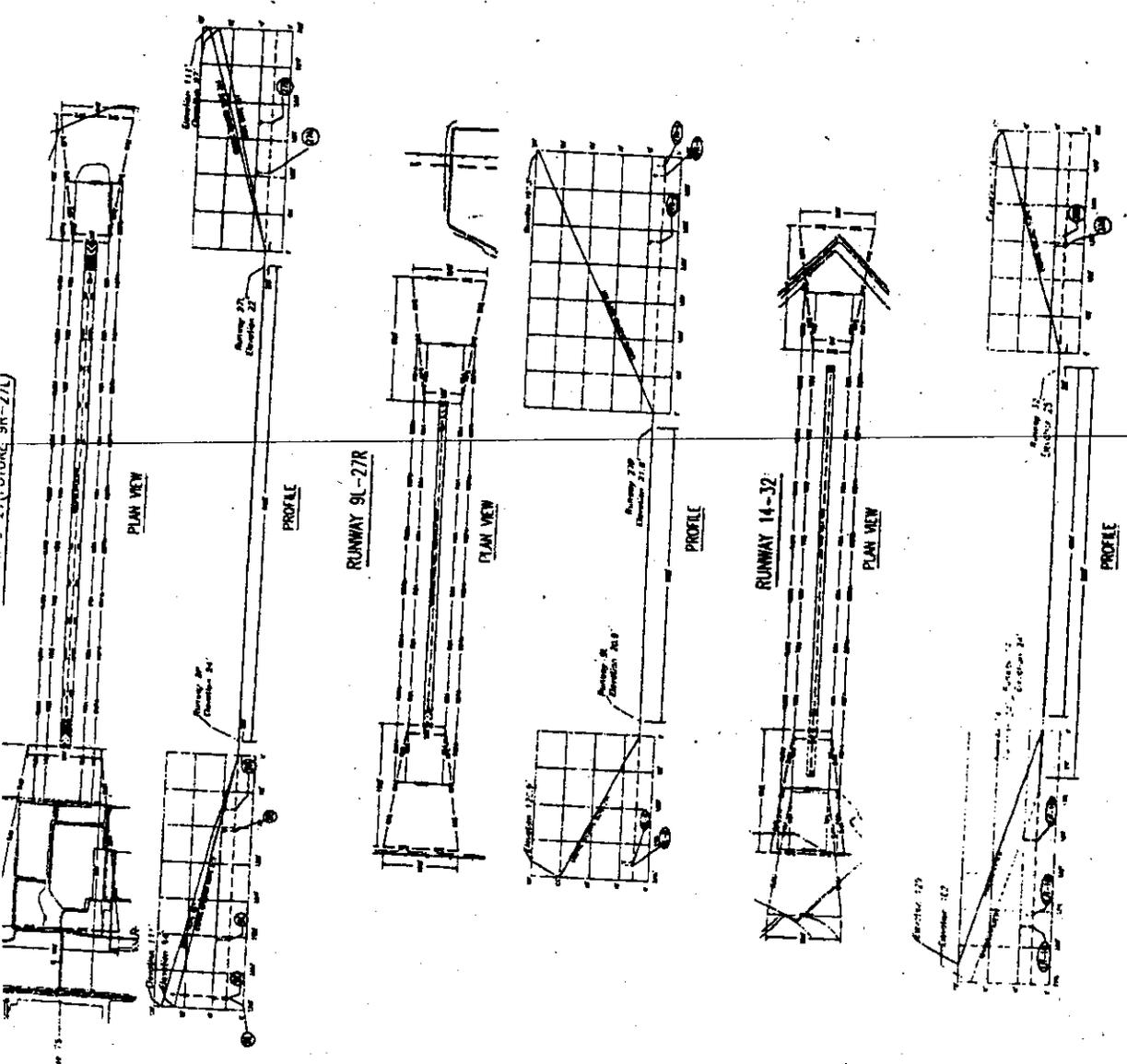
**RUNWAY 27**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'

**RUNWAY 9L-27R**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'

**RUNWAY 14**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'

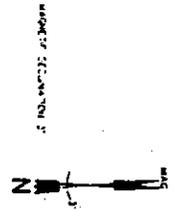
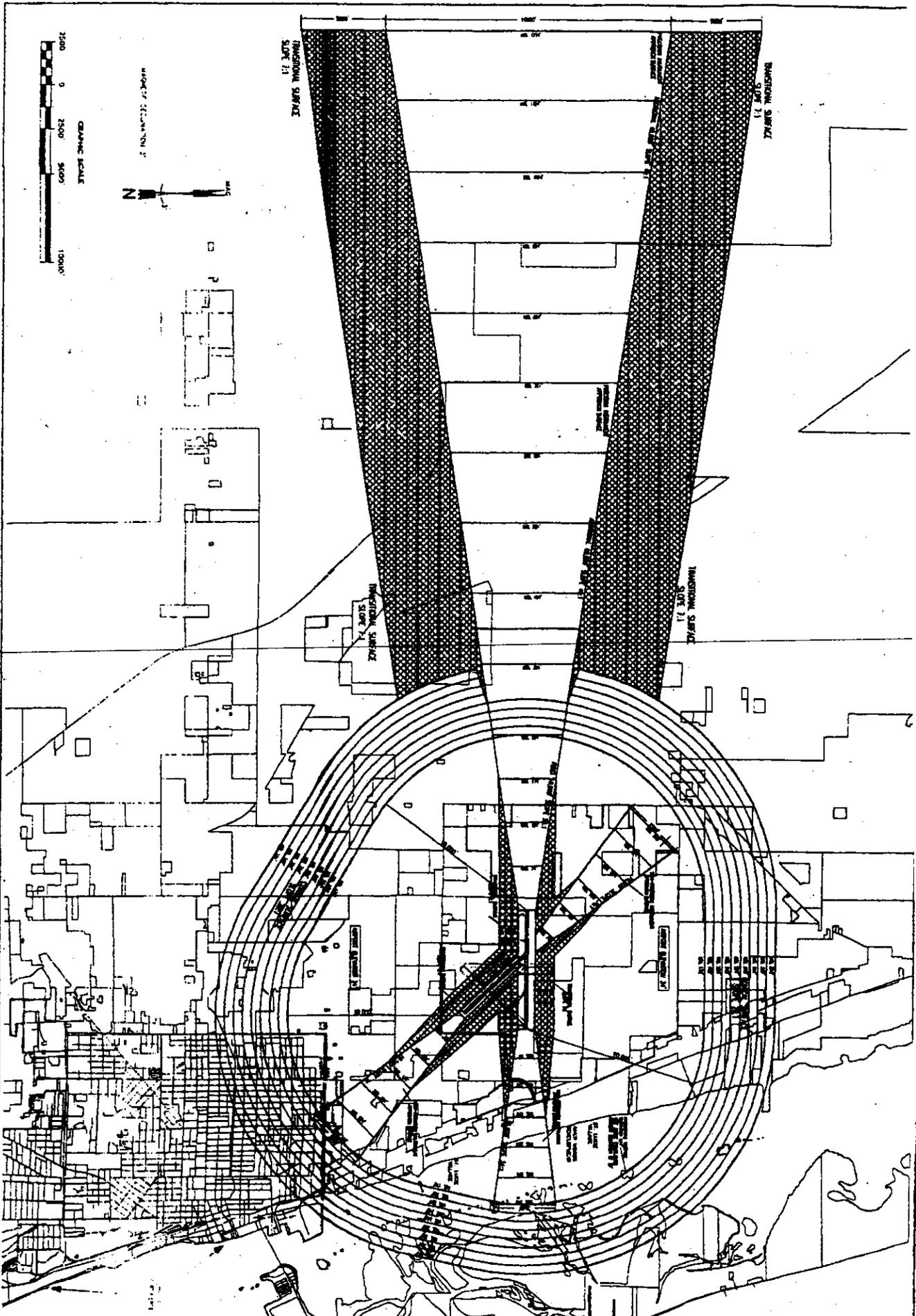
**RUNWAY 14-32**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'

**RUNWAY 32**  
 PRECISION APPROACH SLOPE ELEV. (ASPH) = 24'  
 NON-PRECISION APPROACH SLOPE ELEV. (ASPH) = 12.5'  
 HORIZONTAL DISTANCE = 5400'



Runway	Approach Surface	Width (ft)	Length (ft)	Grade (%)
Runway 27 (Future 27A)	ASPH	150	5400	0.43
Runway 27 (Future 27B)	ASPH	150	5400	0.43
Runway 27	ASPH	150	5400	0.43
Runway 9L-27R	ASPH	150	5400	0.43
Runway 14	ASPH	150	5400	0.43
Runway 14-32	ASPH	150	5400	0.43
Runway 32	ASPH	150	5400	0.43

Graphic Scale

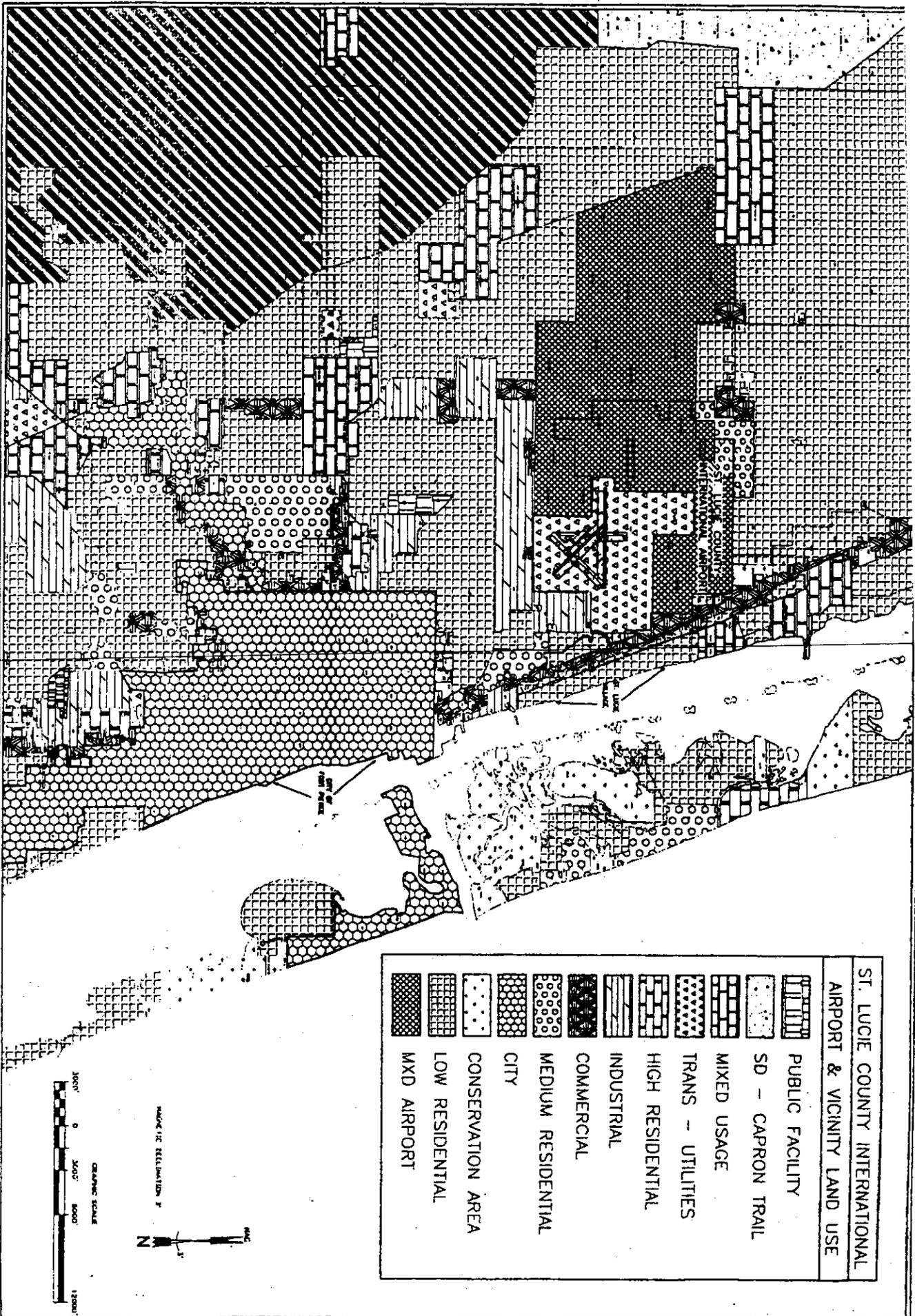


TRANSITION SURFACE  
SLOPE 1:1

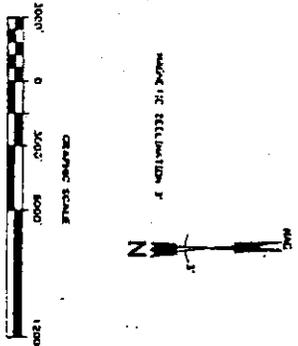
TRANSITION SURFACE  
SLOPE 1:1

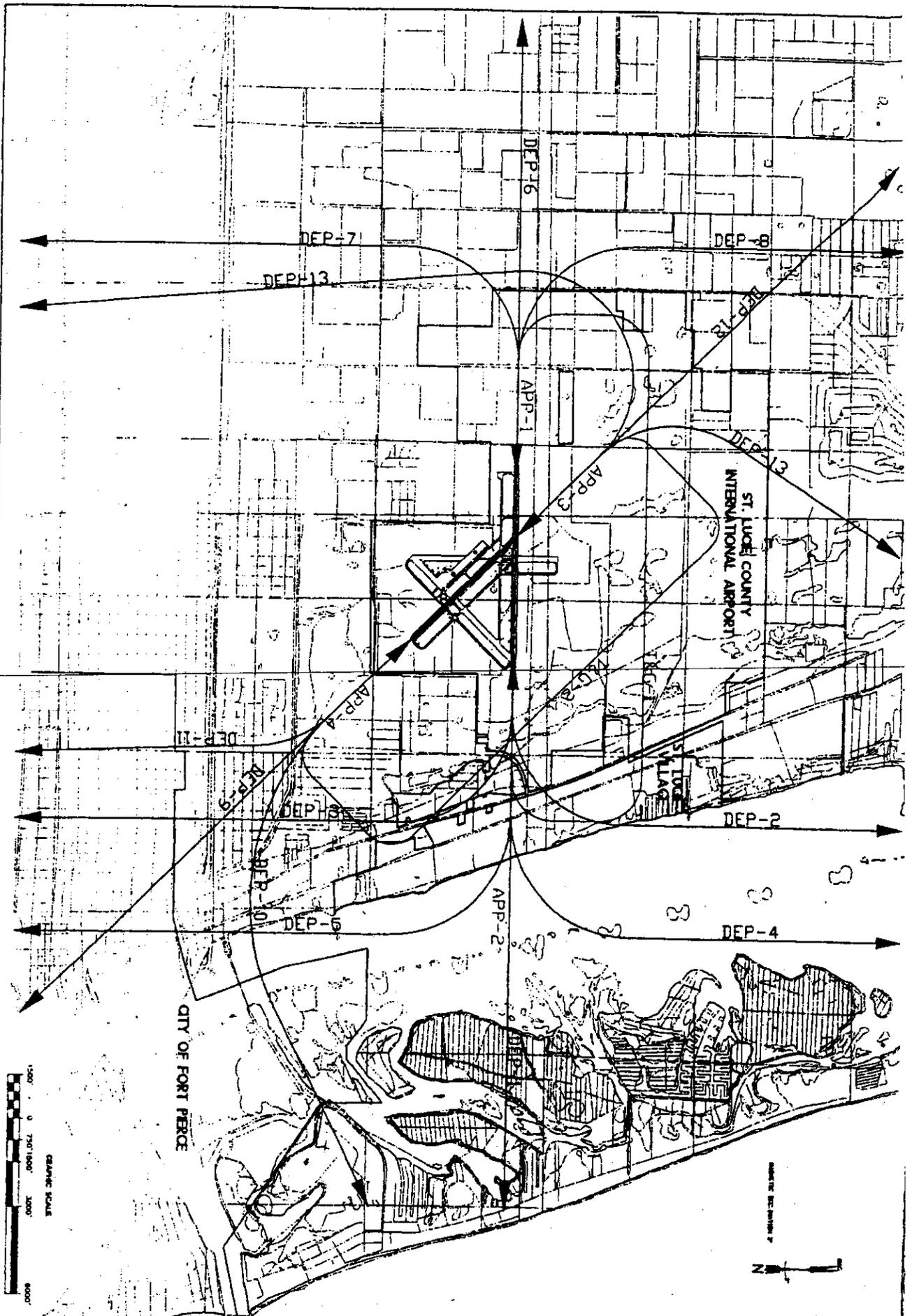
TRANSITION SURFACE  
SLOPE 1:1

TRANSITION SURFACE  
SLOPE 1:1



ST. LUCIE COUNTY INTERNATIONAL AIRPORT & VICINITY LAND USE	
	PUBLIC FACILITY
	SD - CAPRON TRAIL
	MIXED USAGE
	TRANS - UTILITIES
	HIGH RESIDENTIAL
	INDUSTRIAL
	COMMERCIAL
	MEDIUM RESIDENTIAL
	CITY
	CONSERVATION AREA
	LOW RESIDENTIAL
	MXD AIRPORT





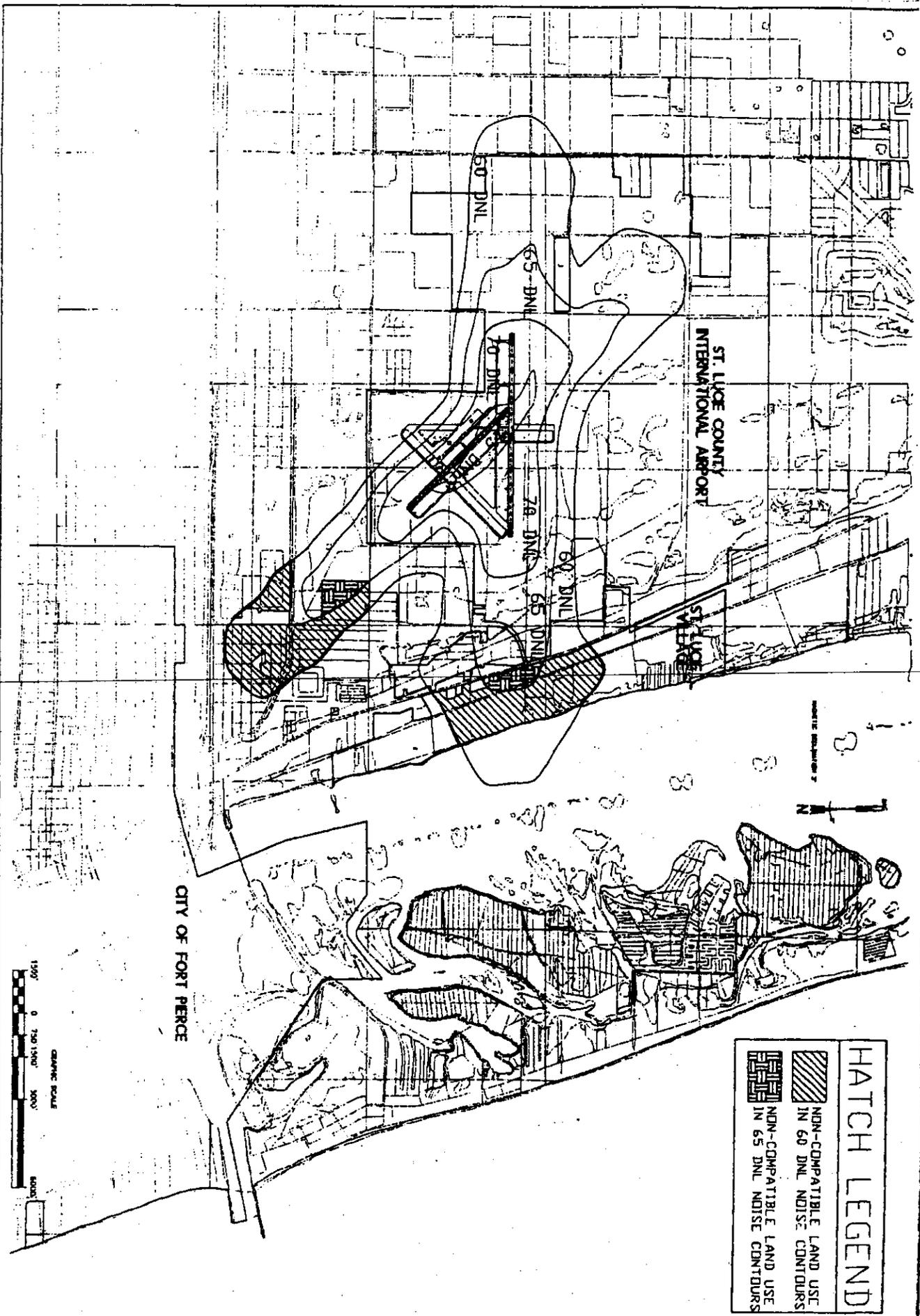
GRAPHIC SCALE  
 1:5000  
 0 750' 1500' 2250' 3000' 3750' 4500'

ST. LUCE COUNTY INTERNATIONAL AIRPORT  
 AIRPORT MASTER PLAN  
 EXISTING FLIGHT TRACKS

Hoyle, Tanner & Associates, Inc. **HTA**  
 3432 LAKE LYNDIA DRIVE, SUITE 151, ORLANDO, FL 32817  
 TEL (407) 268-7615 FAX (407) 268-2681

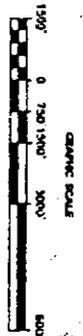
SCALE: GRAPHIC DATE: AUC 02  
 DES. BY: WJM IN. BY: WJM CHG. BY: REB

PROJECT NO. 853702  
 CADD NO.  
 SHEET 6 OF 8  
 53702E02



**HATCH LEGEND**

 NON-COMPATIBLE LAND USE IN 60 DNL NOISE CONTOURS  
 NON-COMPATIBLE LAND USE IN 65 DNL NOISE CONTOURS



CITY OF FORT PERCE

ST. LUKE COUNTY INTERNATIONAL AIRPORT

ST. LUKE SPILLWAY

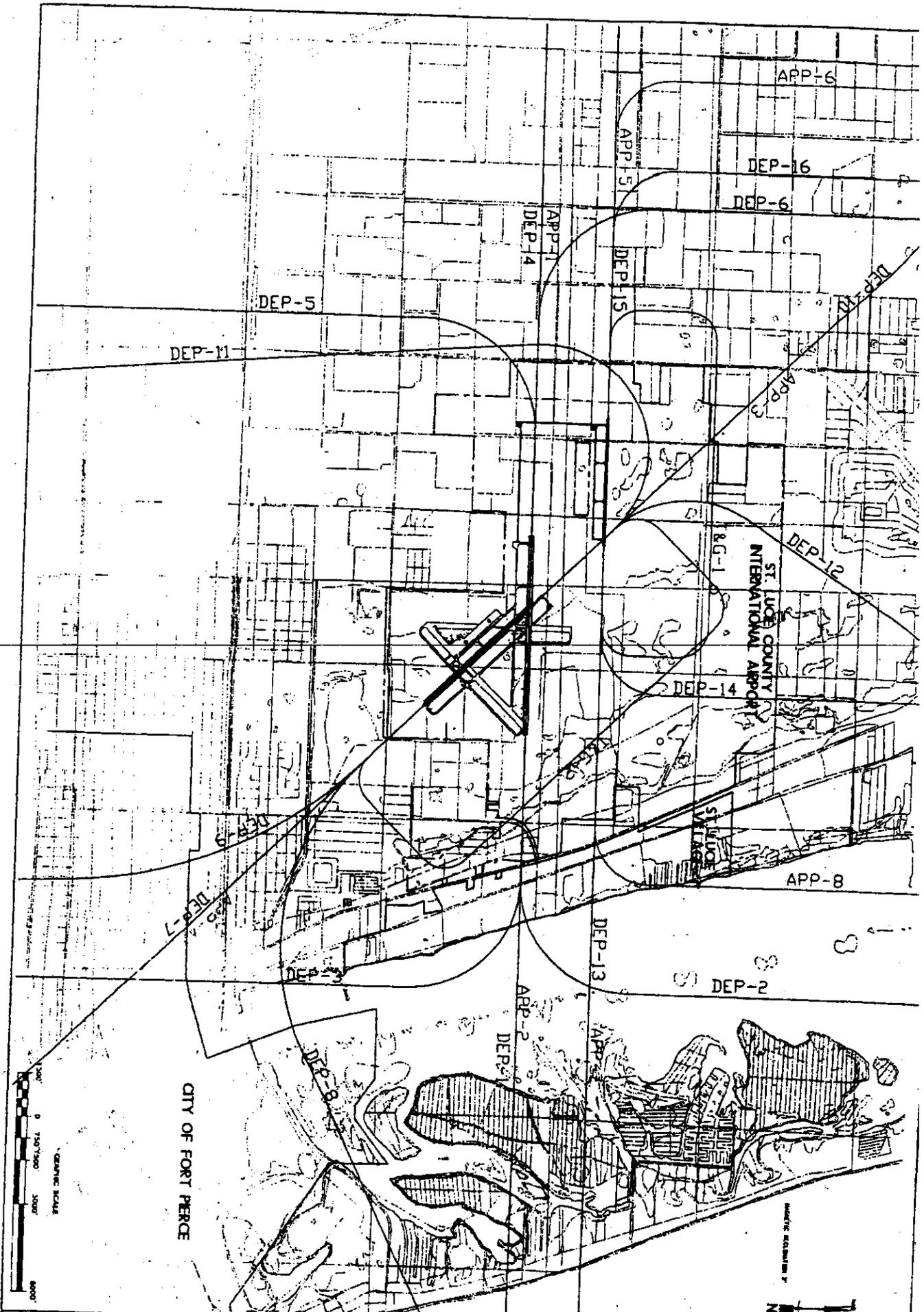
6-C

ST. LUKE COUNTY INTERNATIONAL AIRPORT MASTER PLAN  
 EXISTING DNL NOISE CONTOURS WITH NON-COMPATIBLE LAND USE

Moyle, Tanner & Associates, Inc. HTA  
 3432 LAKE LYNDIA DRIVE, SUITE 131, ORLANDO, FL 32817  
 TEL: (407) 266-1992 FAX: (407) 266-1888

SCALE: GRAPHIC DATE: APR 1977

PROJECT NO.	853702
CADD NO.	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
DATE	

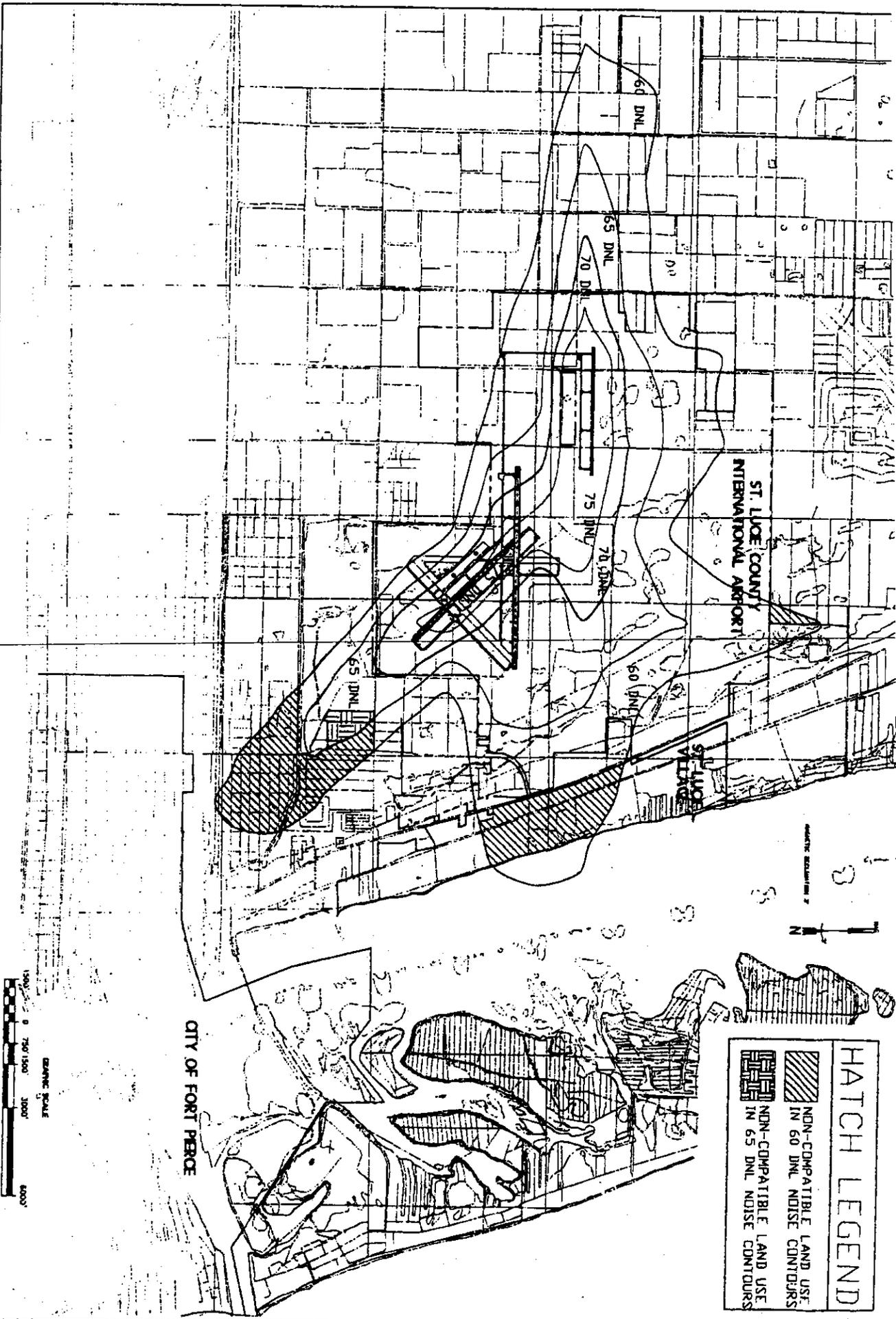


6-1

ST. LUCE COUNTY INTERNATIONAL AIRPORT  
 AIRPORT MASTER PLAN  
 FUTURE FLIGHT TRACKS

Hoyle, Tanner & Associates, Inc. HTA  
 3422 LAKE LYNDIA DRIVE, SUITE 151, ORLANDO, FL 32817

PROJECT NO. 853702



ST. LUCIE COUNTY  
INTERNATIONAL AIRPORT

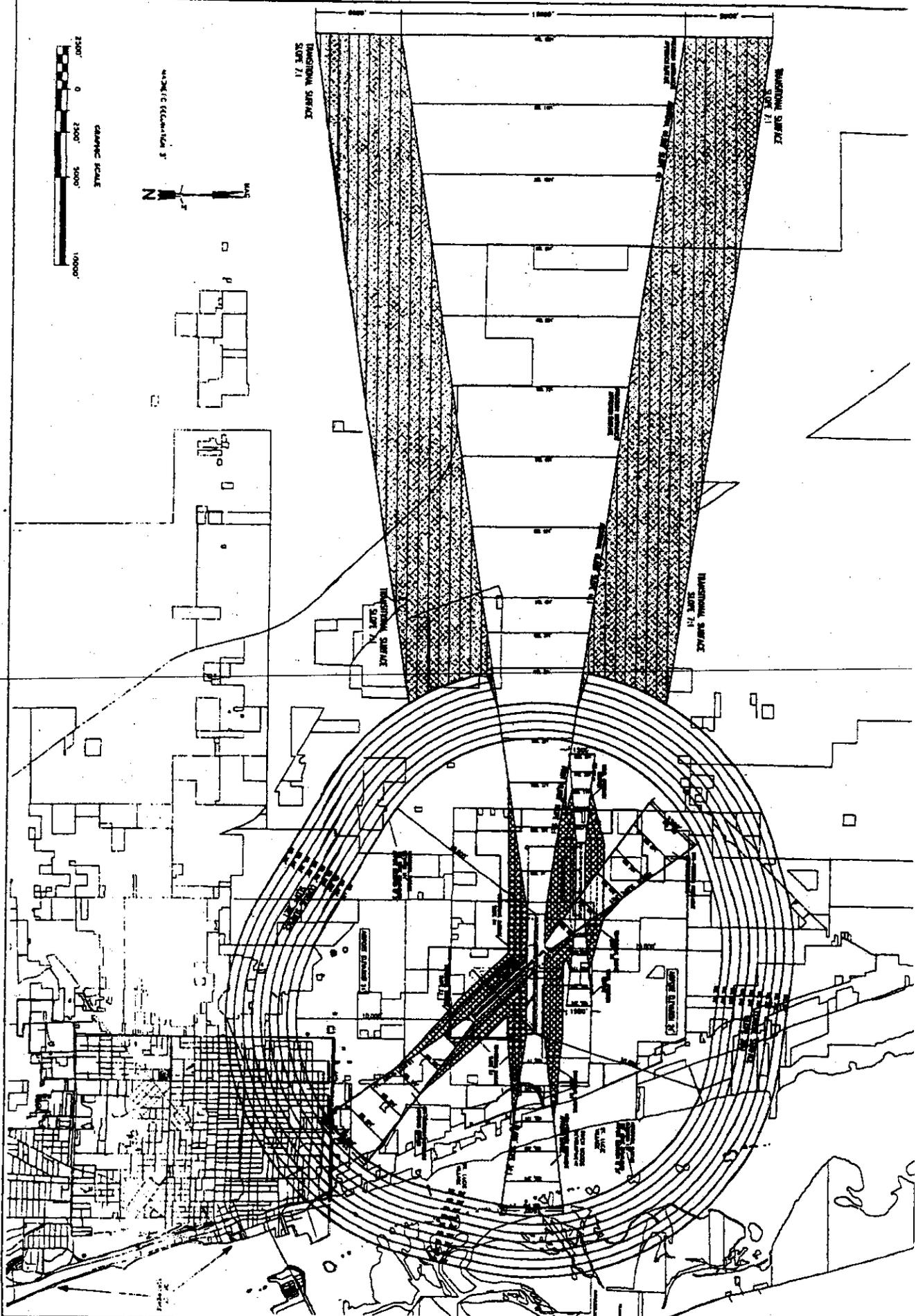
ST. LUCIE  
AVENUE

CITY OF FORT PIERCE

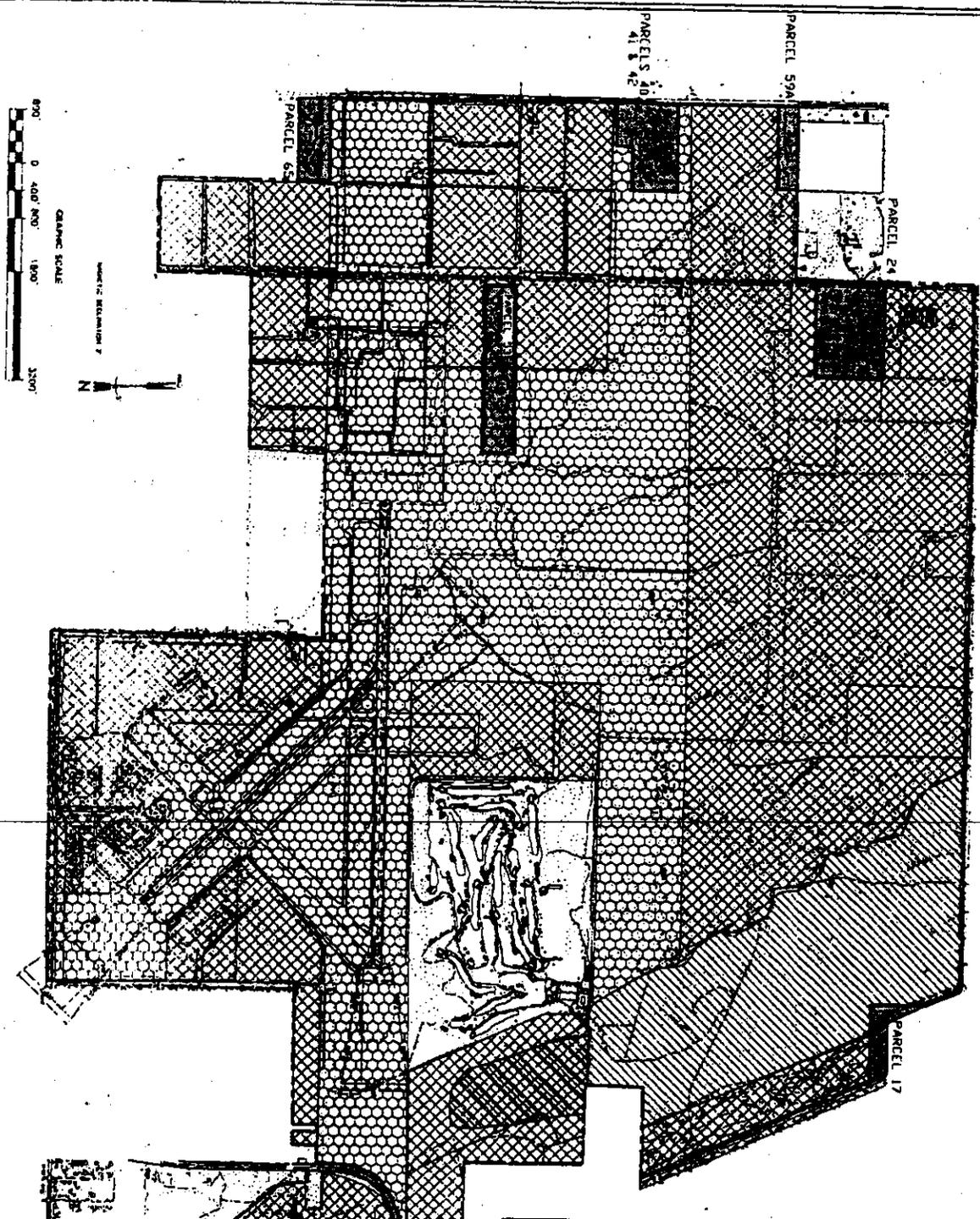
**HATCH LEGEND**

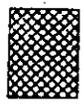
	NON-COMPATIBLE LAND USE IN 60 DNL NOISE CONTOURS
	NON-COMPATIBLE LAND USE IN 65 DNL NOISE CONTOURS





7	ST. LUCIE COUNTY INTERNATIONAL AIRPORT AIRPORT MASTER PLAN	Hoyle, Tanner & Associates, Inc. <b>HTA</b>		PROJECT NO. 853702		
	FUTURE PART 77 AIRSPACE SURFACES	3432 LAKE LYDIA DRIVE, SUITE 151, ORLANDO, FL 32817 Tel: (407) 226-1242 Fax: (407) 226-1232 South International Airport, Fla. Web: www.hoyletanner.com		CADD NO.		
	SCALE: GRAPHIC	DATE: AUG 02	DES. BY REB	DR. BY WH	CHKD. BY REB	370207



	AVIATION/INDUSTRIAL/COMMERCIAL DEVELOPMENT AREAS
	PRESERVATION & MITIGATION AREAS
	LAND USE AT ST. LUCIE COUNTY INTERNATIONAL AIRPORT
	FUTURE LAND ACQUISITIONS LAND PARCELS TO BE ACQUIRED

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**Chapter 6**  
*Environmental Overview*

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## Chapter Six: Environmental Overview

### 6.0 GENERAL

Although an airport has many positive impacts on the community it serves, including providing a direct stimulus to the local economy, it may also generate negative environmental impacts. Through prudent planning and realistic mitigation measures, however, an airport and its environs can be compatible. This Chapter examines the environmental conditions surrounding St. Lucie County International Airport in relation to the consequences of the preferred alternative and recommended development projects. The actions proposed include the addition of parallel Runway 9L-27R, an extension of Runway 14-32, a north south taxiway and the development of additional facilities and equipment.

### 6.1 ENVIRONMENTAL REQUIREMENTS

The goal of this master plan is to provide guidelines for future airport development that are financially, technically, and environmentally feasible. The National Environmental Policy Act of 1969 (NEPA) significantly affects airport planning by requiring that environmental impacts of proposed airport development be considered early and throughout the entire planning process. Environmental feasibility is as important as economic or engineering feasibility in determining how an airport will be developed.

Three categories of environmental action relevant to airport development are outlined in 40 Code of Federal Regulations (CFR) Parts 1500-1508. Every project proposed for an airport will eventually fall into one of the following three categories:

- Categorical Exclusions – Projects categorically excluded are those actions that have been found under normal circumstances to have no potential for significant environmental impact.
- Actions Normally Requiring an Environmental Assessment – Projects normally requiring an environmental assessment are actions that have been found by experience to sometimes have significant environmental impacts.
- Actions Normally Requiring an Environmental Impact Statement (EIS) – The purpose of an environmental assessment is to determine whether or not a project will have significant impacts. Based on the results reported in an environmental assessment, the FAA then prepares either a finding of no significant impact or a determination that an EIS is required. An EIS further investigates a project's potential environmental impacts.

The major product of the master planning process is the Airport Layout Plan (ALP), which shows an airport's existing and future planned development. Federal aviation regulations require that an airport operator submit an environmental assessment of the planned development for FAA review and approval if it plans to apply for federal grants to fund development depicted on the ALP. There are certain types of development, as previously noted, that have categorical exclusions from the federally mandated environmental assessment process. Due to the limited shelf life of an environmental assessment, nearly all ALPs are conditionally approved by the FAA without an environmental assessment. The formal environmental assessment is undertaken at a later date to

## Chapter Six: Environmental Overview

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ensure that the environmental work is current within the timeframe in which the actual project is undertaken.

According to FAA Order 5050.4A, Airport Environmental Handbook, an environmental assessment is needed to secure federal participation in the following:

- *Development of a new runway*
- *Major extension of an existing runway*
- *Runway strengthening that would result in a 1.5 DNL or greater increase in noise over any noise sensitive area located within the 65 DNL contour*
- *Construction or relocation of a service road that intersects a public access road and affects the capacity of such public road*
- *Land acquisition in association with any of the above or when residential units are relocated when there is insufficient comparable replacements, major disruption of business activities, or acquisition that involves lands covered under U.S. Department of Transportation, Section 4 (f).*
- *Establishment of an Instrument Landing System (ILS) or Approach Lighting System*
- *An airport development action that falls within the scope of various extraordinary circumstances as defined by the FAA. These actions include properties protected by the Historic Preservation Act; controversial environment grounds; significant impacts on natural, ecological, cultural, or scenic resources; use of wetlands; conversion of prime farmlands; endangered species; etc.*

The remaining proposed development in the Master Plan for St. Lucie County International Airport would not trigger a federal Environmental Assessment nor Environmental Impact Study. However, it should be noted that if projects such as hangars, ramps, on-airport access are in wetland areas or impact other environmentally sensitive areas, environmental approval and mitigation might be required. Each project will need to be evaluated on a case-by-case basis for specific determinations.

The purpose of this environmental overview for St. Lucie County International Airport is to provide a preliminary review of the environmental issues that must be addressed in an environmental assessment. This overview is not prepared at the level of detail required for environmental assessment. The proposed development plan for the Airport was evaluated in relation to each of the 19 environmental impact categories outlined in the Airport Environmental Handbook.

## 6.2 ENVIRONMENTAL ANALYSIS

The environmental categories listed below that are most likely to require inclusion in an EA are marked with an asterisk (\*). Those categories that are unmarked have been considered and may be eligible for a determination of FONSI (Finding of No Significant Impact) status but will require further consideration when construction designs and schedules are better defined.

- Noise
- \* Compatible Land Use
- \* Social Impacts
- \* Induced Socioeconomic Impacts
- \* Air Quality
- \* Water Quality
- Department of Transportation Act, Section 4 (f)
- Historic, Architectural, Archaeological, and Cultural Resources
- \* Biotic Communities (including both Flora and Fauna)
- \* Endangered and Threatened Species of Flora and Fauna
- \* Wetlands
- Floodplains
- Coastal Waters
- Wild and Scenic Rivers
- Farmland
- Energy Supply and Natural Resources
- Light Emissions
- Solid Waste Impact
- \* Construction Impacts

FAA Order 5050.4A discusses types of impacts and the thresholds that determine if an impact is considered significant. In some instances, these determinations are made by calculations, measurements, or observations. In other cases, it is established through correspondence with appropriate Federal, State, or local officials. The following sections discuss each of the impact categories in relation to the recommended development for the Airport.

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### 6.2.1 Noise

Noise, defined as "undesirable sound" is one of the major concerns of airport owners and airport neighbors affected by it. Noise is measured in decibels (db). Aircraft sound levels are measured using the A-weighted decibel scale (dBA), which was developed to measure sounds with more emphasis on frequencies that can be heard by the human ear.

The noise analysis for the Airport was prepared utilizing a standard, single-number measurement of community noise exposure, the DNL. The DNL (average day/night sound level) metric identifies a single value of A-weighted sound for a duration of 24 hours that includes all of the time-varying sound energy for that period. A 10-dBA penalty is applied to nighttime (10:00 p.m. – 7:00 a.m.) sounds to reflect the increase in perceived sensitivity to noise occurring during sleeping hours.

The Day/Night Noise Level metric, also referred to as DNL, was introduced by the Environmental Protection Agency (EPA) as a simple method for predicting the effects on a population of the average long-term exposure to environmental noise. Regulations of the Department of Housing and Urban Development (HUD) include the DNL as the standard for measuring outdoor noise environments. Areas exposed to noise levels of 65 DNL or less are considered normally acceptable for all types of land use development.

Aircraft noise impacts are assessed through use of the FAA's Integrated Noise Model (INM) Version 6.0c. The INM produces noise contours, which depict noise impact areas based on input of an airport's activity levels, fleet mix, approach and takeoff profiles, and flight tracks.

### 6.2.2 Compatible Land Use

Noise contours are used to identify land uses that are typically compatible or incompatible with various levels of noise exposure. Exhibit 6-A provides a detailed listing of land use categories within various DNL contour intervals. As shown, all land uses are generally acceptable outside the 65 DNL. Residential development is normally not compatible within the 65-75 DNL unless soundproofing is incorporated into the structure or the community determines that this type of development is necessary in this noise environment.

The forecasts of increased operations at FPR are displayed in Exhibit 6-B through Exhibit 6-E as part of this Master Plan Update. The 75 and 70 DNL contours for both existing and future conditions at the airport are contained on Airport property. Almost all of the existing and future 65 DNL contours are contained within the Airport. The future noise contours, however, show that the 65 DNL encompasses a portion of the residential development off the approach end to Runway 27. A FAR Part 150 Noise Study would help to more specifically identify noise sensitive areas around the Airport.

All non-compatible land uses within the 65 DNL contour and above are identified and quantified as part of a FAR Part 150 Noise Study. With an approved Part 150 Study, the FAA and FDOT may provide funding to the airport in sponsoring noise abatement and mitigation projects such as the purchase, relocation, or soundproofing of homes, noise abatement measures, and noise mitigation measures.

### 6.2.3 Social Impacts

The purpose of a social impact analysis is to determine the effect of airport development on the human environment. The types of social impacts that can generally result from airport development include:

- Relocation of residences and/or businesses
- Disruption of communities
- Disruption of orderly, planned development
- Alterations in traffic patterns that may permanently or temporarily restrict traditional community access

The proposed Airport development will not require the acquisition of area homes or businesses. The proposed project does not involve residential or commercial relocation. In addition, no significant changes in current vehicular traffic patterns in the community will occur as a result of the proposed development at the Airport. No negative social impacts are anticipated as a result of the development proposed as St. Lucie County International Airport.

### 6.2.4 Induced Socioeconomic Impacts

This category refers to the potential for induced or secondary impacts surrounding communities, such as changes in population and business/economic activity due to the proposed Airport Developments.

No existing businesses are anticipated to be disturbed or relocated. For this reason, it is expected that the proposed projects will not induce any negative socioeconomic impacts. Future expansion of the general aviation facilities has the potential to generate employment and, therefore, is considered a beneficial impact for the community through increased revenue and jobs.

The proposed action is not considered to be capable of producing any negative induced socioeconomic impacts on either the City of Fort Pierce or St. Lucie County since there are no significant impacts in land use or social categories.

### 6.2.5 Air Quality

The effects of air pollution, ranging from impaired health to deterioration of structures, are well documented. Historically, however, airports and aircraft emissions constitute only a minor percentage of the air pollutants in the air. Air pollution is generally caused by "stationary" or "point" sources, and airports are not considered such sources.

No air quality impacts are expected due to proposed landside or airside improvements. Given the Airport's existing aircraft activity and the forecast of operational activity, additional impacts from aircraft emissions are projected to be minimal. Additional emissions from airborne aircraft are also expected to be minimal. While additional aircraft operations are anticipated at the Airport, the type of aircraft operating at the Airport will remain relatively constant.

Air quality impacts associated with automobile activity will not significantly worsen due to increased traffic and parking lot usage. Concentrations of emissions and their dispersion are not currently a significant problem due to the lack of any barriers preventing emission dispersion. It is anticipated that there will be no negative air quality impacts from either airside or landside operations.

### 6.2.6 Water Quality

Water Quality is a particular sensitive, political, social, environmental, and economic issue. A community's ability to provide adequate volumes of high quality water is seen as one factor in being able to support additional residential development and to expand an area's economic base. Concern for water quality naturally extends to consideration of the status of the sub-surface, water table, stormwater, and the adverse affects of chemical, physical, and biological changes to water supplies.

### 6.2.7 Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation (DOT) Act states that the Department secretary shall not approve any project using land that is considered to be of national, state, or local significance and is included under one or more of the following categories:

- Publicly owned park or recreation area
- Wildlife or waterfowl refuge
- Historic sites

There are no Section 4(f) lands required for use under the proposed action. Therefore, for the purpose of this analysis no additional analysis is required.

### 6.2.8 Historic, Architectural, Archaeological, and Cultural Resources

Two federal laws apply to this category:

- *The National Historic Preservation Act of 1966* – This Act requires an initial review to determine whether properties contained within the National Register of Historic Places or properties eligible for inclusion in the Register will be affected by the proposed development.
- *The Archaeological and Historical Preservation Act of 1974* – This Act requires a survey, recovery, and preservation of significant and prehistorical data that may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project.

For this environmental overview, the Florida Division of Historical Resources was contacted for assistance in assessing the affect of the recommended development on area resources. Correspondence from this agency is included in Appendix A. The Florida Division of Historical Resources recommends that a historic structure survey be performed to determine if any of the original buildings on the airfield are eligible for inclusion in the National Register. If so, the design of any new buildings planned for construction adjacent to a historical building eligible for listing in the National Register must incorporate the same historical character.

### 6.2.9 Biotic Communities

Biotic communities are gatherings of animals and plants in the same habitat, which interact through feeding and other activities. The assessment of biotic impacts is directly related to the effects of noise, air, and water quality changes due to construction impacts.

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### 6.2.10 Endangered and Threatened Species

A list of any endangered, protected or threatened species that inhabit the areas around the Airport should be compiled with the assistance of federal and state agencies. These agencies provide a list of threatened or endangered animals and natural communities found within a two-mile radius of the Airport.

### 6.2.11 Wetlands

Wetlands are defined as those areas that are inundated by surface or ground water with a frequency sufficient to support vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. Wetlands also include estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation.

The wetlands on airport are being determined and defined in a separate project to update the airport's storm-water management plan. This yet-to-de-determined map would identify the specific types of wetlands that are located on the airport. Example types of wetlands are abbreviated as follows:

- Palustrine/Forested/Broad-leafed Deciduous/Temporary
- Palustrine/Shrub/Broad-leafed Deciduous and Emergent/Persistent/Seasonal
- Palustrine/Emergent/Persistent/Semipermanent

- Riverine/Lower Perennial/Open Water/Excavated
- Palustrine/Open Water/Excavated
- Palustrine/Aquatic Bed/Unknown Submergent/Semipermanent
- Estuarine/Intertidal/Emergent/Persistent/Unknown

The wetlands map will be reviewed by a qualified environmental specialists, including representatives from the South Florida Water Management District and the United States Army Corps of Engineers, to verify that a particular project does not impact wetlands, or to calculate the extent of impact.

As development occurs on the airfield, if any development or construction requires the alteration of wetlands or surface waters, a wetland resource (dredge and fill) permit would be required. This permit can be obtained from the South Florida Water Management District and the United States Army Corps of Engineers.

#### **6.2.12 Floodplains**

Floodplains are defined as lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas or offshore islands. At a minimum, areas that are subject to a one percent or greater chance of flooding in any given year (100-year flood) are also considered to be floodplain areas.

#### **6.2.13 Coastal Waters**

The Coastal Barriers Resource Act of 1982, PL 97-348 (CBRA), prohibits, with some exception, federal financial assistance for the development within the Coastal Barrier Resources System.

#### **6.2.14 Prime and Unique Farmland**

Prime and Unique Farmland is considered to be available land that is best suited for producing food, feed, forage, and other types of crops. In addition, prime and unique farmland has the soil quality and moisture supply needed to produce and sustain high yields of crops when treated and managed according to modern farming methods.

Currently, St. Lucie County International Airport is partially surrounded by citrus groves mainly on the western side of the Airport. Some citrus growers have expressed concern though that the land is no longer considered farmable. These effects are not due to the operations of the airport in any way, but due to natural citrus predators. For these reasons, no adverse impacts to prime and unique farmland are expected.

#### **6.2.15 Energy Supply and Natural Resources**

In terms of airport development, there are typically two areas of concern with regard to energy supply and natural resources:

- Stationary consumers
- Mobile consumers

Stationary consumers include facilities in a fixed location and can be further categorized into landside consumers and airside consumers. The two primary landside consumers include

terminal buildings and general aviation facility buildings. Runway, taxiway, and approach lighting are the primary airside energy consumers. It is anticipated that increases in energy consumption, due to general aviation and runway/taxiway lighting, will not adversely affect the area's local energy supply.

Mobile consumers include moving consumers such as aircraft and automobiles. At an airport, aircraft are the primary users of fuel. Since the forecasts indicate an increase in activity during the planning period, additional fuel will be consumed. It is anticipated that the local consumption of aviation fuel will not have an adverse local or regional impact on carbon fuel production.

#### **6.2.16 Light Emissions**

Light Emissions which may create an annoyance to residents in the vicinity of the Airport must be taken into account. As part of the recommended Airport development plan, runway and taxiway lighting will be installed.

Currently, annoyance from the Airport's existing light emissions is minimal. Additional airfield lighting is also expected to have minimal light emission impacts. Due to the relatively low intensity of runway and taxiway lighting, additional light emission created by these airfield lights will not be significant and are not expected to cause annoyance. Runway lighting for nighttime operations at the airport are typically keyed on by the approaching pilot. This minimizes the impact from Airport lighting.

#### **6.2.17 Solid Waste Impact**

Solid waste is typically affected by terminal development rather than airfield development. ~~Projects which relate only to airfield development (runways, taxiways, etc.) do not normally result in any direct impact to solid waste collection, control, or disposal other than that associated with the construction itself.~~

#### **6.2.18 Construction Impacts**

Construction activities generate noise, dust, air emissions, and erosion, which impact the surrounding environment. Heavy construction equipment will generate noise. However, it is expected that this noise will occur only during the daylight hours. During construction of the runway, it is expected that temporary noise impacts will occur. Noise is an expected by-product of construction and will not produce any permanent, on-going impacts.

Potential impacts of dust during construction include reduced visibility, unsightly coatings on buildings, and discomfort for dust-sensitive individuals. Methods for dust control can be implemented to minimize dust generation and transport.

Construction activity will produce emissions from vehicular, equipment, and other construction activity associated with the projects. A temporary increase in emissions will occur due to the presence of constantly running internal combustion engines. While these activities will produce a temporary increase of emissions, they are typical of large construction projects and will not pose any lasting negative impacts.

Construction impacts such as noise, dust, air emissions, and erosion generated by construction activities associated with the proposed project are anticipated to be minimal and are not long-term impacts on the environment. Measures for limiting construction impacts described in the FAA

Advisory Circular 150/5370-10A, Standards for Specifying Construction of Airports (Item P-156) should be followed during construction.

### **6.3 ENVIRONMENTAL OVERVIEW SUMMARY**

This environmental overview has not identified any major impacts that would be associated with the proposed Airport development plan recommended by this Master Plan. If future development of the airport requires an environmental assessment, several categories may need to be investigated in more detail. These categories include noise, biotic communities, threatened or endangered species, floodplains, and wetlands.

#### **6.3.1 Environmental Impact Statement**

Development projects recommended by this Master Plan Update will not require an EIS unless it is determined by an EA that environmental categories investigated in that EA require the detailed investigation of an EIS action.

#### **6.3.2 Environmental Assessment**

An EA may be required due to the physical characteristics of development projects recommended by this Master Plan Update. In addition to the potential environmental effects of the physical characteristics of recommended developments, an EA may also be required due to the increasing numbers of aircraft operations and related activities, for example, aircraft maintenance and ground access.

The 1993 FAR Part 150 Study will need to be revised due to such projects as the installation of Runway 9L-27R, and the extension of Runway 14 threshold beyond the RSA, and the updated forecasts of aviation activity.

### **6.4 DEVELOPMENT ACTIONS AND ENVIRONMENTAL CATERGORIES**

Recommended development actions that may require an EA are as follows.

Within 20-year master plan period:

- New Parallel Runway 9L-27R
- Connecting North-South Taxiway
- Land Acquisition for New Runway Approaches
- Extension of Runway 14-32

#### **6.4.1 New Parallel Runway 9L-27R**

Although a formal site inspection has not been conducted, aerial photography indicates that the construction site for Runway 9L-27R and its future taxiway systems is on relatively stable land. The site appears suitable for construction of paved surfaces and there appears to be minimal wetlands within the construction site. However, wetlands occur off each end of the runway location in or near future runway protection zones.

Because Gopher Tortoise colonies have been found in similar sites on FPR, a site inspection will be required. Where Gopher Tortoises are found, there may also be Eastern Indigo Snakes and Gopher Frogs. Gopher Tortoise relocation programs have been completed for other construction

projects at FPR. The construction of Runway 9L-27R may require expansion of current relocation sites or other mitigation actions.

Further east, beyond the runway protection zone, are possible nesting/roosting sites, which need to be investigated to determine types and numbers of birds that may be affected by fly-overs of aircraft. It is suspected that there may be Egrets, Herons, and Scrub Jays in those nesting sites.

Approximately 4,450 feet north of the new runway centerline and 5,910 feet east of the Runway 27R threshold is a Bald Eagle nest. The site is approximately 1,900 feet south of Indrio Road. There are residential units on the north side of Indrio Road 4,150 feet closer to the nest than the runway. The acclimation of the birds to the residences needs to be determined and can serve as input with regard to determining the overall amount of controlled space needed.

#### 6.4.2 Connecting North-South Taxiway

The recommended north-south connecting taxiway passes both existing citrus groves and undeveloped upland areas. There are also some existing site drainage canals which could be placed in conduit beneath the taxiway.

#### 6.4.3 Land Acquisition

Some additional land acquisition will be required for the new parallel Runway 9L-27R, supporting taxiway systems, and runway protection zones. These areas include parcels 40, 41, 42 and 53.

#### 6.4.4 Extension of Runway 14-32

The extension of Runway 14-32 by 850 feet north of Runway 9-27 plus the extension and connection of Taxiway B to the new Runway 14 threshold will extend northwest toward the site of a temporary Gopher Tortoise relocation program. The effects on the site will require investigation prior to a construction program.

### 6.5 INCREASED ACTIVITIES AND ENVIRONMENTAL CATEGORIES

The effects on environmental categories, due to increased activities, are not as easily related to an individual recommendation, as is a defined construction project. In most cases, the environmental categories affected are off-site. An example of an on-site effect due to increased activities may, however, be the fly-over of nesting areas. Increased activities that may require an EA include aircraft operations, aircraft maintenance, and ground access.

The increase in aircraft operations may contribute directly to environmental categories of noise, social impacts, induced socioeconomic impacts, and air quality and indirectly to water quality.

The increase in aircraft maintenance resulting from increased numbers of based aircraft, visiting aircraft, and aircraft operating hours contribute most directly to effects on environmental categories of water quality.

The need for airfield ground access will increase due to increased number of based and visiting aircraft with the most significant effect on environmental categories being related to induced socioeconomic impacts because of increased surface traffic.

### **6.5.1 Noise**

The forecasts of increased operations at FPR are displayed in Exhibits 6-B through 6-E as part of this Master Plan Update. The proposed FAR Part 150 Noise Study Update will consider any additional noise impacts, abatement, and mitigation.

### **6.5.2 Social Impacts and Induced Socioeconomic Impacts**

There are no social impacts or induced socioeconomic impacts due to the recommended airport development projects or increased activities because they will result in very limited relocation of residences, businesses, or patterns of population and business movement. Increased ground access will not be a significant contributor to surface transportation.

### **6.5.3 Air Quality**

An air quality analysis in accordance with the Air Quality handbook, "Air Quality Procedures for Civilian Airports and Air Force Bases," Report No. FAA-EE-82-21 will be a requirement of an EA.

### **6.5.4 Water Quality**

Aircraft operations contribute to water quality effects through increased maintenance and repair functions that occur when numbers of based aircraft, visiting aircraft, and aircraft services increase. Water quality certification may also be required under the Federal Government's 1982 Airport Act for airport developments such as a new runway. Water certification may be obtained through consultation with and approval from the EPA regional office concerning the potential for contamination of aquifers identified as a sole or principle drinking water source; coordination with the U.S. Fish and Wildlife Service (and equivalent state agency); and acquisition of various permits having to do with release of water into navigable waters which includes some wetlands. An update of the master drainage plan for FPR is recommended in this Master Plan Update and may be helpful in obtaining the various permits.

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**Chapter 7**  
***Capital Improvement Plan***

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## Chapter Seven: Capital Improvement Plan

### 7.0 GENERAL

A staging plan and a financial plan are presented to describe the steps required to reach the development discussed in *Chapter 4 - Airport Alternatives*. The staging plan considers the demand-driven need for facilities according to *Chapter 3 - Facility Requirements*, as well as the financial feasibility of construction as determined in this task, so that the Capital Improvement Plan (CIP) can be reasonably implemented. The financial plan evaluates the airport's resources and proposes financial actions and revenue improvements.

The key issues to be dealt with in this Chapter, as identified by the Master Plan Study Group (MPSG), are listed below with a note as to the Section in which the issue is addressed.

<u>Aviation</u>	<u>Environment/Community</u>	<u>Existing Commitments</u>
Five Year, Annualized List of Development Project's Costs Funding Sources (FAA, FDOT, County, Private) Short-term (2002-2006)	Analysis of Airport Budget as it Relates to County Budget Conclusions	Federal Regulations Regarding Diversion of Airport Revenue Existing Lease Structure
Ten Year List of Projects/Costs Intermediate-Term (2007-2011)	Analysis of Airport's Ability to Support Itself Revenues	Existing Leases Existing Lease Structure  FAA & FDOT Grant Programs Capital Improvement Plan

Twenty Year List of Projects/Costs  
Long-term (2012-2020)

Review of Revenue Sources and Levels  
Financial/Management Plan

Analysis of Airport Operating Expenses  
Revenues

### 7.1 CAPITAL IMPROVEMENT PLAN (CIP)

The CIP represents a schedule and cost estimate for implementing the airport improvements, which have been recommended as a result of the AMPU process. Scheduling of improvements has been subdivided into three phases: short-term (2002-2006), intermediate-term (2007-2011) and long-term (2012-2020). The CIP must be viewed as a constantly evolving document: planning for the airport should remain flexible and should incorporate annually updated estimates of costs and priorities.

The CIP is structured in a manner that presents a logical sequence of improvements, while attempting to reflect available funding from the State and Federal levels. Those airport improvements which are eligible for AIP funding in the State of Florida, such as the Design and Construction of Security Fencing, receive 90% of the funding from the FAA, 5% is funded by FDOT and the remaining 5% by the local sponsor. Projects ineligible for AIP funding must either be funded by the State, the Airport or by private entities, such as the FBO's at the airport or outside developers.

The following sections describe the proposed airport improvements for each of the three phases. The short-term phase represents a more detailed plan as it is broken down by individual fiscal years. The intermediate and long-term phases only include a prioritized order of project implementation. **Table 7-1** contains details for the short-term phase of the CIP and **Table 7-2** contains details for the intermediate and long-term phases of the CIP.

### **7.1.1 Short -Term (2002-2006)**

The majority of the projects recommended by this AMPU occur during the short-term development phase. The projects range from safety enhancements, to buildings, to meeting FAA design criteria, to providing additional safety and capacity at St. Lucie County International Airport.

Individual Explanations of the Proposed Projects and their timelines.

#### **CONSTRUCT MARK & LIGHT T/W A-6 & E**

This taxiway is in accordance with the approved Master Plan. Pavement design strength will be 60,000 pounds, which is consistent with the associated taxiways. Standard marking and lighting will be applied. Combined with A-6 and E, it will provide more efficient access to the terminal and FBO areas.

#### **INSTALL APPROACH SLOPE INDICATOR R/W 9L 27R**

Install vertical/visual guidance systems (PAPI/VASI/REIL/ALS/etc.)

#### **REHAB & MARK T/W "A"**

The runway weight bearing capacity is rated at 60,000#DG. The taxiway strength has been evaluated at 30,000 lbs. GW and the PCI is below standards in many sections.

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#### **REIMBURSE AIRPORT LAND**

Acquire land or easement for approaches

#### **CONSTRUCT PARALLEL RUNWAY**

Needed for capacity enhancement and noise abatement.

#### **CONSTRUCT PARALLEL T/W TO PARALLEL R/W 9L-27L**

Needed to support new Parallel Runway 9L-27R.

#### **CONSTRUCT CONNECTING T/W TO PARALLEL R/W**

Needed to support new Parallel Runway 9L-27R.

#### **CONDUCT PART 150 NOISE STUDY**

Update to evaluate, reduce and mitigation for existing and future conditions.

#### **INSTALL REILs R/Ws 9R, 27L & 32**

Installation of REIL's on these runways will better define the runway thresholds for nighttime operations. The lights will add to the operational safety of aircraft utilizing these runways for landings.

#### **IMPROVE AIRFIELD DRAINAGE (Multi-Phased)**

The existing headwalls on the west end of 9/27 at two locations near the runway are inadequate to prevent erosion due to heavy rains. The structures need to be modified and/or extended to allow stability of the surrounding solid and permit slope protection. Presently the unstable soil is being

washed into the ditches causing a blockage of the drainage through the pipes. Efforts have been made to maintain the areas around the structures.

**APRON IMPROVEMENTS**  
Rehab Apron Areas.

**REIMBURSE AIRPORT DEVELOPMENT LAND**  
Acquire land or easement for development.

**STARS-LITE DISPLAY SYSTEM**  
Provide Safety Enhancement through Air Traffic Control.

### **7.1.2 Intermediate -Term (2007-2011)**

The intermediate-term phase includes pavement maintenance projects for Runway 14-32 as well as Taxiways 'A', 'E' and 'C'. The improvements will extend the service life of the Runways and Taxiways.

It is essential for airports to update their Master Plans every 5 to 10 years. Airports significantly increase the potential for State and Federal funding when their AMP is kept up-to-date. Therefore, the next AMPU is suggested during this phase.

An Airport Rescue and Fire Fighting (ARFF) facility is recommended for construction during the long-term phase. Having an ARFF facility located directly at the airport significantly reduces response time when such services are called upon. Also, the FBO's are expected to add T-hangars, conventional hangars and fuel farm capacity. These projects will be privately developed and financed through the FBO's, but primary taxilanes, roadways, and utilities will be provided by the airport.

**INDUSTRIAL PARK DEVELOPMENT (Phase I & II)**  
Project will be used as industrial Park Development for SW area of Airport.

**AIRPORT DRAINAGE IMPROVEMENT**  
The sponsor has acquired a significant amount of property (approximately 2,500 acres) for expansion purposes. Additionally, drainage plans for individual projects will need to be updated to reflect recent regulatory changes as well as to tie in with near and intermediate-term planned development.

**UPGRADE R/W 9R/27L TO HIRL**  
Install runway lighting, HIRL, MIRL, TDZ or CL lighting

**CONSTRUCT GA APRON NW OF T/W 'B'**  
Needed for General Aviation Infra structure Improvements.

**CONSTRUCT GA APRON NW OF T/W 'F'**  
Needed for General Aviation Infra structure Improvements.

**CONSTRUCT TERMINAL APRON**  
Construct Terminal Apron

**REIMBURSE AIRPORT LAND - PHASE I**  
Ongoing FAA program

CONSTRUCT PASSENGER TERMINAL  
Improve/Modify/Rehab terminal

INSTALL PERIMETER SAFETY FENCING - PHASES III - VIII  
Acquire security equipment/perimeter fencing

CONSTRUCT PERIMETER ROAD  
Construct/Expand/Improve/Modify/Rehab Service Road

REIMBURSE AIRPORT LAND  
Acquire land or easement for approaches

INSTALL SECURITY FENCING  
Acquire security equipment/perimeter fencing not required by Part 107

CONSTRUCT GA APRON  
Needed for General Aviation Infrastructure Improvements.

CONSTRUCT AIRCRAFT RUN-UP AREAS  
Locate to reduce aircraft noise impacts and assist aircraft operations.

REHABILITATE R/W 14/32  
Maintenance to Runway to keep facility to acceptable standards.

CONSTRUCT ARFF FACILITY  
Needed for airfield operations support and safety.

ACQUIRE ARFF VEHICLE  
Needed for airfield operations support and safety.

REHAB R/W 9/27 LIGHTING  
Rehab Runway lighting or electrical vault

EXTEND TAXIWAY 'A'  
Extend/Widen/Strengthen Taxiway to meet acceptable standards.

REHAB TAXIWAY 'C'  
Maintenance to Runway to keep facility to acceptable standards.

DEMOLITION OF AIRPORT OWNED STRUCTURES  
To allow for needed commercial development in the south quadrant.

AIRPORT INDUSTRIAL PARK NORTH  
Needed for Commercial or General Infrastructure Improvements.

### 7.1.3 Long -Term (2012-2020)

Additional T-hangars, conventional hangars and fuel farm capacity are expected to be privately developed, and financed by the FBO's at the airport. Maintenance projects as needed.

Table 7-1  
Short-Term Capital Improvement Plan (CIP)

Projects: Short-Term (2002-2006)	Federal Fiscal Year	TOTAL PROJECT COST	FAA	State	Local
1 IMPROVE AIRFIELD DRAINAGE (Phase I)	2002	100,000	---	80,000	20,000
2 REIMB AIRPORT DEVELOPMENT LAND	2002	8,504,250	8,504,250	---	---
3 INDUSTRIAL PARK DEVELOPMENT	2002	1,100,000	---	550,000	550,000
4 INSTALL PERIMETER SAFETY FENCING - PH2	2002	255,000	---	204,000	51,000
5 CONDUCT PART 150 NOISE STUDY	2002	158,000	142,200	7,900	7,900
6 CONSTRUCT AIRCRAFT RUN-UP AREAS	2002	289,000	260,100	14,450	14,450
7 AIRPORT MAINTENANCE BUILDING	2002	150,000	---	120,000	30,000
8 STARS - LITE	2002	170,000	---	136,000	34,000
<b>Total</b>	<b>2002</b>	<b>10,726,250</b>	<b>8,906,550</b>	<b>1,112,350</b>	<b>707,350</b>
9 IMPROVE AIRFIELD DRAINAGE (Phase II)	2003	250,000	---	200,000	50,000
10 INDUSTRIAL PARK DEVELOPMENT	2003	1,100,000	---	550,000	550,000
11 REIMBURSE AIRPORT LAND	2003	1,111,925	1,111,925	---	---
12 REHABILITATE RW 14/32	2003	1,000,000	900,000	50,000	50,000
13 INSTALL SECURITY FENCING (PHASE III)	2003	166,666	150,000	8,333	8,333
14 CONSTRUCT GA APRON	2003	542,000	---	433,600	108,400
15 CONSTRUCT PARALLEL RUNWAY	2003	2,678,500	2,410,650	133,925	133,925
16 CONSTRUCT PARALLEL TW TO PARALLEL RW 9L-27R	2003	2,851,298	2,566,170	142,564	142,564
17 CONSTRUCT CONNECTING TW TO PARALLEL RW	2003	480,000	432,000	24,000	24,000
18 DEMOLITION OF AIRPORT OWNED STRUCTURES	2003	160,000	---	80,000	80,000
<b>Total</b>	<b>2003</b>	<b>10,340,389</b>	<b>7,570,745</b>	<b>1,622,422</b>	<b>1,147,222</b>
19 IMPROVE AIRFIELD DRAINAGE (Phase III)	2004	250,000	---	200,000	50,000
20 CONSTRUCT MARK & LIGHT T/W A-6 & E	2004	292,000	---	233,600	58,400
21 CONSTRUCT GA APRON NW OF T/W B	2004	485,000	---	388,000	97,000
22 CONSTRUCT PARALLEL RUNWAY	2004	2,678,500	2,410,650	133,925	133,925
23 LOCAL RADAR	2004	300,000	270,000	15,000	15,000
24 REPLACE AIRPORT ROTATING BEACON & TOWER	2004	65,000	58,500	3,250	3,250
25 INSTALL REILs (14, 27, & 32)	2004	50,000	---	40,000	10,000
26 CONSTRUCT CONNECTING TW TO PARALLEL RW	2004	480,000	432,000	24,000	24,000
<b>Total</b>	<b>2004</b>	<b>4,600,500</b>	<b>3,171,150</b>	<b>1,037,775</b>	<b>391,575</b>

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	Projects: Short-Term (2002-2006) - continued	Federal Fiscal Year	TOTAL PROJECT COST	FAA	State	Local
27	INSTALL APPROACH SLOPE INDIC R/W 9L 27R	2005	73,200	65,880	3,660	3,660
28	REHAB & MARK T/W A	2005	603,000	542,700	30,150	30,150
29	INSTALL REILS R/Ws 9R, 27L & 32	2005	87,500	78,750	4,375	4,375
30	REIMBURSE AIRPORT LAND	2005	9,957,440	9,957,440	—	—
31	AIRPORT DRAINAGE IMPROVEMENT	2005	250,000	—	200,000	50,000
32	UPGRADE RW 9R/27L TO HIRL	2005	36,000	32,400	1,800	1,800
33	CONSTRUCT TERMINAL APRON	2005	1,000,000	900,000	50,000	50,000
34	RENOVATE PASSENGER TERMINAL	2005	450,000	—	360,000	90,000
35	INSTALL PERIMETER SECURITY FENCING (PHASE IV)	2005	190,000	—	152,000	38,000
	<b>Total</b>	<b>2005</b>	<b>12,647,140</b>	<b>11,577,170</b>	<b>801,985</b>	<b>267,985</b>
36	APRON IMPROVEMENTS	2006	737,000	—	589,600	147,400
37	CONSTRUCT PERIMETER ROAD	2006	902,000	—	721,600	180,400
38	REHAB RW 9R/27L AIRFIELD LIGHTING	2006	1,900,000	1,710,000	95,000	95,000
39	ACQUIRE ARFF VEHICLE	2006	312,500	—	250,000	62,500
40	CONSTRUCT ARFF FACILITY	2006	980,000	—	784,000	196,000
41	INSTALL PERIMETER SECURITY FENCING (PHASE V)	2006	190,000	—	152,000	38,000
	<b>Total</b>	<b>2006</b>	<b>5,021,500</b>	<b>1,710,000</b>	<b>2,592,200</b>	<b>719,300</b>
	<b>SHORT-TERM PHASE TOTAL</b>		<b>43,335,779</b>	<b>32,935,615</b>	<b>7,166,732</b>	<b>3,233,432</b>

Table 7-2  
Intermediate and Long-Term CIP

Projects: Intermediate-Term (2007-2011)	Federal Fiscal Year	TOTAL PROJECT COST	FAA	State	Local
42 AIRPORT INDUSTRIAL PARK NORTH (Phase I)	2007	1,750,000	---	875,000	875,000
43 INSTALL PERIMETER SECURITY FENCING (PHASE VI)	2007	150,000	135,000	7,500	7,500
44 EXTEND TAXIWAY A	2007	975,000	---	780,000	195,000
45 REHAB TAXIWAY C	2007	709,500	639,000	35,500	35,000
46 PASSENGER TERMINAL RENOVATIONS	2007	300,000	---	240,000	60,000
47 AIRPORT INDUSTRIAL PARK NORTH (Phase II)	2008	1,750,000	---	875,000	875,000
48 INSTALL GPS / DME	2008	---	---	---	---
49 REIMBURSE AIRPORT LAND	2008	1,029,641	1,029,641	---	---
50 AIRPORT MASTER PLAN UPDATE	2008	250,000	225,000	12,500	12,500
51 INSTALL PAPIs (9R, 27L, 14, 32, 9L, & 27R)	2009	550,000	495,000	27,500	27,500
52 INSTALL PERIMETER SECURITY FENCING (PHASE VII)	2009	150,000	135,000	7,500	7,500
53 INSTALL PERIMETER SECURITY FENCING (PHASE VIII)	2011	150,000	135,000	7,500	7,500
54 REIMBURSE AIRPORT LAND	2007	---	---	---	---
<b>INTERMEDIATE-TERM PHASE TOTAL</b>		<b>7,764,141</b>	<b>2,793,641</b>	<b>2,868,000</b>	<b>2,102,500</b>
<b>Projects: Long-Term (2012-2022)</b>		<b>TOTAL PROJECT COST</b>	<b>FAA</b>	<b>State</b>	<b>Local</b>
55 AIRPORT ELECTRICAL IMPROVEMENTS	2022	1,200,000	1,080,000	60,000	60,000
56 AIRPORT DRAINAGE IMPROVEMENTS	2015	250,000	---	200,000	50,000
57 AIRPORT MASTER PLAN UPDATE	2014	300,000	270,000	15,000	15,000
58 GENERAL AVIATION RAMP IMPROVEMENTS	2007	1,750,000	---	875,000	875,000
<b>LONG-TERM PHASE TOTAL</b>		<b>3,500,000</b>	<b>1,350,000</b>	<b>1,150,000</b>	<b>1,000,000</b>

## 7.2 FINANCIAL/MANAGEMENT PLAN

This Section deals with the financial structure and management of St. Lucie County International Airport. The airport is a revenue generating entity within the St. Lucie County structure; its operating revenues meet its operating expenses. Nonetheless, the airport's goals should be to realize the maximum revenue from the airport lease structure, thereby insuring the ability of the airport to cover operating costs and match for State or Federal capital grants for the CIP.

### 7.2.1 Existing Lease Structure

St. Lucie County International Airport owns the land within the leasehold of the airport, and the tenants develop and own the buildings, hangars and other facilities located on airport property. Currently, there are two primary leases that ultimately define the financial structure of the St. Lucie County International Airport. Table 7-3 summarizes the main provisions of these leases.

The two primary FBO leases are held by Air Charter and B & E Houck Enterprises, both on a renewable basis. All other leases at the airport are through the primary FBO lessors. The requirements to become a FBO at St. Lucie County International Airport are detailed in the airport's Rule & Regulations and comprise of providing basic aircraft support such as fueling, aircraft rental, storage, tie-down and sales aircraft maintenance, and Hangar rental. Various aviation support services, such as the FAA Airport Traffic Control Tower, The St. Lucie County Sheriff's Department, and the St. Lucie County Fire District, have lease agreements with the airport in exchange for providing services.

Any revenues generated from the airport land must remain on the airport and be used to offset airport expenses per Federal regulations. Airport leases should provide for revenue generation from several different separately recognized sources. A lease which only calls for a lump sum payment from the lessee does not clearly identify what the lessee is paying for and makes it more difficult to alter the lease if the lessee's conditions change in such a way as would warrant an adjustment in the lease terms. The following four major revenue components should be identifiable in an airport lease:

**Land Rent:** Land is an airport's major resource and the airport should be compensated for its use. Airport land should be leased, not sold, and at rates comparable to commercial and industrial rates.

**Facility Rent:** The airport should be adequately compensated by users who rent or lease space in airport-owned facilities, e.g. terminal buildings, hangars, fuel farms, etc.

**Gross Receipts Fee (GRF):** This fee is based on the fact that the airport's existence creates the market on which a commercial operator depends. The airport should be compensated for the expense of maintaining the airport and creating that market opportunity. The GRF can be difficult to administer.

**Additional Fees:** These are charges to direct users of the airport. A typical example is the fuel flowage fee. The fuel flowage fee is a predetermined charge owed to the airport for each gallon of fuel purchased by the FBO's on the field.

Table 7-3 illustrates how the FBO and other leases at St. Lucie County Airport incorporate the majority of the revenue sources previously mentioned. Additionally, they clearly identify the services to be provided and normal operating contingency provisions. The four leases are, therefore, compensatory leases for the airport. Specific recommendations for improvements are described in the following section.

**Table 7-3  
 Current Lease Agreements**

Lessee	Lease Dates	Premises Leased	Services Provided	Payments	Renegotiation
Air Charter*		Acreage: -Plus tenant constructed facilities	Full Service FBO: -Fuel sales -Aircraft rental, storage, tie-down and sales -Aircraft maintenance -Hangar rental	-Rent: \$/acre/yr. -Fuel Flowage Fee: \$/gal., min. of \$/month -Adjusted per Consumer Price Index (CPI) upon renewal	Renewal
B & E Houck Enterprises*		Acreage: -Plus tenant constructed facilities	Full Service FBO: -Fuel sales -Aircraft rental, storage, tie-down and sales -Hangar rental	-Rent: \$/acre/yr. -Fuel Flowage Fee: \$/gal., min. of \$/month -Adjusted per CPI upon renewal	Renewal
Sheriff's Department	None		Safety & Security		Renewal
Fire District	None		Fire Protection EMS services		Renewal
ATCT	None		Airspace & Ground Control Airfield Monitoring		Renewal

Source: HTA

\* Includes a number of sub-tenant agreements.

**7.2.2 Revenues and Expenses**

The primary sources of airport revenues come from land leases, rentals, and fuel fees, while St. Lucie County assists in paying the local share of capital development. Most of the airport expenses can be classified as "Administrative", "Maintenance", and "Capital", or "Development". The classification of "Other" covers such expense items from the airport industrial park, small project studies, foreign trade zone, and outside services.

Table 7-4 illustrates the latest financial performance figures for the airport. Table 7-5 is a projection of future revenue at St. Lucie County International Airport under the current revenue structure.

**Table 7-4  
 Operating History**

Revenues	1997	1998	1999	2000	2001*
Land Rent	150,000	150,000	150,000	150,000	150,000
Fuel Flowage	31,390	35,583	42,824	50,393	51,130
Rentals	358,656	396,446	424,799	424,412	431,613
Interest	106,226	134,269	153,732	150,616	55,000
Miscellaneous	8,576	59,754	931,350	784,473	1,204,449
General Revenues	523,579	1,400,822	2,801	1,203	---
FDOT/Federal Grants	2,249,650	1,307,036	905,471	100,626	4,152,170
<b>Total</b>	<b>3,428,077</b>	<b>3,483,910</b>	<b>2,610,977</b>	<b>1,661,723</b>	<b>6,044,362</b>

Expenses	1997	1998	1999	2000	2001*
Admin. / Maintenance	462,232	669,217	548,110	523,320	598,038
Development	2,741,474	1,805,261	1,767,588	113,958	4,733,807
Capital	118,970	38,114	51,409	302,592	153,518
Other	70,464	113,202	1,073,231	70,180	558,999
<b>Total</b>	<b>3,393,140</b>	<b>2,625,794</b>	<b>3,440,338</b>	<b>1,013,050</b>	<b>6,044,362</b>
<b>Total Surplus (Deficit)</b>	<b>34,937</b>	<b>858,116</b>	<b>(829,361)</b>	<b>648,673</b>	<b>0</b>

Source: St. Lucie County International Airport

\* 2001 fiscal year budgeted figures were used and are therefore estimates.

**Table 7-5  
 Revenue & Expense Projections**

Year	Rent/Fees	Fuel Flowage Fee	Total Revenue	Expenses
2005	1,497,600	81,100	1,578,700	857,500
2010	1,911,300	103,500	2,014,800	1,018,100
2020	3,113,300	168,500	3,281,800	1,515,800

Source: St. Lucie County International Airport and HTA.

Future projections based on projected annual operations and historical data.

All figures rounded to the nearest 100.

### 7.2.3 Management

St. Lucie County International Airport is owned by St. Lucie County. An Airport Director, who is appointed by the St. Lucie County Administrator, manages the airport. The airport management staff consists of the following eight St. Lucie County employees: Airport Director, Executive Assistant, Airport Operations Manager, and Noise Abatement Officer. Four airport staff personnel handle airfield maintenance and security.

### 7.3 CONCLUSIONS AND RECOMMENDATIONS

The comparison of the projected revenues and expenditures at St. Lucie County International Airport represents an estimate of future trends, which are subject to the assumptions previously mentioned. The airport cash flow and finances are sound, and this study has two recommendations for improvement.

1. Although revenues cover expenses, St. Lucie County International Airport should make maximum use of the revenue generating elements of the existing leases so as to ensure continued capability to fund the capital program in the CIP.
2. St. Lucie County should consider creating an independent "airport account" within the County Accounting System to simplify the ability to strictly account for airport funds per FAA and FDOT regulations. Such accounting will assist the airport to remain fiscally self-sufficient.

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**Appendix A**  
***Abbreviations and Meeting Minutes***

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## Abbreviated Aviation Terms and Names:

This glossary is intended to provide a general reference for commonly used terms relating to aviation, aircraft and airport operation or regulation. While all are not used in this document's text, they may be used in the various guidance, reference or regulatory publications listed in Section V. The definitions section of the model zoning ordinance is Section IV contains a glossary of specific aviation related land use terms used in the model.

AAAE – American Association of Airport Executives  
AASHTO – American Association of State Highway Transportation Officials  
A/C - Aircraft  
AC (00/0000-0) - Advisory Circular (with an identification number)  
ACHP - Advisory Council on Historic Preservation  
ACI-NA - Airports Council International-North America  
ACM - Asbestos-containing materials  
ADA -Americans with Disabilities Act  
ADG – Airplane Design Group  
ADO - Airports District Office (FAA – Federal Aviation Administration)  
ADPM - Average day of the peak month  
AGL - Above ground level  
AIP - Airport Improvement Program  
AIR-21 - Aviation Investment and Reform Act for the 21st Century  
ALP - Airport Layout Plan  
ALPA - Airline Pilots Association  
ALUC - Airport Land Use Commission  
AMP – Airport Master Plan  
AMPU – Airport Master Plan Update  
AMSL – Above Mean Sea Level  
ANG - Air National Guard  
AOA - Air operations area  
AOCI – Airport Operations Council International  
AOPA - Aircraft Owners and Pilots Association  
APM - Automated people mover  
APU - Auxiliary power unit  
AQMP - Air Quality Management Plan  
ARC - Airport Reference Code  
ARFF - Aircraft rescue and fire fighting (formerly crash/fire/rescue [CFR])  
ARP - Airport reference point  
ARSA - Airport Radar Service Area (now, Class C airspace)  
ARSR - Air route surveillance radar  
ARTCC - Air Route Traffic Control Center  
ASOS – Automated Surface Observation System  
ASR – Airport Surveillance Radar  
ASV - Annual service volume  
ATA - Air Transport Association of America  
ATC - Air traffic control  
ATCT - Airport traffic control tower  
  
BCA - Benefit-cost analysis (FAA)  
BEA - Bureau of Economic Analysis (U.S. Department of Commerce)  
BIDS - Baggage Information Display System  
BLM - Bureau of Land Management

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**BLS - Bureau of Labor Statistics (U.S. Department of Labor)**  
**BMP - Best management practices**  
**BRL - Building restriction line**

**CAD - Computer Assisted Design.**  
**CATER - Collection and Analysis of Terminal Records**  
**CBD - Central Business District**  
**CDV - Corrected Deduct Value**  
**CEQ - Council on Environmental Quality**  
**CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund)**  
**CFASPP - Continuing Florida Aviation System Planning Process.**  
**CFI - Certified Flight Instructor**  
**CFR - Code of Federal Regulation**  
**CMSA - Consolidated Metropolitan Statistical Area**  
**CO - Carbon monoxide**  
**CPI - Consumer Price Index**

**dba - A-weighted decibels**  
**DBE - Disadvantaged Business Enterprise**  
**DBO - Date of Beneficial Occupancy**  
**DEIS - Draft Environmental Impact Statement**  
**DGPS - Differential global positioning system**  
**DME - Distance measuring equipment**  
**DNL - Day-night average sound level (expressed in dBA)**  
**DOT - Department of Transportation**  
**DRI - Development of Regional Impact**

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**EA - Environmental Assessment**  
**EAA - Experimental Aircraft Association**  
**EDMS - Emissions and Dispersion Modeling System**  
**EIR - Environmental Impact Report (state)**  
**EIS - Environmental Impact Statement (federal)**  
**EPA - Environmental Protection Agency**

**FAA - Federal Aviation Administration**  
**FAMA - Florida Airport Managers Association**  
**FAR - Federal Aviation Regulation**  
**FASP - Florida Aviation System Plan**  
**FATA - Florida Aviation Trades Association**  
**FBO - Fixed base operator**  
**FCC - Federal Communications Commission**  
**FDOT - Florida Department of Transportation**  
**FEIS - Final Environmental Impact Statement**  
**FEMA - Federal Emergency Management Agency**  
**FFY - Federal Fiscal Year**  
**FHA - Federal Housing Administration**  
**FHWA - Federal Highway Administration**  
**FICAN - Federal Interagency Committee on Aircraft Noise**  
**FICON - Federal Interagency Committee on Noise**  
**FICUN - Federal Interagency Committee on Urban Noise**  
**FIDS - Flight Information Display System**  
**FIP - Federal Implementation Plan**

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**FIRM - Flood Insurance Rate Map**  
**FIS - Federal Inspection Services**  
**FONSI - Finding of No Significant Impact**  
**FPR - St. Lucie County International Airport**  
**FSDO - Flight Standards District Officer**  
**FSS - Flight service station**  
**FTZ - Foreign trade zone**  
**FY - Fiscal Year**

**GA - General aviation**  
**GAO - Government Accounting Office**  
**GARB - General Airport Revenue Bonds**  
**GCA - Ground Controlled Approach**  
**GDP - Gross domestic product**  
**GDS - Global distribution system**  
**GIS - Geographic Information System**  
**GPO - Government Printing Office**  
**GPS - Global positioning system**  
**GSE - Ground support equipment**  
**GTC - Ground Transportation Center**

**HIRL - High-intensity runway lights**  
**HOV - High occupancy vehicle**  
**HTA - Hoyle, Tanner & Associates, Inc.**  
**HUD - U.S. Department of Housing and Urban Development**

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**IAB - International Arrivals Building**

**IATA - International Air Transport Association**  
**ICAO - International Civil Aviation Organization**  
**IFR - Instrument flight rules**  
**ILS - Instrument landing system**  
**IMC - Instrument meteorological conditions**  
**INM - Integrated Noise Model**  
**INS - Immigration and Naturalization Service**  
**ISTEA - Inter-modal Surface Transportation Efficiency Act (1991)**  
**IT - Information technology**  
**ITB - International Terminal Building**

**LBE - Local Business Enterprise**  
**LDA - Localizer-type directional aid**  
**LLWAS - Low Level Wind-shear Advisory System**  
**LOI - Letter of Intent**  
**LOS - Level of service**

**MALS - Medium intensity approach lighting system**  
**MALSF - Medium-intensity approach lighting system with sequenced flashers**  
**MALSR - Medium-intensity approach lighting system with runway alignment indicator lights**  
**MBE - Minority-owned Business Enterprise**  
**MDA - Minimum Descent Altitude**  
**MEA - Minimum Enroute Altitude**

**MEF - Maximum Elevation Figure**  
**MGTW - Maximum gross takeoff weight**  
**MIRL - Medium-intensity runway lights**  
**MITL - Medium-intensity runway lights**  
**MLS - Microwave landing system**  
**MOA - Memorandum of Agreement**  
**MOCA - Minimum Obstruction Clearance Altitude**  
**MOU - Memorandum of Understanding**  
**mph Miles per hour**  
**MPO- Metropolitan Planning Organization**  
**MPSG - Master Plan Study Group**  
**MSA - Metropolitan Statistical Area**  
**MSL - Mean sea level**  
**MTOW - Maximum takeoff weight**  
**MTR - Military Training Route**  
**MVA - Minimum Vectoring Altitude**

**NA-1 - Noise Abatement measure for jet aircraft**  
**NA-2 - Noise Abatement measure for jet aircraft**  
**NA-3 - Noise Compliant Procedures**  
**Nav aids - Navigational Aids**  
**NAAQS - National Ambient Air Quality Standards**  
**NAS - Naval Air Station**  
**NAS - National Airspace System**  
**NASAO - National Association of State Aviation Officials**  
**NATA - National Aviation Transportation Association**  
**NBAA - National Business Aircraft Association**  
**NCDC - National Climatic Data Center**  
**NCP - Noise Compatibility Program**  
**NDB - Non-directional radio beacon**  
**NEPA - National Environmental Policy Act**  
**NLA - New Large Aircraft**  
**NLR - Noise level reduction**  
**NM - Nautical Mile(s)**  
**NO - Nitrogen oxides**  
**NOAA - National Oceanic and Atmospheric Administration**  
**NOI - Notice of Intent**  
**NOP - Notice of Preparation**  
**NOTAM - Notice to Airmen**  
**NP - Non-Precision Approach**  
**NPA - National Planning Association**  
**NPDES - National Pollutant Discharge Elimination System**  
**NPIAS - National Plan of Integrated Airport Systems**  
**NPw/ILS - Non Precision Approach with ILS on opposite end**  
**NTSB - National Transportation Safety Board**  
**NWS - National Weather Service**

**O&D - Origin and destination**  
**O&M - Operation and maintenance**  
**OAG - Official Airline Guide (a registered trademark of Official Airline Guides, Inc.)**  
**ODALS - Omni-directional Approach Lighting System**  
**OFA - Object free area**  
**OFZ - Obstacle free zone**

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**OSHA - Occupational Safety and Health Administration**

**PAL - Planning activity level**

**PAPI - Precision approach path indicator**

**PAR - Precision approach radar**

**PCB - Polychlorinated biphenyls**

**PCI - Pavement Condition Index**

**PFC - Passenger facility charge**

**PIC - Pilot in Command**

**PL - Public Law**

**PM - Particulate matter**

**PMSA - Primary Metropolitan Statistical Area**

**PRM - Precision runway monitor**

**R&D - Research and development**

**RAIL - Runway alignment indicator lights**

**RAPCON - Radar approach control**

**RDSIM - Runway Delay Simulation Model (FAA)**

**REIL - Runway end identifier lights**

**RIMS - Regional Input-Output Modeling System**

**ROD - Record of Decision**

**RPM - Revenue passenger miles**

**RPZ - Runway protection zone (formerly clear zone)**

**RSA - Runway safety area**

**RVR - Runway visual range**

**SEL - Sound exposure level**

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**SHPO - State Historic Preservation Officer**

**SIMMOD - Airport and Airspace Simulation Model (FAA)**

**SIP - State Implementation Plan**

**SIAP - Standard Instrument Approach Procedure**

**SLUCM - Standard Land Use Coding Manual**

**STAR - Standard Terminal Arrival Route**

**SWAP - Severe Weather Avoidance Plan**

**TACAN - Tactical area navigational aid**

**TCA - Terminal Control Area (now, Class B airspace)**

**TCAS - Terminal Collision Avoidance System**

**TDM - Transportation Demand Management**

**TEA 21 - Transportation Equity Act for the 21st Century (1998)**

**TERPS - U.S. Standard for Terminal Instrument Procedures  
(FAA Handbook 8260.3B)**

**TODA - Takeoff distance available**

**TORA - Takeoff run available**

**TRACON - Terminal Radar Approach Control**

**TRB - Transportation Research Board**

**TVOR - Terminal Very High Frequency Omni Directional**

**T/U - Transportation Utility**

**USC - United States Code**

**USGS - United States Geological Survey**

**USPS - United States Postal Service**

**UST - Underground storage tank**

**V - Visual Approach**

**VASI - Visual approach slope indicator**

**VFR - Visual Flight Rule**

**VMC - Visual meteorological conditions**

**VMT - Vehicle miles traveled**

**VOC - Volatile organic compounds**

**VOR - Very-high frequency omni-directional range station**

**VORTAC - Very-high frequency omni-directional range tactical air navigation**

**VFR - Visual flight rules**

**VRB - Vero Beach Municipal Airport**

**Vw/NP - Visual Approach with Non Precision Approach on Opposite End**

**WAAS - Wide Area Augmentation System**

**WBE - Woman-owned Business Enterprise**

**WVAS - Wake Vortex Advisory System**

### **Glossary of Terms :**

**A-WEIGHTED SOUND LEVEL (dBA);** The ear does not respond equally to sound frequencies. It is less efficient at low and high frequencies than it is at medium or speech-range frequencies. Thus, to obtain a single number representing the sound level of a noise having a wide range of frequencies in a manner representative of the ear's response, it is necessary to reduce the effects of the low and high frequencies with respect to the medium frequencies. The resultant sound level is said to be A-weighted, and the units are decibels (dB); hence, the abbreviation is dBA. The A-weighted sound level is also called the noise level. Sound level meters have an A-weighting network for measuring A-weighted sound level.

**Ac (00/0000-0)** - Advisory Circular (with an identification number) published by the Federal Aviation Administration (FAA) to provide specific information, instructions or standards established for aviation related subjects. AC 74/7460-IH provides the standards for Marking and Lighting obstructions to air navigation.

**ACCEPTABLE** (DNL not exceeding 65 decibels)—The noise exposure may be of some concern but common building constructions will make the indoor environment acceptable and the outdoor environment will be reasonably pleasant for recreation and play.

**AIP**—See AIRPORT IMPROVEMENT PROGRAM.

**AIR CARRIER, CERTIFICATED ROUTE**—An air carrier holding a Certificate of Public Convenience and Necessity, issued by the Federal Aviation Administration (FAA), to conduct scheduled services over specified routes and a limited amount of nonscheduled operations.

**AIR CARRIER, COMMUTER**—An air taxi operator who (1) performs at least five round trips per week between two or more points and publishes flight schedules that specify the times, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a contract with the U.S. Postal Service.

**AIRCRAFT DELAY**—The additional travel time, caused by aircraft congestion, taken by an aircraft to move from point A to point B.

**AIRCRAFT OPERATION**—An aircraft arrival (landing) or an aircraft departure (takeoff) represents one aircraft operation. A low approach below traffic pattern altitudes or a touch-and-go operation is counted as both a landing and a takeoff, that is, as two operations. Aircraft operations are recorded by the FAA in four categories: air carrier, air taxi, general aviation, and military.

**AIR CARRIER**—Operations performed in revenue service by certificated route air carriers.

**AIR TAXI/COMMUTER**—Operations performed by operators of aircraft holding an air taxi certificate under Part 298 of the FAA regulations. This category includes commuter airline operations (excluding certificated commuter airlines), mail carriers under contract with the U.S. Postal Service, and operators of nonscheduled air taxi service.

**GENERAL AVIATION**—All civil aircraft operations not classified as air carrier or air taxi operations.

**MILITARY**—Operations performed by military groups, such as the Air National Guard, the U.S. Air Force, or the U.S. Marine Corps.

Aircraft operations may also be described as local or itinerant:

**LOCAL**—Local operations are performed by aircraft that (1) operate in the local traffic pattern or within sight of the airport, (2) are known to be departing for, or arriving from, flight in local practice areas within a 20-mile radius of the airport, and (3) execute simulated instrument approaches or low passes at the airport.

**ITINERANT**—All aircraft operations other than local operations.

**AIRCRAFT PARKING APRON**—See APRON.

**AIRCRAFT PARKING POSITION**—The area on the ramp where aircraft park for servicing and preparation for flight.

**AIRFIELD CAPACITY (HOURLY)**—The maximum number of aircraft operations (landings or takeoffs) that can take place on an air-field in one hour under specific conditions.

**AIR NAVIGATION FACILITY (NAVAID)**—A facility designed for use as an aid to air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio direction-finding, or for radio or other electronic communication, and any other structure or mechanism having a similar purpose for guiding and controlling flight in the air or the landing or takeoff of aircraft.

**AIRPORT ACCESS AND PARKING PLAN**—A plan that indicates the proposed routing of airport access facilities to central business districts and to points of connection with existing or planned arteries and based on airport access studies that take into account traffic demands, existing and potential access problems, highway and rapid rail facilities, and in-town terminal facilities. The plan also incorporates on- and off-airport parking facilities for passengers, employees, and visitors and is a required element of an airport master plan.

**AIRPORT APPROACH AND RUNWAY PROTECTION ZONE LAYOUT PLAN**—A plan map showing the imaginary surfaces that specify the maximum height of structures, trees, and other phenomena around an airport and which is prepared in accordance with FAR Part 77, "Objects Affecting Navigable Airspace." The plan is required as part of an airport master plan.

**AIRPORT ELEVATION**—The highest point of an airport's usable runways measured in feet above mean sea level (AMSL).

**AIRPORT ENVIRONS**—The area surrounding an airport that is considered to be directly affected by the presence and operation of the airport.

**AIRPORT IMAGINARY SURFACES**—Imaginary surfaces established at an airport for obstruction determination purposes, and consisting of primary, approach-departure, horizontal, vertical, conical, and transition surfaces.

**AIRPORT IMPROVEMENT PROGRAM (AIP)**—A program administered by the Federal Aviation Administration to provide financial grants-in-aid for airport planning, airport development projects, and noise compatibility programs. The program was established through the Airport and Airway Improvement Act of 1982, which was incorporated as Title V of the Tax Equity and Fiscal Responsibility Act of 1982 (P.L. 97-248).

**AIRPORT LAND USE PLAN**—A generalized plan depicting proposed land uses within the airport boundary. The land use plan is a required element of an airport master plan.

**AIRPORT LAYOUT PLAN (ALP)**—A plan for an airport showing boundaries and proposed additions to all areas owned or controlled by the sponsor for airport purposes, the location

and nature of existing and proposed airport facilities and structures, and the location on the airport of existing and proposed non-aviation areas and improvements thereon. The ALP is a required element of an airport master plan.

**AIRPORT MASTER PLAN**—An assembly of appropriate documents and drawings covering the development of a specific airport from a physical, economic, social, and political jurisdictional perspective. The airport master plan includes an airport land use plan, airport layout plan, airport approach and runway protection zone layout plan, terminal area plan, airport access and parking plan, staging plan, and financial plan.

**AIRPORT NOISE AND CAPACITY ACT OF 1990**—Public Law 101-508, enacted November 5, 1990. Two important provisions of the law were the establishment of a national aviation noise policy (Sections 9308 and 9309) and the creation of a passenger facility charge (Sections 9110 and 9111), which enables airport sponsors to impose fees on the tickets issued to enplaning passengers. An amendment to FAR Part 91, "Transition to an All Stage 3 Fleet Operating in the 48 Contiguous United States and the District of Columbia," and new FAR Part 161, "Notice and Approval of Airport Noise and Access Restrictions," implement the national noise policy. New FAR Part 158, "Passenger Facility Charges," implements that portion of the Act authorizing the imposition of such charges.

**AIRPORT SPONSOR**—A public agency or tax-supported organization, such as an airport authority, that is authorized to own and operate an airport, to obtain property interests, to obtain funds, and to be legally, financially, and otherwise able to meet all applicable requirements of current laws and regulations.

**AIRPORT SURVEILLANCE RADAR (ASR)**—Radar providing position of aircraft by azimuth and range data. It does not provide elevation data. ASR is designed for range coverage up to 60 nautical miles and is used by terminal area air traffic control.

**AIRPORT TRAFFIC CONTROL TOWER (ATCT)**—A central operations facility in the terminal air traffic control system, consisting of a tower cab structure, including an associated instrument flight rule (IFR) room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices, to provide safe and expeditious movement of terminal air traffic.

**AIRSPACE**—Space in the air above the surface of the earth or a particular portion of such space, usually defined by the boundaries of an area on the surface projected upward.

**AIR TRAFFIC CONTROL (ATC)**—A service operated by appropriate authority (the FAA) to promote the safe, orderly, and expeditious flow of air traffic.

**ALERT AREA**—A geographically designated area of airspace where a high volume of pilot training or an unusual aeronautical activity is conducted (See: Special Use Airspace).

**AMBIENT NOISE**—The total of all noise in a system or situation, independent of the presence of the specific sound to be measured. In acoustical measurements, strictly speaking, ambient noise means electrical noise in the measurement system. However, in popular usage, ambient noise is also used to mean "background noise" or "residual noise."

**AMSL**—Above Mean Sea Level. The most common height or altitude reference used for flying and flight procedures usually measured in feet.

**Approach Category**—A grouping of aircraft based on recommended final approach speed or maximum certified landing weight. The size of an airport's VFR traffic pattern is calculated using aircraft approach category.

**Category A:**

**Speed:** Less than 91 knots  
**Weight:** Less than 30,001 pounds

**Category B:**

**Speed:** 91 knots or more but less than 121 knots  
**Weight:** 30,001 pounds or more but less than 60,001 pounds

**Category C:**

**Speed:** 121 knots or more but less than 141 knots  
**Weight:** 30,001 pounds or more but less than 60,001 pounds

**Category D:**

**Speed:** 141 knots or more but less than 166 knots  
**Weight:** 30,001 pounds or more but less than 60,001 pounds

**Category E:**

**Speed:** 166 knots or more  
**Weight:** and any weight

**APRON**—A paved area that provides the connection between the terminal buildings and the airfield. The apron includes aircraft parking areas, called ramps, and aircraft circulation and taxiing areas for access to these ramps. On the ramp, aircraft park in locations typically designated as gate positions or gates.

**ATC**—See AIR TRAFFIC CONTROL.

**AUTOMATED RADAR TERMINAL SYSTEM (ARTS)**—Computer-aided radar display subsystems capable of associating alphanumeric data with radar returns.

**AVERAGE DAILY TRAFFIC (ADT)**—The average traffic flow on a specific street, road, or highway segment. ADT can be either total average flow or the average traffic in each direction.

**AVIATION SAFETY AND NOISE ABATEMENT ACT OF 1979**—Public Law 96-193, enacted February 18, 1980. The purpose of the Act is to provide assistance to airports in preparing and carrying out noise compatibility programs and in assuring continued safety for aviation. The Act also contains provisions that extend until January 1, 1988, the requirement for certain types of aircraft to comply with Part 36 of the Federal Aviation Regulations (see also FAR Part 36).

**BACKGROUND NOISE**—See AMBIENT NOISE.

**BENEFICIAL OCCUPANCY**—See DATE OF BENEFICIAL OCCUPANCY.

**BUILDING CODE**—A legal document that sets forth requirements to protect the public health, safety, and general welfare as they relate to the construction and occupancy of buildings and structures. The code establishes the minimum acceptable conditions for matters found to be in need of regulation. Topics generally covered are exits, fire protection, structural design, sanitary facilities, light, and ventilation. Sound insulation may also be included.

**BUILDING PERMIT**—A permit issued by a local political jurisdiction (village, town, city, or county) to erect or modify a structure.

**BUILDING RESTRICTION LINE (BRL)**—The BRL should be located on an airport layout plan to identify suitable locations for building areas on airports. It is recommended that the BRL encompass the runway protection zones, the runway visibility zone, areas required for airport traffic control tower clear line of sight, and all airport areas with less than 35-foot clearance under the FAR Part 77 surfaces.

**CAD** - Computer Assisted Design. A specific program capability within a computer or computer system to produce, examine or alter three dimensional, on-screen displays or "drawings".

**CAPITAL IMPROVEMENT PROGRAM (CIP)**—A multiyear (sometimes a single year) schedule of capital expenditures for construction or equipment at an airport.

**CEQ (COUNCIL ON ENVIRONMENTAL QUALITY) REGULATIONS**—CEQ Regulations implementing the National Environmental Policy Act of 1969 (NEPA) were published in the Federal Register on November 29, 1978. References to the 4 Regulations in FAA Order 5050.4A (Airport Environmental Handbook) identify a given section, e.g., CEQ 1500 or CEQ 1508.8. (See also IMPACT.)

**CFASPP** – Continuing Florida Aviation System Planning Process. Florida's Method to provide for long-range, continuous planning for state's airports and airways systems needs.

**CFR** – Code of Federal Regulations. The system identifying rules of the Executive branch departments and agencies of the Federal Government. In use, CFR is preceded by a Title number to identify broad functional area and followed by Part Numbers to further delineate the area of interest. Title 47, CFR are rules on Telecommunications; Title 14, CFR contains Federal Aviation Regulation (FAR).

**Ch.333, F.S.** – Chapter of Florida's Statutes (F.S.) concerning "Airport Zoning" established to prevent the erection of structures dangerous to air navigation. It is the authority under which local airport zoning ordinances are enacted.

**Clear Zone** – Clear zone or runway clear zone means an area at ground level underlying a portion of the approach surface. The term "clear zone" has been redesignated by the FAA to Runway Protection Zone (RPZ). Under either usage, the zone extends to a point on the ground where the approach surface reaches fifty (50) feet above the runway end elevation. (See: RPZ for additional definition.)

**CONTOUR**—See NOISE CONTOUR.

**DATE OF BENEFICIAL OCCUPANCY (DBO)**—The date on which the replacement terminal facilities are as substantially complete that they are usable by Airport tenants and the public without hazard or undue inconvenience.

**DAY-NIGHT AVERAGE SOUND LEVEL (DNL)**—A method for predicting, by a single number rating, cumulative aircraft noise that affects communities in airport environs. The DNL value represents decibels of noise as measured by an A-weighted sound-level meter (see also). In the DNL procedure, the noise exposure from each aircraft takeoff or landing at ground level around an airport is calculated, and these noise exposures are accumulated for a typical 24-hour period. (The 24-hour period often used is the average day of the peak month for aircraft operations during the year being analyzed.) Daytime and nighttime noise exposures are considered separately. A weighting factor equivalent to a penalty of 10

decibels is applied to operations between 10 p.m. and 7 a.m. to account for the increased sensitivity of people to nighttime noise. The DNL values can be expressed graphically on maps using either contours or grid cells. DNL may also be used for measuring other noise sources, such as automobile traffic, to determine combined noise effects.

**dba**—See A-WEIGHTED SOUND LEVEL.

**DECIBEL (dB)**—A unit for measuring the volume of a sound, equal to the logarithm of the ratio of the intensity of the sound to the intensity of an arbitrarily chosen standard sound.

**DEPLANED PASSENGERS**—The volume of passengers inbound to an airport. The annual passenger volume of an airport is the total of deplaned and enplaned passengers (see also).

**DEREGULATION ACT**—Airline regulatory reform act of 1978. Designed, among other things, to encourage competition among domestic airlines, the Act allows an airline greater freedom to enter and leave any given market.

**Determination** – The term used by FAA to denote the outcome of an aeronautical study under FAA Part 77 (See: Hazard or No Hazard).

**DEVELOPMENT PLAN**—A detailed land use plan for all or specific areas on an airport. The plan usually includes a plot map depicting parcel size and configuration, access, land use categories, utilities, and performance standards for each parcel and use category.

**DISPLACED THRESHOLD**—A runway threshold that is located at a point other than the designated beginning of the runway.

**DNL**—See DAY-NIGHT AVERAGE SOUND LEVEL.

**Development of Regional Impact** – The term applied to a proposed development which under Florida Statutes Chapter 380 has potential environmental, economic or other significant regional impact.

**EFFECTS**—See IMPACT.

**ENGINE RUNUP AREA**—An area on an airport where aircraft engines are serviced or tested. The noise from such servicing or testing can affect neighborhoods adjacent to the airport.

**ENPLANED PASSENGERS**—The volume of passengers outbound from an airport. The annual passenger volume of an airport is the total of enplaned and deplaned passengers (see also).

**ENVIRONMENTAL IMPACT STATEMENT (EIS)**—A statement prepared under the requirements of the National Environmental Policy Act of 1969 (NEPA), Section 102(2)(c). The EIS represents a federal agency's evaluation of the effects of a proposed action on the environment. Regulations relating to the preparation of an EIS are published in FAA Order 5050.4A.

**FAA**—See FEDERAL AVIATION ADMINISTRATION.

**FAA ADVISORY CIRCULAR 150/5300-13**—This document, titled "Airport Design," contains airport design standards, including descriptions of various subdivisions of FAR Part 77 (see also) such as obstacle free zones (OFZs), object free areas (OFAs), and runway protection zones (RPZs) formerly referred to as "clear zones"—on airports. According to Paragraph 211, "Safe and efficient operations at an airport require that certain areas on and near the airport be clear of objects or restricted to objects with a certain function, composition, and/or height." To achieve this requirement, object clearing criteria contained in the handbook describe the type of objects tolerated within various subdivisions of FAR Part 77. Aircraft are controlled by aircraft operating rules and not by these criteria. However, objects not in conformance with these criteria may result in aircraft operating restrictions.

**FAA HANDBOOK 7400.2**—This document, titled "Procedures for Handling Airspace Matters," contains procedures and guide-lines for conducting aeronautical studies and determining effects of existing or proposed objects that exceed FAR Part 77 (see also) standards. ~~Objects that exceed FAR Part 77 standards are subject to an aeronautical study~~ and are presumed to be hazards to air navigation unless an aeronautical study determines otherwise. However, once an aeronautical study has been initiated, Part 77 standards are not the basis for determining whether or not an object would be a hazard. Other standards, including operational, procedural, and electronic requirements, are used to determine if the object being studied would actually be a hazard to air navigation. The outcome of an FAA aeronautical study is either a "Determination of No Hazard" or "Determination of Hazard to Air Navigation."

**FAA HANDBOOK 8260.3B**—This document, titled "TERPS," contains obstruction clearance criteria for instrument procedures. Imaginary surfaces for each particular type of instrument procedure are described. If an object would penetrate the imaginary surfaces for a particular procedure and could not be relocated or sufficiently reduced in height, one of the following actions would be necessary: (1) alteration of the procedure, to minimize or eliminate effects; (2) increase in the minimum cloud ceiling and/or visibility requirements for conducting the procedure; (3) some combination of (1) and (2); or (4) preclusion of the affected procedure.

**FAA ORDER 5050.4A**—This document, entitled "Airport Environmental Handbook," was published by the FAA on October 8, 1985. It contains all of the essential information an airport sponsor needs to meet both procedural and substantive environmental requirements.

**FAR PART 36**—Federal Aviation Regulations Part 36, "Noise Standards: Aircraft Type and Airworthiness Certification." Establishes noise standards for the civil aviation fleet. Some extensions for compliance are included in the Aviation Safety and Noise Abatement Act of 1979 (see also).

**FAR PART 77**—Federal Aviation Regulations Part 77, "Objects Affecting Navigable Airspace." Establishes standards for determining obstructions and conducting aeronautical studies to determine the potential effects of obstructions on aircraft operations. Objects are

considered to be obstructions to air navigation according to FAR Part 77 if they would exceed certain heights or penetrate certain imaginary surfaces established in relation to airports. Objects classified as obstructions are subject to an aeronautical study by FAA to determine their potential effects on aircraft operations.

**FAR PART 91**—Federal Aviation Regulations Part 91, "General Operating and Flight Rules." On September 25, 1991, the FAA issued an amendment to FAR Part 91 (14 CFR Part 91) in conformance with requirements of the Airport Noise and Capacity Act of 1990 (see also). The amendment to the aircraft operating rules requires a phased transition to an all Stage 3 fleet operating in the 48 contiguous United States and the District of Columbia by December 31, 1999. The amendment places a cap on the number of Stage 2 aircraft allowed to operate in the United States and provides for a continuing reduction in the population exposed to noise from Stage 2 aircraft.

**FAR PART 150**—Federal Aviation Regulations Part 150, "Airport Noise Compatibility Planning." An FAR Part 150 Program is an FAA-assisted study designed to increase the compatibility of land and facilities in the areas surrounding an airport that are most directly affected by the operation of the airport. The specific purpose is to reduce the adverse effects of noise as much as possible by implementing both on-airport noise abatement measures and off-airport noise mitigation programs. The basic products of an FAR Part 150 program typically include (1) noise exposure maps for the existing condition and for five years in the future; (2) workable on-airport noise abatement measures, such as preferential run-way use programs, new or preferential flight tracks, curfews; (3) off-airport noise mitigation measures (land use control programs and regulations), such as land acquisition, soundproofing, or special zoning; (4) an analysis of the costs and the financial feasibility of the recommended measures; and (5) policies and procedures related to the implementation of on- and off-airport programs. A community involvement program is carried on throughout all phases of development of the program.

**FAR PART 158**—Federal Aviation Regulations Part 158, "Passenger Facility Charges." Adopts new regulations to establish a passenger facility charge (PFC) program. The rule implements Sections 9110 and 9111 of the Airport Noise and Capacity Act of 1990 (see also), which requires the Department of Transportation to issue regulations under which a public agency may be authorized to impose a PFC of \$1, \$2, or \$3 per enplaned passenger at a commercial service airport it controls. The proceeds from such PFCs are to be used to finance eligible airport-related projects that pre-serve or enhance safety, capacity, or security of the national air transportation system, reduce noise from an airport that is part of such system, or furnish opportunities for enhanced competition between or among air carriers. The rule sets forth procedures for public agency applications for authority to impose PFCs, for FAA processing of such applications; for collection, handling, and remittance of PFCs by air carriers; for record-keeping and auditing by air carriers and public agencies; for terminating PFC authority; and for reducing federal grant funds apportioned to large and medium hub airports imposing a PFC.

**FAR PART 161**—Federal Aviation Regulations Part 161, "Notice and Approval of Airport Noise and Access Restrictions." Establishes a program for reviewing airport noise and access restrictions on the operations of Stage 2 and Stage 3 aircraft. This rule is in response to specific provisions in the Airport Noise and Capacity Act of 1990 (see also) and is a major element of the national aviation noise policy required by that statute.

**FEDERAL AVIATION ADMINISTRATION (FAA)**—The FAA is the agency of the U.S. Department of Transportation that is charged with (1) regulating air commerce to promote its safety and development; (2) achieving the efficient use of navigable airspace of the United States; (3) promoting, encouraging, and developing civil aviation; (4) developing and operating a common system of air traffic control and air navigation for both civilian and military aircraft; and (5) promoting the development of a national system of airports.

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**—A finding by the FAA that a proposed action by an airport sponsor will have no significant impact (on the environment). Specific guide-lines for the preparation of a FONSI report are included in FAA Order 5050.4A.

**FLIGHT TRACK**—The average flight path flown by aircraft within specific corridors. Deviation from these tracks occurs because of weather, pilot technique, air traffic control, and aircraft weight. Individual flight tracks within a corridor are "averaged" for purposes of modeling noise exposure using the Integrated Noise Model (see also).

**FONSI**—See FINDING OF NO SIGNIFICANT IMPACT.

**47 CFR Parts 0-70** – (Parts 0-19 and 70-79) All current parts of the Code of Federal Regulations governing telecommunications and licensing including organizations of the FCC, frequency allocations, construction of antennas, broadcast services, cable services and rules of operation.

**GATE**—The designated location in a terminal building that contains an airline podium area where ticketed passengers check in for a specific flight. (See also APRON.)

**GENERAL AVIATION (GA)**—All civil aviation except that classified as air carrier or air taxi. The types of aircraft typically used in GA activities vary from multiengine jet aircraft to single-engine piston aircraft.

**GENERAL PLAN** (sometimes referred to as a comprehensive plan or community plan)—An overall plan of a political jurisdiction setting forth the goals and objectives of the jurisdiction, policies for development and redevelopment, and maps showing the spatial arrangement of land uses, circulation routes, and community facilities.

**Ground Controlled Approach** – A type of ground radar controlled precision instrument approach system used to land aircraft safely in conditions of very low visibility and cloud ceilings. This system is more commonly used at military airfields than at civil airports (See: Precision Approach)

**Hazard** – An advisory determination rendered by the FAA at the conclusion of an Aeronautical Study made under FAR 77 indicating the proposed structure is not a safe and/or efficient use of airspace.

**IFR**—See INSTRUMENT FLIGHT RULES.

**IFR AIRPORT**—An airport with an authorized instrument approach procedure.

**IFR CONDITIONS**—Weather conditions that require aircraft to be operated in accordance with instrument flight rules.

**IFR MINIMUMS AND DEPARTURE PROCEDURES (FAR PART 91)**—Prescribed takeoff rules. For some airports, obstructions or other factors require the establishment of nonstandard takeoff minimums or departure procedures, or both, to assist pilots in avoiding obstacles during climb to the minimum en route altitude.

**ILS**—See INSTRUMENT LANDING SYSTEM.

**IMPACT**—In environmental studies, the word "impact" is used to express the extent or severity of an environmental problem, e.g., the number of persons exposed to a given noise environment. As indicated in CEQ 1500 (Section 1508.8), impacts and effects are considered to be synonymous. Effects or impacts may be ecological, aesthetic, historic, cultural, economic, social, or health related, and they may be direct, indirect, or cumulative.

**INM**—See INTEGRATED NOISE MODEL.

**INSTRUMENT APPROACH**—An approach to an airport, with intent to land, by an aircraft flying in accordance with an IFR flight plan, when the visibility is less than 3 miles and/or when the ceiling is at or below the minimum initial altitude.

**INSTRUMENT APPROACH RUNWAY**—A runway served by an electronic aid providing at least directional guidance adequate for a straight-in approach.

**INSTRUMENT FLIGHT RULES (IFR)**—Rules specified by the FAA for flight under weather conditions in which visual reference cannot be made to the ground and the pilot must rely on instruments to fly and navigate.

**INSTRUMENT LANDING SYSTEM (ILS)**—A system that provides in the aircraft the lateral, longitudinal, and vertical electronic guidance necessary for an instrument landing.

**INSTRUMENT OPERATION**—An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility or air route traffic control center.

**INSTRUMENT RUNWAY**—A runway equipped with electronic and visual navigation aids and for which a straight-in (precision or non-precision) approach procedure has been approved or is planned.

**INTEGRATED NOISE MODEL (INM)**—A computer model developed by the FAA and required by the FAA for use in environmental assessments, environmental impact statements, and FAR Part 150 studies for developing existing and future aircraft noise exposure maps.

**LAND USE COMPATIBILITY**—The compatibility of land uses surrounding an airport with airport activities and particularly with the noise from aircraft operations.

**LAND USE COMPATIBILITY ASSURANCE**—Documentation provided by an airport sponsor to the FAA. The documentation is related to an application for an airport development grant. Its purpose is to assure that a reasonably appropriate action, including the adoption of zoning laws, has been taken or will be taken to restrict the use of land adjacent to the airport or in the immediate vicinity of the airport. Such uses are limited to activities and purposes compatible with normal airport operations, including the landing and takeoff of aircraft.

**LAND USE CONTROLS**--Controls established by local or state governments to carry out land use planning. The controls include zoning, subdivision regulations, land acquisition (in fee simple, lease-back, or easements), building codes, building permits, and capital improvement programs (to provide sewer, water, utilities, or other service facilities).

**LAND USE PLANNING**—Comprehensive planning carried out by units of local government, for all areas under their jurisdiction, to identify the optimum uses of land and to serve as a basis for the adoption of zoning or other land use controls.

**LOUDNESS**—The judgment of the intensity of a sound by a person. Loudness depends primarily on the sound pressure of the stimulus. Over much of the loudness range, it takes about a threefold increase in sound pressure (approximately 10 decibels) to produce a doubling of loudness.

**MARKING & LIGHTING** - Terminology used to indicate methods to increase visibility of an obstruction to air navigation. AC 70/7460 describes the standards established for the purpose. Marking refers to paint and colors; flags or other high visibility devices for day time use.

**MAXIMUM ELEVATION FIGURE** - The height above MSL of the highest known feature, natural or man-made, on a given quadrangle area of an air navigation chart.

**MICROWAVE LANDING SYSTEM** - A new technology ground based radio system to provide pilots very precise cockpit instrument readings to land an aircraft in very poor weather conditions. These systems will be replacing older ILS systems over the next several years. (See: Precision Approach)

**MILITARY OPERATING AREA** - Airspace established to separate or segregate certain types of non-hazardous military activities from IFR flight traffic and identify areas where these activities are conducted for VFR flight traffic. (See: Special Use Airspace)

**MINIMUM DESCENT ALTITUDE** - The lowest altitude in feet above mean sea level (MSL) a pilot may descend during a given type final instrument approach to a runway.

**MINIMUM ENROUTE ALTITUDE** - Lowest height above MSL between air navigation radio fixes at which acceptable signals can be received and obstructions between the fixes can be safely cleared.

**MINIMUM OBSTRUCTION CLEARANCE ALTITUDE** - The lowest height in feet AMSL between air navigation radio fixes on an identified airway or route segment which provides safe obstruction clearance for the entire route segment and assures acceptable radio signal coverage only within 25 nautical miles (NM) of the navigation radio station.

**MITIGATION MEASURE**—An action that can be planned or taken to alleviate (mitigate) an adverse environmental impact. Mitigation includes:

- (1) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (2) Minimizing the impact by limiting the degree or magnitude of the action and its implementation.
- (3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (5) Compensating for the impact by replacing or providing substitute resources or environments.

A proposed airport development project, or alternatives to that project, may constitute a mitigation measure.

**NAVAID**—See AIR NAVIGATION FACILITY.

**NOISE**—Any sound that is considered to be undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying.

**NOISE ABATEMENT PROCEDURES**—Changes in runway use, flight approach and departure routes and procedures, and other air traffic procedures that are made to shift adverse aviation effects away from noise-sensitive areas (such as residential neighborhoods).

**NOISE ATTENUATION OF BUILDINGS**—The use of building materials to reduce noise through absorption, transmission loss, and reflection of sound energy.

**NOISE CONTOURS**—Lines drawn on a map that connect points of equivalent Ldn or CNEL values. They are usually drawn in 5-Ldn intervals, such as connections of Ldn 75 values, Ldn 70 values, Ldn 65 values, and so forth.

**NOISE CONTROL PLANS**—Documentation by an airport sponsor of actions to be taken by the sponsor to reduce the effect of aviation noise. ~~These actions are to be taken by the~~ sponsor either alone or in cooperation with the FAA, airport users, and affected units of local government, with appropriate comments from affected citizens. Alternative actions should be considered, particularly where proprietary use restrictions (see also) on aircraft operations are involved.

**NOISE LEVEL REDUCTION (NLR)**—The noise reduction between two areas or rooms is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of noise reduction combines the effect of the transmission loss performance of structures separating the two areas or rooms and the effect of acoustic absorption present in the receiving room.

**NOISE-SENSITIVE LAND USE**—Land uses that can be adversely affected by high levels of aircraft noise. Residences, schools, hospitals, religious facilities, libraries, and other similar uses are often considered to be sensitive to noise.

**NORMALLY UNACCEPTABLE (DNL above 65 but not exceeding 75 decibels)**—The noise exposure is significantly more severe; barriers may be necessary between the site and prominent noise sources to make the outdoor environment acceptable; special building constructions may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.

**OBSTACLE FREE ZONE (OFZ)**—The OFZ is a three-dimensional volume of airspace that supports the transition of ground-to-airborne-aircraft operations (and vice versa). The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible NAVAIDS whose location is fixed by function. The runway OFZ and, when applicable, the inner-approach OFZ, and the inner-transitional OFZ compose the obstacle free zone.

**OBSTRUCTION**—An object that exceeds a limiting height or penetrates an imaginary surface described by current Federal Aviation Regulations (Part 77).

**PATTERN**—The configuration or form of a flight path flown by an aircraft, or prescribed to be flown, as in making an approach to a landing.

**PRECISION APPROACH PROCEDURE**—A standard instrument procedure for an aircraft to approach an airport in which an electronic glide slope is provided—for example, an instrument landing system and precision approach radar.

**PREFERENTIAL RUNWAY USE (PROGRAM)**—A noise abatement action whereby the FAA Air Traffic Division, in conjunction with the FAA Airports Division, assists the airport sponsor in developing a program that gives preference to the use of a specific runway(s) to reduce over-flights of noise-sensitive areas.

**PRIORITY ACTION PROGRAM**—See STAGING PLAN.

**PROPRIETARY USE RESTRICTIONS**—Restrictions by an airport sponsor on the number, type, class, manner, or time of aircraft operations at the airport.

**RAMP**—See APRON.

**RETROFIT**—The retroactive modification of existing jet aircraft engines for noise abatement purposes.

**RUNWAY OBJECT FREE AREA**—The runway object free area (OFA) is a two-dimensional ground area surrounding the runway. The runway OFA clearing standard precludes parked airplanes and objects, except objects whose location is fixed by function.

**RUNWAY PROTECTION ZONE (RPZ)**—The RPZ (formerly the runway clear zone) is trapezoidal in shape and centered about the extended runway centerline. It begins 200 feet beyond the end of the area usable for takeoff or landing. Displacing the threshold does not change the beginning point of the RPZ. The RPZ dimensions are functions of the design aircraft, type of operation, and visibility minimums.

**RUNWAY THRESHOLD**—The beginning of that portion of a runway usable for landing.

**RUNWAY USE PROGRAM**—See PREFERENTIAL RUNWAY USE PROGRAM.

**SEVERE NOISE EXPOSURE**—Exposure to aircraft noise that is likely to interfere with human activity in noise-sensitive areas; ~~repeated vigorous complaints can be expected and group action is probable.~~ This exposure may be specified by a cumulative noise descriptor as a level of noise exposure, such as DNL 75. (See also SIGNIFICANT NOISE EXPOSURE.)

**SIGNIFICANT EFFECT ON THE ENVIRONMENT**—A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself is not considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

**SIGNIFICANT NOISE EXPOSURE**—Exposure to aircraft noise that is likely to interfere with human activity in noise-sensitive areas; individual complaints may be expected and group action is possible. This exposure may be specified by a cumulative noise description as a level of noise exposure, such as DNL 65. (See also SEVERE NOISE EXPOSURE.)

**SOUND INSULATION**—(1) The use of structures and materials designed to reduce the transmission of sound from one room or area to another, or from the exterior to the interior of a building. (2) The degree of reduction in sound transmission by means of sound insulating structures and materials.

**SOUND LEVEL (NOISE LEVEL)**—The weighted sound pressure level obtained by the use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

**SOUND LEVEL METER**—An instrument, consisting of a microphone, an amplifier, an output meter, and frequency-weighting networks, that is used to measure noise and sound levels in a specified manner.

**TERPS**—Certain airspace needs to be cleared for aircraft operations. This airspace is determined by the application of operating rules and terminal instrument procedures (TERPS). Removing obstructions to air navigation, except those which an FAA aeronautical

study determined need not be removed, satisfies these requirements. Subpart C of FAR Part 77 defines obstructions to air navigation. (Also see FAA HANDBOOK 8260.3B.)

**TOWER**—See AIRPORT TRAFFIC CONTROL TOWER (ATCT).

**UNACCEPTABLE** (DNL above 75 decibels)—The noise exposure at the site is so severe that the construction cost to make the indoor noise environment acceptable may be prohibitive and the outdoor environment would still be unacceptable.

**VFR AIRPORT**—An airport without an authorized or planned instrument approach procedure.

**VFR CONDITIONS**—Weather conditions that permit aircraft to be operated in accordance with visual flight rules.

**VHF OMNIDIRECTIONAL RANGE (VOR)**—A radio transmitter facility in the navigation system radiating a VHF radio wave modulated by two signals, the relative phases of which are compared, resolved, and displayed by a compatible airborne receiver to give the pilot a direct indication of bearing relative to the facility.

**VISUAL APPROACH**—An approach to an airport wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of a radar facility and having air traffic control authorization, may deviate from the prescribed instrument approach procedure and proceed to the airport of destination, served by an operational control tower, by visual reference to the surface.

**VISUAL APPROACH SLOPE INDICATOR (VASI)**—An airport lighting facility in the terminal area navigation system used primarily under VFR conditions. It provides vertical visual guidance to aircraft during approach and landing by radiating a directional pattern of high-intensity, red- and white-focused light beams, which indicate to the pilot that he is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red.

**VISUAL FLIGHT RULES (VFR)**—Rules that govern the procedures for conducting flight under visual conditions (Federal Aviation Regulations Part 91).

**VISUAL RUNWAY**—A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan, or by any planning document submitted to the FAA by competent authority.

**ZONING AND ZONING ORDINANCES**—Ordinances that divide a community into zones or districts according to the present and potential use of properties for the purpose of controlling and directing the use and development of those properties. Zoning is concerned primarily with the use of land and buildings, the height and bulk of buildings, the proportion of a lot that buildings may cover, and the density of population of a given area. As an instrument of plan implementation, zoning deals principally with the use and development of privately owned land and buildings. The objective of zoning legislation is to establish regulations that provide locations for all essential uses of land and buildings and to ensure that each use is located in the most appropriate place. In noise compatibility planning, zoning can be used to achieve two major aims: (1) to reinforce existing compatible land uses and promote the location of future compatible uses in vacant or underdeveloped land, and (2) to convert existing incompatible uses to compatible uses over time.

**MINUTES OF THE ST. LUCIE COUNTY**  
**INTERNATIONAL AIRPORT**  
**MASTER PLAN STUDY GROUP**

**JUNE 21, 2001 - 3:00 P.M.**  
**HELD AT THE ST. LUCIE COUNTY AIRPORT**  
**FORT PIERCE, FLORIDA**

<b>PRESENT.....</b>	<b>REPRESENTING</b>
Frank Lillo.....	Chamber of Commerce
John Holt.....	St Lucie Conservation Alliance
Diane Andrews.....	Commissioner Lewis
Dick Thoma.....	Commissioner Barns
Bob Clark.....	Commissioner Bruhn
Skip Lyshon.....	Industrial Park
Lena Ghaffari.....	Aircraft Service Center, Inc
Michael Cohen.....	Ari Ben Aviator
Adam Houck.....	Fort Pierce Air Center
F. Dewitt Beckett.....	Micco Aircraft Co.
Mayor Thiess.....	St Lucie Village
Susan Sharpe.....	ATC
Ben Williams.....	ATC
Paul Phillips.....	St Lucie County International Airport
Heather Young.....	County Attorney
Jim Van Hekken.....	Citizen
Curtis King.....	Citizen
Carla Roccapriore.....	Reporter
Robert E. Barnhart.....	Hoyle, Tanner & Associates, Inc.
William J. Hess.....	Hoyle, Tanner & Associates, Inc.

<b>Absent.....</b>	<b>REPRESENTING</b>
Dominic Scotto.....	Commissioner Hutchison
Charlie Serge.....	Commissioner Coward
Roger Orr.....	City of Port St Lucie
Major Ed Enns.....	City of Fort Pierce

**I. CALL TO ORDER**

The Master Plan Study Group meeting was called to order by Mr. Barnhart at 3:05 P.M.

An attendance sign in sheet was handed around to those present.

**II. The meeting started with a presentation by Mr. Barnhart explaining the work done on the first two chapters of the master plan. The inventory and forecasting chapters were presented and then questions and comments were taken from the MPSG.**

The issues raised by the MPSG concerning the information presented by Mr. Barnhart are as follows:

## Chapter 1 – Inventory

- The list of the tenants on the airport should include all of the businesses on airport property whether they are in a lease with the airport or whether they are in a sublease at the airport.
- The issue was raised by Mr. Phillips that relatively soon a signage project will be underway and this will be changing the names of the existing taxiways. It was noted that this will cause a problem in the inventory chapter naming the correct section of pavement and where they are located. All Chapters will reflect the new pavement designations.
- It was brought to the attention of Mr. Barnhart that only Runway 9 is a precision approach runway, and that Runway 27 is a non-precision approach runway.
- Current information regarding the square footage of the ramps size and building size of the tenants at the airport was requested from the airport operators.
- Any corrections to the write ups pertaining to the tenants at the airport should be passed to the tenant first, before finally being adopted into the master plan.
- It was inquired that the number of based aircraft at Able Jets and Pan Am was inaccurate, HTA needs to double check on that.

## Chapter 2 - Aviation Forecasts

- It was pointed out that the number of operations was 186,000 in the last year (June 2000 to June 2001) which is greater than the 173,000 operations for January 2000 to January 2001.
- The selection of the operations forecast percentage utilized by the Master Plan was a large topic of discussion. It was finally agreed upon that the Multiple Regression model increase rate of 2.5% would be the preferred choice of the available choices.
- There are a couple of charts that are confusing to the reader. 2-9 and 2-14, one shows the forecasted numbers at the time and the other shows the actual numbers. These will be corrected in the next handout.
- Make the forecasts for operations acknowledge the presence of Pan Am and show what effects that they will have on operations for the next year or so. Then proceed with the actual forecasting method.
- It was noted that 184,000 operations equates to 80% of the airport's capacity, or Annual Service Volume (ASV), and it was stated that 230,000 operations is the airport's current ASV (100% capacity).
- It was noted that the ATC is expecting to see operations to be 195,000 operations in the 2001 calendar year (88 % ASV).
- Chapters 1 & 2 will be finalized according to the Group's recommendations.
- The subsequent chapters will be developed according to the Group's suggestions HTA will develop proposed airport alternatives for the Group to consider accommodating the airport growth.
- It was noted that another Pan Am could come to the airport, but such a large action is not likely. If this would occur, it would trigger a revision to the Master Plan forecasts and any impacts it would have on the development of the airport.
- Pan Am has shown a jump in activity from only 31 aircraft presently, their full capacity is 75 aircraft. Consider that the number of operations that will be produced by all 75 aircraft will be over double the number of operations Pan Am is currently operating.

- The tower noted that they do have the number of operations that are operated by training aircraft, which is approximately 50%.
- It was requested that the Master Plan consider that 100 Octane gas could run out, and how would that effect the number of operations.
- It was finally determined that the forecast would utilize the anticipated Pan Am growth over two years and continue with the Multiple Regression model (2.5% annual increase)  
Anticipated Pan Am growth = (Increased 2000 & 2001 Operations) divided by (Number of existing Pan Am aircraft) multiplied by (Number of anticipated Pan Am aircraft).
- Due to the number of aircraft operations and the mix of different aircraft, the immediate issue of aircraft operational safety was presented by Mr. Phillips. To successfully accommodate operations and separate the traffic a parallel runway would need to be considered. The Group discussed the current operations along with the future forecasts, concurred that the situation was critical, and approved proceeding with the immediate development of a runway parallel to Runway 9/27.
- The information and feedback from the MPSG will be compiled and developed into Chapter 3 - Facility Requirements & Chapter 4 - Airport Alternatives and will be distributed to the MPSG prior to the next meeting on August 16, 2001 at 3:00 PM in the SLCIA General Aviation Terminal Building.

**MINUTES OF THE ST. LUCIE COUNTY  
INTERNATIONAL AIRPORT  
MASTER PLAN STUDY GROUP**

AUGUST 16, 2001 – 3:00 P.M.  
HELD AT THE ST. LUCIE COUNTY  
INTERNATIONAL AIRPORT  
FORT PIERCE, FLORIDA

<b>PRESENT.....</b>	<b>REPRESENTING</b>
Diane Andrews.....	Commissioner Lewis
Frank Lillo.....	Chamber of Commerce
Bob Bangert.....	Conservation Alliance
Mayor Bill Thiess.....	St. Lucie Village
Chris Hill (for Dewitt Beckett).....	Micco
Skip Lyshon.....	Maverick
Bob Clark.....	Littlewood Park
Dick Thoma.....	Study Group
Dominick Scotto.....	Commissioner Hutchinson
Lena Ghaffari.....	Aircraft Service Center, Inc
Errol Houck.....	Fort Pierce Air Center/Adam Houck
Frannie Hutchinson.....	County Commissioner
Richard Funcheon.....	Pan Am International Flight School
Ben Williams.....	FAA
Steve Dowd.....	Self
Heather Young.....	County Attorney
Carla Roccapriore.....	Tribune
H. B. Moore.....	St. Lucie Village
Jim Van Hekken.....	Riverwood
Patricia E. Weiner.....	Tax Payer
John Emrick.....	N/A
Paul Phillips.....	St. Lucie County International Airport
Robert E. Barnhart.....	Hoyle, Tanner & Associates, Inc.
William J. Hess.....	Hoyle, Tanner & Associates, Inc.
Fannie Howard.....	N/A
Lisa Waters.....	MEA Group

<b>Absent.....</b>	<b>Representing</b>
Roger Orr.....	City of Port St. Lucie
Major Ed Enns.....	City of Fort Pierce
Councilman Jack Kelley.....	Study Group
Michael Cohen.....	Ari Ben Aviator
Charlie Serge.....	Commissioner Coward

**I. CALL TO ORDER**

The Master Plan Study Group meeting was first started at 3:10 P.M. by Lisa Waters of MEA Group giving a noise Presentation.

Mr. Barnhart at 4:00 P.M. began the Master Plan presentation on Chapters 3 & 4 (Facility Requirements and Airport Alternatives).

An attendance sign in sheet was passed around during the meeting to all those present.

**II. The meeting was started with a noise presentation by Lisa Waters of MEA Group, Inc concerning four main points:**

- address the concerns of the community;
- stay consistent with other airports in the local region;
- the safety of operations at the airport; and
- the need to comply with FAA guidelines.

The issues raised by the MPSG and the public concerning the information presented by Lisa Waters are as follows:

- If the airport was to have a fee on aircraft using the airport, would the money be put back into the airport fund and used to benefit the airport or would it be put into a city or a county general fund.
- A question was raised "With certain operations being banded, why then are there still aircraft going over noise sensitive areas such as St. Lucie Village?" "Stop & Gos" were explained that, by landing a plane, stopping it, and then proceeding to take off again it is considered a safe and legal operation. It is not considered a touch and go operation.
- The issue was raised with the new training Runway 9L-27R being proposed. Will the noise problems end on the current 9R-27L Runway? It was answered by saying that yes it will move the majority of the training aircraft to the new runway but there will still be instrument training operations on Runway 9R-27L.
- An airfield signage power line was brought to everyone's attention. It was discussed that ID signs for noise abatement would control aircraft procedures. Notifying them if they were breaking any noise abatement policies.

III. The Master Plan presentation followed directly after the Noise presentation. Mr. Barnhart presented on the Master Planning process concentrating his attention on the Facility Needs and the Airport Alternatives Chapters. Issues raised by the MPSG were as follows:

- The question was asked concerning the forecasting for the master plan "Why were the forecasted only based on 1988 and forward, if in 1986-1987 the number of operations was near 240,000 operations annually?" It was explained that from 1988 on was when the tower started recording the number of operations, and that prior to that the operations were only estimates. Also it showed a more realistic trend using the 1988 operation numbers rather than past numbers, because the new Master Plan is trying to be as accurate as possible.
- The question was raised concerning the strengthening of Runway 9R-27L. "If it is suggested that all runways are to be limited to C-III aircraft as the maximum allowable aircraft, why is it suggested that the airport strengthen Runway 9R-27L with an overlay?" It was then explained that all runways over time need improvements due to the PCI index reports. Like any pavement, runways get wear and tear, and over time these things add up to where a runway overlay is required.
- The suggestion that the current Runway 9R-27L be brought up to a strength of 90,000 lbs, it was asked why? It was explained that St. Lucie is in the process of building a paint shop that will be suited for a Regional Jet size of aircraft. With this paint shop fully built, the traffic for RJ's at the airport would be increasing along with these aircraft coming in for other reasons. 90,000 lbs was suggested because it was a great cut line, it allowed all of the small aircraft you wanted to the airport, and pushed away any of the larger aircraft that were in some ways still considered relatively smaller. There was concern that the increase in pavement strength would invite much larger aircraft.
- The question was asked as why are we limiting ourselves as an airport. St. Lucie International Airport is growing so fast, why not improve everything to handle what could come in. More paint shops, Executive Jet overflowing to St. Lucie, why not plan for everything that could possibly come to St. Lucie instead of delaying what we say could happen.
- It was suggested why not have simultaneous ILS operations on the new runways once 9L-27R is built. It was discussed then that you need 4,000 feet of separation for simultaneous ILS operations and if we did that then the training routes would be pushed off of airport property. For that reason, there is a 3,100 foot separation that is being suggested for the new parallel

runway. With the 3,100 foot separation the new training flight path will all be kept over airport property helping in noise control and safety issues.

- The Precision Approach Path Indicators (PAPI's) were suggested for all the existing runways along with the new proposed parallel runway. No objections were made towards the suggestion and it was widely excepted.
- The question was asked why should we obtain Area 17 if it is surrounded by protected wet lands.
- The issue of the Fan Tower being suggested in the noise presentation by Lisa Waters was brought up again in the Master Plan discussion. It was noted that the fan tower will not be of any significance for the airport. Reason being because if you already are listening to the radio and looking out for navigational aids. The new Fan Tower is not going to benefit the pilot anymore. The equipment and the safety is already there it just needs to be made use of.
- The extension of Runway 14-32 was a topic of discussion. Having Runway 14-32 extended was already suggested at one time in the previous master plan and dismissed by Griener because it was determined it would decrease capacity. Other reasons being were because you would have to crown both Runway 14-32 and Runway 9R-27L in order to keep proper storm water drainage. The suggestion of extended the Runway in the other direction was mentioned but nothing evolved from it due to the fact that if you extended the runway in the other direction the Runway Protection Zones, Runway Safety Areas and the Obstacle free zones would not allow it.

IV. The information and feedback from the MSPG will be compiled and developed into the future chapters of the Master Plan as well as making certain changes with the suggestions that were made to the current chapters. The changes and new information compiled will be distributed to the Master Plan Study Group prior to the next meeting on December 20, 2001 at 3:00 P.M. in the SLCIA General Aviation Terminal Building.

**MINUTES OF THE ST. LUCIE COUNTY**  
**INTERNATIONAL AIRPORT**  
**MASTER PLAN STUDY GROUP**

DEC 20, 2001 - 3:00 P.M.  
HELD AT THE ST. LUCIE COUNTY AIRPORT  
FORT PIERCE, FLORIDA

<b>PRESENT.....</b>	<b>REPRESENTING</b>
Frank Lillo.....	Chamber of Commerce
Diane Andrews.....	Commissioner Lewis
Dick Thoma.....	Commissioner Barnes
Skip Lyshon.....	Industrial Park
Lena Ghaffari.....	Aircraft Service Center, Inc
Mayor Thiess.....	St. Lucie Village
Paul Phillips.....	St. Lucie County International Airport
Heather Young.....	County Attorney
Bob Bangert.....	Conservation Alliance
Roger Orr.....	City of Port St Lucie
Robert E. Barnhart.....	Hoyle, Tanner & Associates, Inc.
William J. Hess.....	Hoyle, Tanner & Associates, Inc.

<b>Absent.....</b>	<b>REPRESENTING</b>
Dominic Scotto.....	Commissioner Hutchison
Charlie Serge.....	Commissioner Coward
Major Ed Enns.....	City of Fort Pierce
Bob Clark.....	Commissioner Bruhn
Michael Cohen.....	AriBen Aviator
Councilman Jack Kelly.....	City of Port St. Lucie
Adam Houck.....	Fort Pierce Air Center
F. Dewitt Beckett.....	Micco Aircraft Co.

**I. CALL TO ORDER**

The Master Plan Study Group meeting was called to order by Mr. Barnhart at 3:05 P.M.

An attendance sign in sheet was handed around to those present.

**II. The meeting was started with questions and comments to Mr. Barnhart pertaining to the previous meetings and the information that was sent out to the members of the Master Plan Study Group(MPSG).**

It was pointed out that Mayor Bill Thiess was present at the previous MPSG meeting that was held on August 16<sup>th</sup>. Mr. Barnhart apologized for not showing Mayor Thiess as being present for that meeting and stated to the MPSG the importance of signing in at the meetings to assure accuracy of who is present and who is not.

The next issue raised was about the pavement strength of the future parallel runway. It stated in the handouts that the pavement was to have flexible pavement strength of 90,000 lbs. and that it was agreed upon. The members of the MPSG noted that they never agreed on a strength of 90,000 lbs. for the future parallel runway and that it was not needed because the future runway is being planned for small aircraft that will never

exceed that weight of 60,000 lbs. This issue was discussed for a short time and it was decided that it should be carried over to the next meeting because some of the people that had issues with it at the August 16<sup>th</sup> meeting were not present at this meeting.

The next small comment that was brought up was that the MPSG only had received minutes from the August 16<sup>th</sup> meeting and not the June 21<sup>st</sup> meeting. Mr. Barnhart said that he would send out to each MPSG member the minutes from the June 21<sup>st</sup> meeting.

Since the last meeting the tragic events on September 11<sup>th</sup> have taken a tremendous effect to the aviation world. The concerns that were raised pertain to the forecasts that were forecasted before 9/11. Mr. Barnhart along with Paul Phillips announced to the MPSG that the operations at St. Lucie County International Airport (FPR) were immediately impacted by 9/11, but have bounced back and are still increasing at the same rate or even greater than before the tragedy. So the forecasts that were determined before hand will stay as they are.

Another action that was talked about was the recently at FPR the FAA has put some restrictions on the Touch and Go activity at the airport. Questions where raised as to what effects this would have and the activity at the airport. Currently it is too soon to tell as to what will happen.

It was suggested after all these important issues raised that it would be important to the MPSG to send a letter to all the absent members of the MPSG to inform them and prepare them for the next MPSG meeting. The letter will contain the Minutes from the June 21<sup>st</sup> meeting and discuss the issues that have been raised and have concern on from the MPSG.

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The next issue raised was in the scheduling and the number of meetings. Some members of the MPSG have raised comment that they feel a meeting will be needed between February 21<sup>st</sup> and April 1<sup>st</sup>. This was discussed for a bit and then decided upon that instead of having an extra meeting that the public meeting would be moved ahead of the February 21<sup>st</sup> meeting to allow the MPSG to reflect and give feedback on the comments and questions that were raised by the public.

- III. The presentation by Mr. Barnhart explaining the work done on the last three chapters of the master plan began after the MPSG gave input on the concerns that they had. The Airport Plans, Environmental Overview, and the Capital Improvement Program chapters were presented and then questions and comments were taken from the MPSG.

The issues raised by the MPSG concerning the information presented by Mr. Barnhart are as follows:

#### Chapter 5 – Airport Plans

- The Airport Plans have been being developed throughout the Master Planning Process. These plans were shown to the MPSG and reviewed for comments.
- The barrier islands on some of the drawings and exhibits were not displayed accurately. Mr. Barnhart noted that a standard background for these drawings containing the barrier islands would be established.

- Mr. Barnhart also announced to the MPSG that Drawing 9 would become Drawing 8.
- The next issue that was raised was that St. Lucie Village should not just be zoned as St. Lucie Village but rather as individual entities, such as low residential, commercial, etc.

#### Chapter 6 – Environmental Overview

- The main issue that was raised under the Environmental Chapter dealt with if there was going to be a need for an Environmental Assessment (EA) for the future parallel runway because of the large amount of acres of land that will be used to create it. Mr. Barnhart stated that the need for an EA can only be determined by the FAA and could not himself say if there would be a need for one or not.
- Also discussed under the Environmental Chapter was the on going signage project and the fact that that required an Environmental Assessment which is currently already in process.
- It was noted in the Environmental Overview Chapter that Exhibits 6A – 6I were changed to Exhibits 6A – 6E.
- The comment was also raised on this chapter asking why it says that the Master Plan does not identify any problems nor are there any problems with Environmental Assessments. The question was asked, “How can there be no problems identified if it has not been evaluated yet?”

#### Chapter 7 – Capital Improvement Plans

- The question was raised about what is meant by reimburse money back to the Florida Department of Transportation. Mr. Barnhart and Mr. Phillips clarified that saying that the airport had gotten money from the FDOT before with the understanding that overtime the airport would give the money back when it was available to give back.
- The fencing project was also discussed and notified the MPSG that because of September 11<sup>th</sup> and what had happened that the fencing projects would be sped up dramatically for safety and security reason, not just for FPR but airports nationwide.
- Money was a large issue that was brought up about the airport itself, how money is dealt, the airport needing to capitalizing on revenues, and having a clear picture on when the what it will take for the airline to make a profit.
- In the Chapter, it say “ why big swings under others in” the MPSG asks what others is defined as.
- Airport revenue was also discussed asking where the income goes that is brought in for different areas on the airport. One area that was brought up was the golf course.

Mr. Phillips stated that the airport does not get any money from the golf course at all. The golf course is in its own relationship with the county and has nothing to do with the airport in terms of money. Mr. Phillips also stated that not all the revenues from property on the airport went into the airport revenue, if that were the case then the airport would be profitable all the time.

- IV. The presentation with comments and questions was followed up by a final call on any questions the MPSG might have on anything that they feel necessary. A reminder was brought up pertaining to the public meeting and that there will be a need for a notice to be sent out. This again brought up a small discussion on what would be a good date to have this meeting. The meeting was determined to be a couple of weeks ahead of the February 21<sup>st</sup> meeting. Everyone was in favor of such a date, so the third MPSG meeting came to an end.
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# MINUTES OF THE ST. LUCIE COUNTY

## INTERNATIONAL AIRPORT MASTER PLAN STUDY GROUP

FEBRUARY 21, 2002 - 3:00 P.M.  
HELD AT THE ST. LUCIE COUNTY  
INTERNATIONAL AIRPORT  
FORT PIERCE, FLORIDA

<b>PRESENT.....</b>	<b>REPRESENTING</b>
Diane Andrews.....	Commissioner Lewis
Roger Orr.....	City of Port St. Lucie
Bob Bangert.....	Conservation Alliance
Major Ed Enns.....	City of Fort Pierce
Errol Houck.....	Fort Pierce Air Center
Adam Houck.....	Fort Pierce Air Center
Lena Ghaffari.....	Aircraft Service Center, Inc
Dominick Scotto.....	Commissioner Hutchinson
Dick Thoma.....	Commissioner Barnes
Charlie Serge.....	Commissioner Coward
Fannie Howard.....	No One
Carla Roccapriore.....	Tribune
Jim Van Hekken.....	Riverwood
Heather Young.....	County Attorney
Paul Phillips.....	St. Lucie County International Airport
Ronald Hall.....	St. Lucie County International Airport
Al Finster.....	St. Lucie County International Airport
Robert E. Barnhart.....	Hoyle, Tanner & Associates, Inc.

<b>ABSENT.....</b>	<b>REPRESENTING</b>
Frank Lillo.....	Chamber of Commerce
Mayor Bill Thiess.....	St. Lucie Village
Bob Clark.....	Commissioner Bruhn
Skip Lyshon.....	Maverick
Councilman Jack Kelley.....	City of Port St. Lucie
Michael Cohen.....	Ari Ben Aviator
F. DeWitt Beckett.....	Aircraft Manufacturing

### I. CALL TO ORDER

An attendance sign in sheet was passed around during the meeting to all those present.

The Master Plan Study Group meeting was first started at 3:15 P.M. by Robert Barnhart of Hoyle, Tanner & Associates to discuss the "MPSG Comments to the February 2002 Draft AMPU.

### II. Discussion regarding the "General" issues began.

- The first discussion was to add a 60,000 lbs. weight threshold to the new parallel RW 9L-27R with agreement by the group.

- The next discussion regarded Issue 8 - extending RW 14 and why. To qualify RW 14/32 as a secondary runway and remove the threshold from the RW 9-27 RSA. Research shows that it will not be excessively difficult to mate the two runway spines together.

- The next discussion regarded Issue 1 - to review the forecasts. The forecasts were developed anticipating the Pan Am growth and 2.5% annual growth. Additional explanations to be inserted into the AMPU.

- The next discussion regarded Issue 2 - for more accurate drawings of the Barrier Islands in the AMPU.

- The next discussion regarded Issue 3 - to consider more aggressive forecasts and airport development. The team discussed that this was reviewed with the understanding of existing conditions taken into account and the forecasts were acceptable.

- The next discussion regarded Issue 4 & 7- request for greater parallel RW separation. The group determined that the need to keep the training traffic on-airport was critical and requested consideration of closer RW separation in order to avoid environmental issues. The MPSG determined that 2500', 3100' and 3800' scenarios would be depicted in the AMPU.

- The next discussion regarded Issue 5 - consider longer parallel RW length. The team discussion felt that 400' was optimal for the use of training traffic aircraft.

- The next discussion regarded Issue 6 - concern that the AMPU states no impacts to areas. The team discussed that the Environmental Overview sections points out specific areas of consideration to be reviewed prior to significant projects and does not specify projects with no impacts.

III. The individual notes on the chapters were discussed as editorial except 1.4 was found to be mis-read as "town" should have been "tower". A request to update the statistical data in Chapter 1 from 1999 to the most recently released was discussed and will be included in the AMPU.

IV. Comments from outside the MPSG were read with the consultant's responses as acceptable.

~~V. The Airport Master Plan Study Group concluded the meeting with a motion to accept the St. Lucie County International Airport - Airport Master Plan Draft Final Technical Report with the above mentioned comments included, and to present this document to the St. Lucie Board of County Commissioners for consensus.~~

# MPSG Comments to the February 2002 Draft AMPU

## GENERAL

- 1 A request to review the forecasting methods.
- 1A The Forecasts compensate for the arrival of Pan Am and the highly expected increases in aircraft and operations associated with the.
- 2 A request for more accurate drawing of the Barrier Islands. Done
- 3 A request to consider more aggressive forecasts and alternatives such as: a Cargo hub, Regional Carrier hub, with a vision for more tourism and business.
- 4 A request to review parallel runway separate of 4,300' for dual operations.
- 5 A request to consider longer parallel runway length.
- 6 A concern about wetland and habitat mitigation. That the MPU states that there is no impact to these areas.
- 6A The MPU addresses 19 specific areas of environmental concerns to be research through an EA or EIS prior to proceeding with any development.
- 7 A request for the MPSG to consider the closest allowable runway separation (2500') to the effort to avoid environmental impacts.
- 8 What about an extension to get out of 9-27 RSA? Safety vs. capacity **BOTH**  
Credit Page - Remove Heather Young, Paul Phillips, Robert E. Barnhart and William J. Hess from this page.

## CHAPTER 1

- 1.0 - "County Offices" should read "County Office"
- 1.1.3 - make the directions more specific getting to the airport
- 1.1.3 - add access roads to the airport.
  1. Jet Center Terrace, coming west off Industrial 33<sup>rd</sup> St. which intersects St. Lucie Blvd. at the eastern boundary of the airport.
  2. The entrance to an Air Charter facility about 0.35 miles west of 33<sup>rd</sup>, or about 0.15 miles east of Curtis King, turning north off St. Lucie Blvd.
  3. Airman's Dr., coming east off Hammond Rd. which comes north of St. Lucie Blvd. about 0.55 miles west of Curtis King Blvd.
- 1.1.4 - "key role in the areas" change "in" to "as"
- 1.1.4 - add to the end of the first paragraph. "One of the earliest settlements in St. Lucie County lies within the are that is presently incorporated as the Town of St. Lucie Village, immediately east of the airport. St. Lucie Village Historic District is listed on the National Register of Historic Places and contains approximately two dozen historic homes dating back to 1875."
- 1.1.4 - "Although dated" should read "Although incorporated"
- 1.1.4 - "cattle ranches in the area." Remove "in the area"  
"draw in vacationers" should read "draw vacationers"  
"found here, all this together with a yearly average temperature of 73.7 degrees makes St. Lucie County" should read "found here. All this, together with a yearly average temperature of 73.7 degrees, makes St. Lucie County"

- Table 1-5 Put an \* next to Ari-Ben and PanAm because they are subleases at the Airport.
- 1.2.6 – “‘H’ designates these areas” should read “‘H’ which designates these area”
- 1.3.1 – check the location of Fort Pierce Air Center in relation to Curtis King Blvd. (east)
- 1.3.2 – “On-Airport property” does not required a hyphen.  
 “The City has been” should read “The County has been”
- 1.4 – The ATCT is in operation from 7:00 a.m. until 9:00 p.m., seven days a week
- 1.4 – “the FAA began operating and servicing the airport in 1989.” should read (the FAA began operating and servicing the town in 1989.” \*
- “and all IFR traffic in to” should read “and all IFR traffic into”
- 1.6.1 – “safety zones including” should read “safety zones, including”  
 “As stated in this plan as Goal 2.7...” should read (Goal 2.7 of the comprehensive plan stated)  
 “Free Areas free and clear” should read “Free Areas, free and clear”
- 1.6.2 – “This land use is regulated by the County’s Land Development Code” should be changed to “Land use with in unincorporated areas is regulated by the County’s Land Development Code”  
 Add to first paragraph. “Land use within the Town of St. Lucie Village, immediately east of the airport is regulated by the Town’s Comprehensive Plan and Zoning Ordinance and is primarily residential”
- 1.6.2 – Add “Each jurisdictional entity within St. Lucie County has the ability to control its own land use.”  
 Add sentence regarding residential areas east and south of the airport as substantial. The statement here treats them lightly.
- 1.6.2 – “Near the coastline and US 1, there is a small area of mixed residential developments and commercial areas.” Changed to “Near the coastline and US1, is the Town of St. Lucie Village and other unincorporated, mixed residential developments and commercial areas.”
- 1.6.4 – “from neighborhood surrounding the airport.” Make neighborhood plural.  
 “The west perimeters” perimeters should be singular.  
 “different uses ranging” should read “different zoning districts ranging”  
 “This land use is regulated” should read (These zoning districts are regulated”
- Table 1-10 – “St. Lucie County Firefighters” should read “St. Lucie County Fire District”
- 1.7.1 – “large citrus crops” should read “large citrus groves”
- 1.7.2 – why is 1999 data used. The new numbers have been released.
- Exhibit 1-A.– St. Lucie Village should be identified on the Airport Vicinity Map

## CHAPTER 2

- 2.0.1 – “But by analyzing” should be (By analyzing).  
 “the proposed touch and go restriction” should read “the voluntary touch and go limitations”
- 2.1.3 – “difference of the number” should read “difference in the number”
- 2.1.4 – “the State is at a higher rate” should read “it is at a higher rate”  
 “FASP growth rate, projected a” should not have “a”  
 “The forecast developed, based on a Multiple Regression” remove the (,)  
 “It was determined with an average annual growth rate of 2.5% that the Multiple Regression Analysis was the preferred forecasting methodology.” change to “With

- an average annual growth rate of 2.5%, it was determined that the Multiple Regression Analysis was the preferred forecasting methodology."
- 2.2 – "and the fact that current" should read "and in light of that fact that current"
- 2.2.8 – "operations have accounted for" should read "operations accounted for"

### CHAPTER 3

- 3.1.1 – "capacity on the airfield" should be "capacity of the airfield"
- 3.1.4 – "crosswinds for Runway 9-27 exceed 12 or 15 knots (aircraft dependent conditions." remove "conditions"
- 3.1.18 – "Table 3-5 shows that the runway" should read "Table 3-5 shows the runway"
- 3.3.3 – question was asked if the airport is getting RVR equipment?
- 3.8 – Airport Access – this paragraph is inaccurate and should be rewritten.

### CHAPTER 4

- 4.1 – "under Section 1.16" change to "under Section 3.1.16"
- 4.2.1 – "wheel strength FAA standard" change to "wheel strength. FAA standard"
- 4.2.1 – 3<sup>rd</sup> paragraph second line should read "The development criteria are based" "approaches into the proposed" change to "approaches to the proposed"
- 4.2.2 – "GPS/DME (N-1)" should read (GPS/DME (N-2))  
"Runway 9,27,14 and 32 (N-2)" should read "Runway 9, 27, 14 and 32 (N-3)"  
"Beacon and Tower (N-3)" should read "Beacon and Tower (N-4)"
- 4.2.4 – "and the Authority has acquired" change to "and the County has acquired"
- 4.3 – "These land is necessary" changed to "This land is necessary"  
"projects programmed in " change to "projects are programmed in"
- 4.3 (L-1) – Need to refer to Airport Property Map.
- Table 4-1 – should read :between "Thresholds 9 and 14"

### CHAPTER 5

- 5.4 – comment – request comments relative to compatible land use planning (Drawings 6 & 7 of 8) – "River Woods Development" label should be adjusted to the proper location. The town of St. Lucie Village should be label on the southern end as well as the northern.

### CHAPTER 6

- 6.2 – what does FONSI stand for? Finding Of No Significant Impact
- 6.2.11 – "Exhibit 6-J" should be (Exhibit 6-F) comment – a sentence refers to the wetland areas located south, west and north but omits the wetlands areas to the east.  
(Exhibit 6-A) – Title should be changed from "St. Lucie County International Airport Land Use" to "St. Lucie County International Airport & Vicinity Land Use"

### CHAPTER 7

- 7.2.1 – "St. Lucie County Fire Safety" should read "St. Lucie County Fire District"

### Comments from outside the MPSG

- (Comment) – “As the plan has no constraints, and none are approved, I feel it is not a very useful tool in this airports long range development plans. The master plan barely touch on non-compatible areas which are now negatively impacted by noise pollution and does not touch at all on areas which maybe impacted with unconstrained growth”
  - (Response) - The FAA requires that the AMP Forecasts be developed as unconstrained. The Environmental Overview section addresses specific issues to be addressed by the proposed development. A FAR Part 150 Noise Study, which will address aircraft noise impacts on the community, is recommended in this report.
  - (Comment) – There is no direction given as to alternatives, which would allow future development of the airport and keep it compatible with the community as a whole. One thing this plan makes very clear is the damage unconstrained growth has already done. A quick look at the previous noise contour maps and the present on depicted on the plan shows a total lack of due diligence and planning by the airport proprietors and a total lack of constraint in previous development.”
  - (Response) - The fact that the County has aggressively purchased property surrounding the airport and zoned other properties adjacent to the airport (see Exhibit 6-4 Land Use) shows a significant effort on its part to reduce or prevent property owners from creating areas of incompatible land-use due to aircraft noise.
-