Page Field
General Aviation Airport

Master Plan Update • May 2002

Submitted by

Birk Hillman Consultants, Inc.

Lee County Port Authority
Page Field
General Aviation Airport

APPLICATION FOR
A COMPREHENSIVE PLAN AMENDMENT
LEE COUNTY, FLORIDA

for

PAGE FIELD GENERAL AVIATION AIRPORT

September 2007

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Volume II of III

PAGE FIELD GENERAL AVIATION AIRPORT
LEE COUNTY COMPREHENSIVE PLAN AMENDMENT
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*The Airport Layout Plan (ALP) in the Airport Master Plan in Volume II has been updated, and the updated version of the ALP is located in Volume III of this application.

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Chapter One - Introduction

INTRODUCTION

This Airport Master Plan Update for Page Field General Aviation Airport (FMY) was prepared in accordance with the requirements of the Federal Aviation Administration (FAA), and the Florida Department of Transportation (FDOT). All portions of this document are based on the criteria set forth in the FAA Advisory Circulars (AC) 150/5070-6A, "Airport Master Plans," AC 150/5300-13, Change 5, "Airport Design," as well as the FDOT's Guidebook for Airport Master Planning.

The elements of this study provide a comprehensive analysis of current airport facilities, determination of trends, and activities affecting the airport. The master plan will result in the preparation of airside and landside alternative analysis, preparation of a financial plan, an environmental overview, and an Airport Layout Plan set that meets the FAA and FDOT criteria to guide future development on the airport. All of the recommendations made in this document are focused on maintaining an adequate, safe, and reliable facility to meet the air transportation needs of the community.

OBJECTIVES

The primary goal of this airport master plan study is to create a twenty-year development program that will maintain a safe, efficient, economical and environmentally acceptable airport facility for Lee County. By achieving this goal, the document will provide the guidance to satisfy the aviation demand in a financially feasible and responsible manner, while at the same time addressing the aviation, environmental, and socioeconomic issues of the community. In support of this goal, the following objectives were considered:

- Identify airside, landside, and airspace improvements and recommend options to further optimize the economic aspects of the airport while enhancing the safety and operational capability.
- Establish an implementation schedule for short, intermediate, and long-term improvements and insure that they are financially feasible.
- Identify short-term requirements and recommend actions to optimize short-term funding opportunities.
- Insure that short-term actions and recommendations do not preclude long-range planning options.
- Incorporate the interests of the public, airport users and government agencies into the planning process.
- Be sensitive to the overall environmental characteristics and needs of the area surrounding the airport.
- Reflect current comprehensive land use (on and off airport property) and make recommendations as to compatible land uses and the appropriate steps necessary to ensure proper zoning and minimum noise impacts.
- Enhance operational efficiency and safety of the airport through the review of airport maintenance programs, operating procedures, and minimum operating standards.

KEY ISSUES

The last airport master plan update was accepted by the FAA in October of 1993. This was the last comprehensive look by the Lee County Port Authority at the existing conditions and future plans and goals for the airport. Therefore, the County decided to revisit and revalidate its goals and objectives for the continuation of a strong and viable general aviation airport. Prior to the start of the master plan update, there were a number of key issues identified by the Port Authority, as well as the FAA, requiring attention. These issues include:

- The current approved ALP carries an adaptation to FAA standards for deviations to the runway safety area and object free area standards for Runway 5-23.
- The cost and facilities required to improve the Runway 5 visibility minimums.
- The feasibility of using the Declared Distance Concept for determining appropriate runway lengths.
- Potential land uses and strategies for non aviation related property that the airport has acquired to maximize revenues.
- The uses of aviation and non aviation land, including areas, and cost.

The preceding list is not an exhaustive delineation of the issues considered in the master plan update. The master plan also reviews the land area needs of the airport, the potential absorption of land for aviation development, and the local environmental conditions that may impact property acquired by the airport and its development viability.

This master plan defines the current and future aviation demand at the airport; the means and alternatives for addressing this demand; and the role of the airport in the local, regional, and national aviation system. The master plan also provides a capital improvements program for future development of the airport, as well as an overview of land use compatibility issues in the airport environs and possible recommendations and options for addressing land use compatibility.

PROCESS

This airport master plan provides the officials responsible for the scheduling, budgeting, and ultimate funding of airport improvement projects with an advance notice of the future needs of the airport. By phasing the airport improvements, the development of the airport can be conducted in an orderly and timely fashion. To accomplish the objectives identified in this master plan, the study has included the following tasks:

- Conduct an inventory of the existing documents related to the airport, the physical airport facilities, the demographics of the airport service area, and the airport environment.
- Collect historical operational data, conduct tenant interviews, and forecast aviation activity through the year 2020.
- Evaluate and compare the airfield capacity to the expected aviation activity.
- Determine the airport facilities required to meet the forecast demand.
- Develop and evaluate alternative methods to meet the facility requirements of the airfield.

- Create a concise Airport Layout Plan drawing set reflecting the proposed improvements through the year 2020.
- Compile a schedule of the proposed improvements to include the cost estimates and phasing.

Overall, the master plan will provide the sponsor with a comprehensive overview of the airport's needs over the next twenty year time period, including issues related to the timing of proposed development, costs for this development, methods of funding, management options, and a clear plan of action. Funding for the completion of this airport master plan has been assisted by the FDOT.

Chapter Two - Inventory of Existing Conditions

AIRPORT SETTING

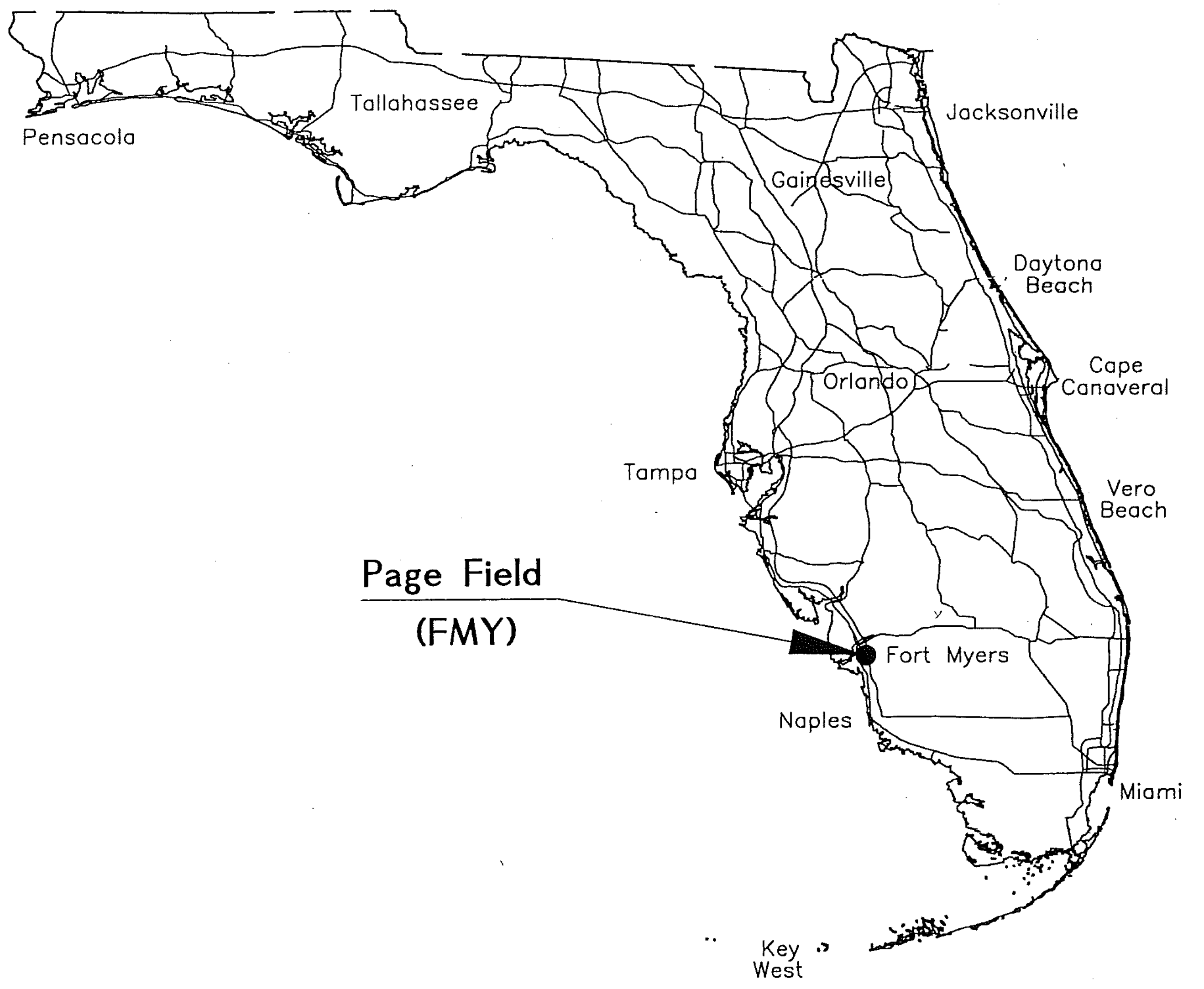
Page Field Airport (FMY) is located in Southwest Florida, approximately four miles south of downtown Fort Myers. The airport has a reference point elevation of 17 feet mean sea level (MSL.) and a magnetic variation of three degrees west. The airport serves a significant amount of the region's general aviation activity including small single engine piston aircraft as well as a number of corporate and business jet operations. **Exhibit 2-1**, a general location map of the airport, depicts the relationship of FMY to other major cities in the region. The airport is included within the National Plan of Integrated Airport System (NPIAS), which is published by the U. S. Department of Transportation. The NPIAS is a congressionally mandated program for development of a national system approach in planning for new airports, and expansions and improvements at existing airports. NPIAS identifies the estimated airport development and planning costs necessary to expand and improve the national system of airports.

In the NPIAS, the role of each airport is identified as one of five basic service levels. These levels describe the type of service that the airport is expected to provide the community through the end of the NPIAS five-year planning period. A former military training base and air carrier airport, FMY no longer has any regularly scheduled flights. The airport is designated as a public use General Aviation - Reliever Airport according to the most recent (1999) NPIAS. In the NPIAS there are 88 airports in the State of Florida with the general aviation designation of which 32 are classified as relievers. Page Field was designated a reliever airport to help reduce demand at the local area commercial service airports such as Southwest Florida International Airport and Naples Airport of the smaller aircraft associated with General Aviation operations.

Locale

Most of the property comprising Page Field Airport is located within Lee County. However, a portion of the land on the north side of the airport falls within the incorporated limits of the City of Fort Myers. The airport itself occupies approximately 616 acres of land located south of the city of Ft. Myers, just to the east of U.S. 41 (Cleveland Ave). The airport is owned by Lee County and is operated by the Lee County Port Authority. Lee County includes the cities of Ft. Myers, Cape Coral, Bonita Springs, Fort Myers Beach, and the popular resort areas of Sanibel and Captiva Islands (see **Exhibit 2-2**). The County is bordered by Charlotte County to the north, Hendry County to the east, Collier County to the south, and the Gulf of Mexico to the west.

There are a number of private and public use airports within a 30-mile radius of FMY. The most significant is Southwest Florida International Airport (RSW), located less than 10 miles east and south of FMY. Southwest Florida International Airport provides regularly scheduled domestic air carrier service as well as international air carrier service for the southwest Florida region. According to Lee County Department of Tourism, nineteen domestic and eight international passenger airlines provide flights into and out of Southwest Florida International Airport. The airport is also served by three air cargo carriers, most notably, United Parcel Service (UPS), Federal Express (FedEx), and Airborne Express.



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PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

NOT TO SCALE

Date: 04/07/2000

Location Map
Exhibit 2-1

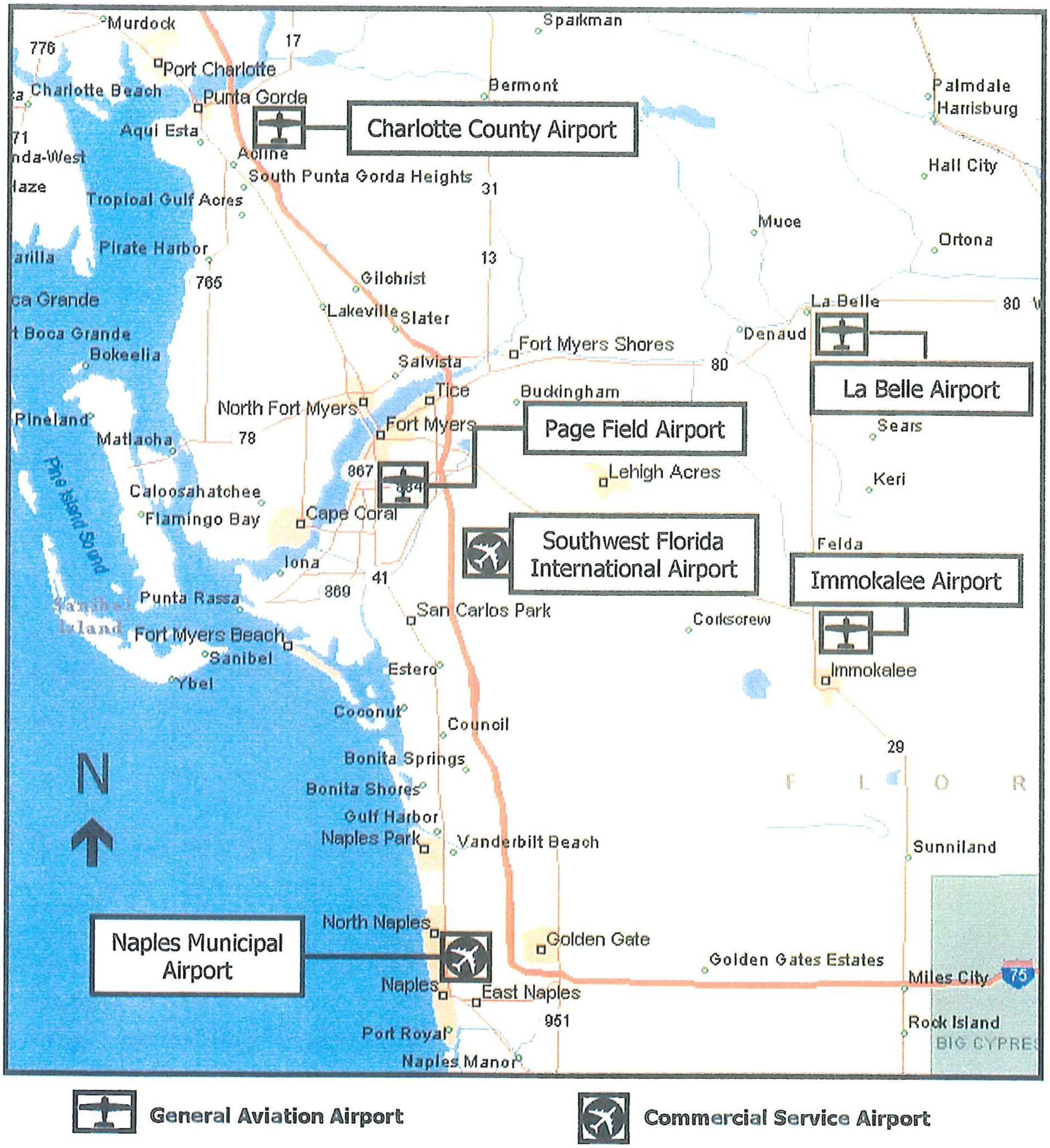


EXHIBIT 2-2
Airport Vicinity Map
Fort Myers, FL

Excluding RSW, there are four other public airports in Southwest Florida within 30 miles of FMY that offer general aviation services. These include Charlotte County Airport, Immokalee Airport, La Belle Municipal Airport, and Naples Municipal Airport. Aside from these airports there are at least 12 privately owned airstrips within a 30 miles radius of FMY. **Table 2-1** provides a comparison of some aspects of these public airports.

TABLE 2-1
PUBLIC AIRPORTS IN THE REGION

Airport	Runways	Instrument Approaches	Services
Page Field Airport	5-23 (6,401' x 150') 13-31(4,997' x 150')	ILS Runway 5 VOR/ GPS Runway 13 NDB and GPS Runway 5 GPS Runway 23 and 31 Circling VOR or GPS ASR all runways	Fuel – 100LL, & Jet A Major Airframe Repair Major Powerplant Repair High Pressure Oxygen Major Avionic Repair Landing Rights Airport
Charlotte County Airport	3-21 (6,580' x 150') 15-33 (5,049' x 150') 9-27 (5,044' x 150')	VOR / DME Runway 27 RNAV / GPS Runway 27 VOR / GPS Runway 3 VOR / GPS Runway 21 Circling VOR / GPS	Fuel – 100LL, & Jet A Major Airframe Repair Major Powerplant Repair
Immokalee Airport	4-22 (5,001' x 150') 9-27 (5,000' x 150') 18-36 (5,000' x 150')	VOR / GPS Runway 18 Circling VOR / GPS	Fuel – 100LL & Jet A Minor Airframe Repair Minor Powerplant Repair
La Belle Municipal Airport	14-32 (3,810' x 50')	Visual Approaches Only	Fuel-100LL Major Airframe Repair Major Powerplant Repair
Naples Municipal Airport	5-23 (5,000' x 150') 14-32 (5,000' x 100')	VOR / NDB Runway 5 GPS Runway 5 VOR / NDB Runway 23 GPS Runway 23	Fuel – 100LL & Jet A Major Airframe Repair Major Powerplant Repair High Pressure Oxygen Low Pressure Oxygen

Source: Southeast U.S. Airport Facility Directory and Southeast U.S. Terminal Procedures.

Climate

Page Field Airport is situated in Southwest Florida, where the climate is considered to be tropical. With the location of the airport only minutes from the Gulf of Mexico, the climate of this region is often influenced by the maritime air masses developing out over the ocean. In the summertime, daily afternoon thunderstorms are very typical of this region due to high temperatures and humidity. The frequency of various weather phenomena can have a direct bearing on the capacity of an airport, specifically with regard to movement areas such as runways. It is therefore imperative that the meteorological conditions at Page Field Airport be carefully analyzed.

Temperature

One of the most important factors affecting aircraft performance is temperature. During the summer months high temperature conditions may dramatically decrease aircraft engine performance and require increased take-off distance. The impact of the high temperature upon runway length requirements (and potentially runway capacity) is determined through the use of a formula, which corrects the aircraft take-off length requirements for environmental factors such as runway slope, altitude, and temperature. According to metrological data compiled by National Oceanic and Atmospheric Administration (NOAA) the hottest month of the year at FMY is August with an average maximum temperature of 91.4 degrees Fahrenheit. During the winter, FMY experiences the coldest average temperatures during the month of January, which has an average high temperature of 53.2 degrees Fahrenheit.

Precipitation

The amount and type of precipitation experienced by any airport is a concern due to the effects that water may have on the braking action of landing aircraft as well as the ceiling and visibility at the facility. A wet runway surface can result in reductions in the deceleration rates due to reduced friction. Precipitation in Southwest Florida occurs during all seasons, however is more abundant during the hotter summer months of June, July, and August, accounting for an average of 9.15 inches of rainfall a month at FMY. The driest months are April, November and December, accounting for an average of only 1.40 inches of rainfall during each of these months. The average annual rainfall for Page Field is 53.44 inches.

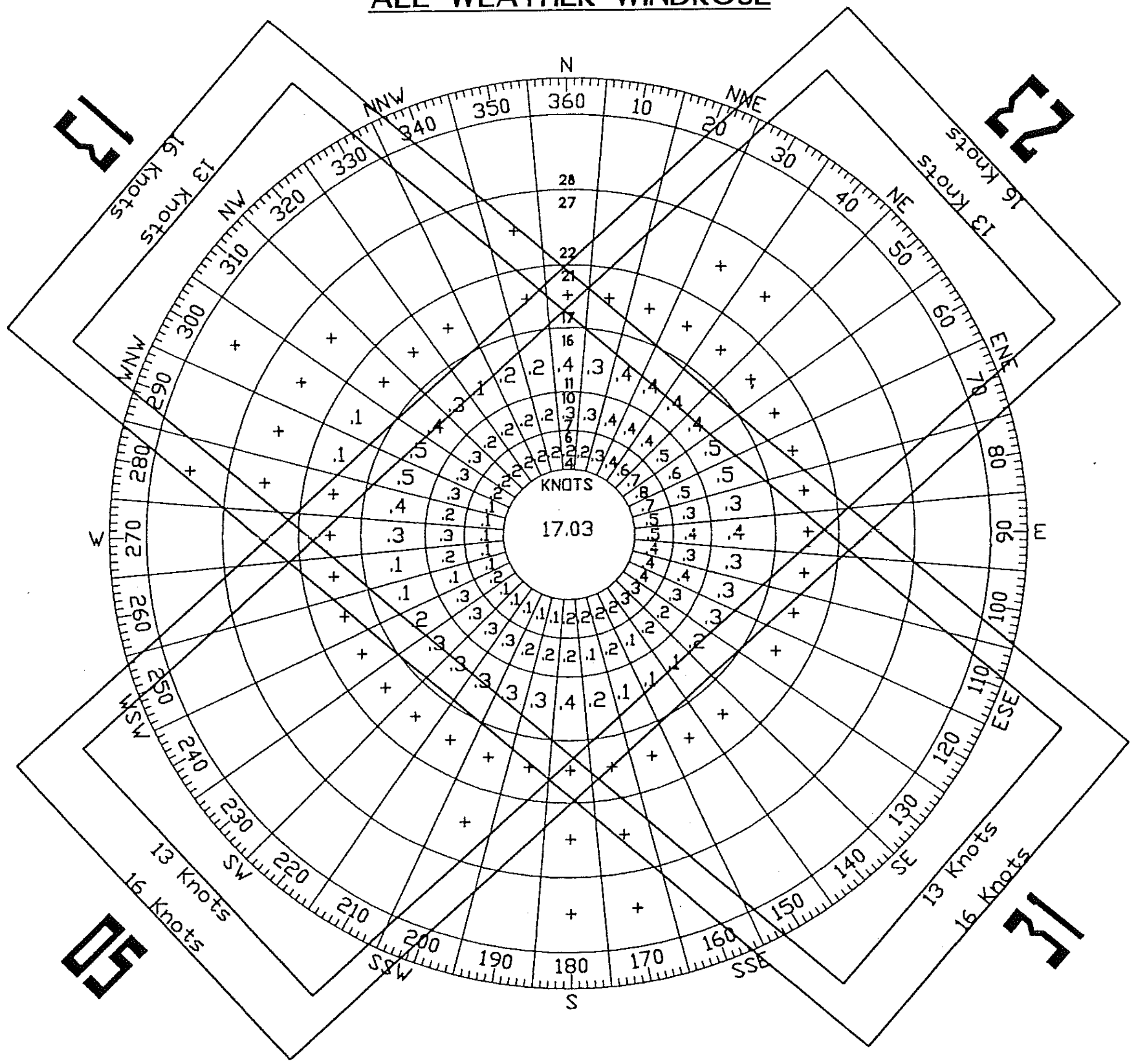
Wind

Wind is a primary factor that influences the number of runways and their orientation. Under ideal conditions, operations (landings and departures) are conducted in the runway direction required to always provide a head wind. Wind is important since aircraft takeoff and land into the wind. The FAA recommends that sufficient runways be provided to achieve a 95 percent wind coverage. Wind coverage for a given runway is that percent of time when the crosswind component is below an acceptable velocity. The crosswind component can be defined as the maximum permissible wind velocity occurring at right angles to (90 degrees left or right of) the true course of a landing or departing aircraft. This is calculated by using a 10.5 knot (12 mph) maximum cross wind component for the smaller, lighter aircraft, while a 13 knot (15 mph) and 16 knot (18 mph) maximum cross wind component is utilized for the larger and jet aircraft. When carrying out an evaluation of this type, the FAA suggests that historical weather information for a period of at least five years is desirable for determining the wind coverage.

Using the data provided by the National Climatic Data Center, wind conditions at Page Field Airport were analyzed for a 6 year period. The existing wind distribution and associated velocities are provided in **Table 2-2** and are assumed to remain consistent through the year 2020, the period of this study. Considering a crosswind component of 13-knots, Runway 05-23 and Runway 13-31 have wind coverage of 98.04 percent and 97.31 percent respectively.

Exhibit 2-3 (All weather wind rose) graphically displays the runway's wind coverage based upon the information provided in **Table 2-2**. Each segment of the wind rose represents a wind direction and speed grouping based on a percentage of the total recorded hourly observations for the airport.

ALL WEATHER WINDROSE



CROSSWIND COMPONENT: 13 KTS.		CROSSWIND COMPONENT: 16 KTS.	
RUNWAY	COVERAGE	RUNWAY	COVERAGE
05/23	98.04 %	05/23	99.68 %
13/31	97.31 %	13/31	99.67 %

OBSERVATION PERIOD: 1990–1995

TOTAL OBSERVATIONS: 50,439

SOURCE: NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, N.C.

Birk Hillman Orlando · Miami · Atlanta	PAGE FIELD AIRPORT MASTER PLAN Fort Myers, Florida	NOT TO SCALE	All Weather Windrose Exhibit 2-3

TABLE 2-2
WIND VELOCITIES AND DIRECTION AS A % OF TIME

Wind	Average Wind Velocity (Kts.)							
Direction	0-3	4-6	7-10	11-16	17-21	22-27	28-33	38-40
0	1,287.8							
10	1.5	84.0	45.3	21.2	1.3			
20	3.2	126.5	78.5	30.0	1.7			
30	5.0	166.8	75.2	35.3	4.0	1.0		
40	6.7	251.8	85.3	37.2	1.8	1.0		
50	6.3	284.8	89.7	35.2	2.2			
60	11.7	342.7	101.7	43.0	1.8			
70	9.3	308.5	86.3	43.2	2.4			
80	7.7	195.3	51.2	24.8	1.0			
90	9.8	227.0	63.3	31.0	2.7			
100	6.3	173.2	52.0	24.2	1.3			
110	10.5	180.3	63.2	21.8	2.0			
120	8.5	194.7	60.8	22.2	1.0			
130	6.0	128.8	45.3	15.3				
140	5.7	105.3	34.0	10.3	1.0			
150	4.8	98.3	24.3	9.5	1.0			
160	4.0	72.5	28.5	9.8	1.0			
170	4.0	66.7	22.3	13.3	1.3	1.0		
180	4.7	82.7	40.2	30.5	2.2	1.0	1.0	
190	1.0	59.8	38.5	27.5	1.3			
200	2.7	49.3	38.7	26.5	2.8	1.0		
210	0.7	51.5	43.0	28.5	1.7			
220	2.5	52.7	45.8	24.7	2.8			
230	1.8	53.5	48.7	25.5	1.0			
240	2.7	78.5	56.7	18.3	1.0			
250	0.8	59.8	30.8	8.3	3.0			
260	1.5	47.5	36.8	11.0	2.5			
270	0.7	49.3	47.8	23.8	1.3			
280	1.3	41.7	39.3	31.8	1.8	1.5	2.0	
290	1.2	60.0	50.8	41.3	5.3	2.0	0.0	1.0
300	2.0	79.3	56.3	41.7	5.7	1.7	1.0	
310	1.5	87.3	48.3	29.5	2.6	1.0		
320	1.3	71.5	41.2	24.5	2.3			
330	1.3	66.8	35.8	11.8	1.0			
340	1.7	68.3	36.3	15.8		1.0		
350	1.0	64.5	31.8	15.2	2.3	1.0		
360	2.3	76.2	48.8	33.2	2.2			
Total								

Source: NOAA, NCDC: 1990 – 1995 Hourly Weather Observation, BHC Analysis, 2000

Analysis of the tables and review of the graphic determines that the existing Runway 05-23 and Runway 13-31 at Page Field Airport provide adequate wind coverage. Based on this, wind conditions do not warrant consideration of an additional runway at FMY.

Airport History

Aviation was introduced to Lee County in 1918, when a landing strip was constructed at Ft. Myers Beach, then called Crescent Beach. Two airstrips had been built in Arcadia for the purposes of training Army Air Corps pilots during World War I. Pilots would fly from the Arcadia airport, designated Carlstrom Field, to the beach landing strip on their days for rest and relaxation.

In 1924 the city of Ft. Myers acquired a quarter section of land south of Ft. Myers from Charles A. Stadler, president of Stadler Realty Company. Initially, the land was to be used as a municipal golf course, but shortly thereafter it became earmarked as the site for a new airport. The airport, now known as Page Field, was ultimately named to honor Channing Page, a World War I hero, and a highly respected member of the community. In 1926, the airport consisted of two 300' wide runways in an L configuration along the two sides of the city owned quarter section. By April 1, 1926 daily airmail service was introduced to the Ft. Myers area by Reid M. Chambers, president of Florida Airways. At this time the airport was a joint use military and civilian airfield. Shortly thereafter, in May of 1927, Charles Lindbergh made his famous solo flight from New York to Paris which resulted in renewed focus on the practical uses of aviation.

In 1937, National Airlines began scheduled passenger service and airmail and air express to the Fort Myers area driving the construction of an initial 4000' asphaltic surface runway. There were operational concerns during wet runway conditions which existed almost from the start of their service. With the continued threat of service cancellation, concerns about safety, and insufficient funds available for improvements, the City finally transferred ownership of the airport to Lee County in order to qualify for Federal monies from the Works Projects Administration (WPA). With voters backing a bond issue, work on three concrete runways was started on January 1, 1940, by the WPA. The work was later taken over by the Civil Aviation Association (CAA) and finally, the US Army. With the advent of World War II and the availability of 8000' long runways, February 1943 saw P-39-1s stationed at Page Field, transforming the base into a training ground for "high tech" pursuit fighter planes. The airport played a big role in World War II, and was considered a site for an important and top secret development in the war against Japan. Fort Myers was also the home to the 310th Aviation Squadron, an all African American squadron. Over the years many events and changes have taken place at the airport, some of the more significant have included the following:

- In 1955, National Airlines was the only major airline operating at Page Field and during this time a new $25,000 terminal was constructed.
- In December 1965, Fort Myers introduced jet air transportation with daily B727 flights to and from New York's John F. Kennedy Airport and Boston's Logan Airport.
- By 1973, Eastern Airlines started their service to Fort Myers, and the new $850,000 terminal was under construction.
- In 1978 more than 100,000 passengers had arrived and departed Page Field during the month of March.
- In 1983, all air carrier operations were shifted over to Southwest Florida International Airport, eventually designating Page Field the only "Reliever Airport" in Southwest Florida.

Since 1983, Page Field has served primarily the general aviation community. Over the years the airport has grown and attracted tenants such as the Experimental Aircraft Association (EAA), the Florida Department of Law Enforcement (FDLE), various Fixed Base Operators (FBOs), aviation maintenance companies, and flight training schools. It is anticipated that the airport's role will not change significantly over the planning period.

Previous Studies

In 1993, Carter and Burgess completed the last master plan update for Page Field. This Master Plan provided a comprehensive analysis of the airport needs and alternatives through the year 2010. This master plan was an update to the previous master plan which was completed by Peat, Marwick, Mitchell & Company in October of 1986. Information in the 1993 Master Plan has been reviewed for inclusion of any applicable data/information in this master plan report.

The airport is included in the Lee County Comprehensive Plan (the Lee Plan). The Lee Plan, which was updated in mid/late 1998, considers the comprehensive development of Lee County through the year 2020.

Page Field has also been included in the Continuing Florida Aviation System Plan (CFASP). The latest CFASP document which was completed in 1992, provides a planning and administrative tool which is utilized as a guide and blueprint for directing and administering the CFASP. The plan provides recommendations and general costs for needed improvements, additions, and/or modifications to the system. An update to the plan was initiated in 1999.

National aviation plans are administered by the U.S. Department of Transportation through the FAA. Page Field is included in the National Plan of Integrated Airport Systems (NPIAS) as well as the Terminal Area Forecasts. The inputs from these plans are integral to the development of the forecasting chapter of this report.

AIRPORT FACILITIES

This section presents a description of the existing airfield, airside, landside and support facilities at Page Field including recent and ongoing improvement projects. The description of the following facilities provides the basis for the airfield demand/capacity analysis and determination of facility requirements to be presented in subsequent chapters. The overall primary airfield components are presented initially followed by the airside and landside facilities located in each quadrant and finally, airport support facilities.

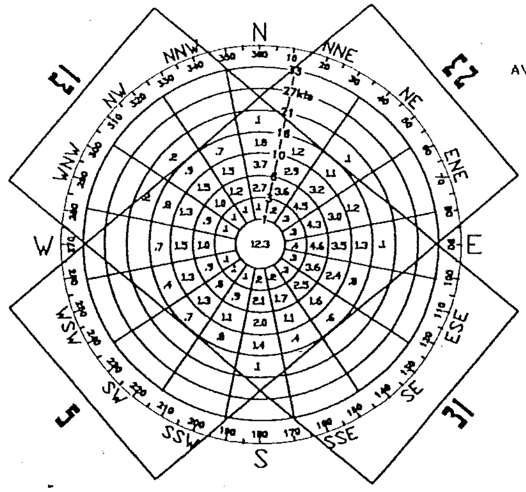
Airfield Facilities

The airfield or airside facilities generally include all facilities required to support the movement and operation of aircraft. These facilities include the airport's runways, taxiways, ramps and aprons, airfield lighting, pavement markings and navigational aids. Numerous improvements to the airports pavement systems have recently been completed.

The current airfield facilities at Page Field are depicted on the Existing Airport Layout Plan, **Exhibit 2-4**. This includes most development projects completed at the airport since the 1993 Master Plan Update. A description of the airfield facilities is included in the following sections.

Runways

There are two active runways at FMY, Runway 05-23 and Runway 13-31. The primary runway, Runway 05-23, is 6,401 feet long and 150 feet wide while the secondary or crosswind runway, Runway 13-31, is



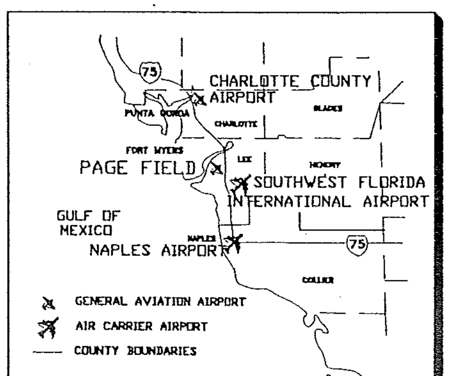
ALL WEATHER WIND ROSE

RUNWAY	COVERAGE
5/23	99.7%
13/31	99.9%

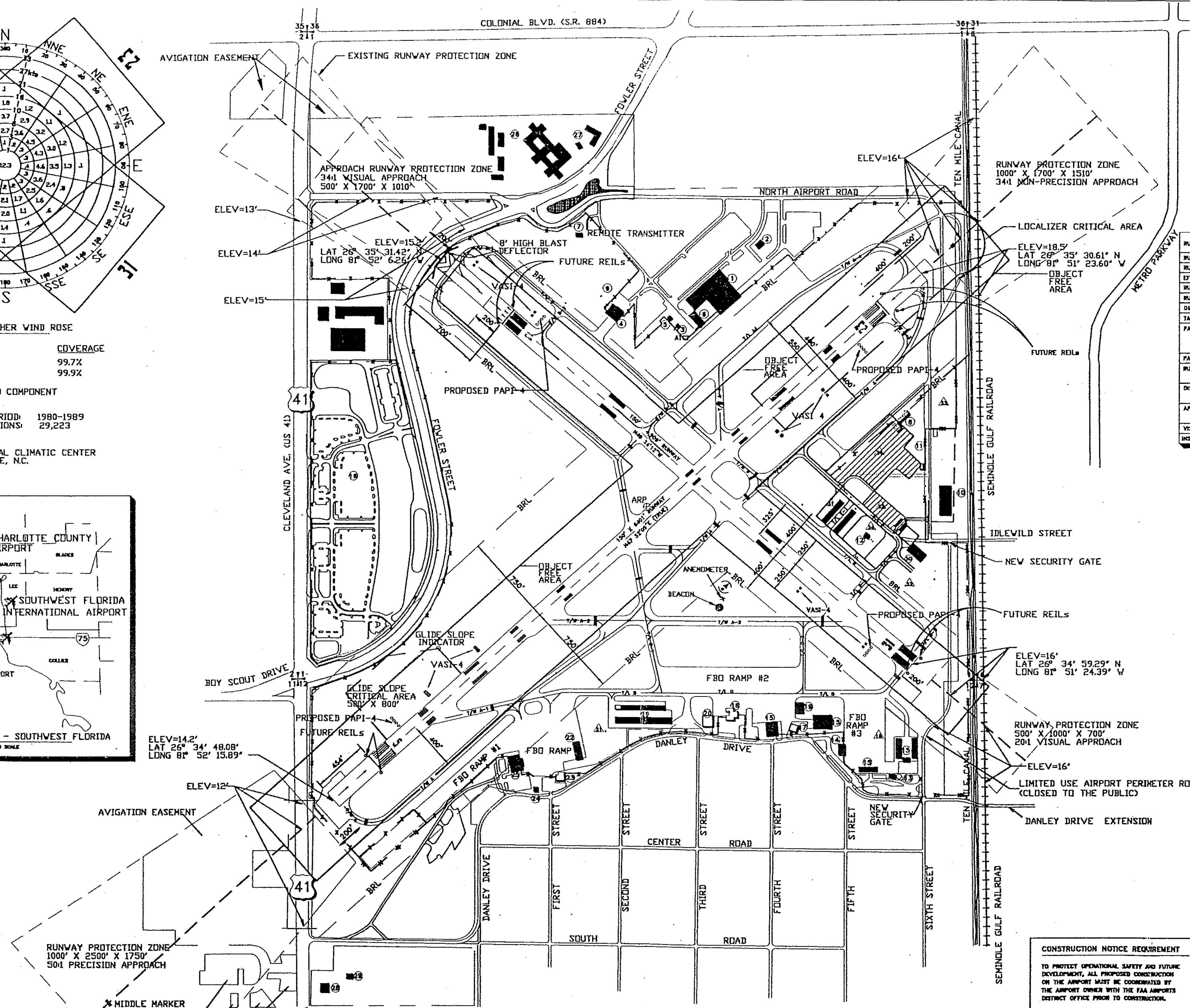
16 KT CROSSWIND COMPONENT
12.3% CALMS

OBSERVATION PERIOD: 1980-1989
TOTAL OBSERVATIONS: 29,223

SOURCE: NATIONAL CLIMATIC CENTER
ASHEVILLE, N.C.



VICINITY MAP - SOUTHWEST FLORIDA
NOT TO SCALE



MAGNETIC DECLINATION
1° W (APRIL 1987)

NOT TO SCALE

LEGEND	EXISTING	EXISTING TO BE REMOVED	PROPOSED
AIRPORT BOUNDARY			SAME
AIRPORT REFERENCE POINT	⊕		SAME
BUILDING RESTRICTION LINE	BRL		BRL
EASEMENT			SAME
PAVEMENT			
RUNWAY THRESHOLD LIGHTS			SAME
RUNWAY END IDENTIFICATION LIGHTS			
VISUAL NAVAID	(VASI)		(PAPI)
WIND INDICATOR			SAME
SECTION CORNER			SAME
ROADS			
PAVEMENT MARKINGS			
BUILDINGS			
DIMENSIONS			
SECURITY FENCE	X		X X
CANAL			SAME
AVIGATION EASEMENT			SAME
RUNWAY PROTECTION ZONE			

RUNWAY DATA TABLE	RUNWAY 5/23		RUNWAY 13/31	
	EXISTING	ULTIMATE	EXISTING	ULTIMATE
RUNWAY CATEGORY	ADG C-III	SAME	ADG B II	SAME
RUNWAY LENGTH AND WIDTH	8,401' X 150'	SAME	4,908' X 150'	SAME
EFFECTIVE GRADIENT	.06 %	SAME	.02 %	SAME
RUNWAY INSTRUMENTATION	INSTRUMENT	SAME	VISUAL	SAME
RUNWAY SAFETY AREA	8,401' X 500'	SAME	4,847' X 150'	SAME
OBSTACLE FREE ZONE	8,801' X 400'	SAME	4,847' X 250'	SAME
TAXIWAY LIGHTING	MITL	SAME	MITL	SAME
PAVEMENT STRENGTH S-SINGLE, D-DUAL, DT-DUAL TANDEM GEARED AIRCRAFT	125,000# S	SAME	30,000# S	SAME
	155,000# D	SAME	35,000# D	SAME
	330,000# DT	SAME	N/A	SAME
PAVEMENT TYPE	ASPHALT CONCRETE	SAME	ASPHALT CONCRETE	SAME
RUNWAY MARKING	5 - ILS	SAME	13 - NPI	SAME
	23 - NPI	SAME	31 - VISUAL	SAME
DISPLACED THRESHOLD	5 - 454'	SAME	13 - 700'	13 - 700'
	23 - 400'	SAME	N/A	SAME
APPROACH SURFACE SLOPE	5 - 50:1	SAME	13 - 34:1	SAME
	23 - 34:1	SAME	31 - 20:1	SAME
VISUAL NAVAIDS	MIRL, VASI	MIRL,PAPI,REIL	MIRL, VASI	MIRL,PAPI,REIL
INSTRUMENT APPROACH NAVAIDS	5 - ILS,NDB	SAME, 23 - TVOR	13 - VOR	13 - TVOR

STRUCTURES INVENTORY	EXISTING	ULTIMATE
TERMINAL BUILDING	1	SAME
PORT AUTHORITY VEHICLE MAINTENANCE	2	SAME
CONTROL TOWER, CONTRACT WEATHER OFFICE	3	SAME
AIRCRAFT RESCUE & FIRE FIGHTING (ARFF)	4	SAME
ELECTRICAL VAULT	5	SAME
AIR CARGO BUILDING	6	SAME
REMOTE TRANSMITTER	7	SAME
LEE COUNTY DOT DEPOT 7 MAINTENANCE	8	REMOVE
EMS HELIPAD	9	SAME
LEETRANS MAINTENANCE FACILITIES	10	SAME
LEETRANS MAINTENANCE FACILITIES	11	REMOVE
EAA (EXPERIMENTAL AIRCRAFT ASSN.)	12	RELOCATE
FORMER FORT MYERS AIRWAYS A.G. FUEL FARM	13	SAME
BEAVER AVIATION SERVICES SOUTH	14	SAME
PAGE FIELD AVIATION CENTER HANGAR	15	15
PROPOSED PAGE FIELD COMMONS	16	SAME
PAGE FIELD AVIATION CENTER A.G. FUEL FARM	17	SAME
PAGE FIELD AVIATION CENTER	18	SAME
PAGE FIELD AVIATION CENTER HANGAR	19	SAME
FORMER F.M. AIRWAYS MAINTENANCE HANGAR	20	SAME
FORMER FORT MYERS AIRWAYS T-HANGARS	21	21
FORMER FORT MYERS AIRWAYS SHADE HANGARS	22	SAME
FORMER FORT MYERS AIRWAYS HANGAR	23	SAME
REMOTE COMMUNICATIONS OUTLET	24	SAME
FORMER FORT MYERS AIRWAYS OFFICE / MIKE'S LANDING BISTRO RESTAURANT	25	SAME
SHADY REST CARE PAVILION	26	SAME
CHILDREN'S HOME	27	SAME
FLORIDA HIGHWAY PATROL	28	SAME
DEPARTMENT OF MOTOR VEHICLES	29	SAME
SMS CORPORATE HANGAR	30	SAME
PAGE FIELD AVIATION CENTER GA HANGARS	31	31
CORPORATE HANGAR EXPANSION AREA	N/A	32
PUBLIC INSTITUTION'S AVIATION WING	N/A	33

ORIGINALLY DRAWN BY:	REVIEWED	APPROVALS
G. LEMONS 1989	LARRY BAUMAN 1989	
D. CORNWALL 1993	LARRY BAUMAN 1993	DATE
ADAPTATIONS TO STANDARDS PREVIOUS APPROVAL: JAMES E. SHEPPARD ORL-ADO MGR 8-4-89 RSA ADAPTATION FOR RWYS 5/23 & 13/31		FAA DATE LEE COUNTY PORT AUTHORITY

AIRPORT DATA	
AIRPORT ELEVATION	18.2 MSL
AIRPORT AND TERMINAL NAVIGATIONAL AIDS	TOWER
MEAN MAXIMUM TEMPERATURE — HOTTEST MONTH	92.7 F
AIRPORT REFERENCE POINT COORDINATES (ARP) (NAD 1983/1990 FINAL ADJUSTMENT)	26°35'08"N LAT 81°51'51"W LON
AIRPORT REFERENCE CODE (ARC)	C-III

DECLARED DISTANCES TABLE

AIRCRAFT APPROACH CATEGORY C
AIRPLANE DESIGN GROUP III
PRECISION INSTRUMENT RUNWAY & NON-PRECISION INSTRUMENT/VISUAL RUNWAY

	TORA	TODA	ASDA	LDA
RUNWAY 5	8,401'	8,401'	8,401'	5,847'
RUNWAY 23	8,401'	8,401'	8,401'	8,001'
RUNWAY 13	4408'	4,909'	4,909'	4,287'
RUNWAY 31	4,487'	4,908'	4,887'	4,667'

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION.

FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

THE PREPARATION OF THIS DOCUMENT WAS FINANCED IN PART THROUGH AN AIRPORT IMPROVEMENT GRANT FROM THE FEDERAL AVIATION ADMINISTRATION (FAA) AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AND AS AMENDED BY THE AIRPORT AND AIRWAY SAFETY CAPACITY EXPANSION ACT OF 1987. THE CONTENTS OF THIS REPORT REFLECT THE VIEWS OF THE LEE COUNTY PORT AUTHORITY, WHICH IS RESPONSIBLE FOR THE FACTS AND ACCURACY OF THE DATA HEREIN. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THIS REPORT BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE WITH PUBLIC LAWS 91-190, 91-258, 94-353, AND/OR 90-495.

EXHIBIT 2-4

Existing Airport Layout Plan

4,997 feet long and 150 feet wide. Both runways are of asphalt concrete construction and were observed to be in good condition. Runway 05-23 was recently rehabilitated in 1996. Additionally, both runways are equipped with medium intensity runway edge lights (MIRL) to allow for nighttime operations and both runways operate with a left hand traffic pattern.

Runway 05-23 is estimated to have a gross weight pavement strength for a single-wheel load of 125,000 pounds, a dual-wheel load of 155,000 pounds and 350,000 pounds for dual-tandem geared aircraft. These high pavement strengths reflect the earlier use of the facility for commercial service by such aircraft as the Boeing 727.

Runway 05 is the only precision instrument approach runway and has a 3° visual glide path angle. The Runway 05 pavement end coordinates are latitude 26°34'48.028"N, longitude 81°52'15.939"W. Runway 05 is at an elevation of 12.8 feet MSL and the threshold crossing height for the runway is 52 feet AGL. To provide proper clearance to US Highway 41, Runway 05 has a threshold displacement 459 feet with a displaced threshold elevation of 13.2 feet MSL. The threshold coordinates for the displacement are latitude 26°34'51.079"N, and longitude 81°52'12.193"W. The approach slope to the displaced threshold is 34:1 while the touchdown point elevation is 15.0 feet MSL. Additionally, a seven foot tall wooden blast fence is located approximately 190 feet beyond the approach end of this runway.

Runway 23 is a non-precision approach runway with a 3° visual glide path angle. The runway pavement end coordinates for Runway 23 are latitude 26°35'30.596"N, longitude 81°51'23.613"W. A non-precision approach procedure is a standard instrument approach procedure in which no electronic vertical guidance is provided. Runway 23 is at an elevation of 17.1 feet MSL and the threshold crossing height for the runway is 55 feet AGL. To provide proper clearance to the Seminole Gulf Railroad tracks Runway 23 has a threshold displacement of 399 feet with a displaced threshold elevation of 16.1 feet MSL. The threshold coordinates for the displacement are latitude 26°35'27.943"N and longitude 81°51'26.877"W. The touchdown point elevation for the runway is 16.0 feet MSL.

Runway 13-31 is estimated to have a gross weight pavement strength for a single-wheel load of 30,000 pounds and a dual-wheel load of 35,000 pounds.

Runway 13 is a non-precision instrument approach runway with a 3° visual glide path angle. The runway pavement end coordinates are latitude 26°35'31.416"N, longitude 81°52'06.249"E. Runway 13 is at an elevation of 14.0 feet MSL and the threshold crossing height for the runway is 30 feet AGL. To provide proper clearance to the Fowler Street extension which transitions the airport property to both the north and west, the Runway 13 threshold was displaced 700 feet. The threshold coordinates for the displacement are latitude 26°35'26.914"N and longitude 81°52'00.384"E. The touchdown point elevation is 15.0 feet MSL. There is also an 8-foot tall blast fence at located just off the approach end of the runway.

Runway 31 is a non-precision approach runway. The runway end coordinates are latitude 26°34'59.285"N, longitude 81°51'24.384E". The Runway 31 end and threshold is at an elevation of 14.9 feet MSL and the threshold crossing height for the runway is 39 feet AGL.

Taxiways

There are four main taxiways at Page Field that provide access between both runways and all of the aircraft parking areas. These taxiways include Taxiway A, Taxiway B, Taxiway D, and Taxiway E. Previously, Taxiway C provided access between the approach ends of Runway 5 and Runway 13. However, this pavement has since been abandoned and removed.

Taxiway A

Taxiway A is a full-length parallel taxiway for Runway 5-23. This taxiway, which is located on the southeast side of Runway 5-23, has a minimum runway centerline to taxiway centerline separation of 400 feet and a width of 50 feet. There are four connector taxiways, Taxiway A-1, A-2, A-3, and A-4 associated with Taxiway A.

Taxiway A-1, which is also 50 feet wide, ties into Runway 5-23 approximately 600 feet from the Runway 5 threshold. Taxiway A-2, provides access between Runway 5-23 and Runway 13-31. This taxiway, which is 75 feet wide, ties into Runway 5-23 approximately 1,800 feet from the Runway 5 threshold and approximately 700 feet from the Runway 31 threshold. Taxiway A-3 and Taxiway A-4 are both 50 feet wide. Taxiway A-3 ties into the displaced threshold for Runway 23, while Taxiway A-4 ties into the displaced portion of the runway (in front of the Runway 23 threshold). On the northwest side of Runway 5-23, Taxiway A-4 also provides access to both sides of the former air carrier apron. On this side of the runway, the width of Taxiway A-4 varies from 50 to 75 feet.

In addition to the dedicated connectors associated with Taxiway A, Taxiway B also serves as an additional connector taxiway for aircraft operating on Runway 5-23. Each portion of the Taxiway A system has Medium Intensity Taxiway Lights (MITL). All of the pavement associated with Taxiway A and its connectors is in good to excellent condition. These pavements were all rehabilitated in 1992.

Taxiway B

Taxiway B is a full-length parallel taxiway serving Runway 13-31. This taxiway is located on the northeast side of Runway 13-31 and has a minimum runway centerline to taxiway centerline separation of 325 feet. There are five connector taxiways, Taxiway B-1, B-2, B-3 and B-4 each of which connects Runway 13-31 with Taxiway B. All of the portions of Taxiway B, including the connectors, to the northwest of Runway 5-23 have a width of 40 feet, while the portions to the south of Runway 5-23 have a width of 60 feet.

Taxiway B-1 ties into the displaced portion of the runway at the Runway 13 approach end. Taxiway B-2 connects to the runway at a point approximately 300 feet from the displaced Runway 13 threshold. Taxiway B-3 connects Taxiway E to Runway 13-31 at a point approximately 700 feet from the approach end of Runway 31. Taxiway B-4 simply ties into Runway 13-31 at the approach end of Runway 31.

Due to its deteriorating condition, portions of Taxiway B are closed to DC-9, Boeing 727, and other larger aircraft. These portions include all the pavements southeast of Taxiway A and the pavements to the northwest of Taxiway A but south of the Taxiway C connector. Also, due to recent hangar development, the portion of Taxiway B southeast of Taxiway A is considered a non-movement area because it is not visible from the air traffic control tower. All portions of Taxiway B have a MITL system.

Taxiway D

Taxilane D lies between Taxiway A and the approach end of Runway 31. At a width of 50 feet, this taxilane provides access to all of the hangars and apron areas located on the south side of the airport. Two connector taxiways, Taxilane D-1 and D-2, tie Taxilane D into Taxiway A-2. Taxilane D is in good to excellent condition due to it's recent rehabilitation as a part of improvements made to the south side of the airfield in 1998. Taxilane connectors D-1 and D-2 are noted as being in poor condition. Taxilane D has both MITLs and reflective cans. The reflective cans are used on the portion of taxilane that runs through the middle of the south aircraft parking apron.

Taxiway E

Taxiway E is the newest taxiway at Page Field. This taxiway was constructed to provide additional apron and hangar development on the east side of the airport. At a width of 40 feet, Taxiway E runs parallel to Taxiway B between Taxiway A and Taxiway B-4. A connector taxiway to Taxiway B was also constructed and is located to the north of the Experimental Aircraft Association hangar. This connector has been labeled Taxiway E-1 and is also 40 feet wide. Both Taxiway E and Taxiway E-1 are in excellent condition and have MITLs.

Airfield Lighting & Signage

Proper airfield lighting is required at all airports that are utilized for nighttime operations. Edge lights are used to outline usable operational areas of airports during periods of darkness and low visibility weather conditions - AC 150/5340-24 Chg. 1 "Runway and Taxiway Edge Lighting System". The Page Field Airport is capable of accommodating aircraft at night because of the existing lighting fixtures found on the airfield.

Runway Lighting

A runway edge lighting system is a configuration of lights that define the lateral and longitudinal limits of the usable landing area. Both Runways 05-23 and 13-31 are equipped with Medium Intensity Runway Lighting (MIRL) systems.

Taxiway Lighting

Taxiway lighting, similar to runway lighting is essential to safe nighttime operations at an airport. Taxiway lights allow pilots to taxi to and from the active runways and for other surface guidance to vehicles on the airport.

Taxiway edge lights, emit blue light and are used to outline the edges of taxiways during periods of darkness or restricted visibility conditions. These lights have variable intensity settings and may be adjusted at pilot request or when deemed necessary by the air traffic controller.

Taxiways A and B are equipped with Medium Intensity Taxiway Lighting systems (MITL). Taxiway D is under positive control of the air traffic control tower and has limited edge lighting.

Signage
The airfield is not currently equipped with lighted airfield signage. Hole Montes & Associates is currently in the process of addressing the lighted airfield signage needs for FMY and the first phase of implementation is scheduled for the year 2000. The new plan calls for lighted signs which will comply with the standards set-forth in FAA circular 150/5340-18C. Because of the increase in electrical output needed to illuminate these signs the electrical vault is also scheduled for upgrades.

Pavement Markings

The runways at FMY have slightly different markings from each other, based on the different type of operations each one accommodates.

Runway 05 and Runway 23 are marked the same. Both have precision instrument runway markings, which include number designation markers, a centerline stripe, side stripes, threshold markers, aiming point markers and touchdown zone markings. Both runways have displaced thresholds and they are properly marked.

Runway 13 is marked as a non-precision instrument runway. The markings on this runway include the number designation marker, a centerline stripe, threshold markers and aiming point markers. The approach end has adequate markings with displaced threshold markings, arrows and arrowheads.

Runway 31 is a non-precision instrument runway but is marked incorrectly. The runway has the proper designation number and threshold markings but is missing the aiming point markers which are required for non-precision runways according to AC 150/5340-1H.

All of the taxiways at FMY have taxiway centerline stripes. Hold short lines are located at all of the required locations on the taxiways at FMY.

Navigational Aids (Navaids) - Electronic

Navigational aids (navaids) include any facility or equipment that provide guidance and assistance to pilots during the takeoff, landing, or enroute phase of flight. There are various types of navaids available to aviation. The following sections deal with electronic navaids, which include any facilities or equipment that provide some form of electronic signal to provide directional guidance or position information to an aircraft in flight. There are various types of electronic navaids in use today, each serving a special purpose. The FAA has the authority to establish, operate, and maintain navigational facilities and to prescribe standards for the operation of any of these aids that are used for instrument flight in federally controlled airspace.

VHF Omni-Directional Range/Tactical Air Navigation Facility
A VHF Omni-Directional Range/Tactical Air Navigation (VORTAC) facility is one of the most fundamental electronic navaids serving the national airspace system. A VORTAC facility is actually the combination of separate civil and military navigational facilities.

The basis of civilian navigation is provided by a system of VHF Omni-Directional Range (VOR) facilities. A VOR is a ground-based facility that transmits a very high frequency signal, oriented from magnetic north, on a 360-degree azimuth. The VOR signal, which provides accurate course alignment, allows an aircraft in flight to determine its bearing relative to the VOR station. This navaid is utilized to facilitate both instrument flight and visual flight traffic into and out of an airport area.

A Tactical Air Navigation (TACAN) station provides the same function for military aircraft as VOR's for civilian aircraft. The primary difference between a VOR and TACAN is the signal. TACANs operate on a ultrahigh frequency to support military equipment.

A VORTAC collocates the VOR and TACAN navigational facilities. The Ft. Myers area is served by a VORTAC that is located at the Southwest Florida International Airport. This facility is identified as the Lee County VORTAC. Page Field is located 5.8 nautical miles to the northwest of the Lee County VORTAC, along the 308-degree radial from the station. The Lee County VORTAC is a low altitude facility, which provides directional service from 1,000 feet above ground level (AGL) up to and including 18,000 feet AGL, at radial distances out to 40 nautical miles.

In addition to the VOR and TACAN service, the Lee County VORTAC is also equipped with Distance Measuring Equipment (DME). DME provides compatible receivers with very reliable and accurate distance information up to 199 nautical miles away. The VORTAC also provides a non-precision instrument approach into Page Field. This approach will be discussed in the section on published instrument approach procedures.

Instrument Landing System

The most significant electronic navaid located at Page Field is the instrument landing system (ILS). An ILS consists of the following basic components: localizer antenna array and a glide slope antenna array, and marker beacons. The purpose of an ILS is to provide a method of precision instrument navigation to a point just beyond the approach end of the runway. Since the system provides both course and glide slope information, much lower weather minimums are possible than the minimums provided by a non-precision instrument approach.

At a specified point on the ILS approach (coincident with the minimum decision height), the pilot must decide whether to land or execute a missed approach. The missed approach procedure is required if visual contact with the runway environment cannot be established by a set decision height or a landing cannot be made for any other reason. This procedure consists of an immediate climb and then a climbing turn to a safe altitude and course that will take the aircraft back to an initial approach fix so that the approach can be attempted again if desired. The aircraft would proceed to an alternate airport if a decision was made to not attempt another approach.

Precision instrument approaches are runway specific and therefore, each runway that is to have such an approach must have its own ILS system. At Page Field, Runway 5 is the only runway equipped with a Category I ILS system. Details pertaining to the precision ILS approach for Runway 5 are included in the section on published instrument approach procedures.

The localizer antenna array provides the horizontal guidance to the pilot with respect to the longitudinal axis of the runway. This antenna is located at the end of the runway opposite that for which the ILS system is installed. The localizer antenna array has a latitude of 26°35'32"N and a longitude 81°51'20"W which locates it approximately 355 feet beyond the departure end of Runway 5.

The glideslope antenna provides vertical guidance to the pilot and is positioned near the intended touchdown point on the runway. The glideslope antenna for Runway 5 at Page Field provides a standard three-degree glide slope angle. This antenna, which is located on the left side of the runway, is offset approximately 346 feet from the Runway 5-23 centerline. The unit is also located 1,000 feet from the Runway 5 threshold which gives its location a latitude of 26°35'00"N and a longitude of 81°52'06"W.

Both the localizer and glideslope antenna arrays require a unique and significant critical area that must be clear of all objects. These areas, which are depicted on the airport layout plan, cannot be impacted by any type of activity or development.

There is an outer beacon associated with the Runway 5 ILS. The outer marker is used to indicate the point at which an aircraft, at the appropriate altitude on the localizer course, should intercept the glide path to begin the approach. When a non-directional radio beacon is used in conjunction with the ILS markers, it is called a compass locator or locator outer marker. The outer marker for the Runway 5 ILS does have a radio beacon and is identified by the name Caloo. This beacon is discussed further in the next section. The outer marker lies approximately 34,300 feet (5.7 nautical miles) from the Runway 5 threshold and has a latitude of 26°30'97"N and a longitude 81°57'00"W.

Non-Directional Beacon

The outer marker of the ILS incorporates a Non-Directional Beacon (NDB) which makes it a compass locator or locator outer marker. This NDB provides a radio beacon frequency which transmits non-directional signals. With the appropriate equipment, these signals allow the pilot of an aircraft to determine bearings to and from the facility. In addition to being a navaid, the NDB also provides the airport with a non-precision instrument approach. Details of this approach are included in the section on published instrument approach procedures.

Airport Surveillance Radar

Because of Page Field's close proximity to Southwest Florida International Airport, it is included in the coverage area of the Airport Surveillance Radar (ASR) located at the Southwest Florida International Airport. An ASR assists air traffic controllers by detecting and displaying the position of aircraft within the coverage area. Depending on local conditions, the typical coverage area for an ASR can extend out to 60 miles. ASR information is primarily utilized by air traffic controllers to facilitate the sequencing of both arriving and departing traffic.

Published Instrument Approach Procedures

There are seven instrument approach procedures published for Page Field. Although they may have options for visual approaches, only precision and non-precision instrument approaches are published in the United States Flight Information Publication – U.S. Terminal Procedures. The primary difference between a precision and a non-precision instrument approach is that the precision instrument approaches provide some form of electronic glideslope or glidepath for vertical guidance.

At Page Field, the only precision instrument approach is the Category I ILS for Runway 5. There are three categories of ILS approaches. The following list provides a breakdown of the different ILS categories.

Category I	-Decision Height ≥ 200 feet -Runway Visibility Range = 2,400 feet -or Runway Visibility Range = 1,800 feet (with touchdown zone and centerline lighting)
Category II	-Decision Height ≥ 100 feet -Runway Visibility Range = 1,200 feet
Category III	-No Decision Height or below 50 feet -Runway Visibility Range = between 700 and 150 feet

The Runway 5 Category I ILS provides instrument rated pilots with a decision height of 266 feet MSL and visibility minimums of 1 mile. The approach also provides a straight-in non-precision approach utilizing the localizer with a minimum descent altitude (like the precision approach decision height) of 440 feet MSL and visibility minimums of 1 mile. Also, there is a circle to land approach (visual approach) that provides a decision height of 480 feet MSL and visibility minimums of 1 mile. **Exhibit 2-5** provides additional details about these approaches.

A VOR or GPS non-precision straight-in instrument approach is available to Runway 13. This approach is created by the Lee County VORTAC and requires Automatic Direction Finding (NDB) or DME equipment. This straight-in approach provides instrument rated pilots with a minimum descent altitude of 560 feet MSL and visibility minimums of 1 mile. The approach also provides a circle to land approach with the same minimums as the straight-in approach. If the DME equipment is used, the minimum descent altitudes for both the straight-in and visual approach decrease to 440 feet and 480 feet MSL respectively. **Exhibit 2-6** provides additional details about these approaches.

An NDB non-precision straight-in instrument approach is available to Runway 5. This approach is created from the NDB (compass locator/outer marker locator) signal. This straight-in approach provides instrument rated pilots with a minimum descent altitude of 480 feet MSL and visibility minimums of 1 mile. The approach also provides a circle to land approach with the same minimums as the straight-in approach. **Exhibit 2-7** provides additional details about these approaches.

All four runways have non-precision global positioning satellite (GPS) approaches. These approaches have a minimum descent altitude of between 380 feet MSL to 420 feet MSL depending on the runway. All four runways have a one-mile visibility minimum. Additional information for these approaches is provided in **Exhibits 2-8, 2-9, 2-10, 2-11.**

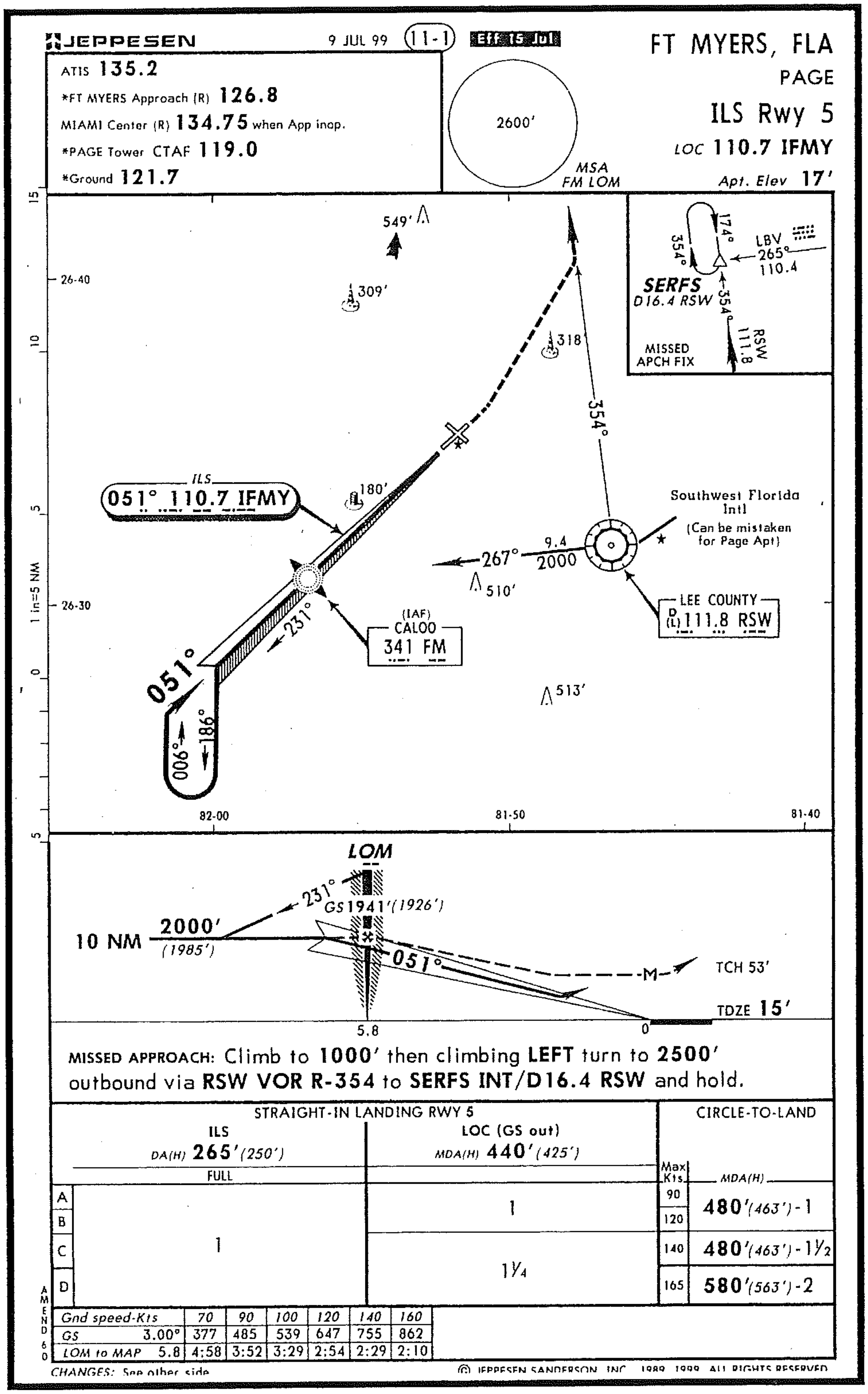


EXHIBIT 2-5

FMY-ILS Approach Plate

Page Field Master Plan

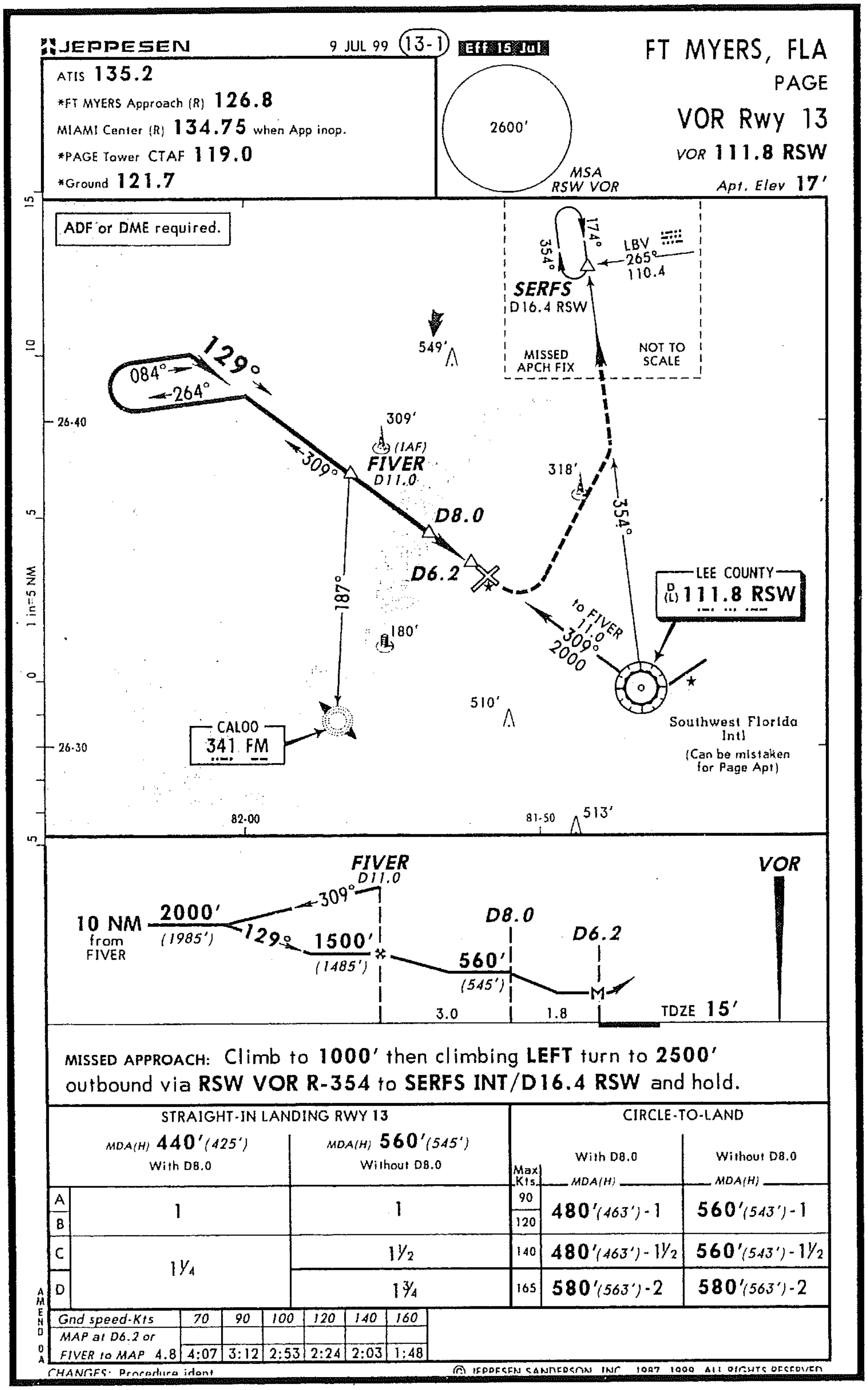


EXHIBIT 2-6

FMY-VOR Approach Plate

Page Field Master Plan

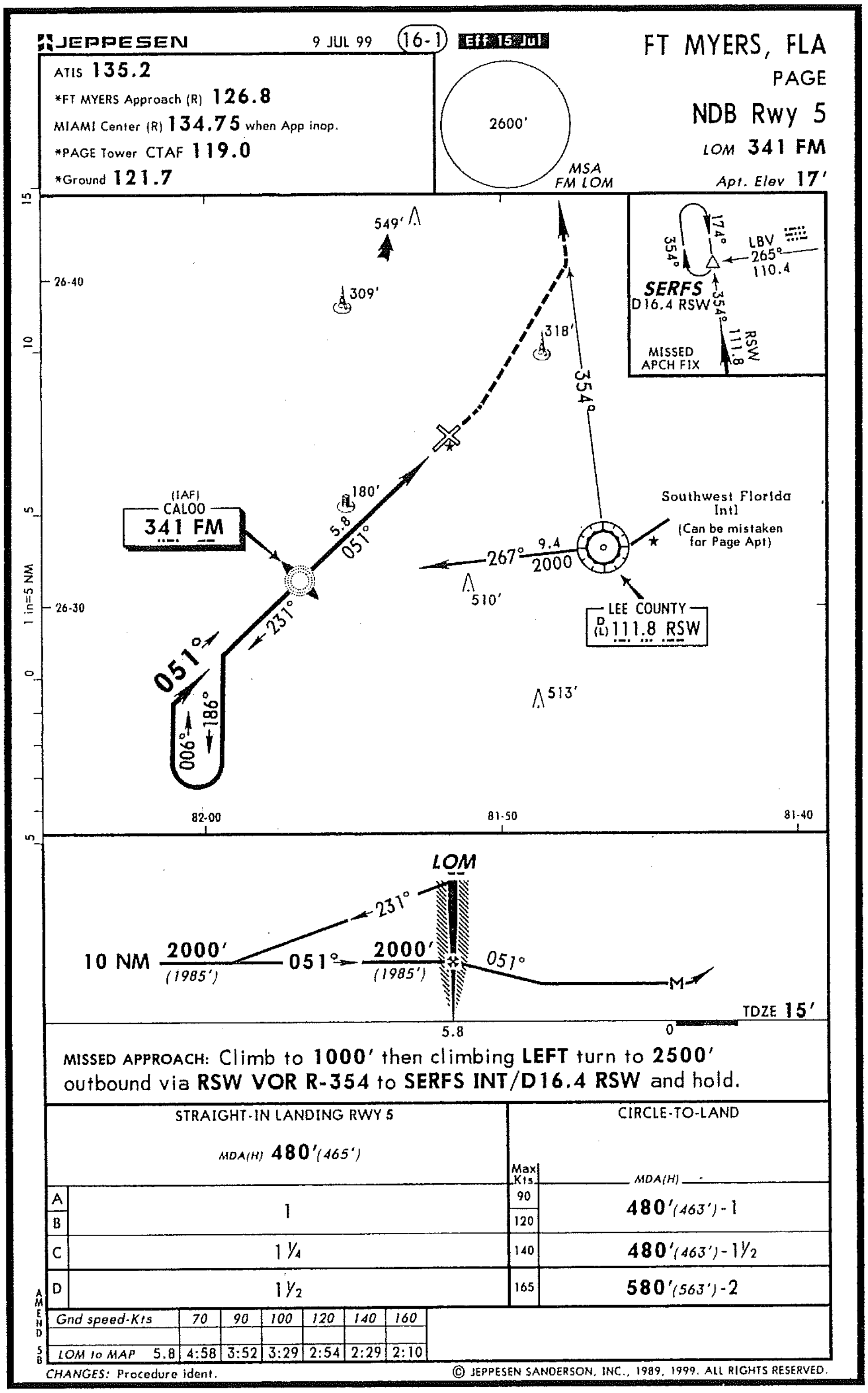


EXHIBIT 2-7
FMY-NDB Approach Plate
Page Field Master Plan

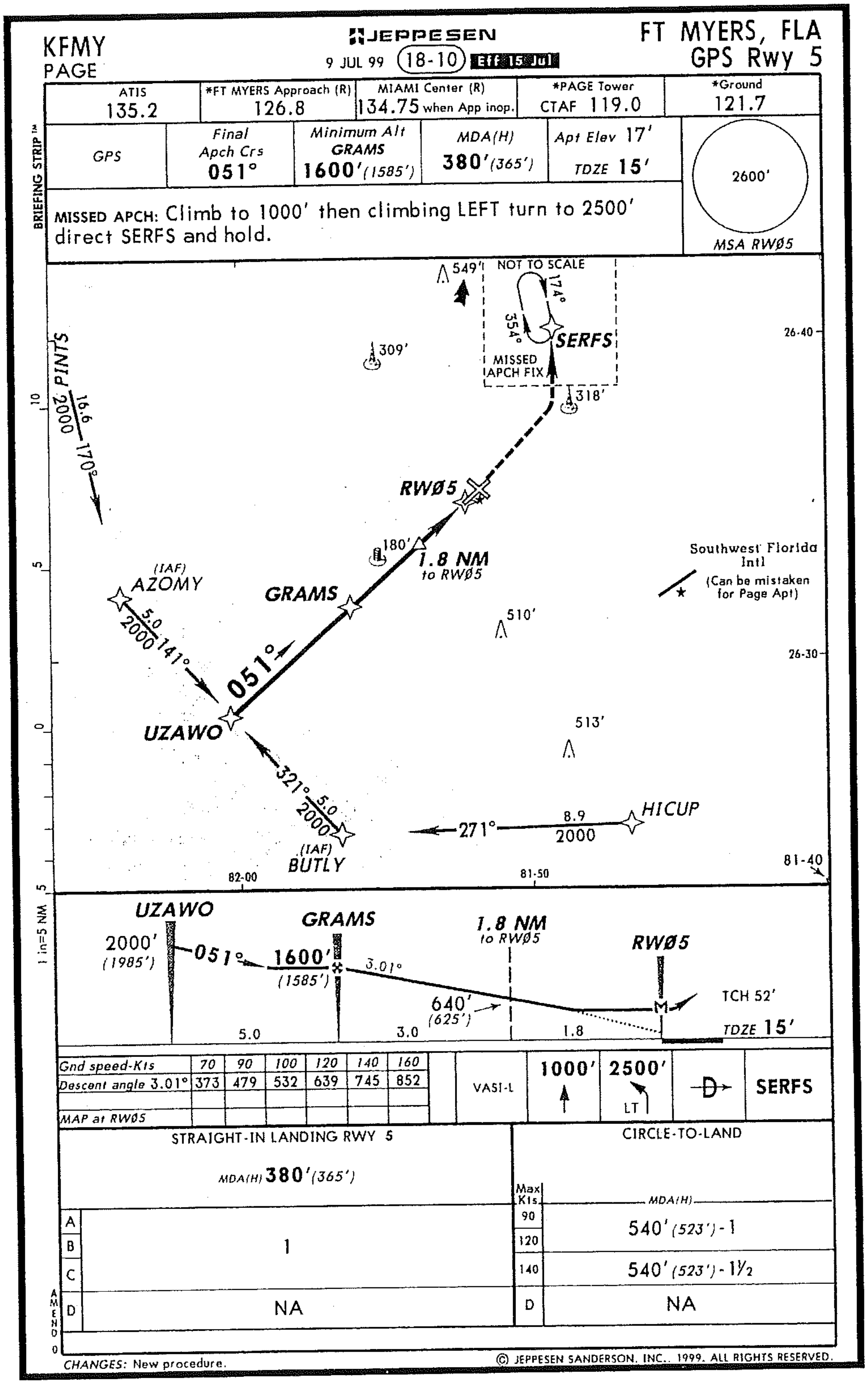


EXHIBIT 2-8

FMY-GPS Approach Plate

Page Field Master Plan

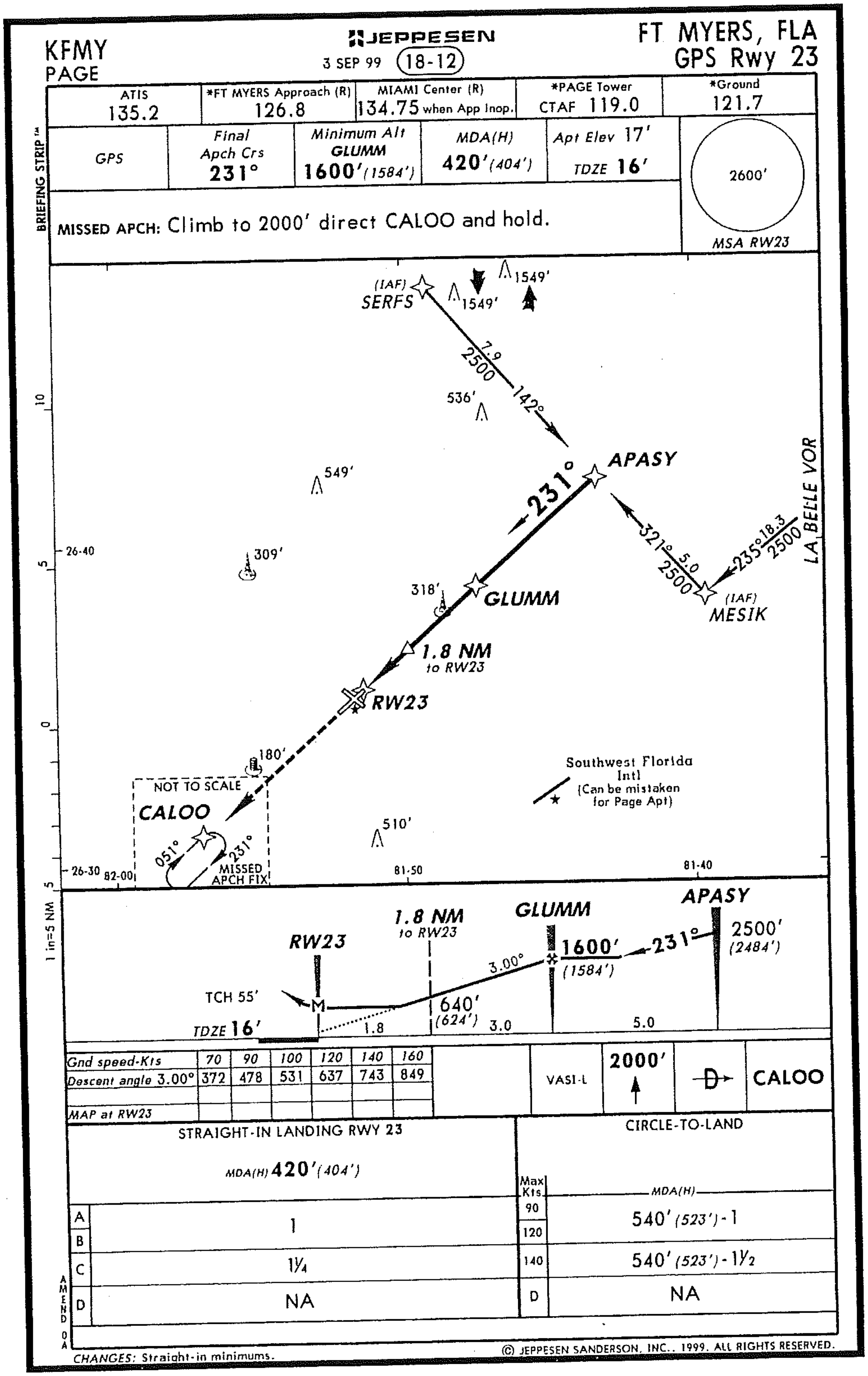


EXHIBIT 2-9
FMY-GPS Approach Plate
Page Field Master Plan

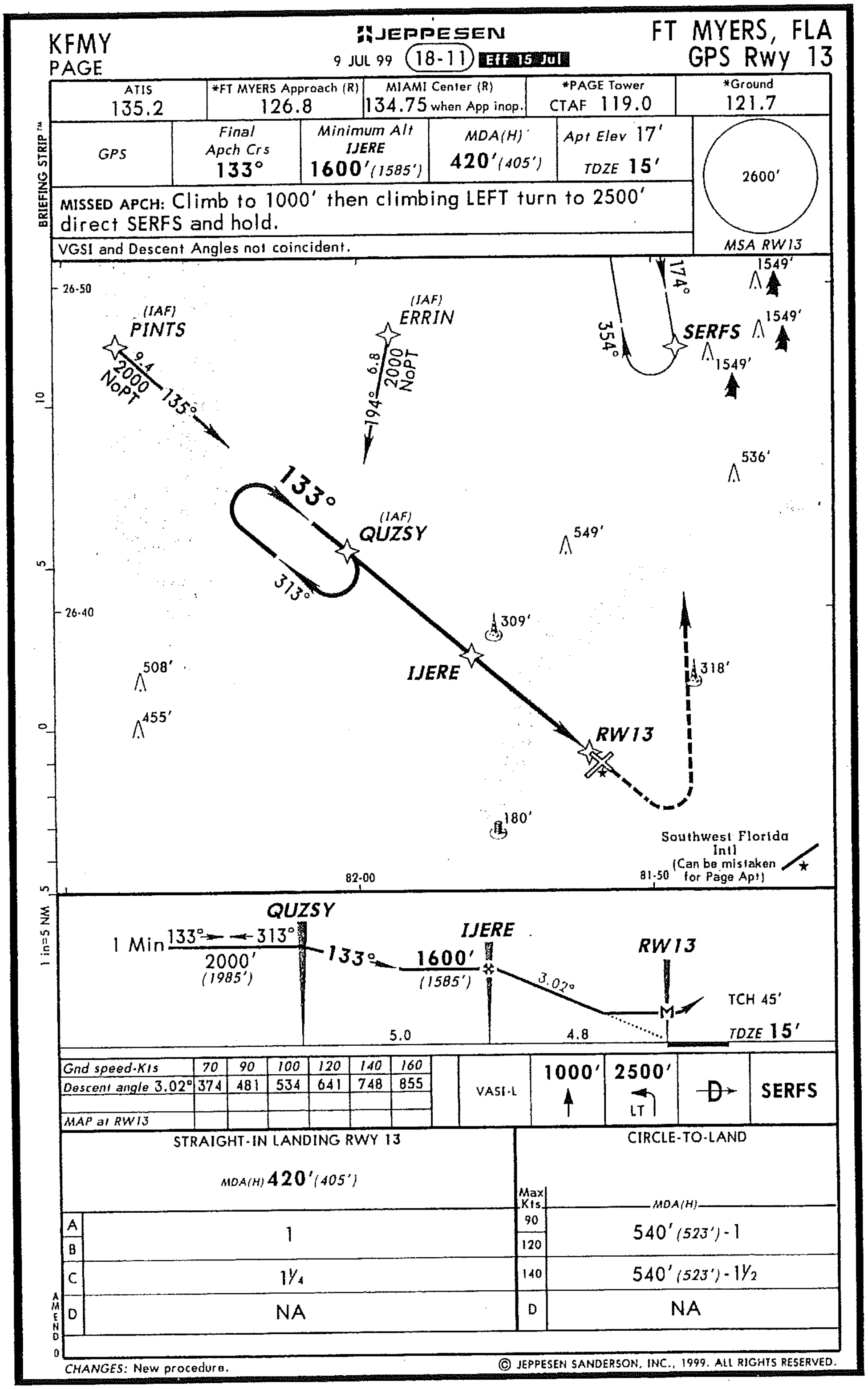


EXHIBIT 2-10

FMY-GPS Approach Plate

Page Field Master Plan

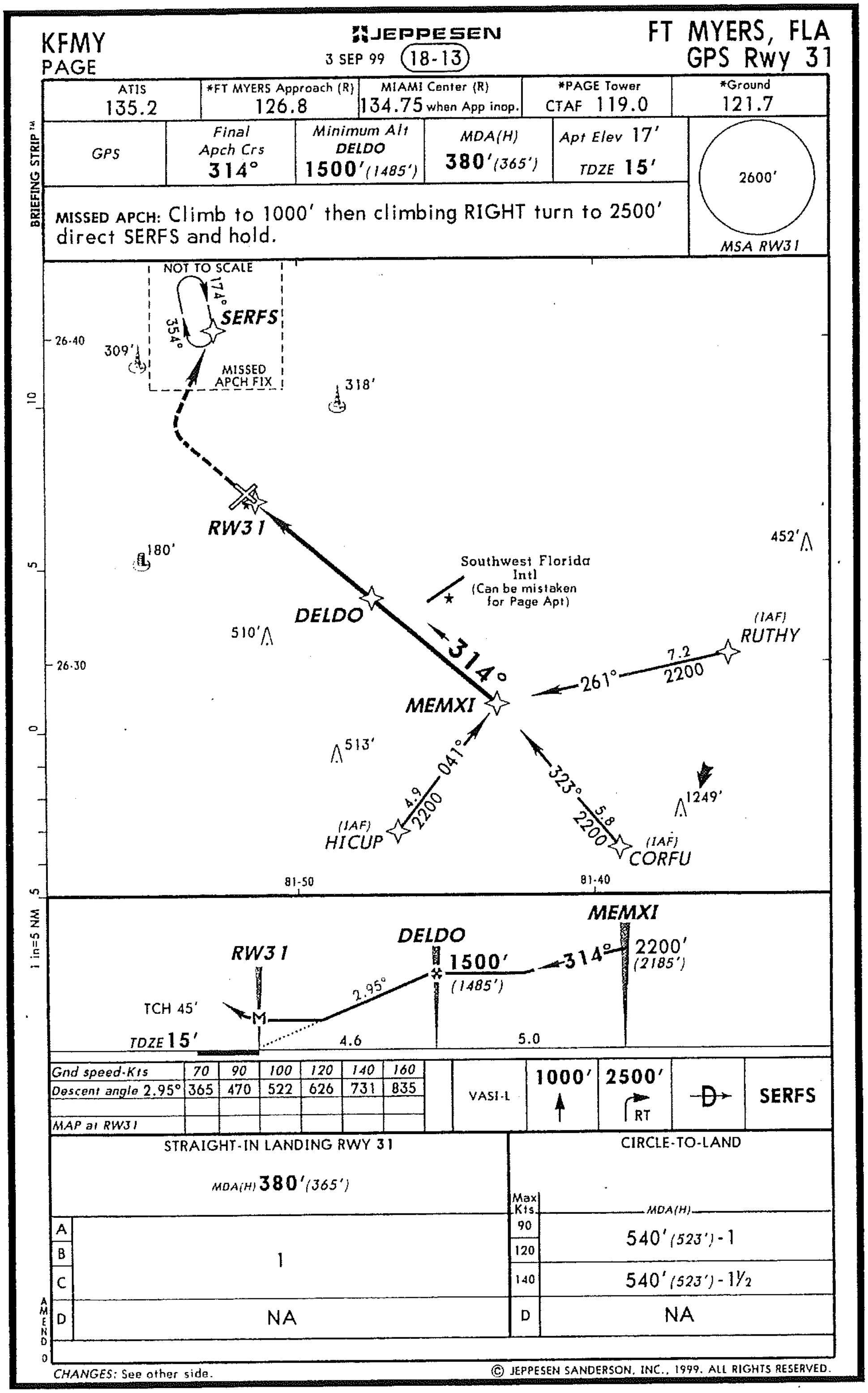


EXHIBIT 2-11
FMY-GPS Approach Plate
Page Field Master Plan

Navigational Aids – Visual/Supplemental

The following sections address the visual and supplemental navaids that are provided at Page Field. Although runway and taxiway lighting, along with airport signage and pavement markings are significant visual navaids, they have been addressed in other sections of this Inventory.

Airport Beacon

The location and presence of an airport at night or in adverse conditions is universally indicated by an airport rotating beacon. The rotating airport beacon at Page Field is located approximately 927 feet southeast of the Runway 5-23 centerline and approximately 661 feet southwest of the Runway 13-31 centerline. This beacon, which is approximately 72 feet AGL, is equipped with an optical rotating beacon system that projects two beams of light, one green and one white, 180 degrees apart. Although the beacon is old, it is still in good working condition. The beacon is in operation during nighttime hours and when the airport is under instrument meteorological conditions.

Visual Approach Slope Indicators

Visual glide slope indicators provide the pilot of an aircraft with visual descent guidance information during the approach to a runway. These lights are typically visible from three to five miles during the day and up to 20 miles or more at night. The Visual Approach Slope Indicator (VASI) system consist of two or three light bars, near, and far (or near, middle, and far). The lights in the light bars project a beam of white light in the upper segment and red light in the lower segment. Depending on the aircraft's angle in relation to these lights, the pilot will receive a combination that indicates his position relative to the desired glide slope. All four runway ends at Page Field have a four box (2 bars with four lights) VASI on the left side of the runway.

Automated Surface Observing System

Page Field is equipped with an Automated Surface Observing System (ASOS) located midfield near the rotating bacon. An ASOS provides continuous real-time weather reports, 24 hours-a-day, without human involvement. Using a computer-synthesized voice, an ASOS can generate new weather reports every minute in a standard format familiar to pilots. The ASOS at Page Field, which is located just south of the runway intersection near the airport beacon, includes the sensors required to measure and report temperature, dew-point, wind speed, wind direction, altimeter setting, density altitude, visibility, precipitation, cloud height, and cloud cover information. Pilots can access the information provided by the ASOS by directly dialing up the system on a telephone. Most of the data is also available on the national weather data network.

ASOS installations create a network of reporting stations that are a part of a joint program involving the FAA, the National Weather Service, and the Department of Defense. By providing information on the atmosphere, at a number of locations, these systems are designed to improve the safety and efficiency of aviation operations as well as being the key to improving forecasts and warnings.

Anemometer

In addition to the ASOS, wind speed at Page Field is also measured using a cup anemometer. This unit has a vertical shaft with three cups attached to capture the wind. The wind speed is calculated by electronically registering the number of revolutions per minute. The anemometer is also fitted with a wind vane to detect the wind direction. Currently, the anemometer, which is adjacent to the rotating beacon and ASOS, is approximately 897 feet southeast of the Runway 5-23 centerline and approximately 588 feet southwest of the Runway 13-31 centerline.

Segmented Circle and Windsock

There is a segmented circle and lighted windsock located just south of the runway intersection at Page Field. The segmented circle provides a visual indication of the runway traffic patterns when the air traffic control tower is closed. Similarly, the lighted windsock provides a visual reference, during both the day and night, of the wind's direction and relative speed.

Airside and Landside Facilities by Quadrant

The runway orientations of 05/23 and 13/31 create a large "X" on the airfield with each runway crisscrossing the roughly square airport site from corner to opposing corner. This configuration breaks the developable airport lands into four primary quadrants which are roughly triangular in shape. The airside and landside facilities located in each of these quadrants – Northern, Eastern, Southern, and Western – are outlined in this section. **Exhibit 2-12** presents a key map indicating the general location of each quadrant and their related exhibits.

Northern Quadrant – Airside

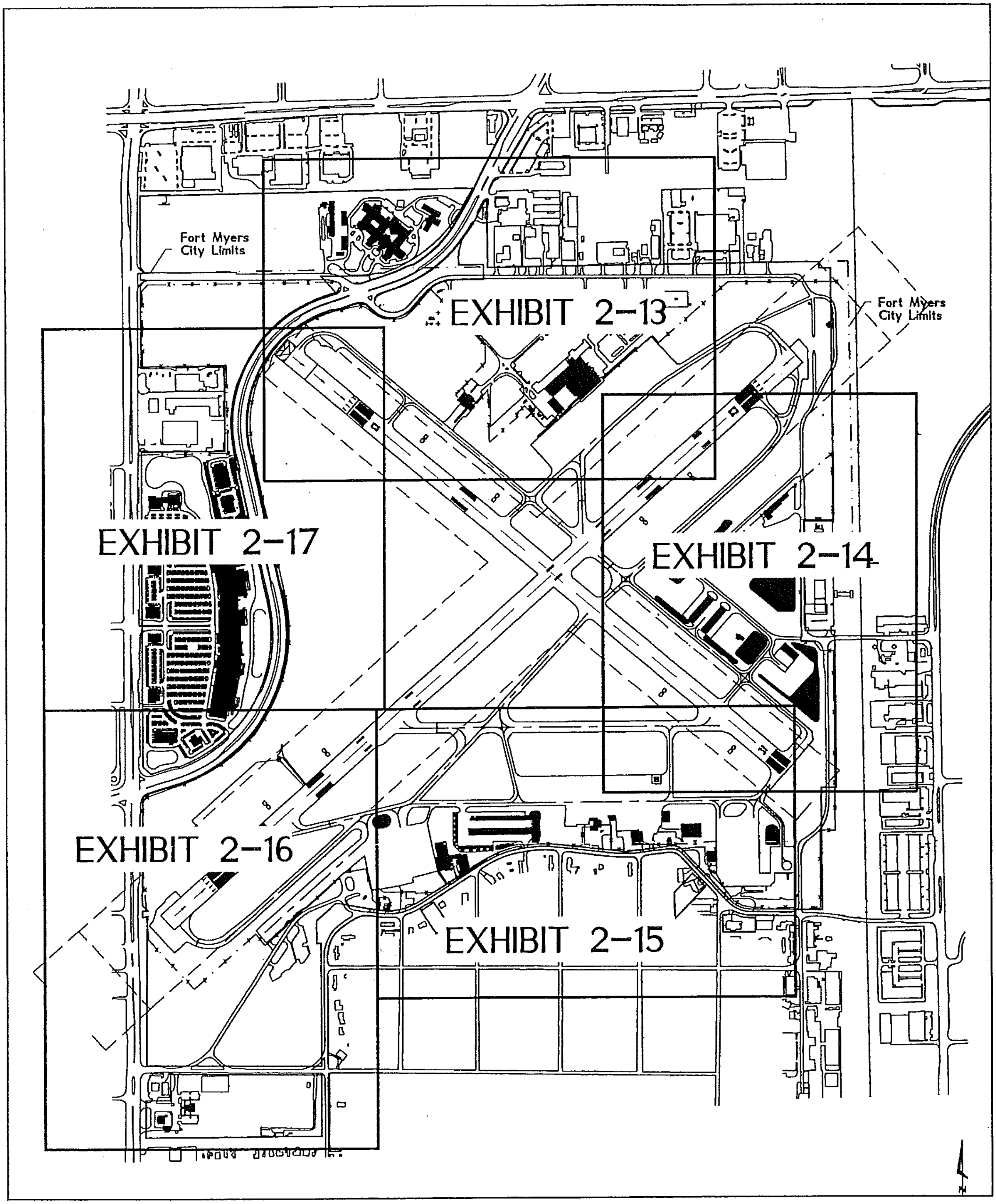
Each facility outlined in the northern quadrant is graphically depicted in **Exhibit 2-13.**

North Ramp

The large aircraft ramp adjacent the old terminal facility originally accommodated air carrier aircraft. This ramp was rehabilitated in 1998 and configured to accommodate general aviation aircraft. The 1998 Apron Rehabilitation construction drawings identified a letter designator to each of the various ramps that were included in the project and this nomenclature will be carried throughout this inventory. The large north ramp was configured to accommodate 40 aircraft tie-downs with two rows of eight nested aircraft at both the east and west ends of the ramp and two single rows accommodating four aircraft each near the center portion of the ramp. The tiedowns are of the Fly-Tie variety, with straps that retract into the recessed ground canisters. Rehabilitation of the North Ramp consisted of: 1 ½" milling of bituminous surface, crack sealing and then overlay with 2 ½" bituminous surface course.

EMS Helipad

An Emergency Medical Service (EMS) helipad is located just north of the Aircraft Rescue and Fire Fighting facility, south of the remote transmitter. This facility has been abandoned and is currently not being used. EMS does operate helicopters from a parking pallet in front of the fire station building, but a designated helipad is not available.



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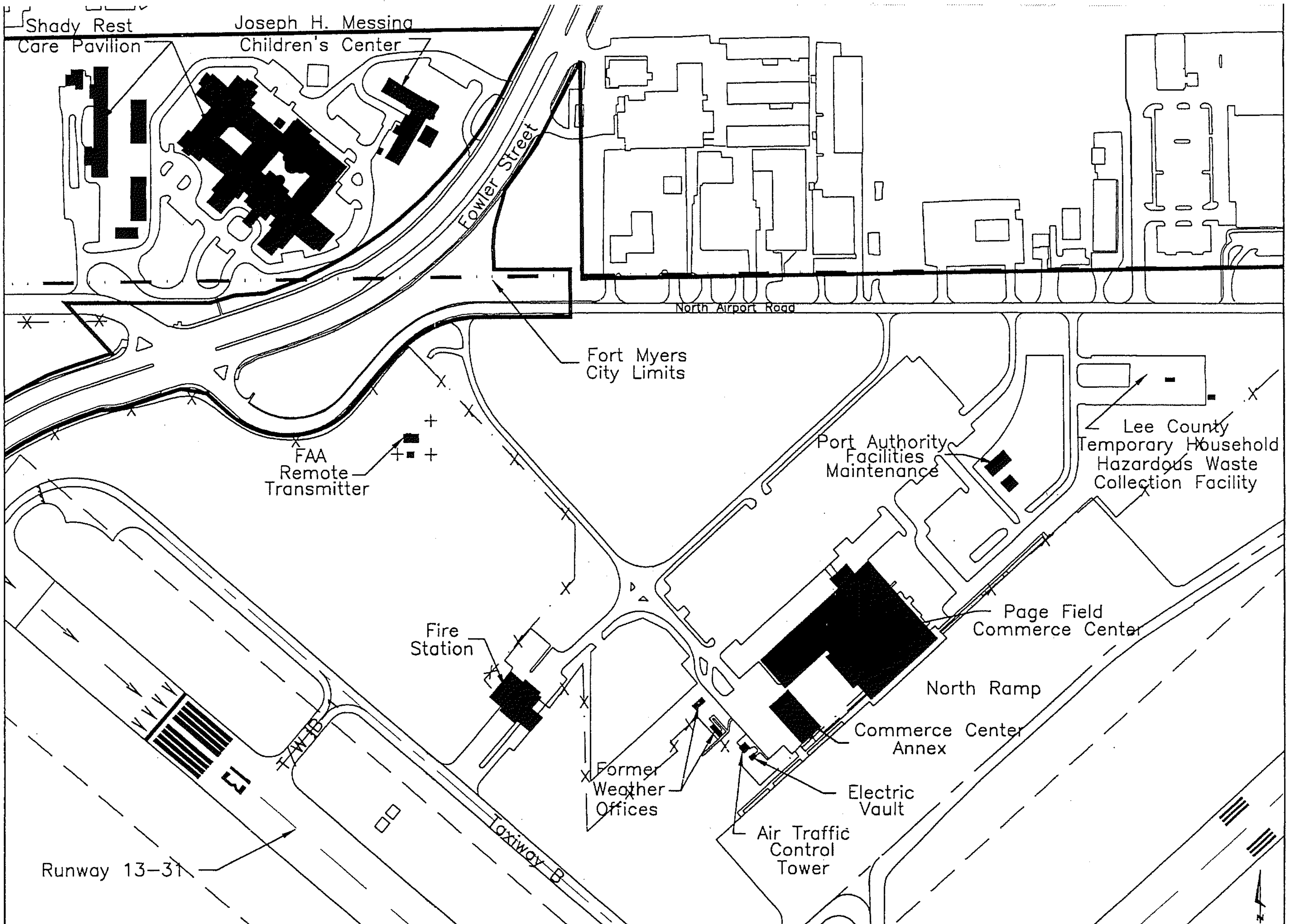
Fort Myers, Florida

NOT TO SCALE

FMY-Key Map

Exhibit 2-12



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Fort Myers, Florida

GRAPHIC SCALE
0 150 300
SCALE IN FEET

FMY-Existing
Northern Quadrant
Exhibit 2-13

Northern Quadrant – Landside

Page Field Commerce Center (Former Terminal Building)

The former terminal building was noted as beginning to show signs of deterioration in the previous master plan due primarily to lack of use and age. Originally constructed as an interim facility in 1975 to better accommodate passengers until the Southwest Florida International Airport could be constructed, the facility was renovated and expanded in 1979 to its existing footprint of 64,460 ft^2. The precast concrete panel building underwent major renovations in late 1998/early 1999 to accommodate a new major facility tenant, the Florida Department of Law Enforcement (FDLE). The FDLE lease includes just over 24,200 ft^2 in the eastern half of the facility.

Commerce Center Annex (Former Air Cargo Building)

The 6000 ft^2 air cargo building located west of the old terminal building was constructed in 1976 and renovated in 1980. The prior master plan noted this facility as being in good condition but its future need has been questioned. There has been interest in the property by local businesses and the Port Authority is actively seeking a tenant.

Lee County Temporary Household Hazardous Waste Collection Facility

A portion of the northeastern section of the easternmost parking area is used on a periodic basis by Lee County Temporary Household Hazardous Waste Collection Facility. The facility is a household solid waste collection facility which collects solid hazardous waste such as batteries directly from the public. The waste is then containerized and removed from the site. No long term storage of waste is done at the site.

Port Authority Facilities Maintenance

This facility, located northeast of the old terminal, is used by the Port Authority to service vehicles and as a workshop for the maintenance of on-site facilities.

Shady Rest Care Pavilion & Joseph H. Messina Children's Center

Two non-aviation related facilities have been developed on airport owned land on the northwest corner of North Airport Road and Fowler Street. These facilities are the Shady Rest Care Pavilion and the Joseph H. Messina Children's Center.

Northern Quadrant – Other

Additional facilities located in this quadrant which will be discussed in subsequent sections of this chapter include:

- Air Traffic Control Tower/Weather Office
- Remote Transmitter
- Aircraft Rescue and Fire Fighting facility (ARFF)
- Electrical Vault

Eastern Quadrant – Airside

Each facility outlined in the eastern quadrant is graphically depicted in **Exhibit 2-14**.

Aviation Center GA T-Hangars

The Aviation Center GA hangars were constructed in late 1996/ early 1997 as part of the Ramp Expansion – Phase 1 project. Access to the ramp on which the T-hangars are located was provided by extending Taxiway Connector B-3 northeastward, Taxilane B-4, and connecting this extension with Taxiway A by constructing a 40' wide taxiway section, Taxilane E, parallel to Taxiway B. The two parallel rows of nested t-hangars have a 75' separation with central access taxilane, Taxilane E-1, that connects from Taxiway B northeast to the new parallel segment. The east side of the east row of T-hangars and the west side of the west row have access off the new parallel segment via a 50' wide section of pavement starting at the face of each building. However, they do not have access to Taxiway B. The distance from the Taxilane E-1 to the centerline of either of the outer access taxilanes is 126'. Each row of the T-hangars accommodates 8 smaller nested aircraft and one larger cabin class aircraft in a total building width of 51' and length of 232'. Each of the T-hangar buildings is internally separated by three four-hour fire walls, limiting the number of aircraft in each building section to no more than three. The northern end of each facility accommodates the single cabin class aircraft position and the height of the structure increases in this area by 5'6" to a height of 22' above the building threshold.

Plane Wash

Although space has been set aside for a plane wash facility and its design was provided as part of the Phase 1 project, this facility has yet to be developed. The anticipated site is north of the intersection of the Taxilane E and the Taxilane B-4. The septic field for this facility was constructed as part of the Phase 1 Apron Rehabilitation project and currently serves the SMS Corporate Hangar Facility.

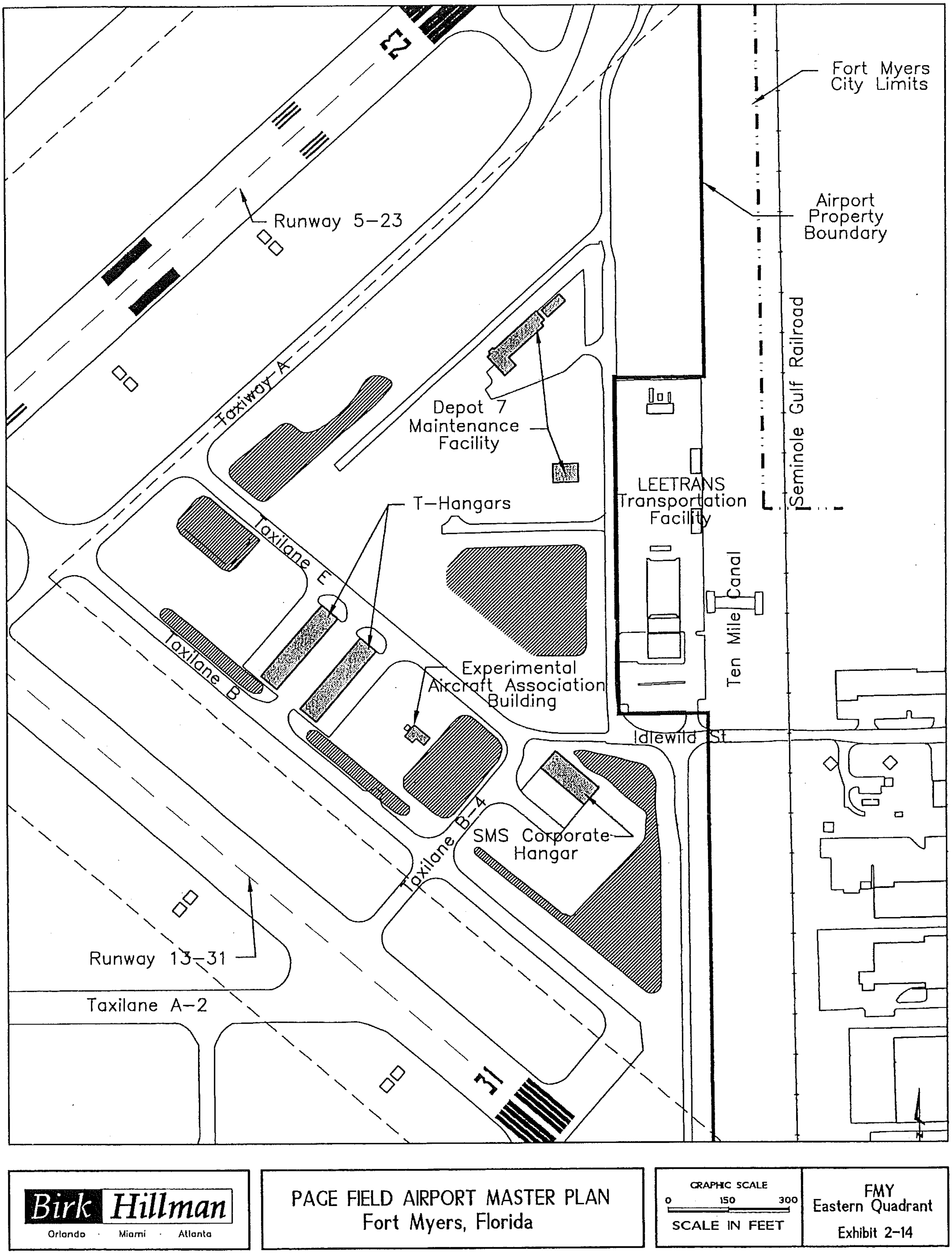
Southern Machine and Steel (SMS) Corporate Hangar

The SMS Corporate Hangar is located east of Taxilane B-4 and is accessed by a short connector taxilane. The SMS Corporate hangar is approximately 11,000 square feet and is the first of a total of three potential conventional hangar sites with access off the small connector.

Eastern Quadrant – Landside

EAA Building

The Experimental Aircraft Association (EAA) currently utilizes a metal building located southeast of The Aviation Center GA Hangars. The location of this facility is currently earmarked for eastward expansion of the T-hangar facilities.



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Fort Myers, Florida

FMY
Eastern Quadrant
Exhibit 2-14

Lee County DOT Depot 7 Maintenance/Lee Trans Maintenance Facilities
The Lee County DOT Depot 7 Maintenance yard is currently located on the north half of the triangular section that makes up the Eastern Quadrant of the airfield. Two non-aviation structures in this portion of the quadrant include the Lee Trans Maintenance Facilities. Efforts have been initiated to relocate these facilities offsite to allow for the expansion of aviation uses into this area.

Southern Quadrant - Airside

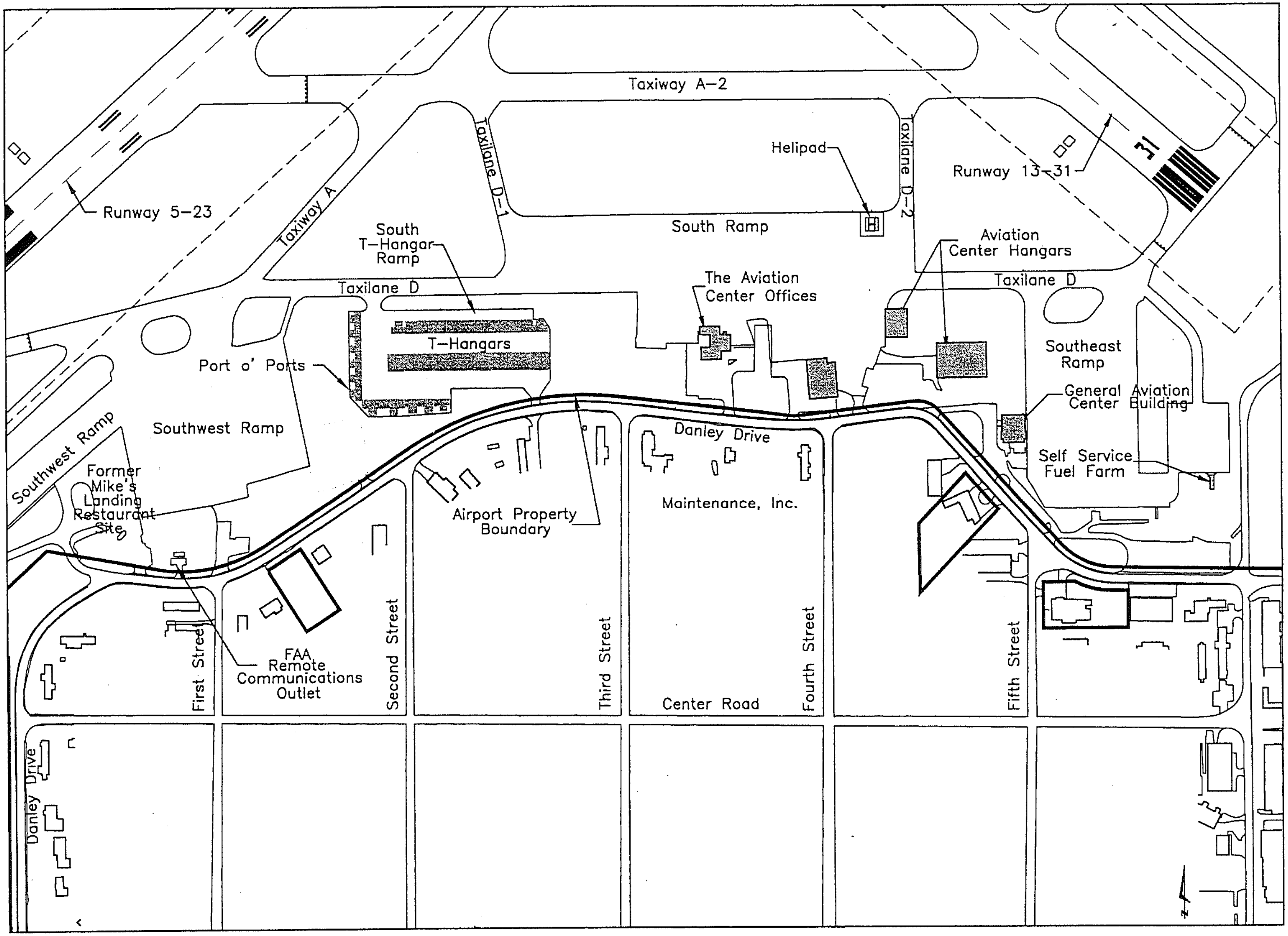
The southern quadrant of Page Field accommodates a majority of the ramp and hangar facilities at the airport. Each facility outlined in the southern quadrant is graphically depicted in **Exhibit 2-15** and **Exhibit 2-16**.

Southwest Ramp
The Southwest ramp is the westernmost series of ramps located between the approach end of Runway 05 and the intersection of Danley Drive and First Street. Referred to as FBO Ramp #1 in the 1993 Master Plan, recent modifications as part of the Apron Rehabilitation Project – Phase 2 have expanded the Southwest ramp westward.

The Southwest ramp extends from the former Mike's Landing Bistro Restaurant site, westward accommodating an apron edge taxilane and 22 aircraft tie-down positions. The Southwest ramp also includes the apron adjacent to the old Mike's Landing Bistro Restaurant eastward, directly behind or North of the FAA RCO site. The entire southwest ramp can accommodate up to 80 tie-down positions depending on aircraft size.

Rehabilitation of the apron edge taxilane and 22 aircraft tie-down positions in 1998 consisted of full depth pavement removal, regrading and compacting of subgrade and a pavement cross section of: 1 ½" bituminous surface course over 2 ½" bituminous base course over 6" limerock stabilized base course. The remaining Southwest ramp rehabilitation consisted of crack sealing followed by a slurry seal.

South T-Hangar Ramp
The South T-Hangar Ramp consists of the pavement areas serving the forty-one t-hangars located to the west of the Aviation Center. This pavement was rehabilitated as part of the 1998 Apron Rehabilitation – Phase 2 project. The rehabilitation consisted of full depth pavement removal, regrading and compacting of subgrade and a pavement cross section of: 1 ½" bituminous surface course over 2 ½" bituminous base course over 6" limerock stabilized base course. With this rehabilitation the thirteen Port o' Ports located on the Southeast ramp where relocated adjacent to the South T-Hangar Ramp to provide for construction of the new self fuel facility on the Southeast ramp.



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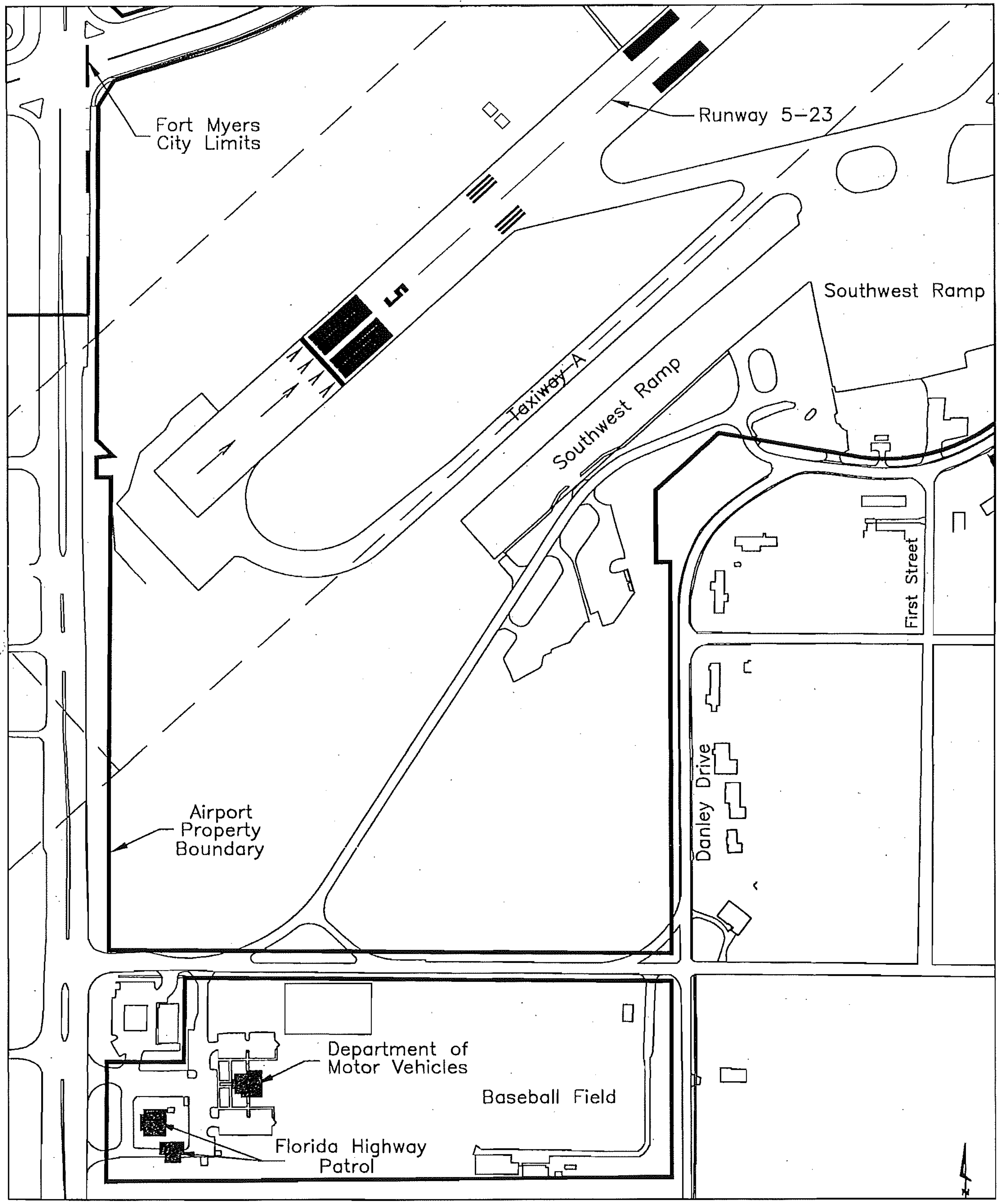
Fort Myers, Florida

GRAPHIC SCALE
0 150 300
SCALE IN FEET

FMY-Existing
Southern Quadrant
Exhibit 2-15



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Fort Myers, Florida

GRAPHIC SCALE
0 150 300
SCALE IN FEET

FMY–Southwestern Quadrant
Exhibit 2–16

South Ramp

South Ramp, previously referred to as FBO Ramp #2, is the center ramp located north of Danley Drive and First Street and the intersection of Danley Drive and Fourth Street. As with the Southwest ramp, the South Ramp has a taxilane that traverses through the center of the ramp. Two taxilane connectors, D-1 and D-2 connect the South ramp to taxiway A-2. Following the 1998 Apron Rehabilitation – Phase 2 project, the portion of the south ramp directly north of the Aviation Center accommodates approximately 53 tie-down positions in addition to a helipad. The portion of the South Ramp directly North of Switlik Aviation accommodates approximately 14 tie-down positions.

Rehabilitation of the northern portion of the South Ramp consisted of: crack sealing and then 3'' bituminous surface course placed in two lifts. Rehabilitation of the southern portion of the South Ramp consisted of: 1" milling of bituminous surface, crack sealing and then overlay with 2 ½" bituminous surface course. Rehabilitation of the apron taxilane, taxilane D consisted of: crack sealing and then overlay with 2" bituminous surface course.

Southeast Ramp

The Southeast Ramp, previously referenced as FBO Ramp #3, is the easternmost ramp on the south airfield, located north of Danley Drive and Fourth Street and the intersection of Danley Drive and Sixth Street. It used to accommodate a row of The Aviation Center T-Hangars (Port o' Ports), which were relocated to the South T-Hangar Ramp, as well as the old Fuel Farm. The General Aviation Center (GAC) is located along the ramp's western edge and is the primary facility with access to this ramp. The ramp was rehabilitated and reconfigured as part of the Apron Rehabilitation – Phase 2 project to accommodate 37 tie-downs. Rehabilitation of Ramp D consisted of: crack sealing and then overlay with 2" bituminous surface course. However, portions of the east and west edges of the ramp received full depth replacement. The easternmost area of pavement, located northeast of the old fuel farm, used to accommodate nine t-hangars or Port o' Port. After relocation of these t-hangars to the Aviation Center t-hangar Ramp, the ramp was rehabilitated as part of the Phase 2 Apron project. The ramp now can accommodate six tie-down positions and houses the airport's only aircraft self-fueling facility. Rehabilitation of the ramp consisted of full depth pavement removal, regrading and compacting of subgrade and a pavement cross section of: 1 ½'' bituminous surface course over a 2 ½'' bituminous base course over a 6'' limerock stabilized base course.

South T-Hangars

The South T-Hangar Ramp accommodates forty-one aircraft in t-hangars, shade hangars and Port o' Port hangars. The Ramp accommodates two rows of t-hangars with a total of twenty-two t-hangar and six shade hangar positions, occupying a total of 52,500 ft² of space. The two rows of hangars are located approximately 65 feet apart. The northern hangar is located approximately 77 feet south of Taxiway D. These facilities were refurbished and painted in 1999. A total of eleven Port o' Port hangars are located along the westernmost and southernmost edge of the t-hangar ramp. These hangars accommodate most small twin-engine aircraft and almost all types of single engine aircraft. Two additional Port o' Port hangars are located at both ends of the north t-hangar unit.

Aviation Center Hangars (conventional)

The first of the three conventional hangars, referred to Aviation Center Hangar #1, is located east of The Aviation Center terminal facility and accommodates the Switlik Aviation aircraft maintenance operation (refer to Support Facilities section). Located about 70 feet to the east of this structure is the above ground fuel farm.

Tomlinson Avionics (Aviation Center Hangar #2) is located just north of the fuel farm adjacent the east edge of the South Ramp. It occupies an area of about 5,200 ft^2 and is leased to one of the helicopter operators on the airport. This hangar houses between six and eight helicopters. Aviation Center Hangar #3 is located east of the fuel farm and southeast of Hangar #2. This large hangar has a total area of approximately 15,350 ft^2. The hangar is used for itinerant and local aircraft storage and operated by Lee County Port Authority.

Southern Quadrant – Landside

The Aviation Center

The Aviation Center is located fairly central to the south side of the airport, north of Danley Drive, between Third and Forth street. The building provides the primary FBO functions for the airport with weather briefing equipment, a pilot's lounge and sleep room, conference room, etc. This facility also houses the on-site airport management staff. The facility is operated by Lee County Port Authority.

General Aviation Center (GAC) Building

The GAC is located north of the intersection of Danley Drive and Fifth Street, adjacent to the west edge of the southeast Ramp. The facility acts as a small office building with a number of aviation related tenants.

Florida Highway Patrol & Department of Motor Vehicles

The Florida Highway Patrol and Department of Motor Vehicles each operate out of buildings located on airport property. They are located to the east of US 41 and south of South Street on a non-contiguous parcel of airport land.

Southern Quadrant - Other

Additional facilities located in this quadrant which will be discussed in subsequent sections of this chapter include:

- Former Above Ground Fuel Farm (Support Facilities Section)
- Aviation Center Above Ground Fuel Farm (Support Facilities Section)
- FAA Remote Communications Outlet

Western Quadrant – Airside

There are no ramps, tie-downs or hangars located in the Western Quadrant of the airport.

Western Quadrant - Landside

Each facility outlined in the western quadrant is graphically depicted in **Exhibit 2-17**.

Page Field Commons

Page Field Commons is a series of facilities located in the airport's west quadrant. The commercial development is located west of the extension of Fowler Street and east of Cleveland Ave. (U.S. 41). Construction on this facility was initiated in late 1998 and will be completed by mid to late 2000.

All Quadrant Tie-Down/Hangar Summary

The following tables, **Table 2-3**, **2-4** and **2-5**, present summary information for aprons/tie-downs and hangars, whether T-hangars or conventional.

TABLE 2-3
AIRCRAFT PARKING APRON

Apron	Quadrant	Size(sy)	Tie Downs
North Ramp	North	44,872 sy	40
Southwest Ramp	South	38,879 sy	78
South Ramp	South	44,326 sy	66
Southeast Ramp	South	22,873 sy	49
Total		**150,950 sy**	**233**

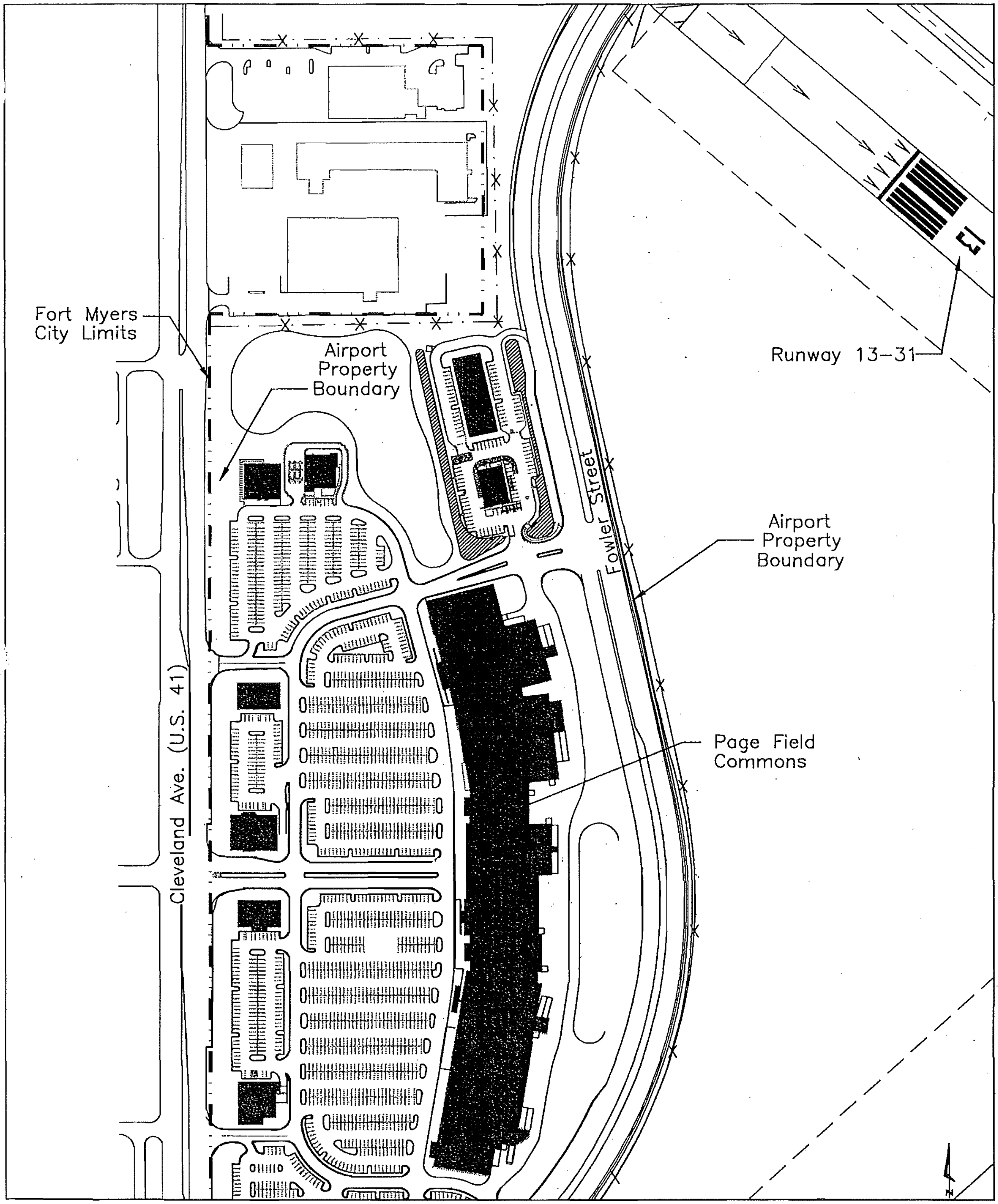
The term sy stands for square yards.

TABLE 2-4
T-HANGARS

Facility	Quadrant	Positions
Aviation Center T-Hangars I and J	East	16 small, 2 medium
T-Hangars – B (includes Shade Hangars)	South	32
Aviation Center Hangars (Port o' Ports)	South	13
Total		63

TABLE 2-5
CONVENTIONAL HANGARS

Facility	Quadrant	Size
SMS Corporate Hangar	East	11,000 ft²
Aviation Center Hangar #2	South	5,200 ft²
Aviation Center Hangar #3	South	15,400 ft²
Total		31,600 ft²



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Fort Myers, Florida

GRAPHIC SCALE
0 150 300
SCALE IN FEET
Date: 04/07/2000

FMY–Western Quadrant

Exhibit 2–17

Support Facilities

Fueling Facilities

Currently, there is one operational fuel farm at Page Field and one aircraft self-fueling facility. The Aviation Center above ground Fuel Farm is located on a roughly 25,000 ft² site north of Danley Drive and east of Fourth Street at the southeast edge of the South Ramp. The facility has three existing fuel storage tanks consisting of two 12,000 gallon Jet A-1 fuel tanks and one 12,000 gallon 100LL tank. Tanker trucks currently are required for the fueling of all aircraft, while a self-fueling facility was commissioned in 1999. The self-fueling facility is located adjacent to the Southeast ramp and stores 12,000 gallons of only 100LL.

The former Fort Myers Airways Above Ground Fuel Farm was located at a site north of Danley Drive between Fifth and Sixth Street. This facility has been decommissioned and the tanks have been removed. However, the concrete wall that surrounded the tanks still exists. Environmental concerns have been raised regarding this site and are currently being further explored for potential petroleum contamination.

Fire Station

The fire station is located west of the Air Traffic Control Tower with access directly onto Taxiway B just east of the B-2 connector. The 3-double bay facility has a flow through configuration allowing up to six fire fighting vehicles to be stored. The total footprint of the building is roughly 10,000 ft² in area. This included a hangar which was added to the south end of the facility to accommodate the Emergency Medical Service (EMS) helicopter.

Aircraft Maintenance Facilities

Switlik Aviation Maintenance Hangar

Switlik Aviation leases a conventional hangar from the airport located east of The Aviation Center and adjacent the south ramp edge for an aircraft maintenance operation. This hangar is approximately 9,000 ft² in area and is in good condition.

AIRPORT INFRASTRUCTURE

Utilities

This section overviews each of the primary utilities at the airport including electrical power, water, sanitary sewer and stormwater. More detailed information will be developed as part of the utility mapping component of this study.

Electrical Power

Power at the airport is provided by Florida Power and Light (FPL) through a variety of substations and transmission lines extending north, south, east and west sides of the airport. Power is provided in the northern quadrant by a single substation with lines that access the airport at three different locations. The remote receiver, Air Traffic Control Tower and electrical vault are powered from the westernmost line which enters the airport just east of the Fowler Street/North Airport Road intersection. Further east, a second leg of this line enters the airport and provides power to the old terminal facility. Finally, the third line enters near the northeast corner of the airport providing power for the Runway 05 localizer. Power is provided in the eastern quadrant by a transmission line that transits Ten Mile Canal at Idlewild road connecting to a main transmission line along Metro Parkway. Power is provided to the south quadrant by a series of transmission lines that transit each north-south street northward to Danley Road. In the west quadrant the glideslope is powered by a line that crosses the Fowler Street extension and then continues northward on the roadway's west side.

The airfield electrical vault, constructed in 1976/77, is a 400 ft^2 building located just northwest of the Air Traffic Control Tower. The facility provides power for all of the airfield lighting and is equipped with an emergency backup generator, as is the fire station.

Water

Potable water to the old terminal complex and ARFF enter the airport along Airport Road via an 8" PVC pipe. This 8" PVC line then turns south at the airport's eastern boundary supplying water to the airport eastern quadrant facilities with 6" PVC connectors. The 8" PVC switches to a 6" cast iron line along the airports southeast corner. A 6" cast iron line transits the airport's southern boundary westward supplying water to all the facilities in the southern quadrant. An 8" asbestos cement water line transits the airport's west property boundary just east of US 41. The city of Fort Myers is the supplier of water to the airport.

Sanitary Sewer

Limited sanitary sewer service exists at the airport save some of the facilities in the northern quadrant that have access into the City of Fort Myers sewer system. The Air Traffic Control Tower and old terminal facility have a lift to sewer while the ARFF facility has a gravity septic system. Most newer facilites throughout the airport such as The Aviation Center terminal and the SMS corporate hangar have lift to septic systems. The prior master plan noted that an old red-brick sanitary sewer line traverses the entire airport, extending to Page Park which is south of Danley Drive. The abandoned line, discovered in the late 1980's or early 1990's was noted in good condition and was capped by the County.

Stormwater

Stormwater at Page Field drains Northward and Southward, away from Ten Mile Canal which is located just east of the airport. Most of the on-airport drainage is above ground and flow is via a series of ditches and piping. Flow is north on the northernmost portion of the airfield, west from the west-central portion of the airfield, and south from the south portion of the airfield. Stormwater just west of the canal flows south along the east side of the airport, around the Runway 31 end and then south. Few retention/detention ponds exist on the airport, the majority of which have been developed recently to accommodate the Phase I Apron Expansion Project and T-hangar development located in the east quadrant. Stormwater drainage problems have been noted in the area of the glideslope facility. A full list of stormwater permits is included in the environmental chapter of this report.

Ground Access & Circulation

Ground access to Page Field and its various facilities is primarily via Colonial Boulevard (S.R. 884), located north of the airport, Cleveland Avenue (US 41), west of the airport, and Metro Parkway (C.R. 439) to the east. Colonial Boulevard located north of and parallel to North Airport Road becomes a six lane divided arterial just east of the airport and is the primary connector to I-75 located roughly 3 ½ miles east of the airport. It also extends westward providing access across the Caloosahatchee River via the Midpoint Memorial Bridge.

Cleveland Avenue (US 41) is the primary north-south arterial extending across the Caloosahatchee to the north through North Ft. Myers, Punta Gorda and ultimately, South Venice. US 41 extends south past Daniels Parkway and into Collier County. Metro Parkway also provides access from the north and south along the east side of the airport extending from Daniels Parkway past the airport to Hanson Street.

The recent Fowler Road extension across the west and northwest sections of the airport, when combined with Boyscout Road which extends to the west to County Road 869 improves the airport access from the south and southwest. Fowler Street also provides access north into downtown Ft. Myers.

In the vicinity of the airport, North Airport Road provides access to the old terminal area from US 41 and Fowler. Danley Road provides access to the south quadrant facilities via South Street or Metro Parkway. Idlewild provides access to the east quadrant facilities via Metro Parkway.

Currently, there is no on-airport roadway that connects the various airport facilities. This requires that external surface roads be used to transit the airport or to move from one facility to another. This adds to congestion on the roadways and makes many of the facilities, such as those in the airport's east quadrant, extremely hard to find for those unfamiliar with the airport.

Auto Parking

Automobile parking is provided in the north, east and south quadrants of the airport. **Table 2-6** outlines the parking spots available for the various airport facilities in each quadrant.

TABLE 2-6
AUTOMOBILE PARKING

Facility	Quadrant	Spaces
Old Terminal Facility (After FDLE Project)	North	508
Air Traffic Control Tower (ATCT)	North	16
Fire Station	North	21
EAA Building and T- Hangars	East	15
General Aviation Center	South	25
FBO, Employees & Private Tenants	South	90
Total		**700**

AIRSPACE

The FAA has six classifications of airspace for the national airspace system. These classifications, which are designated as Class A, B, C, D, E, and G, are critical to the safety of all flights and to the efficient operation of all air traffic control facilities. Based on the level and type of operations, airports receive either a classification of B, C, D or E. Class A airspace only exists above 18,000 feet and Class G airspace is simply uncontrolled airspace.

Because Page Field has an active contract air traffic control tower (ATCT), the airspace for the airport has been designated as Class D. This type of airspace encompasses an area around the airport of five nautical miles and includes everything from the surface up to 1,200 feet above the airport elevation. Class D airspace requires each person to establish two-way radio communication with the ATCT at Page Field prior to entering the airspace and to maintain this communication while in the airspace. Although considered a controlled airspace, Class D airspace does not provide any separation service to visual flight rules (VFR) aircraft. When the ATCT is closed, the airspace at the airport is designated as Class G.

The airport also has a small portion of Class E airspace. Typically, this airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. Around airports, Class E airspace is used to provide additional safety to those aircraft transiting to and from the airport. The small portion of Class E airspace at Page Field exists in order to provide additional control to the precision and non-precision instrument approaches into Runway 5 and the non-precision instrument approach into Runway 13. This airspace has a floor beginning at 700 feet and extends up to 17,999 feet. Only a small portion of Class E airspace is required because most of the area surrounding Page Field is encompassed by the Class C airspace of the SFIA.

Class C airspace will only be found at airports that have an operational control tower, are serviced by a radar approach control, and have a certain number of instrument flight rules (IFR) operations. In the Class C airspace for Southwest Florida International, pilots must establish and maintain two-way radio communications with the ATCT at that airport, prior to entering the Class C airspace. In addition, the aircraft must be equipped with a Mode C transponder. This type of transponder provides information about the altitude of the aircraft. In Class C airspace, aircraft under Visual Flight Rules (VFR) are separated from the aircraft under IFR. VFR aircraft must still see and avoid other VFR aircraft.

Although Class C airspace can be individually tailored to meet the needs of the airport, the airspace usually consists of two columns of airspace. The Class C airspace for Southwest Florida International has no modifications to the standard airspace coverage. The inner column of airspace encompasses an area that has a 5 nautical mile radius from the airport and extends from the surface up to 4,000 feet above the airport elevation. The outer column of airspace encompasses an area that has a 10 nautical mile radius, but begins at 1,200 feet above the airport elevation and extends up to 4,000 feet above the airport elevation. The simplest way to visualize Class C airspace is to envision a two-layer wedding cake turned upside down and centered on the airport.

Exhibit 2-18 has been taken from the Miami Sectional Aeronautical Chart to illustrate the airspace relationships in the Ft. Myers area. The two large magenta circles represent the inner and outer columns of Class C airspace for Southwest Florida International. Page Field falls between these two circles. This is why the ceiling for Page Field's Class D airspace only goes up to 1,200 feet. At 1,200 feet, the Class D meets the overlaying Class C airspace which is more restrictive. Although it is nearly hidden, the Class D airspace for Page Field is represented by a dashed blue circle. However, the southeast portion of that circle is missing because it meets with the inner column of Class C airspace. The Class E airspace mentioned before is depicted with a wide magenta line that fades from the outside in towards the airport it serves. The small portion of Class E for Page Field is located on the northwest side of the airport. It is only an arc that is truncated by the outer column of Class C airspace.

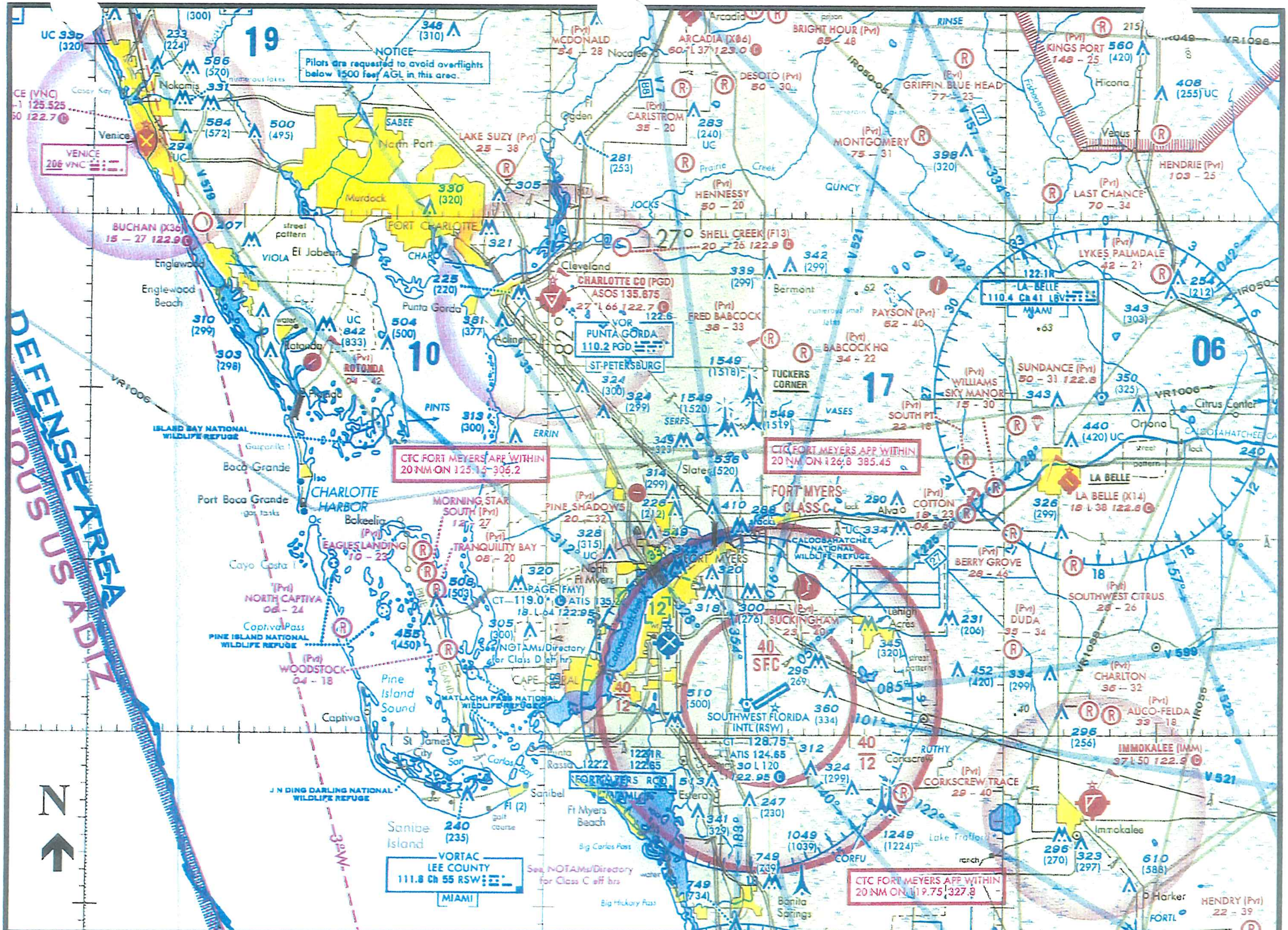


EXHIBIT 2-18
Aeronautical Chart
Southwest Florida

AIR TRAFFIC CONTROL TOWER AND COMMUNICATIONS

Presently Page Field has a contract ATCT which is operated by trained personnel from 7 a.m. to 10 p.m. every day of the week. The ATCT is located approximately 982 feet to the northwest of the Runway 5-23 centerline and approximately 995 feet to the northeast of the Runway 13-31 centerline. The Page Field ATCT provides two primary functions for the airport: local control and ground control operations. These services are handled through two separate frequencies, 119.0 MHz and 121.7 MHz respectively. Additional air traffic services are provided to the users of Page Field via the air traffic control facilities at Southwest Florida International.

Local Control

The local controller of the Page Field ATCT is primarily responsible for the separation of aircraft operating within the airport traffic area and those landing on any of the active runways. The primary responsibility of the local controller is arranging inbound aircraft into a smooth and orderly flow while at the same time sequencing departing aircraft into this flow. This coordination of arriving and departing traffic is limited to the areas of the Class D and Class E airspace for Page Field.

Ground Control

The ground controller is responsible for the separation of aircraft and vehicles operating on the ramp, taxiways, and any inactive runway. This responsibility includes aircraft taxiing out for takeoff, aircraft taxiing into the terminal areas, and any ground vehicles operating on airport movement areas. Page Field ground control is responsible for coordination of traffic in designated movement areas. Line of sight problems on the east end of Taxiway B due to the development of new hangars have resulted in the removal of this section of taxiway from the designated movement area classification. These areas are designated as non-movement areas and are discussed later under non-movement areas.

Approach and Departure Control

Because Page Field lies within the Air Route Traffic Control Center (ARTCC) area of responsibility for Southwest Florida International, the radar facilities at the international airport retain control of all arriving and departing aircraft on an IFR flight plan. This control is retained until either the aircraft departs the Class C airspace, the Ft. Myers ARTCC hands the aircraft over to the Page Field ATCT local control, or until they have the airport in sight and the pilot cancels the IFR clearance. On departure, if Page Field is under IFR conditions and if the control tower is operating, a pilot may pick up his IFR clearance from the ARTCC after he has become airborne. The center retains control of all arriving and departing IFR traffic within its jurisdiction.

Automatic Terminal Information Service

Automatic Terminal Information Service (ATIS) is available to pilots operating into or out of Page Field. The ATIS information provides pilots with required airport and meteorological information. This information, which is updated every time there is a significant change, is continuously broadcast on a separate frequency (135.2

MHz). The use of ATIS information greatly reduces the workload and radio time required by the air traffic controllers at the airport.

Non-Movement Areas

Due to line of sight issues, there are a number of areas at Page Field that have been designated as non-movement areas by the ATCT. As mentioned previously, one of these areas includes the portions of Taxiway B that are southeast of Taxiway A. In addition, all of the portions of Taxilane E in this quadrant of the airport are also considered a non-movement area.

Taxilane A-4 located on the northwest side of Runway 5-23 is also a non-movement area, as well as the former air carrier apron. In this portion of the airfield, the half of Taxiway B-3 that connects the former air carrier apron to Taxiway B is also designated as a non-movement area.

The final non-movement area designation at Page Field includes all portions of Taxilane D, including D-1 and D-2, and each of the aircraft parking aprons located off of Taxiway D (on the south side of the airport).

Remote Transmitter/Receiver Facility

A Remote Transmitter/Receiver (RTR) facility is located on the north side of the airfield. This facility is approximately 909 feet to the northeast of the Runway 13-31 centerline, almost directly abeam the Runway 13 threshold. RTRs are unmanned communications facilities that can be remotely controlled by ATCT personnel. This facility serves to extend the communication range of the ATCT facilities at Page Field.

Remote Communications Outlet

There is an FAA Remote Communications Outlet (RCO) located on the south side of the airfield. This facility is approximately 1,025 feet to the southeast of the Runway 5-23 centerline and just north of Danley Drive. Like RTRs, RCOs are unmanned communications facilities that can be remotely controlled by ATCT personnel. However, this facility, which is named the Ft. Myers RCO, helps extend the communication range of the Miami Flight Service Station to better serve the Southwest Florida area.

AIRPORT IMAGINARY SURFACES (FAR Part 77 Surfaces)

All airports in the country have a three dimensional imaginary surfaces plan that represents each airport's navigable airspace requirements as dictated by Federal Aviation Regulation (FAR) Part 77. Part 77 establishes standards for determining obstructions and publishes the design criteria used to construct the surfaces tailored for each specific airport. This plan is designed to preserve safety for aircraft flight operations and is used to keep the designated airspace free from all natural or manmade objects. The surfaces are like a bowl above the airport with long approach surfaces extending up and out from the runway ends. These surfaces surrounding the airport are also used to analyze all existing, future or proposed tall structures as to their potential for creating a hazard for aircraft operating at Page Field. If a structure does penetrate these surfaces, then it must be identified and either properly painted or equipped with approved obstruction lights. A FAR Part 77 Imaginary Surfaces Plan is included as part of the airport plan set. Page Field has a local agreement with the City of Fort Myers to help control obstacle penetrations to these surfaces. The two agencies work together to protect the airspace environment around the airport. (also see "Airport Hazard District")

AIRPORT ENVIRONMENT

Information pertaining to the airport environment of Page Field is provided in the following sections. This information has been divided into the three categories of airport property boundary, land use, and environmental data. Later chapters of this master plan incorporate greater detail pertaining to these elements of Page Field, including an updated Airport Property Map, Land Use Plan, and an Environmental Overview chapter.

Airport Property Boundary

The airport property of Page Field encompasses approximately 616 acres. The northern portion of this property falls within the limits of the City of Ft. Myers while the southern portion lies within an unincorporated portion of Lee County.

The airport is situated to the south of downtown Ft. Myers, west of Interstate 75 (approximately 3.5 miles via Colonial Boulevard), and just east of Cleveland Avenue (U.S. 41). The northern boundary of the airport essentially runs along North Airport Road, between U.S. 41 and the Ten Mile Canal. There is a 600 foot by 2,600 foot track of undeveloped land on the north side of North Airport Road that belongs to the airport. U.S. 41 bounds the airport to the west, with the exception of a 600 foot by 600 foot tract of land to the west of the runway protection zone for Runway 13. The eastern side has no significant road bounding it. Instead, the Ten Mile Canal and Seminole Gulf Railroad provide the eastern boundary of the airport property. Finally, the southern boundary follows the curved alignment of Danley Drive. There is also a 500 foot by 1,300 foot parcel owned by the county as part of the airport expansion to the south of Danley Drive at the corner created with U.S. 41. Additionally, there are three smaller parcels located along Danley Drive on the south side of the road.

Land Use

The City of Ft. Myers and Lee County have assigned land use and zoning designations to property within their respective jurisdictions. Existing and future land uses on and off airport property are important considerations with respect to the current and future development of the airport and community. Compatible land use issues and considerations will be utilized in the development of later chapters in this master plan. For now the following sections provide a brief overview of the land use features that can be found on airport property and in the areas surrounding Page Field.

On Airport

There are currently five different land use categories for the 616 acres that make up Page Field. These include:

- Airfield Operational
- Aeronautical
- Commercial
- Public Facilities
- Recreational

The most prominent land use for the airport is Airfield Operational. This category of land use covers all of the area around the two runways, within the building restriction line (BRL) and the runway visibility zone (RVZ). The various BRLs for Page Field are reflected on the Airport Layout Plan. Aeronautical land is found between North Airport Road and the BRL in the north quadrant with an area of non-aviation commercial depicted where the former terminal building exists. Aeronautical land is also found between Fowler Street and the BRL in the west quadrant and in the south quadrant from Danley Drive north to the BRL. In the east quadrant Aeronautical land includes an area from Ten Mile Canal west to the BRL. Between Fowler Street and U.S. 41, the land is designated as Commercial where Page Field Commons exists. The area north of North Airport Road, adjacent to Fowler Street is shown as public facilities. This area includes the Shady Rest Care Pavilion and Children's Center. To the South on the corner of South Road and US 41 the other public facilities land is shown which depicts the Florida Highway Patrol offices. To the east of the FHP offices adjacent to South Road, the only recreational land on airport property exists. This area includes a couple of baseball fields and tennis courts.

Foreign Trade Zone

Foreign Trade Zones have emerged as an important economic development tool used by many localities to attract and retain new business and industry. Both Page Field and the Southwest Florida International Airport have been included in the Ft. Myers Foreign Trade Zone (No. 213). A Foreign Trade Zone is a site within the United States, in or in proximity to a United States Customs port of entry, where foreign and domestic merchandise is considered to be in international commerce. Foreign or domestic merchandise may enter a zone absent formal customs entry or payment of custom duties or government excise taxes. No duties are paid on goods that are rejected, damaged, destroyed or discarded, and no duties are paid on goods that are re-exported directly from the trade zone.

Storage, testing, relabeling, repackaging, repairing, assembling, and manufacturing are just seven of a number of processes that merchandise entering a trade zone may undergo. In cases where a final product is imported into the United States, customs duty, and excise taxes are due, but only at the time of transfer from the zone and formal entry in the United States. In fact, the National Association of Foreign Trade Zones (NAFTZ) points out that the duty paid is the lower of that applicable to the product itself or its components. Zones therefore give users opportunities to realize customs duty savings while, at the same time, benefiting from flexible methods of handling merchandise.

Off Airport

There are four primary land use designations for the area surrounding Page Field. These include:

- Mixed Use
- Industrial
- Public/Utility/Institutional
- Residential

The most predominant of these land uses around the airport property is Mixed Use. With the exception of two Industrial areas, all of the land immediately surrounding the airport property line is Mixed Use. Typically, Mixed Use areas around the airport have high intensity commercial and residential development. The first of the two Industrial areas is located off of the northeast corner of the airport. It begins on the north side of North Airport Road, and then runs east, primarily on the north side of Colonial Boulevard. The second Industrial area extends off the southeast corner of the airport property and primarily extends south centered along the Ten Mile Canal and the Seminole Gulf Railroad. A block of Public/Utility/Institutional use land lies to the west of the airport, on the opposite side of U.S. 41.

Airport Hazard District

Subdivision III of the Lee County Land Development Code creates an Airport Hazard District. This Airport Hazard District was created to protect the airspace, noise, and zoning regulations involved with Page Field, the Southwest Florida International Airport and all other existing state licensed airports and heliports (public or private) within the county's jurisdiction.

Based on the Lee County Land Development Code, the specific purpose and intent of the Airport Hazard District is to:

- Promote the maximum safety of aircraft arriving and departing from county airports.
- Promote the maximum safety of residents and property within areas surrounding the county airports.
- Promote the full utility of county airports, so as to ensure the maximum prosperity, welfare, and convenience to the Lee County and surrounding county area and their residents.
- Provide building height standards within the imaginary (FAR Part 77) surfaces of the airports.
- Provide development standards for those land uses within prescribed noise zones.
- Provide guidelines for prevention of airspace obstructions and incompatible land uses in the areas surrounding the county airports.

The Airport Hazard District was updated on August 31, 1994. Because a portion of Page Field's operational airspace overlies the City of Ft. Myers, Lee County and the City have worked out an inter local agreement to ensure continued protection of Page Field's airspace.

Environmental Data

Construction improvement projects at the airport will require environmental permitting through numerous agencies, each with its own criteria and focus. Future development of the airport and the integration of environmental permitting will be critical to the success of each project as well as to the success of the airport. Coordination with the appropriate agencies for permitting requirements will be made as projects are funded. Page Field falls under the jurisdiction of the South Florida Water Management District. This agency will review and permit all construction projects at the airport to ensure compliance with the Conceptual Permit Application for the airport.

The Environmental Overview chapter of this study will provide greater details related to the environment of the airport. This portion of the study will analyze the following topics:

- Vegetative, Wildlife, and Endangered Species
- Water Resources (including surface and ground water)
- Flood Hazards
- Air Quality
- Wetlands and Biotic Communities
- Section 4(f) Lands
- Historical and Archaeological Sites
- Energy Supply and Natural Resources
- Construction Impacts
- Drainage and Hydrology

The Environmental Overview portion of this study will also prepare an assessment of the existing and potential noise impacts at the airport.

Chapter Three - Aviation Activity Forecasts

INTRODUCTION

This chapter identifies the forecast level of aviation activity for Fort Myers Page Field (FMY) to be used as a foundation for subsequent planning activities in the Master Plan Update. Aviation activity forecasts provide the benchmark against which the adequacy of existing airport facilities are evaluated.

Forecasting future activity remains both an analytical and subjective process. This is particularly true of forecasts that deal with general aviation activity. The ability to develop mathematical projections of future activity levels has been complicated by the failure of general aviation to fully correlate to general socioeconomic factors at many of the nation's airports. This has often required the identification of alternative projection techniques to identify the potential level of general aviation activity at individual airports. Regardless of the projection methodology employed, assumptions must be made as a part of the forecast process about how activities might change in the future. This chapter outlines socioeconomic conditions in the Page Field market area, discusses general aviation industry trends, overviews projection techniques and presents projections of aviation activity for a twenty-year planning period covering the following items.

Based Aircraft
- Total Based Aircraft
- Fleet Mix

Annual Operations
- General Aviation
- Military
- Instrument
- Local / Itinerant

Peak Activity
- Peak Month
- Average Day
- Peak Hour

FORECAST CONSIDERATIONS

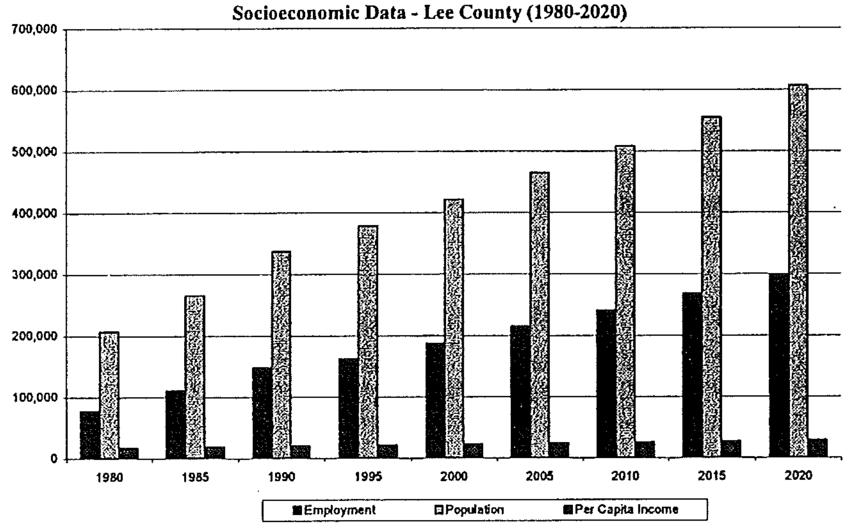
Preparation of activity forecasts for Page Field must take into consideration a variety of factors that influence the level and nature of aviation. The Airport is affected by a number of local as well as regional and national trends and considerations that combine to influence the type and level of airport activity at the facility. These considerations provide the basis for the development of a set of assumptions that are key elements of the overall forecast process. The following sections present general information relative to inputs and considerations that have been used in the process.

Socioeconomic Factors

Local fluctuations in population, employment and per capita income have been found to sometimes be a key consideration in the identification of existing and future aviation activity trends. Intuitively it is apparent that the level of airport activity is higher in areas having large population concentrations than it is in smaller more rural communities. Further, it has also been found that higher disposable income or per capita income has also sometimes been a factor in the rate of growth in activity. These considerations are often a key to the preparation of aviation forecasts as they frequently have a highly correlative relationship to aviation activity. For instance, a growing population with increased disposable income may spend more on air travel, increasing the business potential of airport and aircraft services.

As such, review of historical socioeconomic trends along with anticipated changes in these trends is an often-used approach in forecasting an indication of future aviation activity. As an initial step in the forecast process a variety of data relating to key socioeconomic indices were identified and analyzed in the projection process. This information included population, employment patterns and per capita income for Lee County as a whole. A summary of these historic variables and future projections for each variable is included in **Figure 3-1**.

Figure 3-1
Socioeconomic Data - Lee County (1980-2020)



(Per Capita Income in 1997 dollars)

Historic and Projected Population

Historic and projected population information for Lee County and the City of Fort Myers was obtained from data compiled by the University of Florida's Bureau of Economic and Business Research (BEBR).

Historic Population

Lee County has experienced significant population growth over the last 30 to 40 years. The population of Lee County in 1960 was 54,539 people. By 1980 the County had grown by nearly four times to 207,907. The following ten years saw the resident population grow by 62.4 percent to 337,618 in 1990. Since 1990 the rate of population growth in Lee County registered an overall growth of 12.2 percent with population estimated to reach 412,860 people in 1999, up 8,754 from the 1998 population.

Age Distribution

The 40-54 age group has shown a high overall increase (138%) from 1980 (28,993) to 1995 (68,868) and accounted for approximately 18 percent of the total population of Lee

County in 1995. The age group of 55-64 years comprised 23.1 percent of the total Lee County population in 1995. Approximately 15 percent (55,692) of the Lee County population fell between the years of 65-74 in the same year while the population of senior citizens, aged 75 and over, accounted for 11 percent of the entire County population in 1995. The smallest segment of the population in 1995 (4.6 percent) was between 15 and 19 years of age. In short, the population of Lee County displays a higher percentage of persons in the older age cohorts than the statewide or national average. While individuals in the 45-64 age group are often at their highest income potential the influence that the age distribution has on the propensity for growth in general aviation activity may need to be considered in the forecast process.

County Distribution

According to data gathered from the Lee County Economic Development Office, Lee County's 1997 population of 394,244 people accounted for 51.5 percent of the combined populations of Lee, Collier, Charlotte, Hendry and Glades Counties. These five counties generally comprise the Southwest Florida region and can be considered the area within which Page Field must compete for market share. Within Lee County, about 62 percent of the population resides in unincorporated areas and roughly 23 percent or 90,026 in Cape Coral. Fort Myers showed a 1997 population of 46,522 people, about 12 percent of the total population of Lee County. Fort Myers Beach (6,034) and Sanibel (5,884) comprise roughly three percent of the County's total population.

Projected Population

According to the BEBR, by 2005 the population of Lee County will increase to 465,336 persons, rising by 10.3 percent from the estimated 421,804 persons for the Year 2000. Extended forecasts by the BEBR estimated the population of Lee County to reach 508,261 by 2010 and increase overall 9.2 percent by the Year 2015 to 555,146 people. The population of Lee County is estimated to reach 606,355 by the Year 2020, which represents an increase of nearly 50 percent over the current level of population in Lee County. Thus, it is anticipated that Lee County will experience a significant level of population increase over the course of the airport planning period, and this could impact the level of aviation activity at the area airports.

Age Distribution

There are currently about 82,767 (1999) people within the 40 to 54 age group. This group is expected to increase to about 86,660 by the Year 2000. This age group typically has the propensity to have a significant impact on the level of general aviation activity and the use of general aviation services. This particular age group is expected to experience a continuous increase over the course of the planning period reaching 102,091 by the Year 2010 and 109,355 by the end of the planning period.

The population of people aged between 55 to 64 is expected to increase by 4.3 percent over the current level based on data provided by the BEBR. There are currently 47,417 people in this age group, and are estimated to reach 51,172 individuals by the Year 2000. This group will continue to increase over the planning period reaching 66,381 by 2005, 82,517 in 2010 and 127,510 by the end of the planning period. Overall the percentage of persons in the 55 to 64 age group will increase from 12.1 percent of total population to roughly 21 percent by the end of the planning period. The rate of growth in this age group is roughly twice the national average for this population cohort.

Employment

Historic Employment

Based on data contained in the Lee County Demographic Profile for 1998, the Fort Myers-Cape Coral metro area ranks high among the nation's job growth areas. An October 1996, Forbes Magazine study indicated that over the six-year period 1990 to 1996, the metro area had a 23 percent net increase in jobs. The Lee County unemployment rate of 3.4 percent in 1997 was lower than the U.S. national average of 4.9 percent.

Based on the BEBR statistics the total employment in 1980 was 78,187 people and increased to 110,641 people over the following five-year period. Employment continued to grow reaching 148,202 people in 1990 and growing by 9.8 percent to reach 162,798 by 1995.

Projected Employment

Total employment in Lee County was estimated to be 177,247 in 1998 with a projected increase to 187,585 by the Year 2000. Total persons employed are forecast to show a 2.8 percent annual rate of growth between 2001 to 2005 reaching 215,750 by the end of this period. Between 2005 and the end of the planning period, the annual rate of growth in employment is estimated to be 2.2 percent with total employment expected to reach 240,647 in 2010, 268,417 in 2015 and 299,392 employed persons by 2020. Although the annual rate of employment growth is expected to decline, overall employment will continue rising and depict an average growth of 2.4 percent from the Year 2000 to 2020. Thus the overall employment picture displays steady growth indicating an expanding economy and a growing business base. Given the utilization of general aviation by corporate and business entities, this growth in employment could result in increased demand in the Page Field market area.

The Lee County Economic Development Office estimates government employment to show the largest percentage increase (31.7 percent) from 1995 to 2005 of any of the employment categories in Lee County. Unfortunately, growth in government employment does not necessarily translate into significantly increased demand for general aviation services. Retail Trade and the Services sectors are projected to increase from 36,102 and 46,754 employees to 46,390 jobs (up 28.5 percent) and 60,313 jobs (up 29 percent) respectively by 2005. Employment in the Finance, Insurance and Real Estate sector is expected to increase from 8,308 jobs in 1995 to 9,103 jobs in 2005. The 10 year forecast shows a 9.6 percent increase in jobs for this professional employment sector. The forecast of Service industry employment projects the largest numerical expansion of new jobs of any sector with this category comprising a total of 30.1 percent of total employment in Lee County by 2005. The manufacturing sector is also expected to see a 19.3 percent increase in employment to 7,491 people by 2005. The overall annual growth rate in total employment is expected to be 2.45 percent in Lee County from 1995 to 2005, which is close to double the national average of 1.3 percent. A growth in total employment as well as in individual sectors are likely to use general aviation services will be evaluated to determine if there is a basis for development of a forecast.

Per Capita Income

Demand for aviation services and airport facilities can often be correlated to per capita income. Per capita income is the estimated average amount per person of total money income received during the calendar year for all persons residing in a given political jurisdiction. Obviously the utilization of aviation services including such things as aircraft ownership or the propensity to charter an aircraft can significantly be affected by the level of income available to defray the costs of these services. The basic assumption being that as income increases there is a corresponding increase in the potential for a portion of that income to be spent on general aviation aircraft or services rendered by general aviation.

Historic Per Capita Income
Data derived from BEBR reports placed the level of Per Capita Income for Lee County in 1980 at $17,364. Per Capita Income grew between 1980 and 1995 to $21,523. Based on BEBR estimates growth in per capita income has been under one percent annually through the mid-1990's with the level of per capita projected to reach $22,835 by the end of 1999.

Projected Per Capita Income
Per capita income is forecast by the BEBR to reach approximately $23,175 (in 1997 dollars) by the Year 2000 displaying an annual increase of 1.5 percent. Overall a six percent increase is forecast between 2005 to 2010 with total per capita income reaching an estimated $26,035 by the end of the period. This reflects a 1.2 percent annual increase for the period 2005 through 2010. This 1.2 percent growth rate is forecast to continue through the end of the planning period (2020) with per capita income projected to reach $29,192 (1997 dollars).

In addition to socioeconomic factors, occurrences within the general aviation industry can influence forecast activity levels at an airport. Industry related considerations can include national trends, legislation as well as regional and local considerations. The influence that these factors play at a particular airport need to be considered separately since they may not be displayed in the historic trend data.

General Aviation Industry Trends

The FAA's Fiscal Year Forecast 1998-2009 defines "General Aviation" as a "diverse range of aviation activities and includes segments of the aviation industry except commercial air carriers (including commuter/regional aircraft) and military. Its activities include the training of new pilots, sightseeing, the movement of large heavy loads by helicopter and flying for corporate/business or personal reasons. Its aircraft range from a one-seat single engine piston to the long-range corporate jet. General aviation (GA) provides on the spot efficient and direct aviation services that commercial aviation cannot or will not provide. GA has provided efficient aviation services and it is important for policy makers, opinion leaders and the general public to understand the vital role general aviation plays in the national economy and air transportation system."

Trends in the overall general aviation industry along with changes in local demographics, conditions, and facilities will be utilized in the development of the activity forecasts at FMY. For this reason it is important to overview in general terms the factors and considerations that have influenced general aviation nationally as well as in the immediate Page Field market area. The last 15 to 20 years has been a difficult period for the general aviation industry. During this time frame the industry saw the cessation of production of single engine aircraft and light twins by the major manufacturers and also saw an overall decline in the total number of general aviation aircraft. The industry was battered by a number of factors. These included two major economic recessions, the impact of product liability and litigation, which contributed significantly to a rapid rise in the cost of purchasing an aircraft. The effect of these factors most significantly impacted two segments of the industry consisting of the single engine piston market and the multi (twin) piston market. The period of the eighties also saw the first time that the industry failed to rebound with improving economic conditions. Unlike previous recessionary cycles where the industry saw a downturn and then returned to a period of growth with economic recovery, the general aviation industry did not experience such a return after the recession of the early 1980's nor did it show recovery after the recession of the early 1990's. A clear indicator of this is the fact that U.S. Gross Domestic Product during the eighties and early nineties grew at an average annual rate of 2.0 percent, while domestic piston engine aircraft shipments declined by 95 percent. Several other indicators of the distress that typified the industry up through the early 1990's include:

- General aviation aircraft shipments fell from a high of 17,811 in 1979 to just 811 in 1993. This significant downturn was the basis used to suggest legislation to aid the industry in 1994.
- The active general aviation fleet fell from a high of 213,300 in 1984 to 176,006 in 1994.
- The FAA noted in their Aviation Activity Forecasts 1995-2006 that "Over the last ten years, annual claims paid by manufacturers have increased from $24 million to over $210 million despite an improved safety record."
- The total number of student pilots, total private pilots and the number of hours flown by general aviation aircraft all experienced significant decline up through 1994.
- In 1980 there were 29 U.S. and 15 foreign manufacturers of piston aircraft, by 1994 there were none U.S. and 29 foreign manufacturers of these same aircraft types.

Despite these adverse considerations, it is important to remember that general aviation activity remains the most significant sector in the aviation industry. In 1991, the latest inventory available, there were 670 airports in the United States that had commercial service certificates in addition to serving the general aviation community. At the same time, there were an additional 17,647 active airports and heliports, including Page Field, used exclusively by general aviation aircraft. According to FAA documentation, there were a total of 187,312 active general aviation aircraft in 1997 compared to 7,028 commercial and 16,000 military aircraft. Additionally, general aviation's dominance in the overall aviation picture is further supported by the fact that of the 616,340 certificated pilots in 1996, with general aviation pilots accounting for over 79 percent of that total. General aviation also accounted for over 72 percent of the total 120.3 million aircraft operations that occurred in the United States and its territories in 1997. There is nothing to indicate that the overall dominance and importance of general aviation will undergo any significant or fundamental change in the future, particularly in light of the changes that have begun to emerge as a result of the passage of the General Aviation Revitalization Act of 1994. The signing of this act has provided a renewed era of optimism for the general aviation market, which led to a turnaround in the industry.

In 1999, with five years passing since the enactment of the General Aviation Revitalization Act, the GA industry has experienced an upturn in an array of activity categories. In 1996, the industry advanced its efforts and ideas into constructive actions to stimulate the much-needed demand of GA aircraft and supporting services. After passage of the General Aviation Revitalization Act, two of the largest manufacturers of small aircraft resumed production. The Cessna Aircraft Corporation reentered the single-engine piston aircraft market for the first time since 1986. Also, the New Piper Aircraft Corporation emerged from Chapter 11bankruptcy protection to restart and increase its production schedule. Other aircraft manufacturers and aviation suppliers also began hiring and expanding their production.

In 1997, there was an increase in the activity recorded at the FAA and contract towers combined, resulting in the highest level of activity since 1990. GA activity had much to contribute to this effect with operations totalling 36.6 million, an increase of 3.8 percent over 1996. According to the FAA the active GA aircraft fleet increased for the first time since 1992. In addition, the number of hours flown by GA aircraft recorded its first increase since 1989. The active GA fleet totaled 181,341 on January 1, 1996, an increase of 6.3 percent over the 1994 estimate. These aircraft flew an estimated 25.5 million hours in CY 1995, an increase of 6.7 percent. Based on the data compiled by the General Aviation Manufacturers Association (GAMA) for the first three-quarters of 1998, there were a total of 1,495 GA aircraft deliveries at $3.86 billion. In 1997, the first three-quarters recorded $3.19 billion through 960 GA aircraft shipments. The FAA projects the GA active fleet will total 212,960 in 2009, an increase of almost 24,000 aircraft (1.0 percent annual growth) over the 12-year forecast period.

The current FAA Aviation Activity forecast (1998-2009) assumes that the business use of GA aircraft will expand at a more rapid pace than personal use of GA aircraft. This is largely reflected in the changing character of the GA fleet mix. The more expensive and sophisticated turbine-powered part of the fixed wing fleet is expected to grow at a faster rate than are the piston aircraft categories. Overall, revitalization of the industry has had a positive effect on the number of active general aviation aircraft and the operations these aircraft conduct in the United States. This has been significantly facilitated by the strong economic cycle of the mid to late 1990s. In addition to the TAF, the FAA also publishes an annual report of forecasts for aviation activity as a whole for the nation. The most recent edition of this report, FAA Aviation Forecasts, includes the fiscal years 1998 through 2009. In this edition the FAA states, "The commercial aviation industry recorded its fourth consecutive year of strong traffic growth, while the general aviation industry sustained its recovery by registering its third consecutive increase in aircraft shipments." It is interesting to note that while the decline in the general aviation industry affected the nation as a whole, its impact on Page Field coupled with a decline in market share has had a significant impact on the Airport, and it is only now recovering.

Regional Market Considerations

Page Field is situated in an area that has a number of other aviation facilities providing services to general aviation users. Not the least of these is the increasing role that Southwest Florida International Airport has been playing in providing facilities and services to general aviation aircraft users. A review of the capability of Page Field to capture its share of general aviation activity versus other competing airports in Southwest Florida was prepared based on annual general aviation operations from 1980 through 1997. This analysis provides a comparison of general aviation activity trends occurring at other airports in the region. The market share technique compared general aviation activity at Page Field to that of five other regional public use airports; Southwest Florida International, Immokalee, Charlotte County, La Belle, and Naples. Historic data for each of the airports was obtained from the Florida Aviation System Plan's database and supplemented with the historic Terminal Area Forecast (TAF) numbers generated by the Federal Aviation Administration. The total GA aviation activity for all six airports was compared to that of each individual airport to determine the respective percentage of the overall GA activity for which each accounted, as outlined in **Table 3-1**. The table denotes strictly general aviation activity. Military, commuter, air taxi and air carrier activity was not included in the operation totals.

TABLE 3-1
AIRPORT MARKET SHARE (GA only)

Year	Page Field	Immokalee	Southwest International	Charlotte Co.	La Belle	Naples
1980	43%	8%	0%	16%	4%	28%
1981	41%	9%	0%	16%	5%	29%
1982	44%	8%	0%	12%	5%	32%
1983	42%	8%	1%	11%	6%	32%
1984	42%	9%	2%	10%	6%	32%
1985	37%	8%	1%	16%	5%	33%
1986	36%	8%	2%	16%	5%	33%
1987	34%	8%	1%	22%	4%	31%
1988	38%	10%	2%	28%	6%	17%
1989	35%	8%	1%	26%	5%	25%
1990	31%	8%	2%	23%	4%	31%
1991	32%	7%	2%	21%	5%	34%
1992	29%	7%	2%	19%	5%	37%
*1993	30%	7%	3%	19%	5%	37%
*1994	30%	7%	3%	19%	5%	37%
*1995	34%	8%	3%	24%	6%	24%
*1996	28%	10%	4%	22%	6%	31%
*1997	27%	10%	4%	21%	6%	32%

Total may not add up to 100% because of rounding
* Numbers from TAF
Source: Florida Aviation System Plan

In 1980, Page Field was a dominant force in the general aviation market in Southwest Flórida accounting for 43 percent of the market. Naples airport had the next largest share of traffic with 28 percent. Between 1980 and 1990, Page Field experienced a decrease in its share of the general aviation market dropping by roughly 12 percent over this time frame and accounting for 31 percent of the activity by 1990. The opening of Southwest International Airport and a sharp jump in GA activity at Charlotte County between 1987 and 1990 accounted for most of this decrease in market share. By 1990, Page Field no longer accounted for the largest share of GA activity in Southwest Florida and tied with Naples at 31 percent during this year.

The reduction in Page Field's share of operational activity has continued through 1997 with the Airport's share of total GA operational activity totaling 27 percent of the regional market, down 16 percent from the share experienced in 1980. During this period Naples' market share varied substantially ending in a slight increase at 32 percent. Southwest Florida International increased its share from 2 to 4 percent, attracting larger corporate and business jet activity. Labelle increased from 4 to 6 percent, and Immokolee increased from 8 to 10 percent while Charlotte County decreased slightly from 23 to 21 percent.

In order to kick-start growth at the Airport, allow the Airport to compete in the region and effectively relieve activity at regional airports with scheduled commercial service such as Naples and Southwest Florida International, improvements to Page Field were inevitable. Over the past couple of years Page Field has made a significant effort towards modernizing the Airport and improving the facilities to capture more of the Southwest Florida market share. These airfield improvements have included but are not limited to rehabilitating the aircraft aprons, taxiways and taxilanes, expanding aircraft ramps, adding additional aircraft tie-downs, building new hangar facilities, and adding a self-service fueling facility. Many of these projects have been completed, and some are on going, which should be completed before the end of this Master Plan Update.

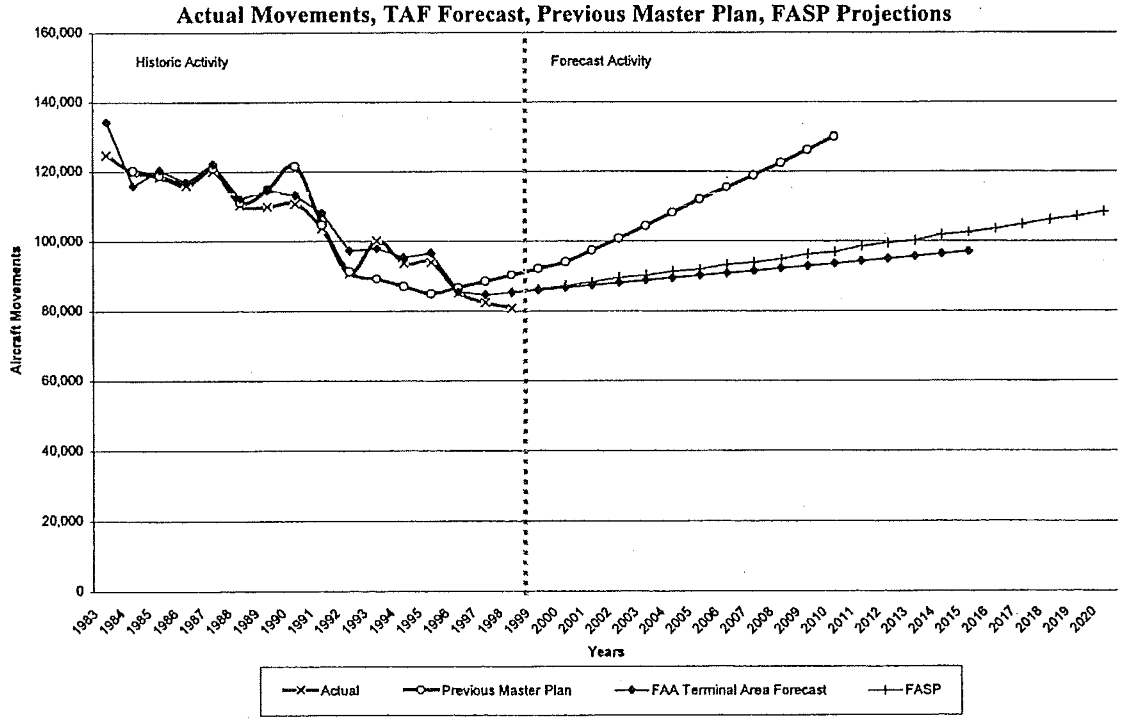
In the first seven months of 1999, operations at the Airport were approximately 22 percent higher than last year. In the opinion of airport officials, the increased number of tie-downs and improvements completed at the Airport has accounted for some of the increase in traffic. Of the five regional airports, excluding Southwest International Airport, Page Field is the only airport in which pilots can make an Instrument Landing System (ILS) approach, a Non-Directional Beacon (NDB) approach, a Very High Omni-directional Range (VOR) approach and Global Positioning System (GPS) stand alone non-precision approaches. Due to the variety of approaches available at Page Field and the increased number of flight training activity, many pilots are flying from Naples and Charlotte County to Page Field to practice the various precision and non-precision approaches. Local operations have also increased since the beginning of the year due to the well-established flight schools at Page Field.

PREVIOUS AVIATION ACTIVITY FORECASTS

Three separate aviation activity forecasts have been prepared for Page Field over the past several years. These forecasts consist of those developed in the 1993 Airport Master Plan, the Florida Aviation System Plan, and the Federal Aviation Administration's (FAA) Terminal Area Forecast.

In 1995, Leigh Fisher Associates updated the forecasts for Southwest International (RSW) and included the results of the Page Field Master Plan update done in 1993 as the current forecasts for this airport. Although new forecasts are generated as part of this master plan update, the data contained in previous studies proves valuable basis for comparison purposes. **Figure 3-2** shows the historic annual aircraft operations at Page Field along with the forecast activity outlined in the 1993 Airport Master Plan, the 1997 FAA Terminal Area Forecast, and the 1998/99 revised FASP forecast.

Figure 3-2
Actual Movements, TAF Forecast, Previous Master Plan, FASP Projections



1993 Page Field Airport Master Plan

The last master plan developed for Page Field was completed in 1993. This study included forecasts of aviation activity which were projected for an 18 year planning period. The base year for these forecasts was 1992. A summary of the 1993 Master Plan forecasts, outlining total annual operations and based aircraft, are presented in **Table 3-2**.

TABLE 3-2
1993 MASTER PLAN FORECASTS

Year	Annual Operations	Based Aircraft
Base Year		
1992	91,349	226
Forecast		
1995	85,000	185
2000	94,000	205
2005	112,000	245
2010	130,000	285

Source: 1993 Airport Master Plan.

The 1993 Airport Master Plan indicated an expected decrease between the 1992 total of 91,349 to 85,000 annual operations in 1995. Similarly, the number of total based aircraft was projected to decrease from 226 in 1992 to 185 in 1995. Beyond 1995, the previous Airport Master Plan projected an average annual growth rate of 2.0 percent and 1.3 percent respectively for annual operations and based aircraft.

Following an initial increase in traffic in 1993, actual operations have decreased to 81,046 annually in 1998. Based aircraft, however, have increased from the 1992 level of 226 to a current level of 255 rather than experiencing the decrease that was projected in the previous master plan for this period.

Florida Aviation System Plan

The Florida Aviation System Plan (FASP) is a broad blueprint that guides the development of Florida's public airports. This plan is necessary to ensure that airports work together effectively as a statewide transportation system, provide a link to the global air transportation network, and effectively interface with any regional surface transportation.

The latest comprehensive version of the FASP (1992 - 2010) was based on data collected up to and including 1991. The forecasts associated with this version of the FASP appeared to have been very optimistic for FMY. The 1995 projections included 140,000 annual operations and 255 based aircraft. While the forecast of based aircraft contained in the FASP is relatively accurate, the operational projections significantly exceed the actual operational activity being experienced at FMY. The Florida Department of Transportation (FDOT) Aviation Office initiated an update to the FASP in late 1998 to early 1999. FASP forecasts were revised recently using the FAA's historical TAF data through 1997 as outlined in **Table 3-3**.

TABLE 3-3 1998/99 FASP FORECASTS	
Year	**Annual Operations**
Base Year	
1997	84,624
Forecast	
2000	87,270
2005	91,902
2010	96,863
2020	108,442

Source: FDOT Aviation Office Non-Official Forecast

The updated FASP forecast indicates an increase in activity from 87,270 annual operations projected in 2000 to 108,442 operations by 2020 for an overall increase of 28 percent or an average annual compounded growth rate of approximately 1.1 percent. Based aircraft are projected to increase from 255 to 337 during the same period for an overall increase of 32 percent or an average annual compounded growth rate of 1.2 percent.

FAA Terminal Area Forecasts

Terminal Area Forecasts (TAF) are prepared by the FAA to meet the planning needs of their offices concerned with future traffic levels at the nation's airport facilities. Except for specific regional or state requests, the airports included in the FAA's TAF report must meet at least one of the following criteria:

- Have an existing FAA tower.
- Have an existing FAA Contract tower.
- Be a candidate for an FAA tower.
- Currently receive or expected to receive scheduled air carrier or regional/commuter service.
- Currently exceed 60,000 itinerant or 100,000 total aircraft operations.
- Report 10 or more based aircraft on the latest available Airport Master Record (FAA 5010 form).

Page Field currently has a FAA contract tower and more than 10 based aircraft

Table 3-4 depicts the projections contained in the 1997 TAF for Page Field. The FAA-TAF projections were developed based on a top down forecast technique employing a regression-based analysis using various national economic indicators as the independent variables.

TABLE 3-4 FAA TERMINAL AREA FORECASTS	
Year	**Annual Operations**
Base Year	
1997	84,624
Forecast	
2000	86,691
2005	90,139
2010	93,586
2015	97,034

Source: FAA Terminal Area Forecast, 1997.

Based on the TAF, annual operations for Page Field are projected to increase from 84,624 annually in 1997 to 97,034 total operations by the Year 2015. This represents an annual growth rate of roughly less than .75 percent.

PROJECTION TECHNIQUES AND PROJECTIONS

Projection Techniques

The development of aviation activity forecasts involves the utilization of various analytical techniques and the subjective judgement of the forecaster to identify trends and their relationship to fluctuations in aviation activity in given markets. Simple projection of past trends is often not enough to realistically estimate what may or may not occur in a market. If past trends had been employed solely for projecting future general aviation activity the impact of the General Aviation Revitalization Act would have been completely missed as a significant variable in the process. As a result there is the necessity to subjectively evaluate the outcome of the trend data and compare the results of the analytical stage with an evaluation of factors and considerations that may not be reflected in the trend data.

The analytical phase of the forecast process employs various trend analysis techniques using different assumptions and variables. Typically, these forecast approaches will employ a variety of local or market area socioeconomic characteristics in an attempt to determine if there is a correlation between trends in the community and the level of aviation activity. Information relating to changes in population, employment, income and/or business patterns will be compared against a variety of aviation indicators. Aviation factors most often used in analytical approaches include operations and based aircraft. Often comparisons between various indicators of community transition and aviation activity results in strong relationships commonly referred to as correlation, between these trends in the local market area. These relationships can then be extended into the future to provide a projection of future activity levels.

Preparing activity forecasts seldom relies on just one analytical process. By far the most reliable approach to estimating aviation demand is to apply a variety of analytical methods using different assumptions and variables. In so doing it is possible to develop a forecast envelope within which future activity levels are most likely to occur. The analytical techniques most often employed in aviation forecasting consist of historical trend line analyses (often called a time series projection), and multiple regression analyses which analyzes a variety of different local indicators and then compares these to historic aviation activity levels. Another commonly used technique for forecasting activity at general aviation airports is the operations/based aircraft technique. This approach relates to the FAA's identification of the nationwide trend of an increasing number of operations per each based aircraft.

Based Aircraft

A key indicator of demand at an airport is tied to the number of aircraft that base at the facility. Based aircraft levels and projections of how these levels are going to change over the course of the planning period provide the basis of assessing the adequacy of a number of airport facilities including the sizing of aircraft parking aprons and the sizing and number of aircraft hangar space. To provide for subsequent planning analyses the based aircraft fleet mix is divided into single engine, multi engine, jet aircraft and rotorcraft categories.

Historic Based Aircraft

Historical based aircraft figures for FMY have fluctuated considerably over the past 15 years at Page Field. These fluctuations are due in part to a seasonal influx or persons and aircraft that is attributable to the desirable weather in the FMY vicinity during the winter months. The historic information for based aircraft at Page Field has been compiled from data contained in the Florida Aviation System Plan (1983-1994) and FAA Airport Master Record (1995-1998). **Table 3-5** delineates the level of based aircraft for the period 1983 through 1998.

The historic based aircraft data presented in **Table 3-5** is the only available data that provides a historic view of aircraft being based at Page Field. A review of the Table results in some concern relative to the accuracy of the listed totals. Very seldom do most airports experience consistent levels of based aircraft for multiple years. Further, the fluctuations occurring in several of the years, such as the jump from 228 in 1995 to 304 in 1996 or the drop from 304 in 1997 to 255 in 1998 appear to be somewhat extreme. While it can not be absolutely ascertained that these are counting anomalies, consideration was given to this potential in the development of based aircraft forecasting.

Table 3-5
HISTORICAL BASED AIRCRAFT

Year	Single-Engine	Twin-Engine	Jet	Rotor	Total
1983	200	40	0	3	243
1984	186	33	0	6	225
1985	212	49	1	2	264
1986	212	49	1	2	264
1987	212	49	1	2	264
1988	212	49	1	2	264
1989	183	25	6	2	216
1990	198	25	3	2	228
1991	198	25	3	2	228
1992	198	25	3	2	228
1993	198	25	3	2	228
1994	198	25	3	2	228
1995	198	25	3	2	228
1996	260	45	8	7	320
1997	275	21	4	4	304
1998	211	30	7	7	255

Source: Florida Aviation System Plan (1983 – 1994).
* FAA Airport Master Record (5010 form, 1995 –1998).

Projected Based Aircraft

As a starting point in developing a projection of based aircraft, regression analyses were performed comparing historical based aircraft levels against various Lee County socioeconomic indicators such as employment, population and per capita income, both individually as well as cumulatively. A total of four regression analyses were created for each category of aircraft in an effort to project the total based aircraft level for the planning period at Page Field. These regressions consisted of: aircraft type, (single engine, multi engine, etc.), versus employment, population and per capita income; aircraft type versus employment; aircraft type versus population and aircraft type versus per capita income. The dependent variable in all regressions was based aircraft and the independent variables are employment, population and per capita income. The socioeconomic variables are derived from BEBR historical information and projections from 1983 to the Year 2020 previously discussed in this chapter.

Similar to the relationship of general aviation activity and Gross Domestic Product the level of correlation that was obtained from the regressions using local socioeconomic data were not sufficient to support a relationship between socioeconomic factors and based aircraft levels. While impossible to definitively determine, a possible factor contributing to this lack of correlation may be the reliability of the based aircraft data. This concern was noted earlier in this analysis. While employment, population and per capita income do not reflect a correlation with based aircraft, increases in these factors intuitively influence the level of demand for aviation facilities in a community. Airports in metropolitan areas routinely experience higher levels of based aircraft than those situated in small rural communities. As a result, subjective judgement suggests that these considerations can not be totally discounted in the examination of potential demand at Page Field. The lack of correlation between socioeconomic growth and GA activity is not uncommon particularly due to the past impacts of product liability and rising costs on the general aviation industry. Condition of the facilities and loss of regional market share is also a contributing factor. Several trends in the Lee County area could combine to provide a basis for growth in aviation demand. The County is projected to experience substantial population growth most of which will be the result of in-migration from other locales. This could also lead to the in-migration of additional aircraft that come with these new residents. Additionally, the age structure of Lee County with higher percentages of persons in the 40 and above age cohorts means that many of these individuals possess the potential to have higher disposable incomes. With this higher income there logically is the potential to see a greater propensity to have some of this income spent in the aviation sector. Thus, while there were not strong correlation, this may be due to anomalies in the based aircraft levels that tended to skew the analyses. With this in mind other factors require consideration in determining the future based aircraft potential.

Based on discussions with airport management, Page Field has experienced constant and significant demand for additional aircraft hangar facilities. Although t-hangar improvements have been implemented at Page Field in the recent past, demand for new hangar construction continues to exceed supply. Additionally, the major Ramp Rehabilitation project, which was being implemented through early 1999, resulted in major improvements to all parking ramps on both the Airport's north and south sides. Prior to this project many of the aircraft parking areas were exhibiting signs of severe distress with the increasing potential of foreign object damage to aircraft. Clearly, the condition of basic facilities that are required by aircraft owners can be a significant factor in their decision to base at a particular facility, particularly given today's cost of aircraft and in an area where other aviation facilities exist.

Based on the substantial improvements currently being undertaken at the Airport, and assumptions relative to management's efforts to attract additional aviation services, based aircraft are projected to increase through 2020 at a rate just under one percent annually. Overall, the total number of based aircraft at FMY are expected to increase over the planning period from the current 255 based aircraft level to 315 by 2020 or growth of roughly 23.5 percent over the planning period. This level of based aircraft growth considered the impact that Southwest Florida International Airport would have, particularly on the potential expansion of the turbo-prop and turbo-jet aircraft categories. These figures are reflected in **Figure 3-3** and depicted in **Table 3-6**. It should be noted that the base year for the forecast of based aircraft is 1998.

Figure 3-3
HIstoric & Forecast based Aircraft - FMY (1983-2020)

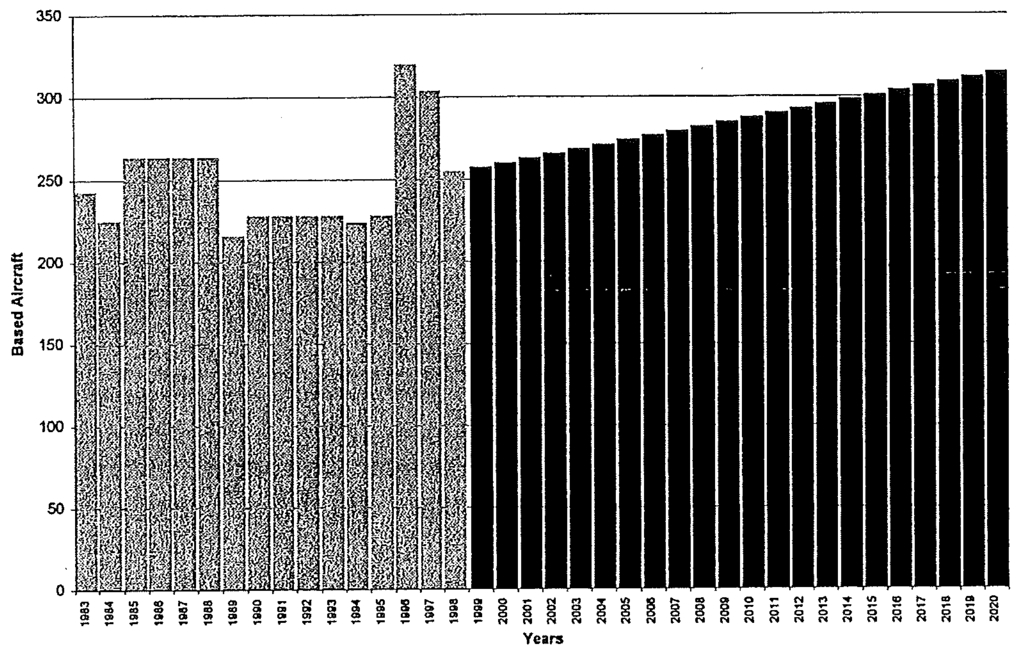


TABLE 3-6 FORECAST BASED AIRCRAFT	
Year	**Total**
Base Year	
1998	255
Forecast	
2005	273
2010	286
2020	315

Source: Birk Hillman Consultants, Inc., 2000.

Projected Fleet Mix

In addition to projecting the level of total based aircraft, it is also important to the planning process to project the fleet mix of those aircraft. A breakdown of the based aircraft fleet mix is necessary because different types of aircraft require different facilities. For example, jet aircraft typically need larger hangars, require greater wing-tip clearances, and have different fuel requirements than single-engine piston aircraft. Therefore, a projection of the anticipated fleet mix is necessary to determine the type and size of facilities necessary at the Airport over the course of the planning period. The based aircraft fleet mix is determined by studying the historic fleet mix, examining national trends, and interviewing airport users. It is important to reiterate that some concern over the accuracy of historic based aircraft data exists. The lack of any fluctuation in the total number of aircraft or in the distribution of aircraft within that total displayed in the data for two extended periods is not a typical occurrence at most general aviation airports. However, given the fact that this is the only historic based aircraft data available, it has had to form the basis of the fleet mix analysis.

As a starting point in the analysis a review of the nation's general aviation fleet distribution was undertaken. Every year, an estimate of the fleet mix for the nation's active general aviation aircraft is published as part of the FAA's fiscal year forecasts. Based on the FAA's data, the projected mix of general aviation aircraft types for the nation will increase through the Year 2009. Leading these increases are jet aircraft (up 2.6 percent), followed by rotorcraft (up 0.7 percent), single-engine (up 0.3 percent), and twin-engine aircraft (up 0.1 percent). The FAA's projection of continued growth in these segments of the general aviation fleet has been most recently re-affirmed in presentations made at their Aviation Forecast conference conducted on March 24 and 25, 1999. As noted at this conference there continues to be strong optimism associated with the continued strength and growth in all segments of the general aviation fleet with the exception of piston rotorcraft. Strong growth is expected in the turbojet fleet displaying the continued importance of business and corporate applications of general aviation aircraft. Page Field is expected to be a recipient of a portion of the growth in all components of the expanding general aviation fleet in the U.S.

A review of the available historic fleet mix data for Page Field shows that currently 82.8 percent of the based fleet consists of single-engine, 11.8 percent are twin-engine, 2.7 percent are jet, and 2.7 percent are rotorcraft. This compares to the national fleet mix that is comprised of 74.3 percent single engine piston, 8.4 percent multi engine piston, 3.0 percent turboprop, 2.9 percent turbojet and roughly 3.6 percent in the rotorcraft category. A direct cross comparison between the categories used in the Page Field data and the FAA's database is difficult due to differences in the way the FAA defines some of the aircraft classes, however some conclusions can be drawn. Page Field has consistently seen a higher percentage of single engine aircraft in its fleet than displayed in the national data running between nine and eleven percent higher in this category over the past seven years. Comparison of the twin engine data at Page Field to the FAA's statistics is complicated by differing aircraft class definitions. However, assuming that the vast majority of the turbo-prop fleet is twin engine and adding that to the multi engine piston category a rough comparison can be made. Based on this approach Page Field's based twins have remained slightly below the national average over the last seven years. Based turbojet aircraft at Page Field were well below the national fleet average over most of the last seven years. It is believed that some of this condition is attributable to the influence that facilities at RSW may have exerted in the market area with RSW capturing a portion of the turbojet fleet and particularly the large components of that fleet. By 1998 Page Field's level of based turbojets was essentially equal to the level in the national general aviation fleet. A very similar trend to that of the turbojet category has also displayed itself in the rotorcraft category. The FAA national growth rates for each type of aircraft provided the primary basis of fleet mix growth and were applied to the forecast of future aircraft projected to be based at FMY. Additionally, information gathered from the airport management staff was utilized to adjust the based aircraft fleet mix percentages where such adjustments appeared warranted.

Several assumptions have guided the development of the aircraft fleet mix numbers and percentages. These include the following:

- Single Engine Piston aircraft will continue to exceed the national fleet percentages at Page Field. This will be driven by the influx (migration) of new aircraft, replacement of existing aircraft and by the availability of facilities at the Airport.

- Twin Engine based aircraft will grow driven by the strength of the turbo-prop fleet and as a result of new in migration of new aircraft.
- The Airport level of based turbojet aircraft is anticipated to follow the national fleet growth trend with the number based at Page equaling the national fleet percentages over the planning period.
- Of the based jets at Page Field, it is anticipated that the fleet will be typified by the smaller components of the business/corporate jet fleet such as the Cessna Citation II, and III, Lear 35 and Beechjet to name a few. Large based jets are anticipated to opt for RSW. These aircraft could include such models as the Falcon 900B, Canadair Globemaster and Gulfstream G-V. This is consistent with information obtained through airport management and staff interviews.
- Page Field will see continued strength in the rotorcraft category, due in part to its proximity to many of the potential users of helicopters including the media and potential governmental agencies

These based aircraft fleet mix projections are presented in **Table 3-7**.

TABLE 3-7
FORECAST BASED AIRCRAFT FLEET MIX

Year	Single-Engine		Twin-Engine		Jet		Rotor		Total Aircraft
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Base Year									
1998	211	82.8%	30	11.8%	7	2.7%	7	2.7%	255
Forecast									
2005	223	81.7%	34	12.5%	8	2.9%	8	2.9%	273
2010	230	80.4%	37	12.9%	10	3.5%	9	3.1%	286
2020	249	79.2%	42	13.3%	13	4.1%	11	3.5%	315

Source: Birk Hillman Consultants, Inc., 2000.

Operations

The FAA defines an operation as either a single aircraft landing or a single aircraft takeoff. The level of aircraft operational activity is a primary consideration in determining the adequacy of key portions of the airfield. As such, it is important to define the level of future operational activity so that a determination of the adequacy of the Airport to meet future demand can be determined in subsequent portions of the planning process.

Historic Operations

Historic total operations data was obtained primarily from the Airport Activity Reports, and was compared to information from the TAF and from the 1993 Master Plan Study. The total number of annual operations at FMY has been divided into three categories of activity, consisting of:

- General Aviation (Local Operations & Itinerant Operations)
- Air Taxi
- Military

It is also necessary to define the extent to which the general aviation activity consist of local operations (within the immediate airport vicinity and most often training activity) versus those operations that arrive at the airport from outside the area, commonly referred to as Itinerant Operations. This information is a necessary element of calculating the level of airfield capacity.

General Aviation aircraft are defined as all civil aviation operations other than scheduled air services and non-scheduled air transport operations held for either remuneration or hire. Since 1984, following the opening of Southwest Florida International, general aviation operations (including air taxi), have accounted for over 99% of FMY's activity. Air Taxi aircraft are defined as aircraft with a maximum seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less carrying passengers or cargo for hire or compensation. In the case of most general aviation airports the air taxi component generally consists of typical general aviation aircraft that have been chartered for passenger or cargo activity. In fact the casual observer would not be likely to differentiate an aircraft used for air taxi purposes from any other aircraft at the Airport. The FAA states that typical air taxi load factors range from one to three people.

Military aircraft movements can be defined as any US Armed Forces or US Coast Guard aircraft operation at the Airport. According to the FAA 5010 data, historical TAF and airport activity records maintained by the tower, over the past ten years, FMY has experienced activity in all but the commercial categories of commuter and air carrier classifications. The FAA defines air carrier operations as those operations conducted by scheduled and nonscheduled (charter) commercial service air carriers operating aircraft with more than 60 seats. Commuter operations cover those operations conducted by regional/commuter airlines with aircraft having 60 seats or less. The remaining operations, such as private or business operations, fall under local and itinerant general aviation. **Table 3-8** outlines the total operational activity for all categories of aircraft activity that has taken place at Page Field since 1983.

TABLE 3-8
HISTORICAL AIRCRAFT OPERATIONS

Year	Annual Operations
1983*	147,458
1984	120,353
1985	119,078
1986	116,855
1987	120,921
1988	111,086
1989	110,610
1990	111,380
1991	103,997
1992	91,349
1993	100,656
1994	94,273
1995	94,243
1996	85,443
1997	82,619
1998	81,046

* Includes Air Carrier operations
Source: Airport Activity records.

As outlined in **Table 3-8** the level of total operational activity at Page Field has tended to mirror the trends in the overall general aviation industry through the 1980's and 1990's. While activity has decreased over the time frame presented in the table, it is important to note that Page Field remains a highly active general aviation reliever facility. The impact of opening Southwest Florida International Airport in May of 1983 is apparent in the above Table. When compared with the growth of market share by RSW as discussed earlier, much of the initial drop in total operational activity can be directly attributed to the impact of opening this facility.

Historical General Aviation Operations

By far the most significant component of total aviation activity at Page Field consists of General Aviation activity. Overall general aviation (GA) activity at Page Field has decreased from a high in 1983 of 124,760 operations (before the opening of RSW) to 80,851 operations in 1998. The decrease in activity may be attributed to the overall state of the general aviation industry during much of the period and the impact that opening RSW and its growth in regional general aviation market share, and the greater competition for market share by other airports in southwest Florida. **Table 3-9** depicts the historic general aviation operations at Page Field including the air taxi operations from 1983 to 1988.

TABLE 3-9
HISTORICAL GA OPERATIONS (inc. air taxi)

Year	Annual Operations
1983	124,760
1984	119,885
1985	118,518
1986	115,940
1987	120,063
1988	110,397
1989	109,871
1990	110,787
1991	103,618
1992	90,758
1993	100,093
1994	93,627
1995	93,891
1996	85,221
1997	82,337
1998	80,851

Source: Airport Activity record

Projected General Aviation Operations

Development of projections of future general aviation activity levels is a fundamental element of the planning process and a requirement for assessing existing facilities and determining what, if any, future facilities are required. A variety of techniques are available for developing these projections and one of the most common approaches employed involves the use of mathematical regression analysis. A variety of regression based forecast approaches were attempted. However, it was somewhat apparent that, due to the external influence of the opening and growth of RSW and its affect on Page Field, use of traditional mathematical trend analysis might not fully identify potential market activity. Further, it was also believed that the use of historic data dating back as far as 1983 tends to significantly downplay the emergence of a turnaround in the general aviation industry stemming from the General Aviation Revitalization Act of 1994. Based on FAA forecasts of future general aviation indicators this consideration must be an element in any projection of future general aviation activity. Thus, while a variety of regression-based analyses were developed each showed either marginal or no correlation and a continuation of the decline in activity over the course of the planning period. It is strongly believed that there are factors that are not addressed by historic trend data that are emerging in both the industry and specifically at Page Field that will have a positive influence on activity levels. The regression based analyses included:

- **Total Air Taxi and General Aviation Activity versus Population and Per Capita Income**
- **Total Air Taxi and General Aviation Activity versus Population and Employment**
- **Total Air Taxi and General Aviation Activity versus Population, Employment and Per Capita Income**

The results of the regression analyses may prove useful, defining a no-action scenario at Page Field. However, they are not believed to be indicative of the Airport's potential, nor do they incorporate the impact that a number of positive improvements at the Airport will have on future growth. For this reason, alternate projection techniques were identified and employed.

A commonly used technique for determining expected levels of aircraft operations at general aviation airports relates directly to the number of aircraft based at the Airport. Knowing the historical basis for both based aircraft and operations, relationships can be determined to give an indication of future activity. The historical annual movements for the past ten (1989-1998) and five year (1994-1998) periods were compared to the based aircraft statistics for each period. It was determined that during the ten-year period from 1989 through 1998, there were an average of approximately 397 operations per each based aircraft. During the five-year period from 1994 through 1998, the operations per based aircraft averaged 337. This compares to a 1998 average of 317 operations per based aircraft. Comparing this data to projections of future FAA activity workloads at towered airports, to the projections of active general aviation fleets and to the projections of general aviation hours flown, an indication of future growth or contraction in operations per based aircraft can be defined. This information can then be used as a basis of projecting future activity over the course of the planning period. It is noted that the FAA outlines an estimate of 492 operations per based aircraft as an estimate of total GA operations in AC 150/5300-13, Appendix 5, paragraph 2a, when specific data is not available.

This technique was employed in conjunction with the assumption that the drop in airport traffic has bottomed out in 1998 and will begin a slow upward trend. This assumption is based on the reemergence of the general aviation industry as defined in FAA forecasts and the following Page Field specific factors:

- The decrease of General Aviation activity at Page Field is partially attributable to the condition of the facilities. Major improvements have been implemented over the last 2-3 years, which greatly improve the operational environment. The major ramp rehabilitation project will be completed by mid 1999 and these improved facilities will increase the competitiveness of Page Field.

- The privately operated FBO located at the Airport ceased operation in the June 1998 timeframe. A substantial dip in operations was noted shortly thereafter but activity rebounded sharply and is anticipated to continue to do so.
- The Lee County Port Authority is now operating the only FBO at the Airport and is strongly focussed on improving facilities and upgrading services. FBO services have been proven to be a significant factor influencing decisions by general aviation aircraft owners to base and operate at one airport versus another.
- Activity during the seven month period beginning January 1999 and ending July 1999 increased by roughly 22% as compared to the same period in 1998.
- The potential addition of a General Aviation Federal Inspection Station (GAF) at the Airport will likely fuel additional growth at the Airport.

Further, the FAA has indicated that their upcoming Aerospace Forecasts 1999 – 2010 will project an increase in general aviation and air taxi hours flown of 1.4% annually, from 26,520 in 1997 to 31,414 by 2009. During the same period active pilots in the United States are expected to increase from 618,298 to 735,025 or roughly 1.5% annually. Additionally, active general aviation and air taxi aircraft are expected to grow from 194,826 in 1998 to 220,804 in 2010, an increase of roughly 1.1% annually, which is slightly higher than the previous years estimate of just under one percent annually.

With the projection of hours flown by general aviation aircraft increasing at a rate faster than the growth in the number of aircraft, a national trend of increased operations per based aircraft is expected. This, coupled with on-going actions by the Lee County Port Authority to improving the quality of facilities and services at the Airport will significantly improve the Airport's competitive position in the Southwest Florida area. These factors are used as a basis for developing projections tied to levels of operations per based aircraft. This analysis identifies the historic level of operational activity on a per based aircraft basis, quantifies any trends displayed in the historic information and based on a set of planning assumptions projects the level of operations per based aircraft over the course of the planning period. Based on a review of the historic data two operational scenarios were developed.

Historically operations per based aircraft have fallen over the past ten years. This is due to the influence of product liability considerations, a deep recession in the early 1990's and the fact that the industry is just now beginning to see the benefits of the General Aviation Revitalization Act. **Table 3-10** presents the level of operations per based aircraft over the past ten years at Page Field. It should also be noted that the historic operations per based aircraft values are affected by the same concern over the accuracy of the historic based aircraft numbers as discussed in a previous section.

TABLE 3-10
OPERATIONS PER BASED AIRCRAFT

Year	Operations	Based Aircraft	Operations Per Based Aircraft
1989	109,871	216	509
1990	110,787	228	486
1991	103,618	228	454
1992	90,758	228	398
1993	100,093	228	439
1994	93,627	224	418

TABLE 3-10 OPERATIONS PER BASED AIRCRAFT			
Year	Operations	Based Aircraft	Operations Per Based Aircraft
1995	93,891	228	412
1996	85,221	320	266
1997	82,337	304	271
1998	80,851	255	317

Source: Airport Activity Records.

With the considerable increase in activity being experienced in the first part of 1999 and every indication that this level will continue throughout the year, a more reasonable starting point was investigated for the general aviation operations forecast. Reviewing year to date operational statistics through July 1999 two estimates were developed relative to the 1999 activity level. The first estimate assumes the balance of activity for the remaining 5 months of 1999 will match the 1998 levels for the same period. Based on the 1999 year to date information available thus far, this would be the more conservative of the two estimates. The general aviation activity level resulting from this analysis indicates the potential for 91,923 total general aviation operations. This conservative or 'low' estimate would represent an increase of almost 14% over the 1999 activity levels. On the basis of the 'low' 1999 projection, this estimate indicates the potential for 356 operations per based aircraft.

The second estimate assumes that the balance of the 1999 calendar year activity would exceed the 1998 levels during the last five months of the year by the same percentage as the first seven months. This would result in a high estimate of 98,676 total general aviation operations. The 'high' estimate would result in an increase of roughly 22% over the 1998 activity level. This estimate of the 1999 activity also exceeds the FAA's TAF for the entire forecast period (relative to the TAF) through 2015. On the basis of the 'high' 1999 projection, this estimate indicates the potential for 382 general aviation operations per based aircraft which approaches the 10 year average of 397 operations per based aircraft.

Recognizing that a forecast represents a projection of a long-term trend, and that a trend of growth is relatively new at the Airport, a fairly conservative starting point for the GA operations forecast of 94,170 was identified for 1999. This represents 365 operations per based aircraft or roughly one third of the difference between the conservative 'low' estimate and the 'high' estimate. Although this represents a substantial increase from the 1998 operations per based aircraft levels, it is considered reasonable due to the extent of airport infrastructure and service improvements that have been implemented over the past year and a half. It is not expected that the Airport will continue to experience such explosive growth. Rather, it is felt that it is returning to the levels it would likely be experiencing had the facilities and services been upgraded in a manner to allow a level of service similar to those at other airports in the region. Ultimately, with a continued aggressive approach to improving facilities and services at the Airport, it is anticipated that the Airport will reach its ten-year average of 397 operations per based aircraft by the Year 2020. This represents an annual growth rate of roughly .4% in operations per based aircraft through the end of the planning period from the projected 1999 level or just over 1% annually relative to the 1998 level.

Total general aviation operations would grow as a result of both the increase in operations per based aircraft and as a result of the projected increase in based aircraft. When applied to the based aircraft forecasts, total operations in 2005 are estimated at 102,510, increasing to 124,898 by the end of the planning period. The total general aviation operations growth for this forecast is estimated at 32.6%, or a growth rate of just over 1.3% annually relative to the 1999 projected levels. This compares to a total general aviation operations increase relative to 1998 of 54.5%. While an overall increase of 54.5% from the 1998 levels might normally be considered an overly optimistic assessment based on Page Field's recent activity history, it appears that the considerable improvements undertaken at Page field in the recent past will account for up to 22% of this amount (and possibly even more) in 1999 alone. **Table 3-11** presents the results of this first projection technique. This is considered the 'average' forecast.

A second estimate of total operations can be developed assuming no growth would be experienced in operations per based aircraft from the levels estimated for 1999. Based on this, operational growth would be driven primarily through the addition of based aircraft at the Airport. Since this is contrary to the trend forecast by the FAA relative to increasing operations per based aircraft, this would be considered a conservative estimate of future activity. Assuming the 365 operations per based aircraft estimate for 1999 carries through to 2020, total GA operations in 2005 are estimated at 100,043 and in 2020, 114,975. This relates to an overall increase from the estimated 1999 baseline of 22.1% by 2020 or just under 1% annually from the 1999 levels. The 365 operations per aircraft value also represent the approximate midpoint between the average 10 year and 5 year operations per based aircraft levels. This is considered the 'low' forecast.

The third and final projection employing operations per based aircraft utilizes a more aggressive assumption. This projection assumes that the aggressive approach being undertaken in improving the Airport results in activity levels exceeding the ten year average of operations per based aircraft (it was noted that the first seven of the last ten years exceeded this value). A value of 428 operations per based aircraft was used for this estimate which reflects roughly the same variation above the ten year average as the 365 estimate was below. This more aggressive forecast results in an estimated 104,977 annual GA operations by 2005 and 134,820 GA operations by 2020. This represents a 43.1% increase over the estimated 1999 activity level and a annual growth rate of just under 1.8% annually. This is considered the 'high' forecast.

TABLE 3-11
PROJECTED GA AIRCRAFT OPERATIONS (inc. air taxi)

Year	Annual Operations High Forecast	Annual Operations Low Forecast	Annual Operations Average
Base Year			
1998	80,851	80,851	80,851
1999*	94,170	94,170	94,170
Forecast			
2005	104,977	100,043	102,510
2010	114,515	105,020	109,768
2020	134,820	114,975	124,898

Source: Birk Hillman Consultants, Inc. 2000.
*Estimated

For the purposes of planning, the 'average' forecast falling midway between the low and high projections of activity will be used. As noted, the average forecast is based on the assumption that operations per based aircraft will return to its ten-year historic average by 2020. The average forecast is expected to represent the most likely future activity scenario representing neither the most conservative nor the more aggressive approach.

Figure 3-4
Annual Aircraft Operations - FMY (1983-2020)

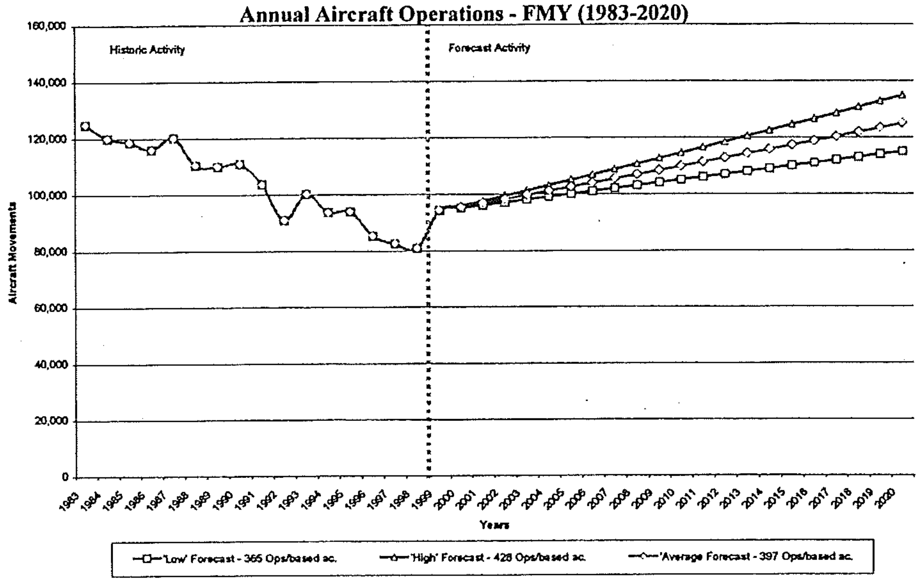


Figure 3-4 shows the trend lines for the forecasted annual aircraft operations expected at Page Field over the planning period.

Air Taxi Operations

Air taxi operations are essentially general aviation flights that are conducted on a commercial or "for hire" basis. Typically, these are non-scheduled flights, carrying a small number of passengers, to destination cities without scheduled airline service, although air taxi operations also can and do serve clients going to cities with scheduled service.

Historic Air Taxi Activity

Air taxi activity has fluctuated substantially over the last fifteen years. From an all-time high of 20,520 in 1983, operational activity dropped sharply. At no point since 1983 has the level of air taxi activity at Page Field approached the 1983 level. After dropping to 7,293 operations in 1985, air taxi operations increased, and fluctuated between 10,000 and 12,000 operations between 1988 and 1992. Air taxi activity dropped back sharply in 1993 to 6,954, continuing to decrease to 3,498 in 1996. This was followed by small increases in both 1997 and 1998 to a total of 4,160 operations. Much of the decrease in air taxi operations during the 1990's has been attributed to the impact of bank mergers that has translated into reduced utilization of general aviation air taxi operators for the transfer of bank paper and for use by bank executives. **Table 3-12** delineates the historic fluctuations in air taxi activity since 1983.

TABLE 3-12 HISTORICAL AIR TAXI OPERATIONS	
Year	**Air Taxi Operations**
1983	20,520
1984	6,021
1985	7,293
1986	9,175
1987	9,677
1988	12,024
1989	10,904
1990	10,788
1991	11,480
1992	10,099
1993	6,954
1994	5,251
1995	4,644
1996	3,498
1997	3,625
1998	4,160

Source: Airport Activity Statistics

Forecast Air Taxi Operations

From 1988 through 1992, air taxi activity represented between 9.7 and 11.1 percent of total operations or between 15.1 and 17.3 percent of total itinerant operations. Air taxi activity decreased to 4.1 percent of overall GA operations by 1996 before increasing to 5.1 percent by the end of 1998. Similarly, air taxi decreased to a low of 6.2 percent of itinerant operations in 1996 before increasing to 8.1 percent in 1998. A distinct demarcation in the level of air taxi operational activity is clearly discernable between 1992 and 1998. Over this six-year period, air taxi operations average slightly over five percent of the total annual operations.

As airport management continues to improve services at the Airport and attracts additional aviation service providers coupled with the growth projected for the Lee County vicinity, it is anticipated that Page Field based air taxi services will experience growth as a percentage of overall general aviation and itinerant traffic. However, it is not anticipated that the Airport will return to the levels of air taxi activity typified by the 1988 to 1992 time frame. The effect of increasing level of services provided at Southwest International Airport and the effect of changes in business practices in banking and other potential users of air taxi will result in a slower rate of air taxi operational growth. With this in mind, a relatively conservative growth of air taxi activity is projected beginning at the current ratio of 5.1 percent air taxi versus total operations and grow over the forecast time frame to a 7% ratio by the end of the planning period. The resultant air taxi operational levels are depicted in **Table 3-13**.

TABLE 3-13 FORECAST AIR TAXI ACTIVITY	
Year	**Annual Operations**
Base Year	
1998	4,160
1999*	4,897
Forecast	
2005	5,782
2010	6,654
2020	8,743

Source: Birk Hillman Consultants, Inc., 2000.
* Estimated

Local and Itinerant General Aviation Traffic

Local operations are those arrivals or departures performed by aircraft that remain in the Airport traffic pattern, or are within sight of the Airport. This covers an area within a 20 nautical mile radius of the airfield. Local operations are most often associated with training activity and flight instruction. Itinerant operations are arrivals or departures other than local operations, performed by either based or transient aircraft, which do not remain in the Airport traffic pattern or within a 20 nautical mile radius.

Historical and Projected Local and Itinerant Operational Split

Flight training activities at FMY have comprised the vast majority of local general aviation operations. Flight training includes student pilots who are getting started in aviation, pilots continuing their training for additional ratings, and pilots conducting the recurrent training required to maintain their rating. Itinerant general aviation operations are typically made up of business and corporate activity, air taxi operations, and private operations. Itinerant operations are most often associated with either personal pleasure flying or business and corporate aviation. Increasingly the growth in business use of aircraft has been a major force in the general aviation segment of U.S domestic aviation.

Historically, the local and itinerant activity split at FMY for the period 1989 through 1998 has averaged 37 percent local and 63 percent itinerant operations. The highest relative level of local operations occurred in 1997 with 39% while the lowest occurred in 1992 with 33%. The local itinerant split in 1998 was just under the level identified for the past ten years. Based on the historical data for the last ten years it is apparent that the level of local versus itinerant activity has remained very constant in spite of the fluctuations that have been experienced in total operational levels. For this reason it has been assumed that this pattern will continue through the planning period. Historical and projected local and itinerant operations are delineated in **Table 3-14.**

TABLE 3-14 TOTAL HISTORICAL LOCAL/ITINERANT ACTIVITY				
Year	**Local Operations**	**Local as % of Total**	**Itinerant Operations**	**Itinerant as % of Total**
1989	42,090	38%	67,781	62%
1990	42,110	38%	68,677	62%
1991	37,583	36%	66,035	64%
1992	29,964	33%	60,794	67%
1993	39,328	39%	60,765	61%
1994	34,330	37%	59,297	63%
1995	32,356	34%	61,535	66%
1996	29,006	34%	56,215	66%
1997	31,756	39%	50,581	61%
1998	29,492	36%	51,359	64%
1999*	34,843	37%	59,327	63%
PROJECTED LOCAL AND ITINERANT OPERATIONS				
2005	37,929	37%	64,581	63%
2010	40,614	37%	69,154	63%
2020	46,212	37%	78,685	63%

Source: Airport Activity Reports – Does not include military, splits based on FAA Form 7230-1.
Projections Source: Birk Hillman Consultants, Inc., 2000.
*Estimated

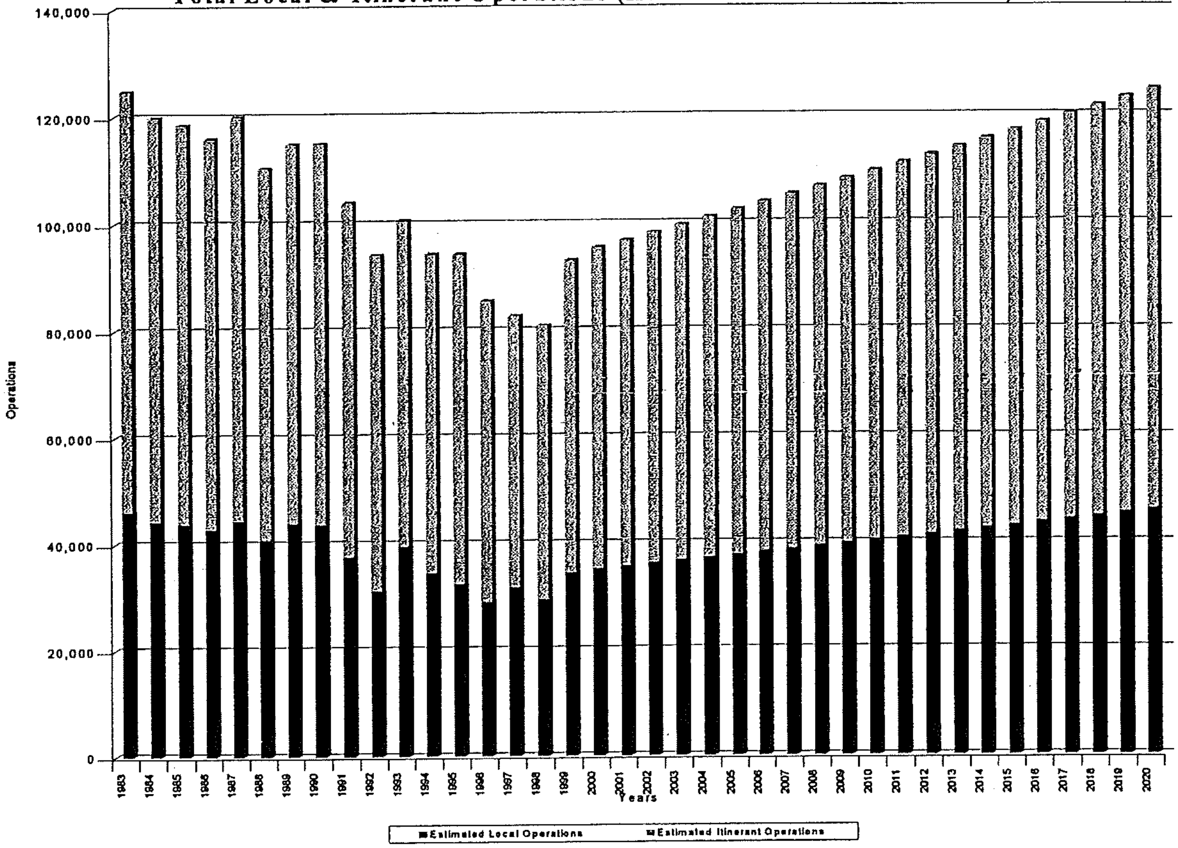
General Aviation Operations Summary

The combined total of the local and itinerant general aviation operations, forecast for the FMY are depicted in the bar chart **Figure 3-5** and shown in **Table 3-15.**

TABLE 3-15 FORECAST GENERAL AVIATION OPERATIONS			
Year	**Local Operations**	**Itinerant Operations**	**Annual General Aviation Operations**
Base Year			
1998	29,492	51,359	80,851
1999*	34,843	59,327	94,170
Forecast			
2005	37,929	64,581	102,510
2010	40,614	69,154	109,768
2020	46,212	78,685	124,898

Source: Birk Hillman Consultants, Inc., 2000.

Figure 3-5
Total Local & Itinerant Operations (Historic & Forecast 1983-2020)



Historic and Projected Military Operations

Military activity is difficult to accurately predict since it has no relationship to local market or demographic conditions. Congressional actions through much of the 1990's resulting in the downsizing of the military have influenced operations at a number of civil airports. This is certainly the case in Lee County, which has seen overall military activity decline at both FMY and RSW due to downsizing at McDill Air Force Base in Tampa and Homestead Air Force Base south of Miami. Historically, military operations over the past 16 years at Page Field have been a small portion of total aircraft activity ranging from a high of 1,053 operations in 1983 and a low of 195 operations in 1998.

Military flight activity at Page Field historically included such large aircraft as the P3 Orion and the C-130 Hercules. However, successful implementation of a voluntary restriction of four-engine aircraft at Page Field has resulted in these aircraft opting to use RSW. Military operations over the past several years have been associated primarily with Coast Guard helicopters and an occasional King Air twin-engine turboprop. Historic military operational activity is delineated in **Table 3-16**. As shown in the Table, military activity has experienced a number of sharp fluctuations over the past 16 years.

TABLE 3-16 HISTORICAL MILITARY ACTIVITY	
Year	**Annual Operations**
1983	1,053
1984	468
1985	560
1986	915
1987	858
1988	689
1989	739
1990	593
1991	379
1992	591
1993	563
1994	646
1995	352
1996	222
1997	282
1998	195

Source: Airport Activity Reports.

A review of **Table 3-16** does show one distinct change in the pattern of military activity at the Airport between 1994 and 1995 there was a sharp drop in military activity. Unlike previous occurrences the level of activity has remained distinctly lower than the pattern of the previous twelve years. To estimate future military activity at the Airport, the military activity over the past four years was averaged. This average has been extended over the course of the planning period. **Table 3-17** displays projected military operations.

TABLE 3-17 FORECAST MILITARY OPERATIONS	
Year	**Annual Operations**
Base Year	
1998	195
1999*	195
Forecast	
2005	250
2010	250
2020	250

Source: Birk Hillman Consultants, Inc., 2000.
* Estimated

Instrument Operations

Instrument operations include both those operations at Page Field that were filed under instrument flight rules (IFR) as well as instrument training activity. Thus, it should be noted that instrument operations do not just represent operations under actual instrument meteorological conditions.

Historic Instrument Operations

Over the past 10 years, instrument operations have averaged 17% of the overall activity at Page Field. The 20,880 instrument operations occurring in 1989 accounted for roughly 18% of overall operations decreasing to 14% in the 1994-1996 timeframe. Instrument activity as a percent of overall operations rebounded to 19% in both 1997 and 1998. In 1998, instrument activity accounted for 15,101 total operations. Historic instrument activity and the percentage of instrument operations to total operations at Page Field are depicted in **Table 3-18**.

TABLE 3-18
HISTORICAL INSTRUMENT ACTIVITY

Year	Instrument Operations	% of Total Operations
1989	20,880	18.2%
1990	19,557	17.0%
1991	18,878	18.2%
1992	16,494	17.5%
1993	13,989	13.9%
1994	14,790	15.7%
1995	12,967	13.8%
1996	13,291	15.6%
1997	15,546	18.8%
1998	15,101	18.6%

Source: Airport Activity records.

Forecast Instrument Operations

As noted, instrument operations as a percentage of total operations (17 percent) have remained relatively consistent over the past eleven years, although for the past two years there has been a slight jump in this percentage. This recent increase has been attributed by increased instrument training activity according to the Air Traffic Control Tower (ATCT) staff. It has been noted that flight instructors from Charlotte County Airport, as well as some from Vero Beach and Naples bring their students to Page Field for instrument flight instruction and to become familiar with operating in an ATCT controlled environment.

It is anticipated that several factors will combine to keep the level of instrument operations generally consist with the 17 percent, eleven year average. These consist of factors that could contribute to growth in instrument operations and several that act to inhibit growth, thereby fending to counter balance one another. Some of the positive things include:

- The number of student pilots has increased and instrument rated pilots have in the past been the fastest growing segment of the pilot population.
- General aviation aircraft are becoming increasingly sophisticated and capable of instrument operations.

- FMY will continue to draw in flight instruction activity due to its ILS and ATCT, without having to directly interact with large commercial aircraft as at RSW.
- With the projected growth in annual operations there will come associated numerical growth in operations both in IFR conditions and under instrument flight plans.
- Counter balancing these factors are the following considerations.
- RSW will capture a segment of the area's GA activity (particularly corporate and business jet operations) that are often inclined to operate under instrument flight rules.
- With the movement toward GPS CAT 1 and above flight procedures, several of the airports in the Region and beyond could see the development of instrument approach capabilities, potentially impact instrument flight training from other airports at FMY.

Based in part on these considerations as well as the historical trend, the projection of future instrument operations at FMY assumes a continuation of the ten-year trend over the course of the planning period. Applying the 17 percent historical factor to the projection of total operations results in instrument operations increasing from 15,101 in 1998 to 20,882 by the Year 2020. **Table 3-19** presents the forecast of future instrument operations.

TABLE 3-19
FORECAST INSTRUMENT OPERATIONS

Year	Annual Operations
Base Year	
1998	15,101
1999*	16,009
Forecast	
2005	17,139
2010	18,352
2020	20,882

Source: Birk Hillman Consultants, Inc., 2000.
*Estimated

Other Activity Categories

Scheduled passenger activity at Page Field has been prohibited since 1984 through Lee County Ordinance Number 84-12 and, more recently, Lee County Ordnance 94-09 which replaced/rescinded the earlier ordinance. Lee County Ordinance Number 94-09 prohibits "scheduled aircraft passenger traffic of any sort" at Page Field. This restriction applies "regardless of the type or size of aircraft, and regardless of the type of license or certificate held by the aircraft operator." The forecast outlined herein assumes that this restriction will extend throughout the planning period. Therefore, no consideration has been given to the potential for, or the implications of, such service.

Table 3-20 summarizes the projected operational levels for general aviation, air taxi and military activity over the course of the planning period.

TABLE 3-20 PROJECTED ANNUAL OPERATIONS				
Year	General Aviation Operations[1]	Air Taxi Operations	Military Operations	Total Annual Operations
Base Year				
1998	76,691	4,160	195	81,046
1999[2]	89,273	4,897	195	94,365
Forecast				
2005	96,728	5,782	250	102,760
2010	103,114	6,654	250	110,018
2020	116,155	8,743	250	125,148

Source: Birk Hillman Consultants, Inc., 2000.
[1] Air taxi has been desegregated from the General Aviation totals.
[2] Estimated

Comparison to Previous Forecasts

Total annual operations forecast in the previous sections and reflected in **Table 3-20**, represent an average annual growth rate of just over 1.3 percent from the 1999 estimated activity level and just under 2% from the 1998 levels. Base data utilized in the forecast process, originated from the FAA 5010 form, Airport Activity Reports and were supplemented with data from the FAA Terminal Area Forecast (TAF) and the 1993 Master Plan. Annual operations as projected in the FAA's most recent TAF reflect a .75 percent average annual growth while the previous master plan reflected an average annual growth rate of 2 percent. The 1998/99 FASP revised forecast reflects an average annual growth rate of 1.1%.

The projected operations contained in this analysis indicate a reverse in the declining activity trends that the Airport has been experiencing for several years up through 1998 to an increasing trend from 1999 onward. This trend is similarly reflected in the 1993 Master Plan, the 1997 TAF and the revised FASP projections. The 1993 Master Plan indicated that the declining activity of the 1990's would bottom out in 1995 at 85,000 annual operations and increase to 94,000 by 2000. It appears that traffic has bottomed out in 1998 and is beginning to turn around putting the actual data a bit behind the previous forecast. The forecast growth in the previous master plan indicated the potential for 130,000 annual operations in 2010 versus the 110,018 projected in this analysis. Finally, the FASP reflects an increase to 96,863 by 2010 and 108,442 by 2020.

The projected rate outlined in the 1997 TAF of .75 percent average annual growth is more conservative than the growth rate 1.4 percent growth rate (from the estimated 1999 activity level) calculated in this analysis. This equates to a difference of 20,446 operations or approximately 21 percent by the Year 2015. The difference in growth rates between the TAF and this analysis is tied to the assumptions of the impact to activity that the substantial efforts that airport management has undertaken to improve the facilities and service. These improvements include the expansion of aviation related commercial development at the Airport, which has the potential to attract not only based aircraft but additional aviation activity. It should further be noted that, if the balance of 1999 experiences the same increase in activity as did the first seven months, the 1999 activity level will exceed the TAF projections for the Year 2015. Similarly, the 1999 traffic levels could easily approach the projected activity level for 2015 outlined in the TAF. With this in mind a more aggressive estimate of activity at the Airport is required to ensure that facilities and expansion plans adequately accommodate this potential.

A comparison of the trend lines of the four projections is depicted in **Figure 3-6** and summarized in **Table 3-21.**

Figure 3-6
Annual Aircraft Operations - FMY (1983-2020)

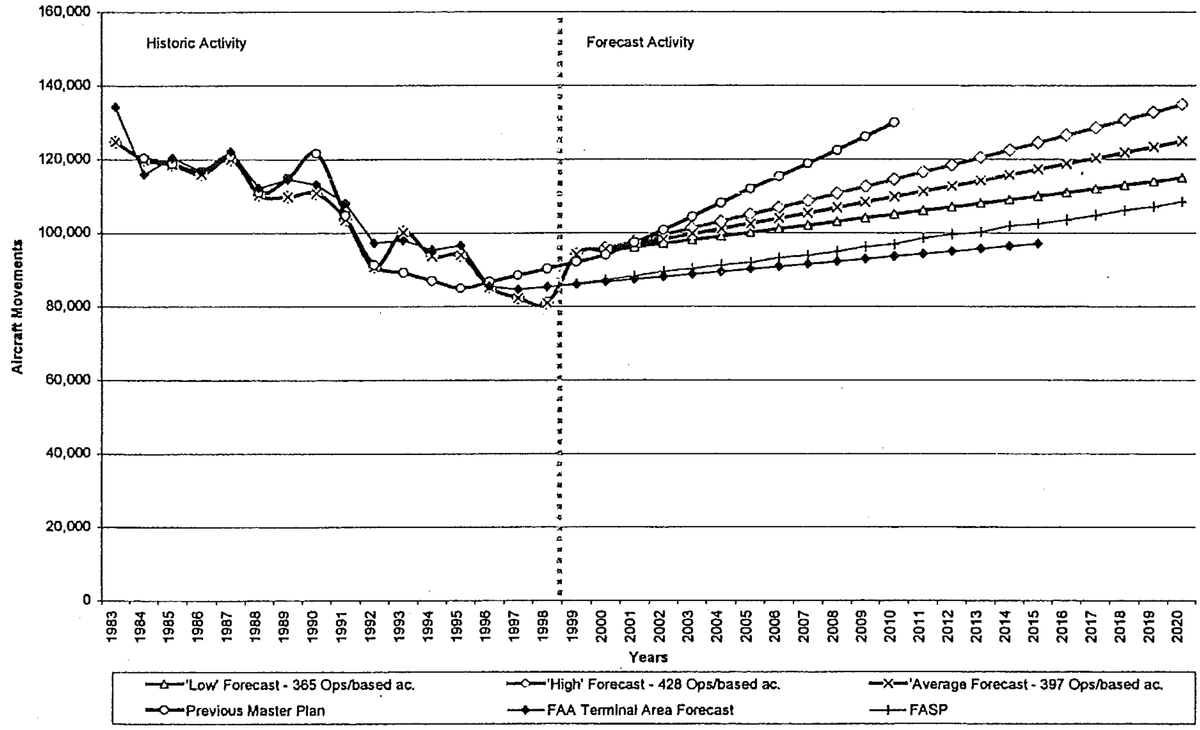


TABLE 3-21 ANNUAL OPERATIONS FORECAST COMPARISON (through 2010)				
Year	**1997 FAA TAF**	**Master Plan Update Model ("average" forecast)**	**1993 Master Plan**	**1998/99 FASP**
2005	86,691	102,760	112,000	91,902
2010	93,586	110,018	130,000	96,863
2015	97,034	117,230	N/A	102,487
2020	N/A	125,148	N/A	108,442

Source: Birk Hillman Consultants, Inc., 2000.

Peak Activity Projections

Peak operational activity including peak month, peak day, and peak hour forecasts are used in the planning and sizing of future facilities and determining the Airport's ability to accommodate projected demand. Page Field experiences the highest traffic levels during the spring months of February, March and April. Of these, the month of March appeared to best represent the busiest month of operations for the Airport. Total operations were analyzed on a monthly basis for the ten-year period ending 1998. It was determined that the peak month of March accounted for an average of 10.2 percent of annual operations over this ten-year period. For planning purposes this 10.2 percent average was applied to the forecast of annual operations through the Year 2020 to estimate the peak month operations for each year.

The values for an average day of the peak month and for the peak hour were calculated using the FAA's methodology found in Advisory Circular 150/5360-7, "Planning and Design Considerations for Airport Terminal Building Development." Under this methodology, the average day of the peak month was derived by taking the number of operations calculated for the peak month and dividing that figure by the number of days in the peak month, which in this case is 31. No historical data was available to determine the peak hour operations at Page Field. A general rule of thumb is that peak hour operations at typical general aviation airports tend to range around 15 percent of the daily activity level. Thus, for planning purposes it was estimated that 15 percent of the peak month average day would be used to represent peak hour operations. Projections of future peak operations at the Airport are shown in **Table 3-22.**

TABLE 3-22
FORECAST PEAK ACTIVITY

Year	Total Annual	Peak Month	Average Day	Peak Hour
Base Year				
1998	81,046	8,267	267	40
1999*	94,365	9,625	310	47
Forecast				
2005	102,760	10,482	338	51
2010	110,018	11,222	362	54
2020	125,148	12,765	412	62

Source: Birk Hillman Consultants, Inc., 2000.
* Estimated

SUMMARY OF AVIATION ACTIVITY FORECASTS

Table 3-23 summarizes the projections of aviation activity developed for this master plan update. Activity at Page Field is expected to show growth throughout the forecast period. The overall rate of growth is not overly aggressive, but will be a departure from the experience of the Airport over the past several years. Because of improvements at the Airport based aircraft are also forecast to increase. Military activity and air taxi activity are not forecast to grow substantially, but will remain components of overall activity at the Airport. The forecasts that are delineated in the previous analysis and summarized below will be used in subsequent sections of the master plan update as input to analyze airfield capacity, define facility needs and assess facility costs and revenues.

TABLE 3-23 SUMMARY OF AVIATION ACTIVITY FORECASTS					
Forecast	**1998**	**1999***	**2005**	**2010**	**2020**
Annual Operations					
Total	81,046	94,365	102,760	110,018	125,148
Local	29,492	34,843	37,929	40,614	46,212
Itinerant	51,359	59,327	64,581	69,154	78,685
Military	195	195	250	250	250
Individual Operations					
Air Taxi	4,150	4,816	5,782	6,654	8,743
Instrument	15,101	15,561	17,139	18,352	20,882
Based Aircraft					
Total	255	258	273	286	315
Single-Engine	211	213	223	230	249
Twin-Engine	30	31	34	37	42
Jet	7	7	8	10	13
Rotor	7	7	8	9	11
Peak Activity					
Peak Month	8,267	9,625	10,482	11,222	12,765
Average Day	267	310	338	362	412
Peak Hour	40	47	51	54	62

Source: Birk Hillman Consultants, Inc., 2000.
* Estimated based on January through July 1999.

Chapter Four – Demand/Capacity

INTRODUCTION

The projection of aviation demand was presented through the year 2020 in Chapter Three, "Aviation Activity Forecasts." These forecasts, which included aircraft operations, based aircraft, fleet mix, and peak activity, are a part of the basis for determining whether the existing airport facilities at Page Field can meet the future demands of the users. Basic airport components such as the runways, taxiways, airspace and ground access can then be reviewed to determine their capability to accommodate the forecast of aviation demand. Subsequent analysis will address specific improvements required to improve not only the function and capability of the basic facilities to support the projected activity, but also the requirements for improvements to support these facilities. Such facilities include the apron/ramp, hangars, aircraft tiedowns, aviation fuel capacity and storage, the Fixed Base Operator (FBO), and other airport support services.

To determine whether basic airfield capacity deficiencies currently exist or might be expected in the future, the airfield was evaluated relative to the number of operations that can be reasonably handled over both an hourly and annual basis. This analysis proceeds the assessment of the various support facilities since it is usually most important to the long term viability of an airport. The outcome can have considerable impact on the location and layout of support facilities and problems associated with it are often among the most expensive to resolve. If potential deficiencies in the capacity of airfield facilities are identified, specific recommendations, including size and phasing of any new facilities will be identified in the following chapter, "Facility Requirements." Additionally, this chapter addresses the ability of the airspace to accommodate the projected activity as well as the transportation infrastructure which connects the airport with the surrounding community.

AIRFIELD CAPACITY FACTORS

A number of techniques have been developed for the analysis of airfield capacity. The method recommended by the Federal Aviation Administration (FAA) can be found in Advisory Circular (AC) 150/5060-5 Change 2, "Airport Capacity and Delay." Airfield capacity was computed using this methodology in the previous Master Plan and is the methodology also recommended by the Florida Department of Transportation (FDOT). Because of it's wide acceptance in determining airfield capacity and aircraft delay it was the methodology used in this Master Plan Update for Page Field (FMY). The following definitions are presented in AC 150/5060-5 Change 2 and will be used throughout this chapter:

- **Hourly Capacity of Runways** – The basic measure of capacity related to peak hour activity and is defined as the maximum number of aircraft operations that can take place in one hour.
- **Annual Service Volume (ASV)** – ASV is the annual capacity or a maximum level of aircraft operations that may be used as a reference in planning the runway system. ASV is used as a particularly valuable tool for long range planning of airfield facilities.
- **Annual Aircraft Delay** – Total delay incurred by all aircraft on the airfield in one year.

Airfield capacity is affected by a number of elements including airfield layout, aircraft mix index, meteorological conditions, runway use, percent arrivals, the percentage of touch and go activity, and the location of exit taxiways along the runways. When analyzed collectively, the above factors provide the basis for establishing the operational capacity of an airport. The following sections will evaluate each of these capacity characteristics with respect to FMY.

Airfield Layout

The airfield layout refers to the location and orientation of the runways, taxiways and apron areas. The runway system at Page Field Airport consists of two paved landing strips. The primary runway, Runway 5-23, has a northeast to southwest orientation. The total pavement length is 6,406 feet long by 150 feet wide, with a 459 foot displaced threshold at the approach end of Runway 5 and a 399 foot displacement of the threshold at the approach end of Runway 23. Runway 5-23 is served by a full length parallel taxiway, Taxiway A, that provides 400 feet of separation from the runway centerline to the taxiway centerline and is located on the east side of the runway. Taxiway A also provides access to the Fixed Base Operator (FBO), conventional hangars, t-hangars, and shade hangars via a variety of taxilanes and taxiway connectors. There are a total of seven exits connecting the parallel taxiway to Runway 5-23, including the exits located at each runway end. Based on the FAA's criteria and the fleet mix at FMY, the optimum exit factor relative to capacity is maximized when a runway has two or three exit taxiways within a range determined by the operations using that runway. At FMY, this operational range would be between 2,000 feet to 4,000 feet from the landing threshold. According to this criteria, Page Field has two taxiway exits for both Runway 5 and Runway 23 within this acceptable range.

Runway 13-31, the crosswind runway, has a southeast to northwest alignment. The runway is 4,912 feet long by 150 feet wide with a 700 foot displaced threshold at the approach end of Runway 13. Runway 13-31 is served by Taxiway B, a full length parallel taxiway located along the north side of Runway 13-31. The distance from the runway centerline to the centerline of parallel Taxiway B is 325 feet. Taxiway B has a total of six exits connecting the parallel taxiway to the runway. Based on the guidelines outlined in the advisory circular, Runway 13 and Runway 31 each have two exits within the respective operational range for each runway end.

The two runways at FMY are laid out in a criss-cross configuration. The intersection of Runway 13-31 is approximately 3,405 feet from the threshold of Runway 5, more than half the length of Runway 5. From the threshold of Runway 13 the intersection of Runway 5-23 occurs at approximately 2,265 feet, just about the midpoint of Runway 13-31. Until recently, FMY had land and hold short operations available on Runway 5. Under this procedure, pilots landing on Runway 5 could exit the runway before, or hold short of the intersection of Runway 13-31, thus allowing Air Traffic Control to release an aircraft departing on Runway 31. The purpose of this operation was to decrease the time between departures and increase the airfield capacity. This procedure is no longer in affect and according to Air Traffic Control Tower personnel at Page Field there are no plans to reinstate this operational procedure in the future. The procedure was indefinitely suspended due to a number of runway incursions that occurred in 1998 and 1999 throughout the U.S.

The majority of aviation development at FMY is located in the southern quadrant of the airport, between the approach ends of Runway 5 and Runway 31. This area includes conventional hangars, T-hangars, shade hangars, public parking aprons, the FBO, and other miscellaneous flight schools and aircraft maintenance facilities. The north side of the airfield consists of the newly renovated Florida Department of Law Enforcement (FDLE) office, and the newly rehabilitated aircraft tie down ramp. East of this facility, across Runway 5-23, is the Experimental Aircraft Association's facility, two rows of new t-hangars, and the SMS corporate hangar.

Instrument Approaches

Runway 5 at Page Field has an instrument landing system (ILS) for precision approaches (both vertical and horizontal guidance) to the runway. ILS allows for operations with approach minimums of 256 feet (decision height) and one mile visibility for all aircraft at any approach speed. Because Runway 5 has no approach lighting system (ALS), the visibility requirements for the ILS approach are higher than other typical ILS approaches. According to the United States Standards Terminal Instrument Procedures (TERPS), an ALS would reduce the visibility requirements for most classes of landing aircraft to half a mile. The ILS also provides a straight-in non-precision approach to Runway 5 using just the localizer. This approach can be made with a minimum descent altitude (MDA) of 440 feet and visibility as low as one mile for aircraft with approach speeds less than 121 knots (Class A and B). Higher approach speeds require one and a quarter mile visibility. Runway 5 has a non-precision instrument approaches using the Non-Directional Beacon (NDB). The MDA for the straight-in NDB approach is 480 feet with visibility minimums of one mile for Class A and B aircraft, one and a quarter miles for aircraft having approach speeds of between 121 and 141 knots (Class C), and one and a half miles for aircraft with approach speeds of above 141 knots (Class D). Runway 5 also has a Global Positioning System (GPS) non-precision approach. For a straight-in landing on Runway 5 the MDA is 380 feet and visibility as low as one mile.

Runway 13 has two types of non-precision instrument approaches, a very high frequency omni-directional range Station (VOR) and a GPS. A straight-in VOR approach can be made with a MDA of 440 feet MSL and one mile visibility for Class A and B aircraft and one and a quarter miles for Class C and D aircraft. This approach requires either distance measuring equipment (DME) or automatic direction finder (ADF) to execute the approach to the published minimums. A straight-in GPS approach can be made with a MDA of 420 feet with one mile of visibility is required for Class A and B aircraft and one and a quarter miles for Class C aircraft.

Runways 23 and 31 both have GPS non-precision approaches. A straight-in approach to Runway 23 can be made with a MDA of 420 feet MSL and one mile visibility for Class A and B aircraft, and one and a quarter miles for Class C aircraft. A straight-in GPS approach for Runway 31 can be made with a MDA of 380 feet MSL and one mile visibility for Class A, B and C aircraft.

FMY also has radar approaches for all four runways. These approaches are considered non-precision with MDAs ranging from 440 to 480 feet MSL. The visibility minimums also vary from one to one and a half miles depending on the runway and the approach speed of the aircraft.

Aircraft Mix Index

With knowledge of the operational fleet mix, it is possible to establish the index value required to compute an airfield's capacity. This index value, simply known as the aircraft mix index, is calculated based on the type or class of aircraft expected to serve an airfield. **Exhibit 4-1** provides examples of typical aircraft for each of the FAA's four capacity classifications. The formula for finding the mix index is %(C + 3D) where C is the percentage of aircraft over 12,500 pounds, but less than 300,000 pounds and D is the percentage of aircraft over 300,000 pounds. At FMY, the current aircraft mix includes Class A and B aircraft, along with some Class C aircraft. No Class D aircraft are expected to operate at FMY during the planning period. Because of the county ordinance passed that prohibits air carrier operations at Page Field, the percentage of Class C aircraft will be small and consist of mainly corporate aviation and some military activity.

Typical class A and B aircraft operating into and out of FMY include single engine aircraft such as the Cessna 172, Cessna 210, Piper Warrior, Piper Arrow, Grumman Tiger, and the Beechcraft Bonanza. Multi engine aircraft in these categories include the Cessna 310 and 414, Piper Seminole, Piper Aztec, Piper Commanche, Beechcraft Baron, and the Beechcraft King Air. These aircraft fall into A and B classifications due to their maximum certified takeoff weight. Only a limited number of jets are included in these categories, among the most notable is the Cessna Citation Jet Series 525/ Citation I.

EXHIBIT 4-1

AIRCRAFT CLASSIFICATION

TYPICAL AIRCRAFT, BY CLASS FOR AIRFIELD CAPACITY

Class A Small single-engine, gross wt. 12,500 lbs. or less.

Mooney Ovation

Cessna 152/172	Mooney 201/231/Ovation
Beechcraft Bonanza	Piper Warrior
Cessna 182/210	Grumman Tiger

Class B Small twin-engine, gross wt. 12,500 lbs. or less.

King Air 350

Beechcraft Baron	Cessna 310/414
Mitsubishi MU-2	Piper Seminole
Cessna Citation I	Beech King Air 90/100/200/350

Class C Large aircraft, gross wt. 12,500 lbs. to 300,000 lbs.

Challenger 604

Lear 35/55	Falcon 20/50/90
Cessna Citation II	Gulfstream III/IV/V
Boeing 727/737	Challenger 604
Douglas DC-9/MD-80	

Class D Large aircraft, gross wt. more than 300,000 lbs.

Boeing 747

Airbus A300/310	Douglas DC-8
Boeing 747	Lockheed L-1011
Airbus A-340	Douglas MD-11

Lee County Port Authority

Based on the analysis of existing activity in the prior chapter, it is estimated that during visual flight conditions approximately 2 percent of the aircraft operations at FMY are currently conducted by Class C aircraft and 98 percent by Class A and B aircraft. During instrument meteorological conditions at peak periods, it is estimated that the Class C percentages will increase to approximately 6 percent. The current fleet mix is projected to shift slightly in terms of Class C aircraft throughout the planning period. This shift is a result of an increasing business jet market. Nationwide business jets are projected to increase with more companies purchasing aircraft or opting for fractional ownership in an aircraft. As a result, an aircraft mix of roughly 95 percent Class A and B aircraft and 5 percent Class C aircraft during VFR conditions is projected. Class C aircraft are estimated to be 15 percent during IFR periods by the year 2020. The aircraft mix data is presented in **Table 4-1**.

TABLE 4-1
AIRCRAFT OPERATIONAL MIX

Year	Percent Class		
	A and B	C	D
VFR			
1998-Base Year	98	2	0
2005	97	3	0
2010	96	4	0
2020	95	5	0
IFR			
1998-Base Year	94	6	0
2005	91	9	0
2010	88	12	0
2020	85	15	0

Source: Birk Hillman Consultants, Inc., 2000.

Meteorological Conditions

Weather conditions often dictate which runway is utilized by pilots, and can significantly affect the overall capacity of the airfield. Wind conditions, cloud ceilings, and visibility all factor into the direction in which take-offs and landings at an airport generally occur, but the majority of the time it is solely determined by the prevailing winds. The type of instrumentation and the adequacy of the associated instrument approaches for the runway system will influence which runway is active during inclement weather conditions.

As the ceiling and horizontal visibility diminishes the required spacing between aircraft departing and arriving an airport increases. The increase in spacing provides the desired margins of operational safety into or out of the airport. However, aircraft operations cease entirely when conditions have deteriorated below the specified approach minimums. As the distance between aircraft increases, the number of aircraft that can operate at the airport during a given time period is reduced, thereby adversely affecting the capacity of the airfield. There are four primary measures of cloud ceiling and visibility conditions recognized by the FAA in calculating airfield capacity. These include:

- Visual Flight Rules (VFR) – Cloud ceiling is greater than 1,000 feet above ground level (AGL) and the visibility is greater than three statute miles.
- Instrument Flight Rules (IFR) – Cloud ceiling is at least 500 feet AGL but less than 1,000 feet AGL and/or the visibility is at least one statute mile but less than three statute miles.
- Poor Visibility and Ceiling (PVC) – Cloud ceiling is less than 500 feet AGL and/or the visibility is less than one statute mile.
- Below Minimums- Cloud ceiling and visibility is below stated minimums for the airport. The airport is closed for landing operations.

Based on weather data received from National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center, a meteorological analysis was prepared for Page Field. Hourly observations between 1990-1995 from NOAA's weather station located at Page Field were used to determine the percentage of time the airport is operated under VFR, IFR, and PVC conditions. At FMY, VFR conditions were found to occur approximately 95 percent of the time, while IFR conditions occur approximately 3 percent of the time, PVC conditions less than 1 percent of the time, and weather conditions below the published approach minimums 2 percent of the time. The percentage of IFR and below minimum conditions can have a considerable negative impact on the overall capacity of the airport from an annual service volume perspective. However, Page Field's percentage of IFR and below minimum conditions is low when compared to many other airports in the United States.

Airfield Operational Characteristics

A number of operational characteristics will also affect an airfield's overall capacity. These include the percentage of aircraft arrivals, the sequencing of aircraft departures, and the percentage of touch and go operations at an airport.

Percentage of Aircraft Arrivals

The percentage of aircraft arrivals is the ratio of landing operations to the total operations of the airport. This percentage is considered due to the fact that aircraft approaching an airport for landing require more runway occupancy time than an aircraft departing the airfield. Except in unique circumstances, the aircraft arrival-departure split is typically 50/50 at general aviation airports. The FAA methodology was used for computing airfield capacity with 40, 50, or 60 percent arrivals to measure the sensitivity of the ASV to this factor.

The 40 and 60 percent figures result in an average annual service volume variance of ±11 percent when compared to the 50 percent level, with the lower percentage (40) having the highest capacity. Discussions with airport management and airport users have indicated that arrivals were estimated to account for 50 percent of the peak period operations at FMY and that figure is not expected to change over the planning period.

Sequencing of Aircraft Departures

The ability to sequence arriving and departing operations or departures on both runways provides an increase in airport capacity that is factored into the FAA's capacity method. To facilitate this, all four runway ends have run-up provisions. However, expanded run-up areas for Runway 5, 23 and Runway 31 are needed, especially since traffic has increased and larger business jets are utilizing Page Field.

Unfortunately, the size constraint of these particular run-up areas cannot be modeled using the FAA's methodology for airfield capacity. Therefore, the airfield is considered to have no constraints with respect to sequencing aircraft departures.

Percentage of Touch and Go Operations
The percentage of touch and go operations to total operations plays a significant role in the determination of airport capacity. Touch and go operations are counted as one landing and one takeoff (i.e., two operations). These types of operations require less time and capacity than full stop operations. The higher the percent of touch and go operations, the higher the theoretical annual capacity at the airport. These types of operations are normally associated with flight training activities. FAA guidelines for calculating annual service volume require an estimate of the percent of touch and go operations occurring at the airport. Based on historical counts, the level of touch and go operations at FMY were estimated to be approximately 37 percent of the annual operations, slightly higher than the number used in the 1993 Master Plan. This percentage has been applied throughout the planning period and appears to be a good representation of touch and go activity.

Runway Utilization
Based on wind rose analysis and runway operating configurations from the previous Master Plan it was determined that the runway utilization had not changed significantly at Page Field in the past 5 years. For the capacity calculations in this analysis, 2 percent was factored into the runway utilization equation as the percentage of time the airport was closed do to inclement weather, such as fog, rain, and even thunderstorms. In both VFR and IFR conditions, Runway 5-23 is the most utilized runway accounting for approximately 55 percent utilization during VFR conditions and 95 percent during IFR conditions. Runway 13-31 is utilized approximately 25 percent during VFR and only 1 percent during IFR weather. Both runways are used approximately 20 percent during VFR and 4 percent during IFR, with Air Traffic Control sequencing aircraft for arrivals and departures. These percentages are important in computing the weighted capacity and annual service volume for the airport.

AIRFIELD CAPACITY ANALYSIS

The preceding characteristics of Page Field's capacity were used in conjunction with the methodology developed by the FAA to determine airfield capacity. As mentioned previously, this FAA methodology generates three different values for measuring airfield capacity. These include the hourly capacity of runways, annual service volume, and annual aircraft delay.

Hourly Capacity of Runways

Hourly capacity of the runways measures the maximum number of aircraft operations that can be accommodated by the airport's runway configuration in one hour. Based on the FAA methodology, hourly capacity for runways is calculated by analyzing the appropriate VFR and IFR figures in Advisory Circular AC150-5060-5 for the airport's runway configuration. From these figures the hourly capacity base (C*) is calculated by applying the aircraft mix index and percent of aircraft arrivals, the touch and go factor (T), is determined based on the percentage of touch and go operations combined with the aircraft mix index, and the exit factor (E) is calculated by applying the aircraft mix index, percent of aircraft arrivals, and the actual number of exit taxiways within the specified exit range. The calculations from the AC 150-5060-5 figures are delineated in **Table 4-2**.

TABLE 4-2 HOURLY CAPACITY OF RUNWAY SYSTEM		
	VFR	IFR
Hourly Capacity Base (C*)	102	61
Touch and Go Factor (T)	1.31	1.00
Exit Factor (E)	.94	.99

Source: Birk Hillman Consultants, Inc., 2000.

The wind direction, the percentage of IFR operations and below minimum weather conditions therefore become important factors in determining the weighted hourly capacity of the airfield. For both VFR and IFR conditions, the hourly capacity for runways is calculated by multiplying the hourly capacity base, exit factor, and touch and go factor. This equation is (Hourly Capacity = C* x T x E).

When analyzing the runway system with an aircraft mix of 2 percent Class C operations in VFR and 6 percent in IFR, 37 percent touch and go operations in VFR conditions, and a taxiway exit rating of two, existing hourly runway capacity was developed for both VFR and IFR conditions. Based on the equation above and the information included in Table 4-2, the hourly runway capacity is estimated to be 126 operations per hour under VFR conditions and 60 operations per hour under IFR conditions. The percentage of Class C aircraft activity in the future is expected to increase slightly during both VFR and IFR conditions. Changes in fleet mix can have an impact on the airport's capacity and as a result weighted hourly capacities were developed.

For calculation of annual capacity a single weighted hourly capacity is determined which incorporates VFR and IFR hourly capacities as well as periods of airport closure into a single number that better represents an "average" condition. The weighted hourly capacities, which include both VFR and IFR conditions, were calculated for the base year and for each of the three planning periods. These figures are included in **Table 4-3**.

TABLE 4-3 WEIGHTED HOURLY CAPACITY OF RUNWAY SYSTEM	
Year	**Operations per Hour**
Base Year	
1998	106
Forecast	
2005	105
2010	104
2020	103

Source: Birk Hillman Consultants, Inc., 2000.

Annual Service Volume

In order to understand the overall capacity at an airport, the Annual Service Volume (ASV) is necessary to calculate for long range planning purposes. The ASV represents a measure of the approximate number of total operations that the airport can support annually given its profile of traffic, weather, etc. In other words, the ASV represents a reasonable theoretical limit of operations that the airport can accommodate safely and with minimal delay. Using the FAA's methodology to estimate ASV, the ratio of annual demand to average daily demand during the peak month is calculated, along with the ratio of average daily demand to average peak hour demand during the peak month. These values are then multiplied together, the result of which is multiplied by the weighted hourly capacity to compute ASV. This equation is:

$$\text{Annual Service Volume} = Cw \times D \times H$$

where: Cw = weighted hourly capacity
D = ratio of annual demand to average daily demand, during the peak month
H = ratio of daily demand to average peak hour demand during the peak month

The calculated ASV accounts for differences in runway use, aircraft mix, weather conditions, and other factors that occur over a single year. The ratio of annual demand to average daily demand in the peak month for Page Field was estimated at between 303.5 and 304.1 for the existing and future activity levels. For the purpose of this analysis, an average value of 303.79 was used. The ratio of daily demand to average peak hour demand during the peak month was estimated between 6.65 and 6.68. Again for this analysis an average value of 6.66 was used. The results of the calculations for ASV are included in **Table 4-4**.

ASV is the approximate measure of an airport's capability in terms of annual throughput capacity. A demand that approaches or exceeds the ASV will typically result in increasingly significant delays on the airfield. No matter how substantial an airport's capacity may appear, delays will occur even before an airport reaches its stated capacity. Capacity, in fact, is a measure of activity that does not exceed an acceptable level of delay. A number of projects that would increase the capacity at an airport are eligible for funding from the Federal Aviation Administration (FAA). According to FAA Order 5090.3B, "Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)," this eligibility is achieved once the airfield has reached 60 percent of its current capacity. This allows improvements to be made before demand levels exceed the capacity of the facility in order to avoid lengthy delays normally associated with larger scale construction projects. Future capacity levels for the airport have been calculated based on the forecasted annual operations and the respective ASV for each year. These levels are compared to the forecast of operational activity and are depicted in **Table 4-5** and can be seen graphically as **Exhibit 4-2**.

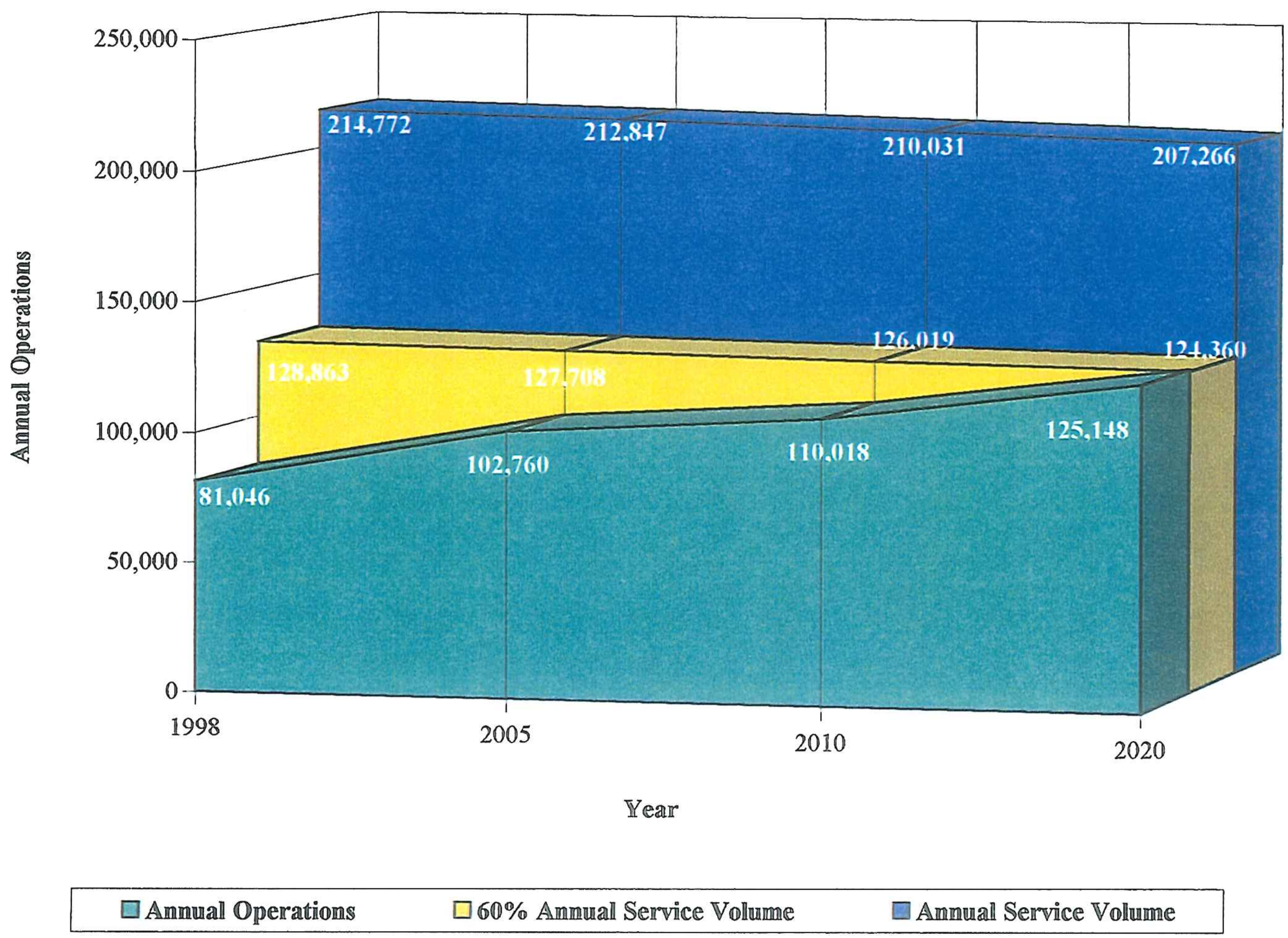
TABLE 4-4
CALCULATED ANNUAL SERVICE VOLUME

Year	Annual Service Volume
Base Year	
1998	214,777
Forecast	
2005	212,751
2010	210,725
2020	206,673

Source: Birk Hillman Consultants, Inc., 2000.

Table 4-5 and **Exhibit 4-2** both show that as demand grows at the projected levels and no improvements are made to the airfield. FMY is not expected to experience significant capacity related problems during the short and intermediate planning periods. By the year 2020, FMY may begin to experience capacity problems if demand grows as projected or exceeds the projections. As mentioned previously, projects that would increase capacity at an airport are eligible for FAA funds once the airfield has reached 60 percent of its ASV. It is recommended that actual improvements should commence before the operational activity reaches 80 percent.

Exhibit 4-2
Demand vs. Airfield Capacity



As conditions change over the years, the capacity of the airfield will need to increase. For this to occur, future projects need to be planned that will enhance the overall capacity of the airfield. The best capacity related improvements would be to develop better access to both runways. These improvements alone would enhance the safety of the airfield while at the same time decrease the runway occupancy time.

TABLE 4-5
AIRFIELD CAPACITY LEVELS

Year	Annual Operations	Annual Service Volume	Capacity Level
Base Year			
1998	81,046	214,777	38%
Forecast			
2005	102,760	212,751	48%
2010	110,018	210,725	52%
2020	125,148	206,673	61%

Source: Birk Hillman Consultants, Inc., 2000.

Annual Aircraft Delay

As annual airport operations approach the ASV, the airfield is likely to experience periods of delay. The FAA methodology allows for the determination of average delay per operation as well as total hours of aircraft delay on an annual basis. The estimate of annual delay includes arriving and departing aircraft operations under both VFR and IFR conditions. Essentially the ratio of projected demand to ASV is utilized in the FAA's charts in AC 150/5060-5, change 2 to determine a conservative estimate of the average delay per aircraft. This value is then applied back to the annual demand to estimate the total amount of annual aircraft delay. The results of the delay calculations are included in **Table 4-6**.

TABLE 4-6
ANNUAL AIRCRAFT DELAY

Year	Average Delay per Aircraft Operation (minutes)	Total Annual Delay (hours)
Base Year		
1998	0.12	162
Forecast		
2005	0.16	243
2010	0.18	297
2020	0.20	386

Source: Birk Hillman Consultants, Inc., 2000.

In the base year, 1998, the average delay per aircraft operation was estimated at 7.2 seconds (0.12 minutes) which equates to approximately 162 total annual hours of delay. By 2020 the average delay per operation is projected to increase to 12 seconds (0.20 minutes) or 386 total annual hours of delay assuming no alterations or improvements are done to the airfield. The average delay per aircraft by 2020 is less than a quarter of a minute, which is not expected to significantly impact airport operations or capacity.

AIRSPACE CAPACITY

Airspace capacity is an essential element of any airport, especially with respect to maintaining the existing and proposed operational characteristics. As discussed in Chapter 2, "Inventory of Existing Conditions", the airfield does have an Air Traffic Control Tower and the airspace surrounding the airport is designated as Class D airspace from the surface up to 1,200 feet Mean Sea Level (MSL). Above 1,200 feet MSL, up to 4,000 feet MSL the airspace is part of the Class C airspace for Southwest Florida International Airport (RSW). Above 4,000 feet MSL, Class E airspace begins and continues up to 17,999 feet above MSL where it intersects the overlying Class A airspace. **Table 4-7** delineates the features of each airspace classification and depicts what requirements, services, and equipment is necessary for use in the different airspaces.

TABLE 4-7
FEDERAL AVIATION REGULATION AIRSPACE CLASSIFICATIONS

Airspace Features	Class A	Class B	Class C	Class D	Class E	Class G
Operations Permitted	IFR	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR
Entry Requirements	ATC Clearance	ATC Clearance	ATC Clearance for IFR	ATC Clearance for IFR	ATC Clearance for IFR	None
Minimum Pilot Rating	Instrument	Private / Student	Student	Student	Student	Student
Two-way Radio Communication	Yes	Yes	Yes	Yes	Yes for IFR	No
VFR Visibility Minimums	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	3 Statute Miles	1 Statute Mile
Aircraft Separation	All	All	IFR, SVFR and Runway Ops	IFR, SVFR and Runway Ops	IFR and SVFR	None
Conflict Resolution	N/A	N/A	Between IFR and VFR Ops	No	No	No
Traffic Advisories	N/A	N/A	Yes	Workload Permitting	Workload Permitting	Workload Permitting
Safety Advisories	Yes	Yes	Yes	Yes	Yes	Yes
Special Equipment	N/A	Mode C Transponder	Mode C Transponder	N/A	N/A	N/A

Source: Birk Hillman Consultants, Inc., 2000.
Abbreviations: SVFR = Special VFR.

Essentially, the Class D airspace facilitates the air traffic control service provided to all VFR and IFR traffic below 1,200 feet MSL within a 5 mile radius of Page Field. As mentioned in the inventory, the airport also lies within the jurisdiction of the Fort Myers Approach Control facility and Miami Air Route Traffic Control Center (ARTCC). Together the two facilities provide approach and departure control for Page Field, depending on the time of day. Radar coverage of the airspace surrounding FMY is provided via the Southwest Florida International Airport Surveillance Radar (ASR).

The airspace for FMY is not significantly impacted or constrained by any of the other airports in the region. However, this does not remove the airspace from the potential of some occasional conflicts with other airports or obstructions in the region. As mentioned in the inventory chapter, there are a number of public use airports in the vicinity of FMY. The fact that RSW and Page Field are only 7 nautical miles apart, could provide some potential airspace conflicts in the future as the demand at both of these airports increases. Fortunately, the alignment of the primary instrument runways at both airports are almost identical minimizing such conflicts. The primary runway at FMY is oriented at 05-23 and both the existing and future runways at Southwest International are expected to be oriented at 06-24. Therefore, arriving and departing traffic can follow similar procedures when entering or leaving either airport environment. IFR traffic on arrival to Page Field can utilize the Sarasota Three Arrival procedure, which is a general use Standard Terminal Arrival (STAR) procedure for the area. The Sarasota Three STAR serves Page Field, Southwest International Airport, Marco Island Airport, and Naples Municipal Airport. As IFR aircraft approach the Ft. Myer's area, radar vectors are provided by approach control at RSW to set the aircraft up on one of Page Field's instrument runways. Similarly, IFR aircraft departing FMY will receive their clearance delivery from RSW before leaving the ground at Page Field. Upon takeoff, the aircraft will switch from the FMY tower frequency to that of RSW's departure control to safely depart the area.

As demand increases in this area for air traffic control services, so does the potential for capacity related conflicts. In addition, there are also a number of private airports and helipads located in close proximity to FMY. The closest of these private strips is the Lee Memorial Hospital helistop, located approximately three nautical miles north of the approach to Runway 13. There are also a number of helipads to the south and southwest of Page Field and while these small facilities are in close proximity to FMY, they do not restrict the capacity of the airport's airspace.

ACCESS ROADWAY CAPACITY

Roadway capacity is typically defined as the maximum number of vehicles that can pass over a given section of a lane or roadway during a given period of time. This capacity is affected by a number of factors including, the characteristics of the roadway, traffic factors, type of use, etc. The previous master plan provided a detailed analysis of the airport access roadway system at that time and what improvements were slated in the next few years. Since then, Fowler Road was extended through the airport property to where it intersects with US 41 at Boy Scout Drive. Additionally, the intersection of North Airport Road with Fowler Road was reconfigured as a part of the roadway extension. Other than the road extension, there has been little change to the area's roads, especially those roads providing access to the south airport facilities including The Aviation Center, and the adjacent commercial properties. Therefore, much of the information contained in the 1993 Master Plan is still considered valid.

It is preferred that a roadway should operate below its capacity. This ensures that it will be able to provide the vehicles using it with reasonable flow while at the same time minimizing delay. As mentioned in the previous master plan, the Highway Capacity Manual defines different operating conditions, known as levels of service. The levels of service are functions of the volume and composition of the traffic and the speeds attained. The Highway Capacity Manual defines six levels of service defined A-F, providing for the best to worst in driver satisfaction. Level of service 'F' defines a road segment operating beyond maximum capacity and well beyond an acceptable level of service. A level of service 'C' is the preferred minimum level of service on most roadways. At this level of service, traffic flow is stable and delays are minimal.

Primary access to FMY is provided via US 41 (Cleveland Avenue). This roadway runs north-south and intersects Colonial Boulevard on the north side of the airfield and Daniels Parkway on the southern end. Both of these roads run east -west with access to Interstate 75. US 41, Colonial Boulevard, and Daniels Parkway are all six lane asphalt divided arterials. US 41 and Colonial are maintained by the state while Daniels Parkway is maintained by Lee county (**Table 4-8**). The Fowler Street extension transits the airport's northwest side extending from the southwest at the intersection of Boy Scout Drive and SR 41 north and east to the revamped Fowler/ Colonial intersection. Fowler is a county maintained arterial developed to relieve the pressure on the primary north - south connector (US 41) into the City of Fort Myers.

Between Daniels Parkway and Page Field, a number of two lane roadways run east-west and intersect or end at Metro Parkway. Metro Parkway runs north-south and provides the eastern boundary arterial access to the airport. It is a state maintained four lane divided roadway that terminates at Hanson Road to the north and Gladiolus Drive to the south. One of the crossroads that connect US 41 and Metro Parkway is Danley Drive. This road connects the two north-south arterials and is the only access to the airport's southern facilities. Page Airport Road located just north of Danley Drive runs east-west and intersects and ends at Danley Drive just to the southwest of the old airport restaurant. Both these roads are two lane undivided collectors maintained by the county.

TABLE 4-8
PRIMARY ACCESS ROADWAYS

Roadway	Classification	Maintenance Responsibilities
Cleveland Avenue (US 41)	Arterial	State
Colonial Boulevard	Arterial	State
Metro Parkway	Arterial	State
Fowler Rd.	Arterial	County
Danley Drive	Collector	County
Daniels Parkway	Arterial	County

Source: The Lee Plan, 1998.

The previous master plan suggested closing Page Airport Road and utilizing Danley Drive as the only access road to the south airport facilities. It should be noted the existing right-of-way along both of the aforementioned streets is not consistent with those normally desired for a collector street system. Further, the pattern of development along both these roads is not compatible with that of a primary access roadway to the airport. This incompatibility is related to the significant number of residential dwellings located along this road, which ideally should be reserved for commercial/industrial activity. The mix of residential uses, with their associated driveways, impact the traffic flow and increases the potential for conflicts with pedestrians.

North Airport Road provides access to the facilities on the north side of the airfield which includes the Air Traffic Control Tower, the Page Field Commerce Center, the Airport Fire Station, and a number of commercial properties. This road is an undivided two lane roadway with direct access from either Fowler or US 41. Idlewild Road provides access to the facilities on the east side of the airport which includes the T-hangar and corporate hangar facilities. This road is also an undivided two lane roadway with direct access to Metro Parkway.

It was noted through a review of the Lee Plan that a number of improvements were planned through the year 2020 for the major arterials serving Page Field. Expansion of Metro Parkway to a six lane divided arterial with a grade separated intersection at Colonial Boulevard is currently included in the 2020 Financially Feasible Plan. This includes the extension of Metro Parkway south to US 41 with a grade separated interchange at the intersection of US 41 and Alico Rd. This is expected to improve Metro Parkway's ability to function as a second primary north south connector into the City of Fort Myers. Improvements are also planned for Colonial Boulevard between US 41 and Metro Parkway with the potential for a grade separated intersection at SR 41.

While a number of surface road improvements have either been recently implemented or are planned to improve access to the airport, access in and around the airport environment is extremely constrained. Currently, users must leave airport property and access a major arterial to move between facilities located on the north, east or south sides of the airport. This will also be true if and when facilities are developed on the airport's west side. Improved movement between these areas without accessing surface roads would substantially enhance the airport operation.

Chapter Five – Facility Requirements

INTRODUCTION

To ensure that Page Field Airport will be able to adequately accommodate the various demands that are expected to be placed on it during the 20 year planning period, this chapter will establish the general facility requirements for the future development of the airport. One of the principle challenges facing any airport is development. Airport development can be particularly costly and since each project is typically planned to last many years, care must be taken to ensure that each development project will help satisfy the airport's needs and enhance the capability and quality of the airport. Analyzing future requirements of the airport with respect to safety standards, capacity shortfalls and the demand for services provides a guide as to the operational, airfield, building, infrastructure and land requirements that must be addressed to meet demand. Once these requirements have been identified, different development alternatives can be created and analyzed to address each facility need. Assessment of relative benefits or disadvantages of each development option can then be undertaken in such a way to ensure that the greatest benefits are provided to the users, tenants, local community, and of course, to the airport itself. The objective of any development plan should be to optimize the available resources and construct airport facilities that achieves the greatest overall benefit in an efficient and economical manner.

It is important that airport owners and managers do not overlook valuable opportunities to maximize the development of the airport's facilities and resources. When these opportunities are missed, the airport loses potential revenues, the tenants do not receive maximum benefit from their leases, and the airport users tend to experience a lower level of service than might otherwise be obtainable. Conversely, it is equally important that airport owners consider the quality of life of the local residents in planning airport development. Meeting the demands of the airport's users must consider the community's desire for aesthetics, controlled development, and environmental conservation.

Finally, an airport must be developed in the context of air safety. Improvements to the airport must allow for continued safe operation of aircraft into and out of the airport as well as maneuvering on the ground. Accommodating these capabilities safely is the most basic function of an airport facility and, as such, the needs associated with this task are most commonly addressed first.

Airport Role and Service Level

The FAA, through the National Plan of Integrated Airport System (NPIAS), establishes the role and service level of each airport included within that plan. The role for each airport identifies one of five basic service levels which describe the type of public service the airport is expected to provide to the community. The role and service level also represents the funding categories set up by Congress to assist in airport development. A former military training base and air carrier airport, there are no longer any regularly scheduled flights operating into FMY. The airport is now designated as a public use General Aviation – Reliever airport according to the most recent (1999) NPIAS. As noted in the Inventory section of this report, the NPIAS identifies 88 General Aviation Airports in the State of Florida, of which 32 are classified as relievers.

Airport Reference Code and Critical Aircraft

An initial step in identifying an airport's potential facility requirements is the establishment of fundamental development guidelines. By examining the types of aircraft expected to use the airport, it is possible to establish the critical aircraft for design purposes. This critical aircraft is usually the most demanding aircraft using the airport. The FAA defines this as the largest, heaviest, and fastest aircraft forecast to have more than 500 annual itinerant operations at the airfield. Itinerant operations are flights which originate or terminate at an airport more than 25 miles from the aircraft's base airport.

After the critical aircraft has been determined, an Airport Reference Code (ARC) is established based on the characteristics of that aircraft. The two primary characteristics of a critical aircraft are the aircraft's wingspan and approach speed. Because some aircraft may have large wingspans and relatively slow approach speeds, while others may have high approach speeds with shorter wingspans, it is sometimes necessary to establish more than one critical aircraft. Additionally, it may be necessary in some instances to design certain areas to a higher design standard than the rest of the airport so as to accommodate certain operations.

This ARC is made up of two components, a letter designation followed by a Roman numeral. The letter indicates the approach category (approach speed) of the most demanding aircraft and the Roman numeral designates the Design Group (wingspan) of the most demanding aircraft. Below, **Table 5-1** and **Table 5-2** delineate the Aircraft Approach Categories and Aircraft Design Groups according to FAA Advisory Circular (AC) 150/5300-13 Change 5, "Airport Design."

TABLE 5-1
AIRCRAFT APPROACH CATEGORIES

Category	Approach Speed (knots)
A	< 91
B	91 – 121
C	121 – 141
D	141 – 166
E	> 166

Source: FAA AC 150/5300-13 Change 5.

TABLE 5-2
AIRCRAFT DESIGN GROUPS

Design Group	Wingspan (feet)
I	< 49
II	50 – 79
III	80 – 118
IV	119 – 171
V	172 – 214
VI	215 – 262

Source: FAA AC 150/5300-13 Change 5.

According to the 1993 Airport Master Plan, Runway 5-23 had both an existing and future ARC of C-III while Runway 13-31 had an ARC of B-II for both the existing and future period. The current and projected fleet mix at FMY were reviewed to identify critical aircraft types for airport design purposes.

Runway 5-23's prior ARC designation of C-III was based on the combination of multi engine piston, turboprop, and jet aircraft with 10 or more passenger seats. The previous master plan identified the P-3 Orion as the design aircraft due to the coast guard operating in and out of FMY in the early 90's. There was no discussion of existing business jet aircraft serving the airport at the time of the study and since then the coast guard has moved its operation to RSW. It was assumed that because the airport serviced commercial aircraft such as the Boeing 727 and the DC-9 in the eighties, which are designated ARC C-III, that the initial ARC has carried throughout the years to the present. The most critical aircraft operating on Runway 5-23 on a regular basis presently at FMY is the Canadair Challenger (CL-604). According to discussions with the Air Traffic Control Tower this aircraft frequents Page Field often and operates regularly enough to justify it as the critical aircraft for the airport. This aircraft has an ARC designation of C-II. The other popular aircraft occasionally operating into FMY is the Gulfstream IV (G-IV). This aircraft has an ARC designation of D-II and this aircraft's approach speed category exceeds that for which the runway was designed, although its wingspan is well within the existing runway's service capabilities. However, it is not projected that G-IV traffic at the airport will approach the 500 annual operation guideline set by the FAA to justify an increase in the ARC.

The FAA's 1999 forecasts noted that a significant amount of larger business jet and regional jet aircraft are currently being manufactured. The business version of these aircraft, which include the Gulfstream V and the Canadair Global Express, are capable of serving the more global requirements of today's business environment. These larger business jets, which can seat up to 19 passengers, have an ARC as high as D-III. As reflected in the forecasts, although the possibility that some of these aircraft may conduct operations at FMY during the next 20 years, their level of operations is not expected to justify them as a critical aircraft for the airport. However, since the airport already accommodates the dimensional requirements of the Design Group III category, the potential future use by these aircraft supports maintaining the C-III classification.

With a majority of the traffic falling in the B-II category and the percentage of time that Runway 5-23 is available to larger piston and jet aircraft, an increase in the ARC for Runway 13-31 does not appear to be warranted. Therefore, it is recommended that the Airport Reference Codes of C-III for Runway 5-23 and B-II for Runway 13-31 be maintained. The future airport facility layout will be undertaken in accordance with FAA design criteria established in Advisory Circular 150/5300-13 Airport Design, Changes 1-5. The specific design criteria associated with Airport Reference Code C-III and B-II are compared and delineated in **Table 5-3.**

TABLE 5-3
AIRPORT DESIGN – AIRPLANE AND AIRPORT DATA

Criteria	ADG B–II (Ft.)	ADG C–III (Ft.)
Runway to Parallel Taxiway/Taxilane Centerline	240	400
Runway Centerline to aircraft parking area	250	500
Runway Width	75	100
Runway Shoulder Width	10	20
Runway Blast Pad Width	95	140
Runway Blast Pad Length	150	200
Runway Safety Area Width	150	500
Runway Safety Area Length Beyond each Runway End	300	1,000

TABLE 5-3 AIRPORT DESIGN – AIRPLANE AND AIRPORT DATA		
Criteria	**ADG B–II (Ft.)**	**ADG C–III (Ft.)**
Runway Object Free Area (ROFA) Width	500	800
ROFA Length Beyond Each Runway End	300	1,000
Clearway Width	500	500
Stopway Width	150	150
Runway Obstacle Free Zone (OFZ)	250	250
Runway OFZ Length Beyond Runway End	200	200
Taxiway Centerline to Parallel Taxiway/Lane Centerline	105	152
Taxiway Centerline to Fixed or Movable Object	65.5	93
Taxilane Centerline to Parallel Taxiway/Lane Centerline	97	140
Taxilane Centerline to Fixed or Movable Object	57.5	81
Taxiway Width	35	50
Taxiway Shoulder Width	10	20
Taxiway Safety Area Width	79	118
Taxiway Object Free Area Width	131	186
Taxilane Object Free Area Width	115	162
Taxiway Edge Safety Margin	7.5	10
Taxiway Wingtip Clearance	26	34
Taxilane Wingtip Clearance	18	22

Source: Airport Design AC 150/5300-13 Change 5.

AIRFIELD REQUIREMENTS

Airfield Capacity

The airport's annual service volume (ASV) as delineated in Chapter Four is estimated at just under 215,000 annual operations. Over the planning period the ASV at FMY will decline slightly as the fleet mix shifts to a slightly higher percentage of larger aircraft. The ASV is projected to be just over 207,000 in the year 2020, based on the current configuration of the airfield.

The airport is presently operating at approximately 38 percent of its calculated ASV. FAA Order 5090.3B **Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)** indicates that an airport should begin planning for capacity enhancements when an airports operations reach 60 percent of the annual capacity. By the year 2020, annual operations are projected to reach approximately 56 percent of the annual service volume, thus indicating that FMY should not experience numerical capacity problems related to the airfield through the long term planning period. However, this does not mean that airport improvements may not be necessary to address other key concerns.

Runway Requirements

Runway requirements at general aviation airports can vary substantially due to the range in types and operational requirements of the general aviation aircraft that may use the facility. As the primary airfield facility at any airport, a runway must have the proper width, length, and strength to safely accommodate the critical aircraft expected to use the airfield.

Runway width requirements for airport design are included in FAA AC 150/5300 Change 5. The design standards are based on the critical aircraft's Approach Category, Design Group, and the airport's approach visibility minimums.

FAA AC 150/5325-4A, "Runway Length Requirements for Airport Design" and the FAA "Airport Design" software, Version 4.2D, provide guidelines to determine the ultimate runway length required at an airport facility. These guidelines consider airfield conditions such as the elevation, mean daily maximum temperature, and effective runway gradient. Length determinations also consider critical aircraft data such as takeoff weight, length of haul and payload.

Airport pavement strength is evaluated for several reasons. Evaluations are needed to establish load carrying capacity for expected operations, to assess the ability of pavements to support significant changes from expected volumes or types of traffic, and to determine the condition of existing pavements for use in the planning or design of improvements which may be required to upgrade a facility. Along these lines, projects to rehabilitate runway pavements are routinely conducted every 15 to 20 years after the previous major rehabilitation, strengthening, and/or new construction. These projects need to be conducted even at airports with regular maintenance programs that include crack sealing and pavement rejuvenations.

Runway 5-23

The current width for Runway 5-23 is 150 feet. Criteria contained in FAA AC 150/5300-13, Change 5, states that for the C-III designation, a runway width of 100 feet is adequate. Therefore, the current width of Runway 5-23 exceeds the standards for the current and future critical aircraft. It is felt that the runway maintain the width of 150 feet for a number of reasons. The runway edge lighting system is in good condition and the cost of relocating them is a big expense. The potential for a change in the runway width could require relocation of the runway's navigational aids. The full width of the runway was recently rehabilitated and is in good condition. The potential for new larger business jet aircraft to operate at Page Field cannot be ruled out and the added flexibility requires little additional cost.

Using FAA AC 150/5325-4A and the FAA's Airport Design software, runway length requirements were calculated for the critical aircraft of Runway 5-23. The runway length analysis was conducted using the following airport and runway data:

Airport Elevation:	17 feet
Mean Daily Maximum Temperature of the Hottest Month:	91.4°F
Maximum Difference in Runway Centerline Elevation:	5 feet
Average Length of Haul	1,000 miles
Runway Conditions	Wet and Slippery

In applying the conditions above, the FAA's computer software resulted in a number of recommended runway lengths based on specific aircraft characteristics. These results and the criteria used to determine the results are presented in **Table 5-4.** In order to calculate an approximate length for Runway 5-23 that would comply with runway length requirements for a variety of aircraft, an average was used for large aircraft with operating weights of 60,000 pounds or less. These operations, large aircraft with heavy loads, typically require longer runways and are going to set the runway length requirements at FMY.

TABLE 5-4 RUNWAY 5-23 LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with approach speeds of less than 30 knots	300 feet
Small airplanes with approach speeds of less than 50 knots	800 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2,520 feet
95 percent of these small airplanes	3,090 feet
100 percent of these small airplanes	3,660 feet
Small airplanes with 10 or more passenger seats	4,280 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5,370 feet
75 percent of these large airplanes at 90 percent useful load	7,000 feet
100 percent of these large airplanes at 60 percent useful load	5,530 feet
100 percent of these large airplanes at 90 percent useful load	8,550 feet

Source: Chapter 2 of AC 150/5325-4A, Runway Length Requirements for Airport Design.

Presently, the larger aircraft operating at FMY on a regular basis tend to be the business jets. A recommended runway length was derived from averaging three of the numbers calculated by the FAA's program. The numbers which were included are shown below:

75 percent of the large aircraft at 60 percent useful load	5,370 feet
100 percent of the large aircraft at 60 percent useful load	5,530 feet
75 percent of the large aircraft at 90 percent useful load	7,000 feet
Recommended Runway Length for Runway 5-23	**5,970 feet**

The recommended length of 5,970 feet is 43~~1~~6 feet less than the actual length of Runway 5-23. Therefore, at 6,406 feet, Runway 5-23 will provide adequate length for the operations of aircraft 60,000 pounds or less forecast during this planning period, based on FAA criteria. The category of 60,000 pounds or more represents those aircraft over 60,000 pounds, such as the G-II or G-IV, for which the FAA does not provide individual performance curves in AC 150/5325-4A. Thus it is difficult to break out these aircraft in the FAA methodology from the much heavier commercial aircraft.

Aircraft performance software was utilized to further analyze the runway length requirements for both the CL-604 and G-IV aircraft to compare with the numbers with the FAA's recommended runway lengths. The same airport and runway data for the FAA's Airport Design Software was applied to this program. The software program, which provides a limited number of takeoff weights for each aircraft produced the runway length requirements shown in **Table 5-5**.

TABLE 5-5 CRITICAL AIRCRAFT RUNWAY LENGTH REQUIREMENTS		
Critical Aircraft	**Takeoff Weight (pounds)**	**Calculated Runway Length (feet)**
Canadair Challanger CL-604	(85% MTOW) 41,100	5,000
Gulfstream IV	(75% MTOW) 55,000 (86% MTOW) 63,000 (88% MTOW) 65,000 (MTOW) 73,600	3,553 4,853 5,210 7,114

Source: BHC Performance Software.

Based on the performance software calculations, the current length of Runway 5-23 will be able to accommodate nearly all of the weight conditions for the CL-604 and G-IV aircraft, under the given conditions. The two programs computed similar runway lengths for the two aircraft in question. It should be noted that some weight restrictions may be required for these aircraft depending upon specific conditions (MTOW).

The maximum pavement strengths, based on landing gear configurations, for Runway 5-23 are published by the U.S. Department of Commerce in the current edition of the Southeast U.S. Airport Facility Directory as:

- Single wheel 125,000 lbs.
- Dual wheel 155,000 lbs.
- Dual-tandem wheel 350,000 lbs.

Both the CL-604 and the G-IV have a dual landing gear wheel configuration with a maximum allowable takeoff weight well below 155,000 pounds. Therefore, the existing weight bearing capacity for Runway 5-23 meets the requirements for the current and future critical aircraft. Page Field is unique in that the pavement strengths are relatively high for a general aviation airport. This is due to the fact that the airport operated as Ft. Myer's primary air carrier airport prior to the opening of Southwest Florida International Airport. Technically the runway is capable of handling large dual wheel landing gear aircraft such as the Boeing 737 and MD-80 / DC-9 aircraft as well as larger aircraft with dual-tandum gear.

URS Greiner and Eckrose/Green conducted a Florida statewide airport pavement project study in 1998 and FMY was one of the airports examined in this study. This study was done to provide an inventory, pavement condition index (PCI), and a pavement management tool to identify the condition of each section of pavement at almost every airport within the State of Florida. The rankings for the study range from 0 being the worst to 100 being the best for pavement indexes. Runway 5-23 at FMY had a number of spot samples taken at both runway ends and numerous locations between the runway ends, and the runway shoulder. All of the samples inspected along the runway and runway shoulder had rankings between 95 and 100. According to the rankings of pavement conditions, the runway and runway shoulder are in excellent or near excellent condition.

During the intermediate planning phase (through 2010), Runway 5-23, is not anticipated to require any major pavement improvements or reconstruction. The strength of Runway 5-23 is adequate, and is anticipated to fully accommodate the existing and future aircraft fleet mixes. However, pavement rehabilitation will probably be required towards the end of the long term planning period to repair damage from normal wear.

Runway 13-31

Runway 13-31 provides the required crosswind coverage for the light singles and smaller multi-engine aircraft that operate at the airport. The runway is also utilized by a few of the smaller business jet aircraft, although Runway 5-23 provides adequate wind coverage for these types of jet aircraft.

Runway 13-31 has a current width of 150 feet. The criteria set forth in FAA AC 150/5300-13, Change 5, recommends that runways serving aircraft with an ARC of B-II and that do not have approach visibility minimums less than ¾ of a statute mile, need a runway width of 75 feet. Therefore, the current width of Runway 13-31 exceeds the standards required for its current and future critical aircraft.

As with Runway 5-23, AC 150/5325-4A along with the FAA's Airport Design software was utilized to determine the recommended runway lengths for Runway 13-31. The analysis was conducted using the following airport and runway criteria:

Airport Elevation:	17 feet
Mean Daily Maximum Temperature of the Hottest Month:	91.4°F
Maximum Difference in Runway Centerline Elevation:	1 feet
Average Length of Haul	500 miles
Runway Conditions	Wet and Slippery

The current length of Runway 13-31 is 4,909 feet and satisfies the recommended runway lengths for all small aircraft as outlined in **Table 5-6**. Runway 13-31 is approximately 460 feet short of the recommended 5,370 feet for 75 percent of the aircraft of 60,000 pounds or less, having a 60 percent useful load. However, as previously mentioned, although some business jets utilize this runway, it is on an occasional basis and assumed under the more ideal conditions. The results of the runway analysis were based on a wet runway condition to present a worse case scenario. If the analysis is conducted using the criteria for dry runway conditions, only 4,680 feet is recommended for 75 percent of the large airplanes of 60,000 pounds or less, with a 60 percent useful load. Therefore, the current length of Runway 13-31 is considered adequate for the traffic it is expected to serve during the planning period.

TABLE 5-6
RUNWAY 13-31 LENGTHS RECOMMENDED FOR AIRPORT DESIGN

Small airplanes with approach speeds of less than 30 knots	300 feet
Small airplanes with approach speeds of less than 50 knots	800 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2,520 feet
95 percent of these small airplanes	3,090 feet
100 percent of these small airplanes	3,660 feet
Small airplanes with 10 or more passenger seats	4,280 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5,370 feet
75 percent of these large airplanes at 90 percent useful load	7,000 feet
100 percent of these large airplanes at 60 percent useful load	5,500 feet
100 percent of these large airplanes at 90 percent useful load	8,510 feet

Source: Chapter 2 of AC 150/5325-4A, Runway Length Requirements for Airport Design.

The maximum pavement strengths, based on landing gear configurations, for Runway 13-31 are published in the current edition of the Southeast U.S. Airport Facility Directory as:

- Single wheel 30,000 lbs.
- Dual wheel 35,000 lbs.

The existing weight bearing capacity for Runway 13-31 is sufficient to meet the requirements for all small aircraft with takeoff weight of less than 30,000 lbs. single wheel configuration, or 35,000 lbs. for any dual wheel configuration. The critical aircraft, the (CL-604) or the G-IV can use this runway but will incur a weight restriction due to the pavement strength limitations on dual wheeled aircraft; in addition to the restrictions incurred from the takeoff distance required on 4,909 feet of runway. In analyzing the all weather wind rose, Runway 5-23 offers Page Field close to 99 percent wind coverage for a cross wind component of sixteen knots which is the cross wind requirement for the CL-604 and G-IV. This provides the critical aircraft the necessary runway length, strength, and wind coverage to support both the CL-604 and G-IV aircraft at various takeoff weights. Therefore, it not necessary for Runway 13-31 to be improved to provide for such aircraft. It is recommended that the runway continue to be used for the smaller aircraft when crosswind conditions exceed the recommended crosswind component published by the aircraft manufacturer. It is also important to note that the CL-604 and G-IV can operate with higher crosswind components, in as much as 6.5 knots higher than the smaller single and multi engine aircraft.

According to the URS Greiner-Eckrose/Green study, Runway 13-31 pavement appears to be in good condition. Samples were taken from the runway and runway shoulder and rankings ranged from the mid 80's to 100. Based on this, it is anticipated that sometime during the intermediate phase the runway pavement will need to be restored and rehabilitated due to normal wear.

Runway Safety Area

The runway safety area (RSA) is described as an imaginary surface which is centered on the runway centerline and has a defined length and width and extends a specified distance beyond each runway end. The dimensional standards associated with the RSA varies depending on the type of approach category aircraft using the runway and the approach visibility minimums. The design standards for a RSA can be found in FAA AC 150/5300-13 Change 5. According to these design standards the RSA beyond both ends of Runway 5-23 do not meet the requirements for an Approach Category C aircraft as determined from previous analysis. In August of 1989, the FAA's Orlando Airports District Office issued an adaptation to standards for Page Field regarding the length of the RSA. This adaptation to standards applied to all four runway ends. However, the subsequent Fowler Street extension dictated the displacement of the threshold on Runway 13, and the shortening of the overall runway length for Runway 13, and resulted in a decrease in the approach category to Category B. This reduced the RSA requirements and met the criteria specified in AC 150/5300-13 change 5. As for Runway 5-23 the adaptation to standards still applies and the RSA remains less than the 1,000 foot requirement beyond both runway ends. (Subsequent to this analysis, a detailed Runway Safety Area Assessment Report was prepared at the request of the FAA to determine if the potential existed for the removal of the Runway 5/23 waivers. This report has been included in its entirety as **Appendix B.**)

Based on the FAA's definition "the RSA shall be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations. It needs to be drained by grading or storm sewers to prevent water accumulation, and must be capable under dry conditions of supporting aircraft rescue and fire fighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft. It needs to be free of objects, except those which are located in the RSA because of their function. Objects higher than 3 inches above grade should be constructed on frangible mounted structures with the frangible point no higher than 3 inches above grade. Other objects like manholes should be constructed at grade and in no case should they exceed 3 inches in height above ground."

Declared Distance Calculations

The FAA's Declared Distance concept is limited to cases of existing constrained airports where it is impractical to provide the runway safety area, runway object free area or the runway protection zone in accordance with design standards. The calculation of declared distances at FMY requires that a portion of the full strength pavement on the north end of Runway 13-31 be dedicated to use as Runway Safety Area. As a result, the available pavement length for aircraft operations is effectively reduced depending upon the direction of operational flow. As mentioned above Runway 5-23 has an adaptation to standard in which the FAA has determined no substantial impact to safety and has waived the RSA dimensional requirements to allow for a smaller defined safety area.

The review of the declared distances methodology has been based on guidance delineated in Appendix 14 of FAA's AC 150/5300-13, Airport Design and was further refined by Policy and Procedures Memorandum 5300.2 from the FAA Great Lakes Region. The following provides definitions of key terms used in the declared distance approach which require definition and will be used throughout this section:

Takeoff Runway Available (TORA) - the distance to accelerate from brake release to lift off, plus safety factors and defines the length of runway declared available and suitable for satisfying takeoff run requirements.

Landing Distance Available (LDA) - the distance from the threshold to complete the approach, touchdown and decelerate to a stop plus safety factors and defines the length of runway declared available and suitable for satisfying landing distance requirements.

Accelerate-Stop Distance Available (ASDA) - the distance to accelerate from brake release to V1 and then decelerate to a stop, plus safety factors which defines the runway plus stopway declared available and suitable for satisfying ASDA requirements.

Takeoff Distance Available (TODA) - the distance to accelerate from brake release past lift off to start the takeoff climb, plus safety factors. The TODA consists of the TORA plus the length of any remaining runway or clearway beyond the far end of the TORA available for satisfying takeoff distance requirements.

Based on the above guidance, the following declared distances were calculated for north and south operational flows on Runway 5-23 and Runway 13-31 at FMY.

	Runway 05	Runway 23
TORA	6,406	6,406
LDA	5,947	6,007
ASDA	6,406	6,406
TODA	6,406	6,406

	Runway 13	Runway 31
TORA	4,912	4,707
LDA	4,297	4,707
ASDA	4,912	4,707
TODA	4,912	4,912

(Subsequent to this analysis, a detailed Runway Safety Area Assessment Report was prepared at the request of the FAA to determine if the potential existed for the removal of the Runway 5/23 RSA waivers. The final determination of this report resulted in a change in the declared distances from those initially calculated above. The revised distances as per the RSA Assessment Report, attached as Appendix B, are accurately reflected on approved Airport Layout Plan as per the FAA's final determination.)

Taxiway System Requirements

A well designed taxiway system should provide freedom of movement to and from the runways of an airport under a variety of operating conditions. This includes entrance and exit taxiways, taxiway run-up areas, apron taxiways, and taxilanes. Some of the basic design principles for a good taxiway system include the following:

- Provide each active runway with a full parallel taxiway.
- Construct as many by-pass, multiple access, or connector taxiways as possible to each runway and runway end.
- Provide taxiway run-up areas for each runway end.
- Build all taxiway routes as direct as possible.
- Provide adequate curve and fillet radii.
- Avoid developing areas which might create ground traffic congestion.
- Ensure appropriate taxiways are adequate to serve projected aircraft ARC.

The demand/capacity assessment indicated that the overall airfield capacity was adequate to meet the numerical capacity demand for the planning period. This is due, in part, to the existing parallel taxiways and the system of exit taxiways at the airport. The capacity assessment indicates no major capacity enhancement needs at the airport. This does not mean, however, that improvements to the taxiway system should not be considered. Improvements to a taxiway system can be warranted for more than just capacity enhancement reasons. A key consideration for taxiway enhancements is the safety of aircraft movements as well as the efficiency of aircraft movements on the airfield and to access developing portions of the airport.

Because Runway 5-23 and Runway 13-31 have different ARC's with Design Group designations of III and II respectively, the discussion below details each taxiway servicing the appropriate runway and ARC based on the design criteria set fourth in FAA AC 150/5300-13, Change 5. The following sections outline requirements needed for the existing taxiway system at FMY. As with runway pavements, more extensive rehabilitation of taxiway pavements should be conducted every 15 to 20 years.

Taxiway 'A'

Taxiway 'A' is the full length parallel taxiway serving Runway 5-23. This taxiway, which is located on the southeast side of Runway 5-23, has been constructed to a width of 50 feet which meets the design Group III's minimum taxiway width. Because this taxiway was rehabilitated in 1992 and remains in excellent condition, the pavement surface should not require reconditioning until the intermediate to long term planning period. The FDOT study performed by Eckrose/Green confirms that the condition of the pavement for Taxiway 'A' is still in excellent condition with pavement rankings from the mid 90's to 100. Additionally, the four taxiway connectors which link Runway 5-23 to Taxiway 'A' have been identified as being in good to excellent condition. Taxiway 'A' and all the connectors have Medium Intensity Taxiway Lighting (MITL) and the system is in good condition.

Currently, Taxiway 'A' has a runway centerline to taxiway centerline spacing of 400 feet. According to the standards in FAA AC 150/5300-13, Change 5, the separation standard for Design Group III aircraft on a runway with approach visibility minimums no less than ¾ of a statute mile requires 400 feet. Therefore the FAA Airport Design Standards criteria has been met for the runway to taxiway separation and taxiway width.

Taxiway 'B'

Taxiway 'B' provides a full length parallel taxiway to Runway 13-31, and is located on the northeast side of the runway. It was constructed to a width of 40 feet, and has five connector taxiways to Runway 13-31. The required width for a design Group II taxiway is 35 feet which is 5 feet less than that provided by Taxiway 'B'. As mentioned in the inventory, portions of Taxiway 'B' have deteriorated significantly enough to close a portion of the taxiway between Runway 5-23 and Taxiway 'A' to certain larger types of aircraft with high gross weights such as the DC-9 and Boeing 727. A rehabilitation of Taxiway 'B' is recommended in the short term. The MITL system along the edges of Taxiway 'B' were noted as being in good condition and should not require improvement.

Taxiway 'B' has a runway centerline to taxiway centerline spacing of 325 feet. According to the standards in FAA AC 150/5300-13, Change 5, the separation standard for Design Group II aircraft on a runway with approach visibility minimums no less than ¾ of a statute mile requires 240 feet. Therefore the FAA Airport Design Standards criteria has been meet for the runway to taxiway separation and taxiway width requirement for Design Group II standards. Further, there appears to be no rationale for a reduction in the runway to taxiway separation.

Taxiway 'D'

Taxiway 'D' connects Taxiway 'A' to the approach end of Runway 31. It has two connector taxiways, 'D1' and 'D2', connecting to Taxiway 'D' and Taxiway 'A2'. Taxiway 'D' as well as the two connector taxiways were all constructed to a width of 50 feet which meets the minimum taxiway width for Design Group III aircraft. This taxiway provides the only existing access to the large amount of hangar and fixed base operator (FBO) development in the south quadrant of the airfield. Because of the location of the

FBO and potential traffic by large business jets including the CL-604 and GIV, a 50 foot width is appropriate. All portions of Taxiway 'D' have MITLs except the portion that runs through the middle of the aircraft parking apron. The pavement is in excellent condition due to the rehabilitation and improvements made to the south side airfield pavements in 1998. It is not anticipated that any pavement improvements will be required for this taxiway until late in the planning period.

Taxiway 'E'

Taxiway 'E' is a connector taxiway between Taxiway 'A.' and Taxiway 'B4'. This taxiway is the newest at Page Field and was built to provide for additional apron and hangar development on the eastside of the airfield. It was constructed at a width of 40 feet wide which is five feet more than required for a Design Group II and it is equipped with MITL's. Taxiway 'E' runs parallel to Taxiway 'B', and both the pavement and the taxiway lighting is in excellent condition.

A summary of the taxiway characteristics including the width, aircraft design group, pavement condition and distance to parallel runway are depicted in **Table 5-7.**

TABLE 5-7
TAXIWAY SUMMARY

Taxiway/Taxilane Segment	Taxiway/Taxilane Width	Pavement Condition	Distance to Parallel Runway	Maximum Airport Design Group (ADG)
A	50 feet	Excellent	400 feet	ADG III
B	40 feet	Good/Poor*	325 feet	ADG II
D	50 feet	Excellent	N/A	ADG III
E	40 feet	Excellent	N/A	ADG II

* Some portions of Taxiway/Taxilane B are in poor condition.
Source: Birk Hillman Consultants, Inc., 2000.

Taxiway and Taxilane Recommendations

A portion of Taxiway 'A', between Taxiway 'A1' and 'A2' was identified in the previous Master Plan and by the Port Authority for realignment to alleviate an unnecessary jog in Runway 5-23's parallel taxiway. The realignment will help minimize congestion in this area and will improve the operational flow of the airfield as well as improve the overall safety. Consideration of this improvement will depend on the cost versus benefit of this action. The alternatives associated with this realignment will be discussed in the following chapter, Airport Alternatives.

In addition to the improvements to the taxiway parallel to Runway 5-23, additional taxiways and taxilanes will be required to provide access to areas of the airfield developed during the planning period. This is likely to include development in the north and east quadrants at a minimum. The location and extent of these taxiway and taxilane improvements will be dependent upon the selected airport development plan. As with the previous taxiways, any proposed access taxiways will require a width of at least 35 feet to accommodate Design Group II aircraft. Likewise, all of the proposed taxiways will require a Taxiway Object Free Area that is at least 131 feet wide. Future taxiways or taxilanes may need to be a width of greater than 35 feet wide depending upon the type of aircraft they are expected to serve. None of the proposed taxilanes should be less than 25 feet in width and all require a Taxilane Object Free Area with a width of at least 115 feet centered on the taxilane. Taxiway and taxilane markings should all meet the standards specified in FAA Advisory Circular 150/5340-1G. **Table 5-8** delineates the differences in the taxiway and taxilane requirements based on the various Aircraft Design Groups that would affect FMY. The ultimate layout of these additional taxiways and taxilanes will depend on the selected alternative for airport development in the subsequent chapters of this master plan study.

TABLE 5-8
DESIGN GROUP CRITERIA

Criteria	Airport Design Group I	Airport Design Group II	Airport Design Group III
Taxiway Width	25 feet	35 feet	50 feet*
Taxiway Object Free Area	89 feet	131 feet	186 feet
Taxilane Object Free Area	79 feet	115 feet	162 feet
Taxiway Wingtip Clearance	20 feet	26 feet	34 feet
Taxilane Wingtip Clearance	15 feet	18 feet	22 feet

* 50 Feet with an aircraft wheelbase less than 60 feet.
Source: Birk Hillman Consultants, Inc., 2000.

Run-Up Areas

Runway ends 13 and 31 have designated areas for aircraft run-ups. These run-up areas are important because they allow pilots to increase throttle settings and make a final check of the aircraft systems before actually taking the active runway and preparing for takeoff. This reduces runway occupancy times, improves capacity and enhances safety. In discussions with Air Traffic Controllers both of these run-up areas need to be improved and enlarged to decrease the amount of delay incurred for departing aircraft. Currently, these areas act as choke points on the airfield, and decrease the operational effectiveness of the entire runway/taxiway system. Additionally, it was recommended that a run-up area be constructed at both ends of Runway 5 and 23. Both of these areas have been identified as bottlenecks and run-up areas will help improve the overall efficiency and operational flow of the airfield. Whether these are constructed in the short term or part of the long term development, all of these run-up areas should be constructed to a size capable of accommodating the wingspan and length of a single Gulfstream IV or multiple smaller aircraft..

Helipad

Rotorcraft operations have steadily increased over the past couple of years, not only at Page Field but also in the State of Florida. Currently, there are no "official" helipads at the airport. The Lee County Emergency Management Service uses an area located adjacent to the Fire Station, and the other temporary helipad is located on the south ramp. An official helipad provides a controlled area for a rotorcraft to takeoff from and land on. Both a helipad and a helicopter parking area are important facilities for the safe operation of helicopters at a GA airport. It is anticipated that rotorcraft operations will continue to grow at Page Field. There are two helicopter training schools that operate out of FMY presently, and the number of flight students continues to grow for rotorcraft training.

According to the FAA AC 150/5390-2A, **Heliport Design,** it is required that a public use general aviation heliport have at least one Final Approach and Takeoff Area (FATO). It should be graded to assure proper drainage but should not exceed two percent in any area where a helicopter is expected to land. The Touchdown and Lift-off

Area (TLOF) is centered in the FATO. It is a paved section and is sized to at least ¾ of the design helicopter's overall length measured from the FATO boundaries. The size of the FATO, TLOF, the safety area surrounding the FATO and the pavement strength is all dependant on the design helicopter.

The design rotorcraft by definition is a generic helicopter which represents the maximum weight, overall length, skid/wheel base and rotor diameter of all the helicopters expected to operate at the facility. Presently there are seven based helicopters at FMY, and the design helicopter can be readily represented by the Bell Jet Ranger. The dimensional characteristics of this helicopter are as follows:

Max Takeoff Weight	4,450 lbs
Overall Length	43 feet
Rotor Diameter	37 feet
Undercarriage skid length	9.9 feet
Undercarriage skid width	7.2 feet

Based on heliport design criteria found in AC 150/5390-2A and the design helicopter characteristics, the area for a heliport at FMY should be approximately 10,921 square feet. This includes the safety area, the FATO and the TLOF. Due to the operational activity it was felt that one, or even two helipads were needed solely for the purpose to serve local and itinerant rotorcraft operations to and from FMY. The parking requirements will be addressed later in this chapter for both aircraft and helicopters. Further options and locations including a helicopter parking area will be discussed and explored in the Alternatives sections of this report.

Pavement Markings

Runway pavements are marked with painted lines and numbers in order to aid in the identification of the runways from the air and to provide information to the pilot during the approach to a runway phase of flight. There are three standard sets of markings used depending on the type of runway:

1. Basic - For runways with only visual or circle to land procedures. These markings consist of runway designation markers and a centerline stripe.

2. Non-precision - For runways to which a straight-in, non-precision instrument approach has been approved. These markings consist of runway designation markers, a centerline stripe, threshold bars, threshold markings, and aiming point markers.

3. Precision - For runways with a precision instrument approach. These markings consist of the non-precision markings plus touchdown zone stripes and side stripes indicating the extent of the full strength pavement.

Runway pavement and displaced threshold markings are painted white, while taxiway pavement markings are painted yellow. Taxiways generally have a centerline and pavement edge stripes, plus hold line markings at the entrance to a runway. FAA AC 150/5340-1G, "Standards for Airport Markings," contains the precise details of all these markings and will be used in the development of the Airport Layout Plan. All runway and taxiway markings periodically need to be remarked so that they remain visible to the users of the airport.

Runway 5 is currently marked as a precision instrument runway with a threshold bar that depicts where the usable landing pavement surface begins because of the 459 foot displaced threshold. The opposite end, Runway 23, is marked the same as Runway 5 with a 399 foot displaced threshold. It is anticipated that through the use of Global Positioning System satellites, Runway 23 will ultimately have a precision instrument approach as well. Since the markings for Runway 5-23 comply with FAA standards set fourth in AC 150/5340-1G it is not anticipated that they will change over the course of the planning period.

Both runways at FMY will require hold position markings for taxiway/runway and runway/runway intersections. For a visual or non-precision instrument runway such as Runway 13-31, serving approach category A and B aircraft with design group designations of I-III the perpendicular distance from the runway centerline to intersecting runway or taxiway centerline is 200 feet for all hold short markings. For a precision approach runway such as Runway 5-23 serving approach category C and D aircraft with design group designations of I-IV, the hold short positions must be 250 feet perpendicular from the runway centerline to the intersecting taxiway or runway. It appears that these markings conform to the FAA standards but they will be field verified and corrective action recommended if needed.

Runway 13 is marked as a non-precision runway. As with the primary runway, Runway 13 has a threshold bar that marks the beginning of the usable landing pavement relative to the location of the 700 foot threshold displacement. Included in the 700 foot displaced threshold is an 85 foot blast pad that is marked and striped to FAA standards. The blast pad along with the blast fence acts as a buffer from jet blast for aircraft taking off Runway 13. Due to the location of the Fowler Street extension relative to the Runway 31 end, this displacement was a necessity. For the approach end of Runway 31, no threshold bar or threshold markings are required. However, the runway is missing the aiming point markings and as such, this runway does not conform to the runway marking standards set forth in the FAA Advisory Circular AC 150/5340-1G for a non-precision runway. A non-precision approach runway should have basic markings which include designation numbers, centerline markings, and aiming point markings. The addition of aiming point markings will assist pilots with a visual aiming point for landing operations and are required for even visual runways. Threshold markings are only required if the runway is used or intended to be used by international commercial transport aircraft. Runway markings may be upgraded to include elements that are not required but still must meet the minimum requirements for the type of approach that the runway has been designated. Any upgraded approaches would require markings in accordance with the aforementioned standards.

Signage

Currently the airport is in the process of implementing a new comprehensive runway, taxiway and apron lighted airfield signage plan to allow pilots the ability to locate things on the airfield, particularly during nighttime operations. The signage plan has been completed by Hole, Montes & Associates and the first phase of the signage plan will be installed sometime in 2000. The signage plan will be included in the Airport Layout Plan.

Pavement Lighting

The current runway system at FMY has sufficient pavement lighting for existing and anticipated future aircraft operations. Taxiway and apron lighting, however, is somewhat sporadic or nonexistent on some portions of the airfield. It is recommended that all existing as well as future taxiways and apron areas be equipped with Medium Intensity Taxiway Lighting.

Precision Instrument Approach

Presently FMY is equipped with a Category I instrument landing system (CAT I ILS) for Runway 5, consisting of a glideslope and localizer, but no approach lighting system is available. The FAA standards for CAT I ILS approaches provide for minimums down to 200 feet and visibility of one-half mile. Due to terrain features and obstacles within the approach and airport vicinity at FMY, these minimums may not be feasible without significant modifications of procedures and the removal of buildings off the runway ends to provide for the required approach lighting systems.

There are two types of precision instrument approach systems that should be considered relative to airports: an ILS, which is the conventional system used at airports around the world today including Page Field, and a state-of-the-art precision Global Positioning System (GPS), which will be available in the foreseeable future. Although the precision GPS systems have not yet been approved for stand alone CAT I approaches, it is anticipated that they will eventually replace ILS's due to the numerous technological and economic advantages associated with this type of approach.

GPS is a satellite based navigation system that consists of a network of satellites known as a constellation. This constellation provides a celestial reference for determining the position of any point on or above the Earth's surface. By analyzing the time delays of signals received from several of these satellites, a ground or air based receiver is able to determine latitude, longitude, and altitude. Although the ILS is still the most widely used instrument approach throughout the world, conversion to a GPS based system is occurring and provisions for GPS approach capabilities should be made at FMY. The ILS is an extremely old system and the technology improvements to navigation and precision approaches through the use of GPS provide for improved approaches to multiple runway ends utilizing a single differential receiver at substantial cost savings for the airport.

Since there exists a precision approach for Runway 5, the need for an approach lighting system also exists. Based on the Aviation Activity Forecasts, there were 15,101 annual instrument operations conducted at FMY in 1998. Because of the procedure used by the Air Traffic Control Tower (ATCT) at FMY, an accurate count of the instrument approaches under actual instrument meteorological conditions (IMC) is not known. Assuming the airport only operates at 2 percent of the time under IFR conditions, actual instrument operations would be around 303 annual operations. With an operational Approach Lighting System the visibility requirements could be lowered by as much as ¼ of a mile for the Runway 5 approach. Given the cost of the land and equipment as well as the environmental considerations, further study would be required to prove that the addition of an ALS is justified.

Non-precision Instrument Approach

Runway 5-23 alone does not provide adequate wind coverage for the smaller and light aircraft (10.5 knot cross wind component) during periods of instrument meteorological conditions. Adequate wind coverage at FMY for this group of aircraft is provided through the use of the crosswind runway, Runway 13-31. As such, the crosswind runway should provide for some type of enhanced approach capability. Since Runway 5-23 supports a precision and non-precision approach, a similar type of approach procedure would be desirable for the crosswind runway. Currently, there is a straight-in VOR non-precision approach published for Runway 13. There is a chance with the initiation of enroute GPS capability that VOR's may be de-commissioned thus eventually eliminating the VOR approach at FMY. However, non-precision GPS approaches have been published for all four runways at FMY and have been in place since 1999.

Visual Landing Aids

The airport is not equipped with Runway End Identifier Light (REIL) systems for any of the approaches to runway ends at FMY currently. This was a recommendation in the previous Master Plan which had not been implemented. If an ALS is not installed for Runway 5, it recommended that REIL's be installed at the end of Runway 5 as well as the other three runway ends. According to the FAA, all four runway ends meet the criteria for REIL's. In a discussion with numerous pilots they all stated that REIL's are beneficial in identifying the runway ends in areas where there are large concentration of lights, such as the area surrounding Fort Myers. The airport is located along one of the busiest traffic corridors, U.S. 41 in Ft. Myers, where there are a number of malls and restaurants and lighted facilities.

All four runway ends at FMY are served by four box Visual Approach Slope Indicators (VASIs) located on the left side of the runways. These visual approach slope indicators are relatively old and the FAA has recommended that all existing VASIs be replaced with Precision Approach Path Indicators (PAPIs) when their useful life has expired. This is largely due to the fact that VASIs are no longer produced and replacement parts are very hard to obtain. It is recommended that the replacement of the VASI's take place at the same time the airfield signage program is implemented.

LANDSIDE REQUIREMENTS

Landside facilities are those necessary for the handling of aircraft, passengers and cargo while on the ground. These facilities provide for the essential interface between the air and ground transportation modes. For the purposes of this analysis these areas will be subdivided into two parts: general aviation facilities and support facilities. The capacities of the various components of each area were examined relative to projected demand to identify future landside facility needs. In addition a tenant and users survey was developed, providing useful feedback and insight as to the demand for various types of facilities and services at Page Field. The results from the survey are ranked and the responses from many of the tenants and users are delineated in **Appendix A**.

Demand for General Aviation Pilot and Passenger Terminal Space

As overall general aviation activity increases, so too will the demand for pilot support space and passenger terminal facilities. Currently, the majority of the local and itinerant traffic is supported by The Aviation Center. The remaining local and itinerant traffic is either handled by the other, smaller General Aviation Center facility or they operate from their own based facilities such as hangars.

The space required for general aviation pilot and passenger terminal space differs from that of commercial operations. Typically, general aviation or FBO terminal areas require space for a pilot's lounge, flight planning room, concessions/vending area, passenger waiting area, and FBO management offices. It is difficult to estimate the amount of space required for such facilities as they are typically determined by the individual FBOs. The size of these facilities is more a business decision and are based on the experience of the FBO operator, the market demand, and the level of service they wish to provide.

Based on the demand relative to the existing FBO operation, additional FBO terminal space will be required to handle the future demand of general aviation pilots and passengers. Although the operational demand is expected to increase by forty-three percent overall during the long term, the need for FBO space is expected to exceed the growth due to the presently perceived deficit. Additional pilot and passenger facilities, offices and meeting facilities are currently desired to meet the existing and anticipated demand. The facility also requires good landside and airfield access, and improved parking capacity. For the purpose of the analysis a future facility 15,000 ft2 in size should be provided for in future planning. This represents a little more than double the 6,702 ft2 currently available.

GENERAL AVIATION AIRCRAFT FACILITIES

The General Aviation Aircraft Facilities component addresses the aircraft parking and storage requirements for the airport. For planning purposes, based and itinerant aircraft requirements are usually considered separately since they serve different functions and have some varying requirements. At FMY, some aircraft parking areas accommodate both itinerant and based aircraft. However for this study, the two will be analyzed separately and then the total requirements of each combined together as a summary of the total aircraft apron required.

In general, the aircraft parking and storage requirements at an airport are typically provided through the combination of some or all of the following facilities:

Apron Area

Small aircraft - an outdoor parking space with tie-down capability, sized to accommodate single-engine and light twin-engine aircraft.

Large aircraft - spaces on a paved apron suitable for parking the larger business jets, such as the Challenger, Gulfstream, Learjet, and Falcon aircraft fleets.

Hangars

T-hangars - a fully enclosed building housing individual stalls, each capable of storing one aircraft, typically a single-engine or a light twin-engine aircraft.

Shade hangars - a structure with a protective roof but no walls, typically capable of holding numerous aircraft each, these are often referred to as aircraft shelters or shade ports. They can house both single engine aircraft or multi engine aircraft, and are often similar in configuration to T-hangars.

Cabin Class hangars- built as a stand alone structure or with a group of T-hangars. These hangars are built for the larger multi engine aircraft or smaller jet aircraft. Depending on size these hangars can also accommodate two smaller single engine aircraft simultaneously.

Multi-use hangars - a fully enclosed building typically capable of holding between six to eight aircraft each (sometime more), these are often referred to as storage hangars.

Corporate hangars - similar to multi-use hangars, but typically have an attached office. These hangars are assumed to hold one large jet or turboprop aircraft but may hold more depending on size.

Page Field currently has all of the types of facilities described above to accommodate aircraft parking and storage.

Itinerant Aircraft Parking Apron Area Requirements

The majority of GA itinerant aircraft utilize parking positions located on the South Ramp in the vicinity of The Aviation Center. This area provides approximately 60 aircraft tiedowns with access to the airport's FBO facilities. The South Ramp area can be broken down into two readily definable apron areas. Directly in front of the FBO, south of Taxilane D, up to 5 itinerant parking positions exist for larger twin engine aircraft of business jet aircraft. These positions are used mainly for aircraft staying at FMY for a short time period. Just north of Taxilane D approximately 54 tiedown positions exist. These are used for itinerant aircraft of any size staying for a couple of days to a couple of months.

The South Apron is a newly constructed itinerant and seasonal aircraft parking ramp designed for a variety of aircraft, including business jets that frequent FMY. The South Apron is situated south of Taxiway A-2 and between Taxilane D-1 and D-2. Taxilane D runs through the middle of the apron providing easy access to the departure ends of Runway 5 and Runway 31. An estimated 44,326 square yards of paved apron is available for itinerant aircraft parking. The apron can provide as many as six jet parking positions directly in front of the FBO facility, with additional positions available if necessary elsewhere on this ramp. On the north side of Taxilane D there are approximately 54 striped aircraft parking positions for both single engine or twin engine aircraft. To the east of The Aviation Center, directly north of Switlik Aviation there are an additional twelve striped parking positions that could be used for itinerant aircraft.

The requirement for itinerant aircraft parking can be derived by using the guidelines provided in FAA AC 150/5300-13 Change 5, "Airport Design." Based on these FAA guidelines, the itinerant parking demands for FMY were computed using the following steps:

1. Determine the peak month average day itinerant operations.
2. Add 10 percent to the above value to find peak day itinerant operations.
3. Find the total number of peak day itinerant aircraft. This is half of the peak day itinerant operations since it is assumed that each aircraft will make two operations.
4. Assume that 60 percent of the total number of peak day itinerant aircraft will need to be accommodated at one time.
5. Increase the final calculated amount by 10 percent. The FAA suggests that the value should be increased by 10 percent to accommodate expansion for at least the next two year period.

The final value is the total calculated demand for itinerant aircraft ramp area. More ramp area is generally required for itinerant aircraft parking than for based aircraft parking. Planning criterion of 700 square yards per peak itinerant aircraft as taken from the ramp dimension and diagrams contained in AC 150/5300-13, Appendix 5 Airport Design guide and were applied to the number of projected itinerant aircraft to determine future itinerant ramp requirements. This figure also takes into account the associated taxilane in front of the tiedown position. **Table 5-9** reflects the results of these calculations.

TABLE 5-9 ITINERANT AIRCRAFT APRON AREA REQUIREMENTS			
Year	**Required Apron Area (SY)**	**Existing Apron Area (SY)**	**Deficient/Surplus Apron Area (SY)**
Base Year			
1998	42,700	44,300	1,600
Forecast			
2005	54,000	44,300	(9,700)
2010	58,000	44,300	(13,700)
2020	66,000	44,300	(21,700)

Source: Birk Hillman Consultants, Inc., 2000.

The ramp requirements presented in **Table 5-9** assume that only the South Ramp is available for itinerant aircraft parking. The Southeast and Southwest ramps areas were not included in the existing apron for itinerant aircraft due to the necessity for these ramps to be utilized for local or based aircraft parking. Additionally, these two ramp areas are well to either side of the FBO and do not provide easy access to the facilities and services provided by the Fixed Base Operator.

The analysis indicates that the size of the current ramp areas will be adequate to handle the itinerant aircraft growth through the year 2010. It should be noted, however, that 50 percent of this ramp is currently used for seasonal or longer stay itinerant aircraft (6-9 months), which results in a severe shortage of itinerant ramp space during peak itinerant activity. It is important to note that the need for an expanded FBO facility will have a major bearing on the actual location or configuration of the future itinerant ramp. This will be further addressed in the alternatives section of this report.

Based Aircraft Parking Apron Area Requirements

Based aircraft demand was developed in the forecast chapter, Chapter 3, of this study. **Table 5-10** presents the total based aircraft required to be accommodated by tiedown and hangar facilities at the airport.

TABLE 5-10 TOTAL BASED AIRCRAFT					
Year	**Single Engine**	**Twin Engine**	**Jet**	**Rotor**	**Total Based Parking Spaces**
Base Year					
1998	211	30	7	7	255
Forecast					
2005	222	34	8	8	273
2010	230	37	10	9	286
2020	249	42	13	11	315

Source: Birk Hillman Consultants, Inc., 2000.

To determine the amount of apron area required for based aircraft parking, a few considerations must be made. First, it has been estimated that the t-hangar and clearspan hangar facilities at FMY accommodate approximately 30 percent of the current based aircraft. This estimate takes into consideration the annual flux of seasonal aircraft. Of the 255 based aircraft counted at FMY, approximately 179 were observed to be stored outside. Second, the weather in Florida is hot and wet year round. This fact, when taken into consideration with the cost to own and operate private aircraft, supports Florida's trend of a high demand for private aircraft hangars. In the past five years, the demand for hangars at airports throughout Florida has continued to increase. This was echoed throughout the sampling of pilot responses to the user survey. It is not unrealistic for airports even in tropical regions to have anywhere between 50-70 percent of the based aircraft stored in hangars. In fact, there are some airports in the state that have between 80 and 90 percent of the based aircraft in hangars. When analyzing other airports in the region it was noted that Naples Municipal Airport accommodates 229 of its 305 based aircraft, or approximately 75 percent in hangar facilities. The previous considerations coupled with the fact that there is currently a long waiting list for hangars at FMY and the airport receives numerous inquiries about available hangar space, a target of 67 percent or 2/3 of the based aircraft parking demand was set as that to be met through the use of hangar facilities by the end of the planning period.

To calculate the apron requirements for the remaining 33 percent of the based aircraft, a planning criterion of 600 square yards per based aircraft as taken from the ramp dimension and diagrams contained in AC 150/5300-13, Appendix 5 Airport Design guide and were applied to the number of projected tiedown based aircraft to determine future ramp requirements. This figure is slightly less than that used for the itinerant aircraft because it is assumed that a tighter spacing between based aircraft can be achieved. The actual area per aircraft on the apron will most likely vary, depending on the configuration and layout of the parking positions. It is also assumed that all of the existing and future based business jet aircraft will be stored in the hangar facilities. As with the itinerant aircraft calculations, the 600 square yards per based aircraft allows for clearance of wing-tips and maneuvering. Based on this 600 square yard guideline, **Table 5-11** shows the amount of apron area that will be needed to accommodate the remaining based aircraft.

TABLE 5-11
BASED AIRCRAFT APRON AREA REQUIREMENTS

Year	Percent of Based Aircraft Stored Outdoors	Required Based Aircraft Apron Parking Spaces	Total Based Aircraft Apron Area (SY)
Base Year			
1998	70%	179	107,400
Forecast			
2005	48%	131	78,600
2010	38%	109	65,400
2020	33%	103	61,800

Source: Birk Hillman Consultants, Inc., 2000.

Summary of Itinerant and Based Aircraft Apron Area Requirements

Table 5-12 provides a summary of the total apron area requirements for itinerant and based aircraft at FMY. Again, while itinerant apron demand increases in the future, based aircraft demand for apron actually decreases due to the storage of an increasing percentage of based aircraft in hangars.

TABLE 5-12 TOTAL APRON AREA REQUIREMENTS			
Year	**Total Itinerant Aircraft Apron Area (SY)**	**Total Based Aircraft Apron Area (SY)**	**Total Aircraft Apron Area Required (SY)**
Base Year			
1998	42,700	107,400	150,100
Forecast			
2005	54,000	78,600	132,600
2010	58,000	65,400	123,400
2020	66,000	61,400	127,400

Source: Birk Hillman Consultants, Inc., 2000.

As mentioned in the Inventory, there are four existing areas for apron expansion at FMY. These include the South Ramp Area, Southeast Ramp Area, Southwest Ramp Area, and the North Ramp Area, which is currently unused. An estimate of the total amount of existing apron space for these areas, in square yards, is reflected in **Table 5-13**. These areas do not include the individual aprons located in front of private hangars, which includes the large apron adjacent to Southern Machine and Steel (SMS), or the ramp associated with the t-hangars.

TABLE 5-13 TOTAL EXISTING APRON SPACE	
Airport Area	**Apron Area (SY)**
North Ramp Area	44,872
South Ramp Area	44,326
Southeast Ramp Area	22,873
Southwest Ramp Area	38,879
Total	150,950

Source: Birk Hillman Consultants, Inc., 2000.

While the total ramp currently available is roughly equal to the current ramp demand, the current inability to easily utilize the North Ramp results in a considerable existing shortfall approaching 45,000 yd2. Assuming all ramp areas are used in the future, the sum of the existing apron areas is approximately 23,550 square yards more than what has been calculated as being required by the end of the planning period. Additionally, it appears that the airport's demand for itinerant apron area beyond 2010 would be deficient due to the lack of sufficient itinerant ramp on the South Apron even if the entire apron was dedicated to itinerant activity. It should be also noted that the manner in which the future FBO demand is accommodated will have a direct bearing on the need and location for additional ramp.

As all of the aircraft parking aprons have just undergone major rehabilitation, no major ramp improvements are anticipated relative to pavement condition. However, standard annual and periodic pavement maintenance programs will be required throughout the planning period.

Hangar Demand

As for the existing hangars, all of the corporate/private hangars are occupied as are all of the FBO/large clearspan hangars. The demand for based aircraft hangar space at FMY is expected to increase from the current level of 30 percent to 67 percent by the end of the planning period. Since only a very small percentage of itinerant traffic (maintenance and occasional overnights) utilize an airport's hangar facilities, only based aircraft demand has been used to plan hangar space requirements. **Table 5-14** reflects the number of based aircraft that will require hangar space in the future.

TABLE 5-14
TOTAL HANGAR REQUIREMENTS

Year	Percent of Based Aircraft Stored in Hangars	Total Number of Based Aircraft	Total Number of Hangar Spaces
Base Year			
1998	30%	255	77
Forecast			
2003	52%	273	142
2008	62%	286	177
2018	67%	315	212

Source: Birk Hillman Consultants, Inc., 2000.

During a field visit to the airport, there were approximately 77 of the 255 based aircraft stored in hangars. Of these 77 aircraft, 57 were stored in T-hangars, 14 in corporate/multi-use hangars, and the remaining 6 aircraft were in shade hangars.

This distribution has been modified from what currently exists for the future requirements to show a larger percentage of aircraft moving from the Multi-use hangars to individual type t-hangars and shade hangars. This is based on the pilot survey and expressed demand of aircraft owners. Aircraft owners right now just want their aircraft protected from the weather and are willing to keep their aircraft in bulk storage. As additional t-hangars come on line the multi-use demand will decrease somewhat. Because of this, the future hangar demand is projected to be about 75 percent in t-hangars, 11 percent in shade hangars, and 13 percent in corporate/multi-use hangars and approximately 1 percent shifting towards private cabin class hangars. **Table 5-15** reflects the number of hangars required during the planning period along with the number of facilities required in the future.

TABLE 5-15
REQUIREMENT FOR HANGAR SPACE BY TYPE

Year	T-Hangars		Shade Hangars (6 aircraft per hangar)		Stand Alone Cabin Class Hangars		Corporate / Multi-Use Hangars	
	Based Aircraft to Use (75%)	Additional Units Required*	Based Aircraft to Use (11%)	Additional Units Required*	Based Aircraft to Use (1%)	Additional Units Required*	Based Aircraft to Use (13%)	Additional Units Required*
Base Year								
1998	57	0	6	0	0	0	14	0
Forecast								
2005	107	50	16	10	0	0	19	1
2010	133	26	20	4	2	2	23	1
2020	159	26	23	3	2	2	28	1
Total		**102**		**17**		**4**		**3**

Source: Birk Hillman Consultants, Inc., 2000.
*Note: Column represents the number of additional facilities required during that planning period.

The need for an additional 102 t-hangars is projected by the end of the planning period. If demand for aircraft hangars grows faster than anticipated during the planning period additional t-hangars or multi-use hangars may be required to meet this demand. According to the Lee County Port Authority the design for 3 new t-hangar buildings with a total of 26 units to be located in the east quadrant is completed and construction is anticipated to begin once state funding becomes available. The site for these buildings, which will accommodate 8-10 aircraft each in a nested configuration, is adjacent to Taxiway 'A', between the end of Runway 23 and Taxiway 'B'. In addition to these, 24 new t-hangars will need to be designed and constructed in order to meet the projected demand anticipated by 2005.

A more affordable solution to t-hangars are shade hangars, which were suggested by many of the local aircraft owners in the 1999 pilot and tenant survey. These are an alternative to T-hangars but it is understood that the FAA and the state will not fund shade hangar projects. Because of the high demand for shade hangars at FMY it was felt that a percentage of them should be provided for. By the end of the planning period 17 additional units will be required based on the percentage breakdown and anticipated demand. Typically, these hangars house 8-10 aircraft each. Based on the demand two additional shade hangars would be required by the end of the planning period.

By 2020, four stand alone cabin class hangars are anticipated to be required based on demand. From the pilot/tenant survey there seemed to be some interest in these types of hangars for the twin engine and small jet pilots. These could also accommodate two or more smaller single engine aircraft or even helicopters and could be leased to these pilots as well.

With the ever emerging presence of corporate and business jets, larger twin engine aircraft, as well as the special needs of helicopters, at least three additional corporate /multi-use hangars should be considered to meet the demand through the end of the planning period. This appears in line with the forecast for 24 jet/rotor aircraft by 2020.

In the Alternatives section a number of locations and options will be discussed further regarding the development of additional hangars.

SUPPORT FACILITIES

A number of facilities that do not logically fall within the above classifications of airfield, landside, or general aviation requirements, have been identified for inclusion in this master plan. The remaining facilities have been included and analyzed as support facilities.

FIS / Customs

The FIS/Customs will be used to process international arrival GA aircraft as a U.S. Port of Entry. This facility will provide a service that does not already exist on the west coast of Florida and will result in improved levels of service for the region and increased activity and revenues for the airport. Based on other airports of this size on the east coast of Florida with FIS/Customs facilities, a facility of 3,000 ft2 should be adequate to serve the demand for this type of service.

Restaurant

Restaurants have become ever more popular at GA airports by proving good food and a relaxing atmosphere for both the local and itinerant pilots. Many airports around Florida such as Space Coast Regional, Vero Beach, Sarasota Bradenton, Orlando Executive, and Charlotte County have restaurants located on the airfield. Based on the survey conducted during the Master Plan Update, which asked both local and itinerant pilots what facilities or services they would like to see developed at FMY, a restaurant received among the highest responses. In speaking with Air Traffic Control and the airport management, pilots and passengers continually ask if there is a restaurant located on the airport. A restaurant did exist at FMY a few years ago called Mike's Landing but unfortunately it went out of business. There is an immediate demand for a snack bar which could be accommodated in the GA terminal. Provision should be made for a future on-site restaurant but timing, and other factors suggest a restaurant be left to a private developer.

Self Maintenance Area

Pilots at FMY expressed an interest in a maintenance area designed to allow aircraft owners to perform minor maintenance on their aircraft. This was an improvement noted repeatedly in the user's survey and during the tenant user meetings. More general aviation airports are beginning to design areas for this purpose because it keeps hangars cleaner by encouraging aircraft owners to all do basic maintenance in the same designated area. Moreover it allows for environmental mitigation through the use of oil/water separators and consolidated collection of waste that might otherwise not be disposed of properly. Based on demand it is estimated that the facility be designed to accommodate two single engine aircraft simultaneously or one twin engine aircraft with ample space to expand in the future. It is suggested that at least one site on the airport have an area for self maintenance.

Wash Rack

Wash racks provide pilots a designated area to wash and care for their personal aircraft. The 1999 survey provided good insight as to the need for such a facility and it was a favorite among the facilities desired. Currently there is no designated area or facility where aircraft owners can wash their own aircraft. Provisions were made for such a facility in the east quadrant of the airport near the SMS hangar. Although the septic field for the SMS hangar was sized to accommodate the construction of a wash facility, it has yet to be developed. The wash racks should be designed to accommodate two single engine aircraft simultaneously or one twin engine aircraft with ample space for expansion in the future.

Fire Station

The fire station located on the airport does not have an ARFF index rating because the airport does not serve any air carrier aircraft with 5 or more average daily departures or more than 30 passenger seats. These requirements were set forth by the FAA in establishing Part 139 –Certification and Operations: Land Airports Servicing Certain Air Carriers. From the days of a commercial service airport, Page Field still operates some fire fighting equipment from when it carried an ARFF index and the facility does house a rescue helicopter. The equipment was noted as being in good condition and no additional fire fighting equipment is anticipated through the end of the planning period.

Restrooms

Currently, no restroom facilities exist on the eastside of the airfield. The survey and tenant user presentations commented on the fact that a facility such as this must be provided for these users. Based on this it is recommend that restroom facilities be incorporated in the immediate term of the development plan for the airport.

Fuel Storage Requirements

As outlined in **Table 2-7**, there are a number of above ground storage tanks at FMY for both Avgas and Jet fuel. In analyzing the fuel storage requirements for the airport, only The Aviation Center's fuel supply and the self-service fueling facility was considered. The Self-Serve Fueling facility was commissioned in 1999 and holds approximately 12,000 gallons of 100LL fuel. It is located on the southeast ramp for easy accessibility both airside and landside. The Avaition Center's fuel storage tanks consist of two 12,000 gallon Jet A-1 fuel tanks and one 12,000 gallon 100LL tank. The fuel supplies currently available to the public at FMY are regarded as adequate in terms of capacity. The future demand for aircraft fuel is driven primarily by the expected number of aircraft operations. Because no historical fuel sales information was provided, an estimate of the approximate gallons of fuel per flight was used. The ratio used for this study equals five gallons of fuel per each peak month piston operation and 125 gallons per peak month jet operation. This value is based on information from other airports with operations similar to that at FMY. To determine the existing supply in days the following formula was used:

> **Peak Month Demand / 30 (avg. # of days in a month) = peak day demand.**
> **Existing Capacity / Peak Day Demand = Existing Supply (in days)**

The peak month operations for piston and jet aircraft demand, existing capacity, and existing supply of fuel are shown in **Table 5-16.**

TABLE 5-16
FUEL STORAGE REQUIREMENTS

Year	Peak Month Operations	Peak Month Demand (gallons)	Existing Capacity (gallons)	Existing Supply (days)
Avgas Demand (Piston Operations)				
Base Year				
1998	8,052	40,260	12,000	9
Forecast				
2005	9,070	45,350	24,000	16
2010	9,729	48,645	24,000	15
2020	11,340	56,700	24,000	13
Jet Demand (Turbine Operations)				
Base Year				
1998	215	26,875	24,000	27
Forecast				
2005	233	29,125	24,000	25
2010	363	45,375	24,000	16
2020	473	59,125	24,000	12

Source: Birk Hillman Consultants, Inc., 2000.

Although it is anticipated no additional fuel storage is needed during the planning period, the tenants of the airport may want to improve or expand their current facilities. Future capacity expansions can be accommodated by additional trucks, installation of larger tanks at the existing facilities, or development of additional fueling facilities. There is space available to add additional facilities to the fuel farm in the future but space is limited.

Automobile Parking

A shortage of adequate parking is an existing problem with many of the airport's southside facilities. Currently, 115 parking spaces support a combined 195 tiedown positions, 45 T-hangar positions, over 20,000 ft^2 of multi-use hangar, a 9,000ft^2 maintenance hangar, 11,600 ft^2 of FBO and office buildings, as well as a number of currently unoccupied structures. Parking is accommodated in the grass field between the FBO building and Switlik aviation maintenance as well as the T-hangars, but overflow parking is often accommodated by other grass areas and portions of the ramp in and around the FBO. Additionally, up to 25 rental cars per day are used on a busy Friday, Saturday, Sunday during peak season.

Parking should be provided to accommodate 1 spot for 40% of the total tiedowns. Additionally, at least 1 spot for every 200 ft^2 of FBO and office space should be available. T-hangars should have at least 1 spot available for 40% of the hangars while clearspan hangars should have 1 spot available for every 600 ft^2 of space. Maintenance hangars should have 1 spot available for every 450 ft^2 of space.

TABLE 5-17
Current Vehicle Parking Requirement – South Airfield

Facility	Space Requirement
Tiedowns	78
T-Hangars	18
Multi-use Hangars	33
Maintenance Hangar	20
FBO/Office Buildings	58
Rental Car	10
Total	217

Source: Birk Hillman Consultants, Inc. 2000.

Table 5-17 outlines an estimate of the existing parking demand based on the current operational facilities on the airport's south side. The parking requirement is roughly twice that currently available on the airport's southside reflecting the perceived facility shortfall. Although the ability does exist to park vehicles in tiedown positions hangars, etc., the ability to accommodate a greater portion of this requirement with specific automobile facilities will reduce vehicles on the ramp resulting in a cleaner and safer operational environment.

FACILITY REQUIREMENTS SUMMARY TABLE

Exhibit 5-1 provides a summary of the facility requirements that were determined necessary to satisfy the forecasts of aviation demand presented in Chapter 4 of this study. These proposed facilities do not include any additional facilities which may be planned to enhance the airport.

Exhibit 5-1
Facility Requirement Summary
Page Field General Aviation Airport
Mater Plan Update

Airport Reference Code	Existing B-II/C-III	2005 B-II/C-III	2010 B-II/C-III	Through 2020 B-II/C-III
Runways		Add runup to both runway ends PAPI's – All runway ends REILS – All runway ends		
Runway 5/23			Stand Alone Cat I GPS capability – Runway 5 Runway 5 ALS (requires land acquisition)	Rehabilitate Runway
Runway 13/31		Upgrade marking on Runway 31	Rehabilitate Runway	
Taxiways				
Taxiway A		Potential reorientation between A1 and A2		Rehabilitate Taxiway
Taxiway B		Rehabilitate Taxiway		
Taxiway C		Extend Taxiway C to Runway 5 end		
Taxiway D				Rehabilitate Taxiway
Taxiway E				Rehabilitate Taxiway
Partial Parallel Taxiway				Add Partial Parallel T/W South Side of 13/31
Various		Replace Reflective Cans with MITL on Taxilanes D and E		
Helipad		10,951 ft² Helipad		
Signage		Upgrade Vault/Implement Signage Program		
General Aviation Terminal	6,072 ft²	15,000 ft²		
Apron				
Itinerant Apron	44,300 yd²	54,000 yd² required	58,000 yd² required	66,000 yd² required
Based Aircraft	255	273	286	315
Parking Apron	107,400 yd²	78,600 yd² required	65,400 yd² required	61,400 yd² required
Total Apron	150,100 yd² required	132,600 yd² required	123,400 yd² required	127,400 yd² required
Hangers				
Total Based Hangar	77 aircraft	115	148	163
T-Hangars	57 aircraft	79	103	114
Shade Hangars	6 aircraft	12	14	16
Corporate	1	2	3	3
Cabin Class	5 aircraft	8	9	10
Multi-Use Based	8 aircraft (→ 0)	14	19	20
Multi-Use Itinerant	0 aircraft (→ 7)	8 to 10	12 to 14	18 to 20
Supplemental Facilities				
GA FIS		3,000 ft² building		
Restaurant		4,000 ft² building		
Aircraft Maintenance Area		1,200 yd²		2,000 yd²
Wash Rack	730 yd² (60% des.)	1,200 yd²		2,000 yd²
Fuel Storage	24k g Jet A-1 24k g 100 LL			
Service Road		Connect South, East & North Quads		
Restroom		East Quad		
Airport Maintenance Facility	2,000 ft² building, 1 acre	2,000 ft² building, 1 acre		

*Apron area requirements for based aircraft decreases due to an increase in hangar storage.

Chapter Six – Airport Alternatives

INTRODUCTION

The previous chapter of the Master Plan identified a number of facilities that were determined necessary for Page Field (FMY) to adequately accommodate the aviation demands expected over the course of the twenty-year planning period. While the Facilities Requirements chapter identified the most favorable airport improvements that would be desired, it is the alternatives section that analyzes both the viability of meeting the identified needs as well as how best to undertake the improvements from an operational, environmental, political, and construction perspective. This chapter will identify potential concepts for meeting each major facility enhancement needed and will evaluate the positive and negative aspects of each concept.

DEVELOPMENT CONCEPT

The result of the Master Plan Update will be an organized development plan for the future configuration of FMY as presented on the Airport Layout Plan (ALP). The ALP will be presented in a subsequent chapter. In addition to being an essential guide for future development at the airport, the ALP is the key document for state and federal funding, with both the Florida Department of Transportation (FDOT) and Federal Aviation Administration (FAA) referring to the ALP for project eligibility determinations.

To develop this conceptual plan, it is necessary to conduct a complete and thorough review of the airport's role in the community. The best overall approach for the development of the facilities can then be planned in order to maintain the airport's required level of public service. However, level-of –service must be weighed against the cost of providing the services and their requisite facilities.

Ideally, an economically self-sufficient facility is the goal of any well-planned airport. To achieve that goal, it is not only necessary to satisfy the anticipated aviation demands, but also to manage the land use for both non-aviation and aviation developments, to minimize adverse impacts and costs, and maximum revenue for the airport.

Essentially, there are four primary components of the airport that will be addressed in the alternative analysis that follows. These airport components include:

- Terminal Area Alternatives
- Airfield Alternatives
- Navigational Aids Alternatives
- General Aviation Alternatives

The alternatives review not only considers these four key elements of the airport individually, but also must factor the interrelationships between these elements of the airport and the options for development within each component. Defining the future development configuration of facilities at FMY must also consider the phasing of development activities within the areas that are available, both now and in the future. Proper development phasing to avoid unnecessary or premature construction of costly infrastructure must also be considered in the planning process. Location and infrastructure service related considerations also play a large part in the alternatives analysis.

There are four primary areas for development at FMY. These areas include the East Quadrant, South Quadrant, West Quadrant, and the North Quadrant. Each of these will be considered as potential locations for the development of future aeronautical and non-aeronautical facilities.

Key considerations and issues must be factored into the analysis of alternatives. A number of these issues, which are directly related to the needs and specific characteristics of FMY, were identified prior to the start of the Master Plan Update. They include:

- The desire to utilize the newly rehabilitated North Apron adjacent to Page Field Commerce Center.
- Identification of future impacts to airfield navigational aids. The critical areas associated with the ILS can significantly impact the viability of each alternative.
- Maximizing the use of the North Apron without losing ramp to aircraft circulation including taxilanes to the terminal and hangars.
- The impact that site features, such as the low lying area near the southwest end of Runway 5-23, have on taxiway and other aviation related development alternatives.
- Provisions for an improved/expanded full service corporate/general aviation terminal facility that reflects the needs of the local community.
- Location of facilities and a strategy for accommodating the increasing demand of Design Group III aircraft.
- Immediate and future land acquisitions required for airport development or protection of airport approaches and imaginary surfaces.
- The requirements for achieving reduced visibility minimums on the primary landing runway, Runway 5.
- Consideration of land use compatibility with adjacent uses of land.
- The potential for revenue enhancement to support the development and upgrade of the required facilities.
- To better serve the specific needs of the local users (more T-hangars, etc.) at or above the minimum level of service being experienced throughout the region.
- Aesthetic improvements to the airport facilities in line with the increased service/quality level being experienced in the surrounding community.
- To design a development plan which effectively maximizes potential revenue and provides for the best use of available land for aviation and non-aviation development.
- To provide for the existing and future needs of the airport users.

In a more general sense, all of the alternatives were considered and developed to:

- fit into the long term airfield development plan identified by the Lee County Port Authority.
- maximize the utilization of existing property.
- conform with terminal area navigation aids and their associated critical areas (ILS as an example).
- minimize impacts related to known modifications of FAA airport design standards.
- avoid additional deviations to FAA airport design standards.
- evaluate impacts to airport operations resulting from construction phasing.
- provide expandability and flexibility.
- consider impacts to, and the need for, infrastructure, including: stormwater and basic public utilities.

Each of the alternatives in this chapter have also been developed so that they are compatible with one another. Upon completion of this chapter, each alternative, or component thereof, that is recommended for implementation will be modified to their final form to provide a concise development plan.

TERMINAL AREA ALTERNATIVES

The Facility Requirements analysis identified several areas where airside and landside improvements and enhancements were considered to be either necessary or beneficial to the overall operational efficiency of the airport. Many of these improvements and enhancements have direct interrelationships, based on their function, with other improvements. The need for, and location of, a new General Aviation Terminal was addressed first as a driving factor for many other improvements at FMY.

The general aviation terminal facility is intended to serve a variety of general aviation users. A survey conducted by Louis Harris & Associates ranked Florida in the top three states nationwide, behind California and Texas in total U.S. turbine business aircraft and operators. Product liability reforms, the promotion of "learn to fly" programs, and the addition of many new aircraft types, from smaller single engine jets to tilt-rotor aircraft, all seem to be affecting general aviation flying positively. Page Field is the only designated reliever in Southwest Florida, and the airport accounts for approximately twenty-seven percent of the region's general aviation market share. However, it should be noted that the airport is coming out of a long period of neglect during which many of its facilities fell into severe disrepair resulting in a loss of market share from the forty-plus percent that the airport was once responsible for. The Port Authority has taken considerable steps during the past few years to upgrade and improve the facilities, as well as the services provided and the impacts of these improvements are beginning to be observed in the traffic levels at the airport. The airport must meet the needs of the aviation community with better based aircraft facilities and meet the needs of the itinerant growth and demand. In keeping with this continued approach to change the airport's image and return a higher level of service to the surrounding community, the General Aviation Terminal becomes a major factor as it is the primary interface between the surrounding community and the airport itself.

Currently, based and itinerant users operate out of the small (6,000ft^2) Aviation Center building in the South Quadrant. Although this building has provided the airport with an adequate facility for accommodating both itinerant and based aircraft, from turbine business jets to single engine aircraft, for almost twelve years, the building and area surrounding the Aviation Center including the adjacent aircraft apron has reached full capacity. The Aviation Center is undersized and in marginal condition. For this reason, the level of service and types of services offered at other general aviation reliever airports of this size are far beyond those available at Page Field. Additionally, there is a severe shortage of automobile parking in the entire South Quadrant of the airport and landside access is difficult. The location is not desirable for future expansion, nor does it provide the infrastructure needed to accommodate the traffic projected in the future. As traffic is projected to increase, the adjacent residential area becomes an increasing concern relative to aircraft noise.

In order to compete with other general aviation airports, serve the local business community and relieve the larger primary airports in the area of GA traffic, the airport and Port Authority recognizes it must move forward with the development of a new general aviation terminal elsewhere on the airport. This will open up the south quadrant area for other future aviation related uses. The airport has an on-going shortage of itinerant ramp space for seasonal pilots who base their aircraft at Page Field for only six to eight months out of the year especially during the winter months. Moving the terminal, thus moving a majority of itinerant operations, will help alleviate some of the mixing of based and itinerant operations. The taxiing congestion that occurs in south quadrant during peak season will be substantially less with moving the larger jet aircraft and itinerant aircraft to another part of the airfield. This move will also segregate the jet aircraft from the smaller single engine and multi-engine piston aircraft. Additionally, a move will allow for the entire south quadrant to be dedicated to the based aircraft customer and their needs.

The general aviation terminal facility may be planned in any one of the three remaining development areas (North, East or West). However, due to the construction of new t-hangar facilities, the existing corporate hangar, and the poor landside access, the East Quadrant was considered undesirable for a terminal facility. Additionally, the Port Authority has already moved forward with designing additional hangars along the east side of the airport and, after further analysis, it was felt this represents the best use of the land. Therefore, only the North and West areas were considered for future terminal development. Because of the newly rehabilitated ramp on the north side and the improved access and vehicular parking area associated with the Florida Department of Law Enforcement project, any terminal development in the North Quadrant would benefit from the existing infrastructure located in this area.

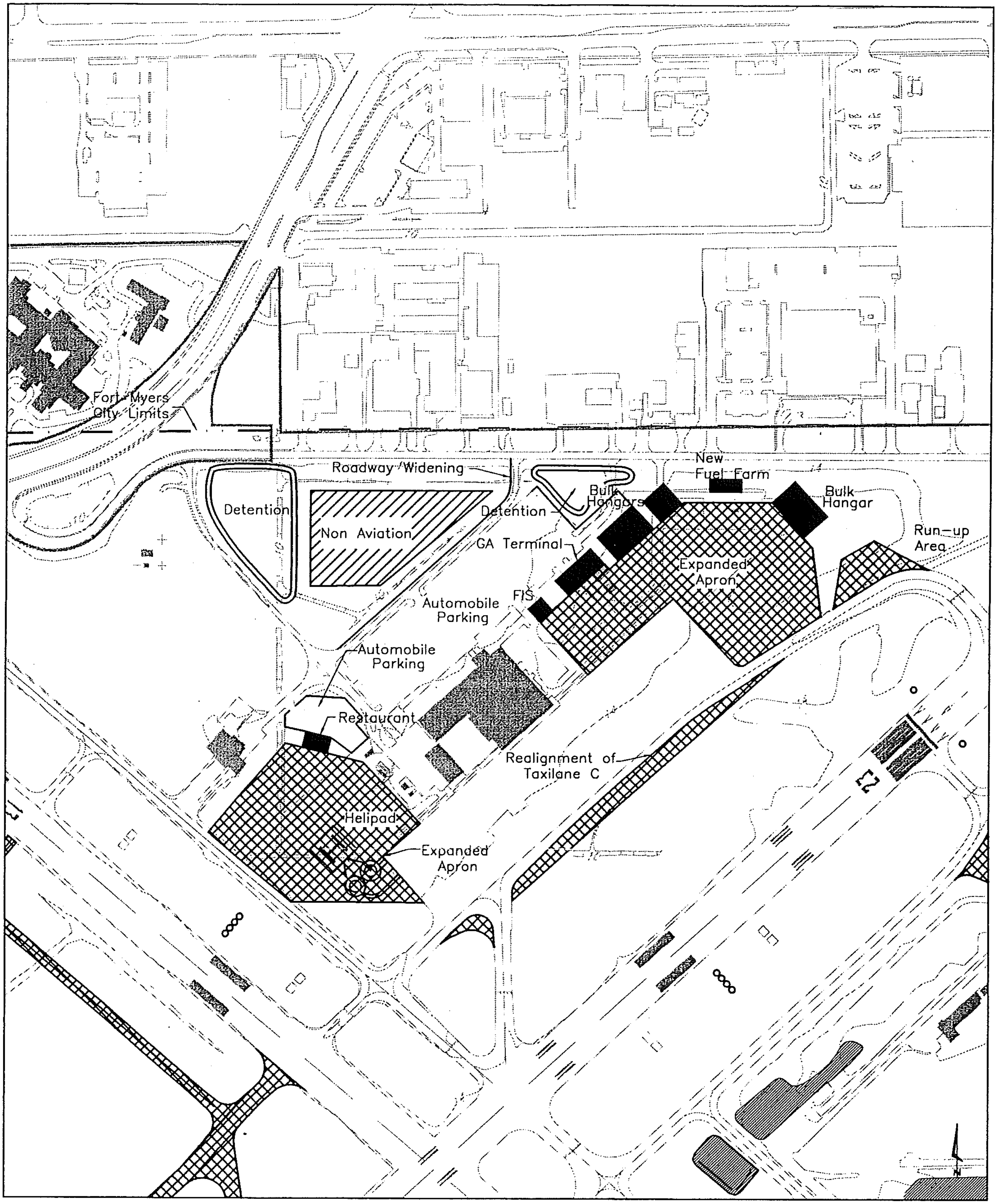
To assess the best option for the future 15,000 ft^2 GA Terminal, four alternatives were developed and analyzed relative to the specified requirements, and the option that best met the needs of FMY throughout the planning period was identified. The development and potential relocation of a new GA terminal will require that several other support facilities be relocated, or constructed, within close proximity to the new facility. These facilities include itinerant ramp, large "Bulk" hangars for itinerant aircraft storage, a fuel farm, an FIS/customs facility, and a helipad. It is estimated based on the calculated facility requirements that these ancillary facilities would require close to 15 acres. These ancillary facilities are critical to the function of each alternative and, as such, were incorporated into the assessment of each alternative.

To summarize the positive and negative features of each alternative, a number of attributes and drawbacks were identified. From these attributes and drawbacks a ranked and weighted matrix was developed that scored each alternative relative to various criteria. The sum of the scores for each was then compared to identify the best solution. The airport staff was instrumental in providing extensive input in determining the available courses of action as well as the positive and negative features of each alternative. Once the location and layout of the General Aviation Terminal were resolved, the analysis of alternatives designed to address airfield access, airfield alternatives, other general aviation alternatives, and non-aviation development alternatives at FMY could be evaluated.

Each of the four alternatives offers unique features that have been recognized and recommended in the layout of a terminal facility. These alternatives are discussed below:

Terminal Alternative One

Terminal Alternative One is the first of three options proposing terminal development on the north side of the airfield. Terminal Alternative One is located northeast of the Page Field Commerce Center building and south of North Airport Drive. **Exhibit 6-1** shows a conceptual layout of the terminal and ancillary support facilities associated with this alternative. This alternative maximizes use of the existing infrastructure, presents an efficient and expandable facility layout, provides an efficient airfield layout, is compatible with ADG-III aircraft, and provides adequate landside access.



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PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

GRAPHIC SCALE
0 200 400
SCALE IN FEET
Date: 04/07/2000

Terminal Alternative One
Exhibit 6-1

The layout of Terminal Alternative One was intended to maximize the use of the existing airside and landside infrastructure to their fullest extent without sacrificing flexibility. This includes using the existing north aircraft apron for aircraft parking rather than for circulation/parking, as required in some of the other terminal alternatives, and preserving a majority of the automobile parking that was recently rehabilitated as part of the FDLE project. Therefore, the terminal building is located closer to the North Apron capitalizing on both the available airside and landside facilities, as well as allowing additional space for other facilities in the North Quadrant.

Between the terminal building and the Page Field Commerce Center building is the FIS/customs facility. Its proximity to the GA Terminal will ensure a high level of service to inbound international activity, whether it is remaining at the airport or continuing onward to its final destination. The proposed building is a 3,000ft² one story building, which should provide ample space for the requirements of FIS/customs. To the east of the terminal is the first phase "Bulk" hangar which could accommodate eight to ten aircraft depending on their size. Two additional hangars are proposed in this area, one on either side of the fuel farm, to provide for the forecasted demand of itinerant aircraft. The fuel farm is located between the second and third phase bulk hangars. This facility has excellent access from both the airside and landside.

Utilities are presently in place on the north side of the airport with power, telephone, water, and sanitary sewage all currently servicing the Page Field Commerce Center building. Discussions with the utility companies indicated that the sizing and line capacity of the existing utilities should be adequate to handle the type of facility and expansion proposed with any development on the north side of the airport. However, utility coordination should be conducted during the design of the terminal and terminal support facilities to verify that no further upgrades are necessary.

The location of the terminal provides direct access to the existing North Apron for itinerant parking and is immediately accessible for aircraft landing on Runway 5. However, it would likely require the extension of Taxiway C to the Runway 5 approach/departure end to reduce the need for departing itinerant aircraft to cross Runway 5/23 to gain access to the primary departure runway end (Runway 5).

All of the taxiways and taxilanes currently serving the North Apron are designed for Aircraft Design Group (ADG) III, which makes this location very desirable for the new terminal. ADG III aircraft are an increasing concern for Page Field and general aviation airports nationwide because there is a trend towards larger corporate aircraft that is expected to eventually filter down to general aviation markets such as Page Field. This alternative will provide the flexibility to service ADG III aircraft without widening taxiways/taxilanes to service these types of aircraft. The remaining three alternatives were also developed so as to provide this flexibility.

Access for Terminal Alternative One would be served by North Airport Road, an existing dual lane roadway that intersects with both Fowler Street and, further to the west, US 41. A new intersection was constructed during the realignment and extension of Fowler Street. This intersection provides improved access into the north quadrant of the airport. A one-way loop road currently accesses the ATCT, the Page Field Commerce Center, and the Airport Fire Station. This road will need to be widened, and the intersection with north Terminal road upgraded, to provide two-way traffic to the new terminal and hangar facilities. This alternative further provides the opportunity for a high profile access road with a circular pick-up and drop-off area.

A summary of the attributes and drawbacks for Terminal Alternative One are listed below:

Attributes

- Utilizes existing aircraft apron most effectively over the other north alternatives
- Utilizes all of the existing automobile parking and roadway access
- Good access to GA terminal from Runway 5 arrivals
- Aircraft Design Group (ADG) III compatible
- Good fuel farm location (including accessibility and space for expansion)
- Compatible adjacent land uses (limited noise concerns)
- Least expensive of the four alternatives
- Utilizes existing utilities
- Provides potential for commercial development northwest of the terminal facility

Drawbacks

- Longer taxi to Runway 5 departure end
- Provides the least long-term itinerant ramp
- FIS/customs facility will impact usable ramp
- Potential for head to head taxiing
- Eliminates some commercial development potential
- Must construct parallel Taxiway C to avoid ADG III conflicts with Taxiway B
- Increases runway crossings on Runway 5-23 for departures, unless west parallel is constructed

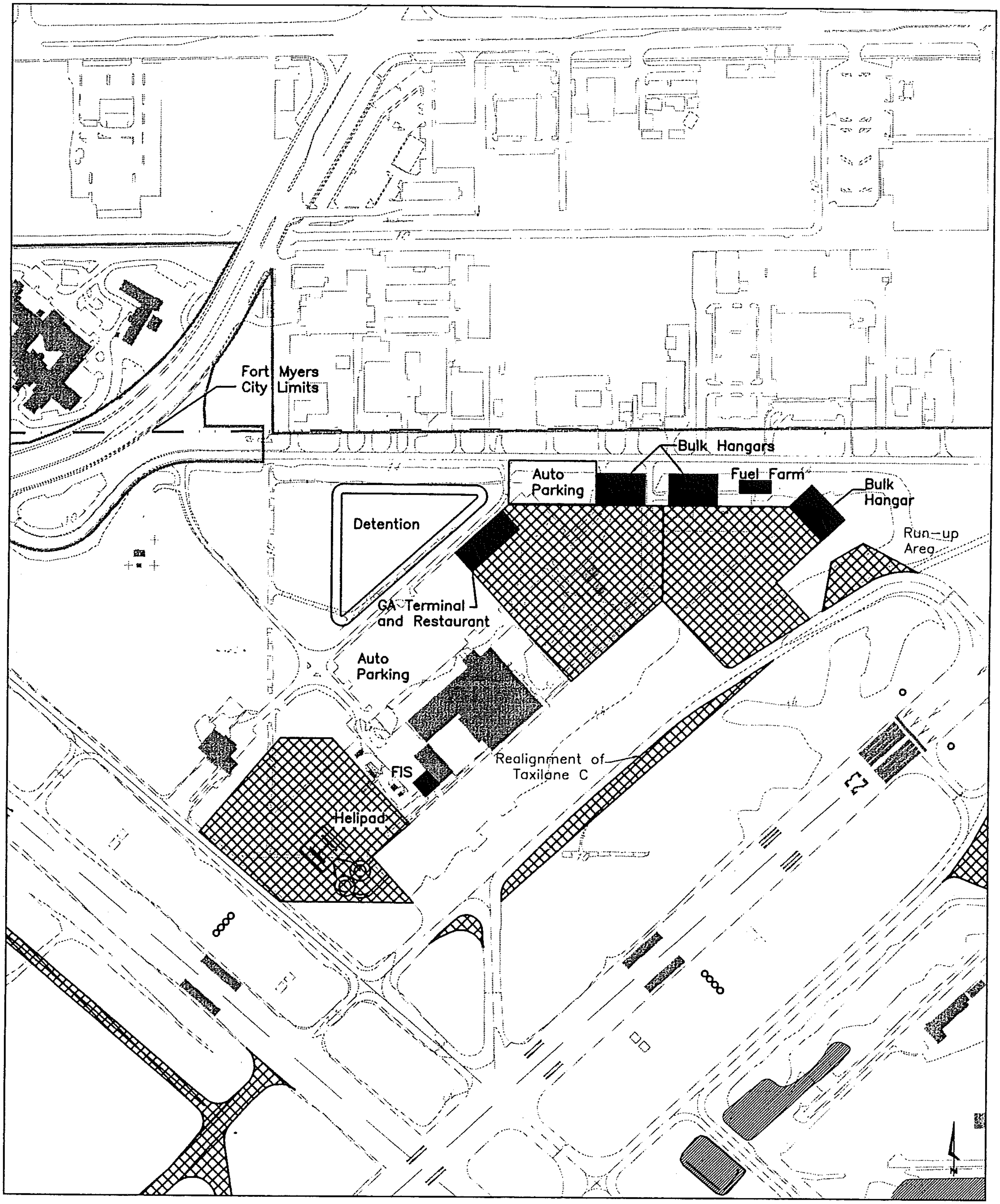
Terminal Alternative Two

Terminal Alternative Two also involves development of the terminal on the North side of the airfield. Similar to Terminal Alternative One, the location proposed by this alternative is northeast of the Page Field Commerce Center building, between the Runway 23 end and North Airport Road. **Exhibit 6-2** displays a conceptual layout of the terminal and ancillary support facilities associated with the new general aviation terminal. The focus of this alternative was to maximize the expansion of the North Apron to provide for the maximum ability to accommodate itinerant aircraft while utilizing existing infrastructure to the extent possible.

This maximum expansion of the North Apron places the terminal directly adjacent to the existing access road that currently serves all the facilities on the north side of the airfield. The bulk hangars and fuel farm are located to the east, directly adjacent the North Airport Road. Although more new apron is provided in this alternative, the depth of the apron area will require that much of it be used for the ingress and egress of aircraft to and from the hangars and terminal. This will have an additional impact when considering the wingspan and maneuvering requirements of ADG-III aircraft.

With this alternative an FIS/customs facility is located southwest of the Page Field Commerce Center adjacent to the existing air cargo building. This location allows for a designated sterile apron area directly in front of the facility for international flights to park and clear customs. The building is a one-story facility, approximately 3,000ft^2 and has potential for expansion if necessary.

Similar to Terminal Alternative One, vehicular access to Terminal Alternative Two would be served by North Airport Road. Currently, access from North Airport Road allows for a one-way loop circulation to the existing facilities on the north side. Modifications and improvements to this access road will be necessary to allow for more efficient circulation with this option. A new parking lot would be required to accommodate the vehicular parking requirements since the ramp expansion impacts almost half of the available parking in the newly rehabilitated parking lot. Additionally, provision of a circular drop-off area to the main entrance would impact the potential for parking further.



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Terminal Alternative Two

Exhibit 6-2

A summary of the attributes and drawbacks for Terminal Alternative Two are listed below.

Attributes

- Expands area available over any of the other North side alternatives
- Provides expansion potential beyond existing concept
- Good accessibility to the fuel farm (both landside and airside)
- Expands available aircraft parking/ allowing more apron development
- Reasonable access to new and existing infrastructure
- Good access to GA terminal from Runway 5 arrivals
- Limited noise impact concerns to surrounding property
- Utilizes existing access to North Quadrant
- Utilizes existing utilities including sanitary sewer, water, electric and telephone

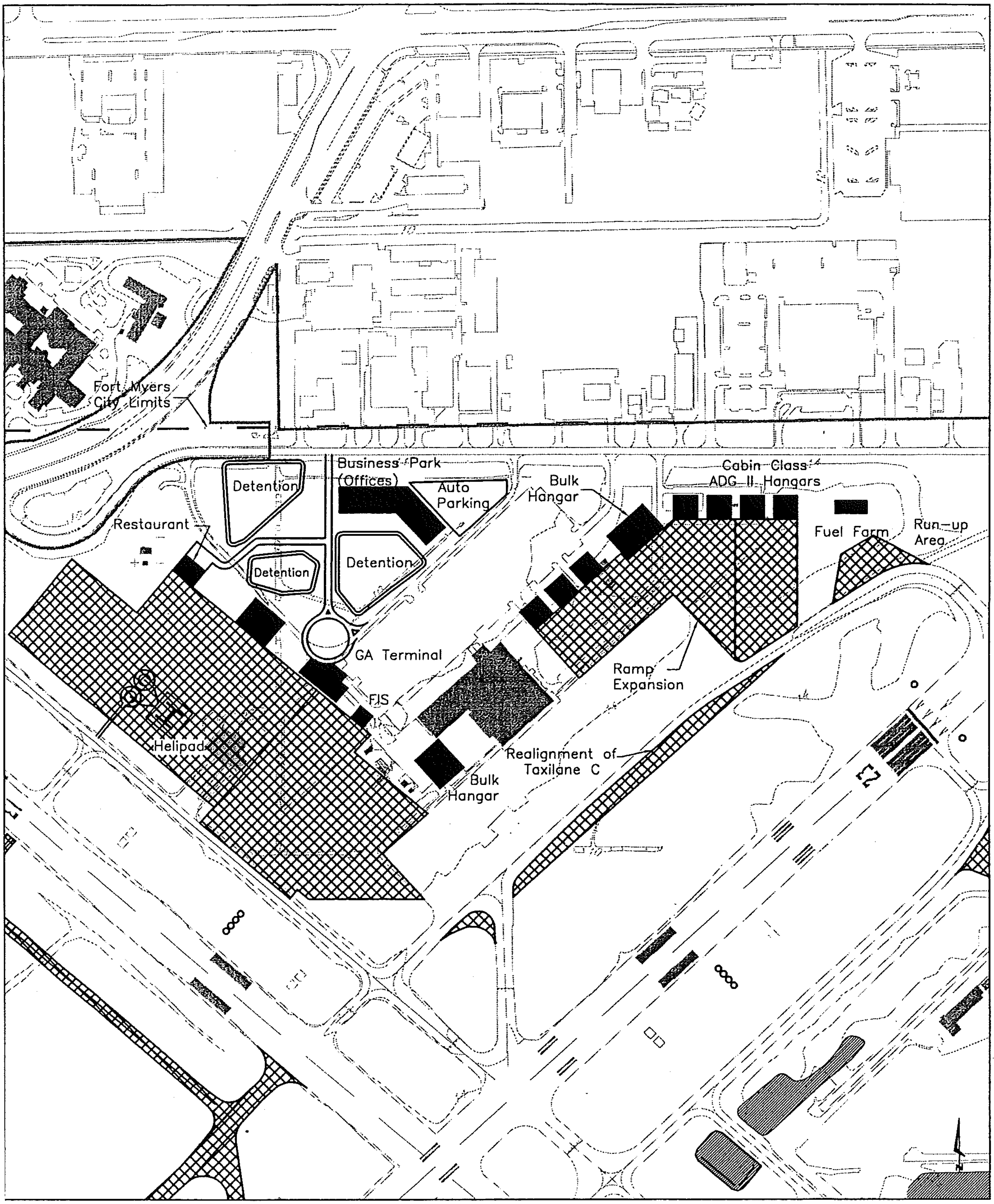
Drawbacks

- Increases runway crossings on Runway 5-23 for departures, unless west partial parallel is constructed
- Calls for need to extend west side partial parallel
- Taxi movement areas significantly impact available ramp
- Long walking distances to some aircraft parked on the existing North Apron
- ADG III more difficult to accommodate compared to other alternatives
- Ramp expansion is angular creating potential limitations
- Longest taxi to Runway 5 for departures
- Requires removal and relocation of a number of tiedowns on the existing ramp
- Impacts existing vehicle parking
- Access to terminal provides little improvement over existing south terminal
- Requires considerable stormwater mitigation
- FIS facility may impact usable apron

Terminal Alternative Three

Terminal Alternative Three is the third option that proposes development of the General Aviation Terminal on the north side of the airfield. The proposed location of the terminal is west of the Page Field Commerce Center building, east of the airport fire station, and northwest of the air traffic control tower. **Exhibit 6-3** depicts the location of the terminal and ancillary support facilities. This alternative proposes a terminal on the north side that will be central to the ultimate aviation development potential as compared to the previous two options.

The first phase of apron expansion will occur south of the proposed terminal and FIS, and east of the fire station to allow aircraft access to the terminal and FIS facilities. The FIS/customs facility would be located southeast of the terminal building in this alternative. Similar to Terminal Alternative One, the location provides convenience for users of the FIS facility due to the close proximity to the terminal. However, because of the configuration of the ramp and the location of FIS, access to the FIS apron may be difficult and may result in a reduction of itinerant aircraft parking in the immediate vicinity of the terminal.



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Terminal Alternative Three

Exhibit 6-3

East of the ATCT will be one of the two bulk hangars used to accommodate itinerant aircraft. This bulk hangar is located at the site of the existing cargo building. The second large bulk hangar required to meet the projected demand of itinerant aircraft would be added during the second phase of development at a site northeast of the Page Field Commerce Center. With the GA Terminal and one bulk hangar located west of the Commerce Center, considerable space remains available to the east to support additional hangar development. On either side of the second bulk hangar Terminal Alternative Three identifies the potential for "cabin class" ADG II hangars. This was an option shown in the North Quadrant for extended stay itinerant aircraft owners to have the ability to hangar their aircraft in a private or semi private hangar. These cabin class hangars could be used as overflow for the bulk hangars, or they could be leased to extended stay itinerant users. Five cabin class hangars are outlined during the planning period, with an additional two hangars that could be constructed beyond the twenty-year period.

A new vehicle access road will be designed to allow for a circular loop at the terminal building to provide for passenger drop-off. It will also allow access to the automobile parking area as well as access to other commercial and aviation related facilities on the north side of the airport.

A summary of the attributes and drawbacks for Terminal Alternative Three are listed below.

Attributes

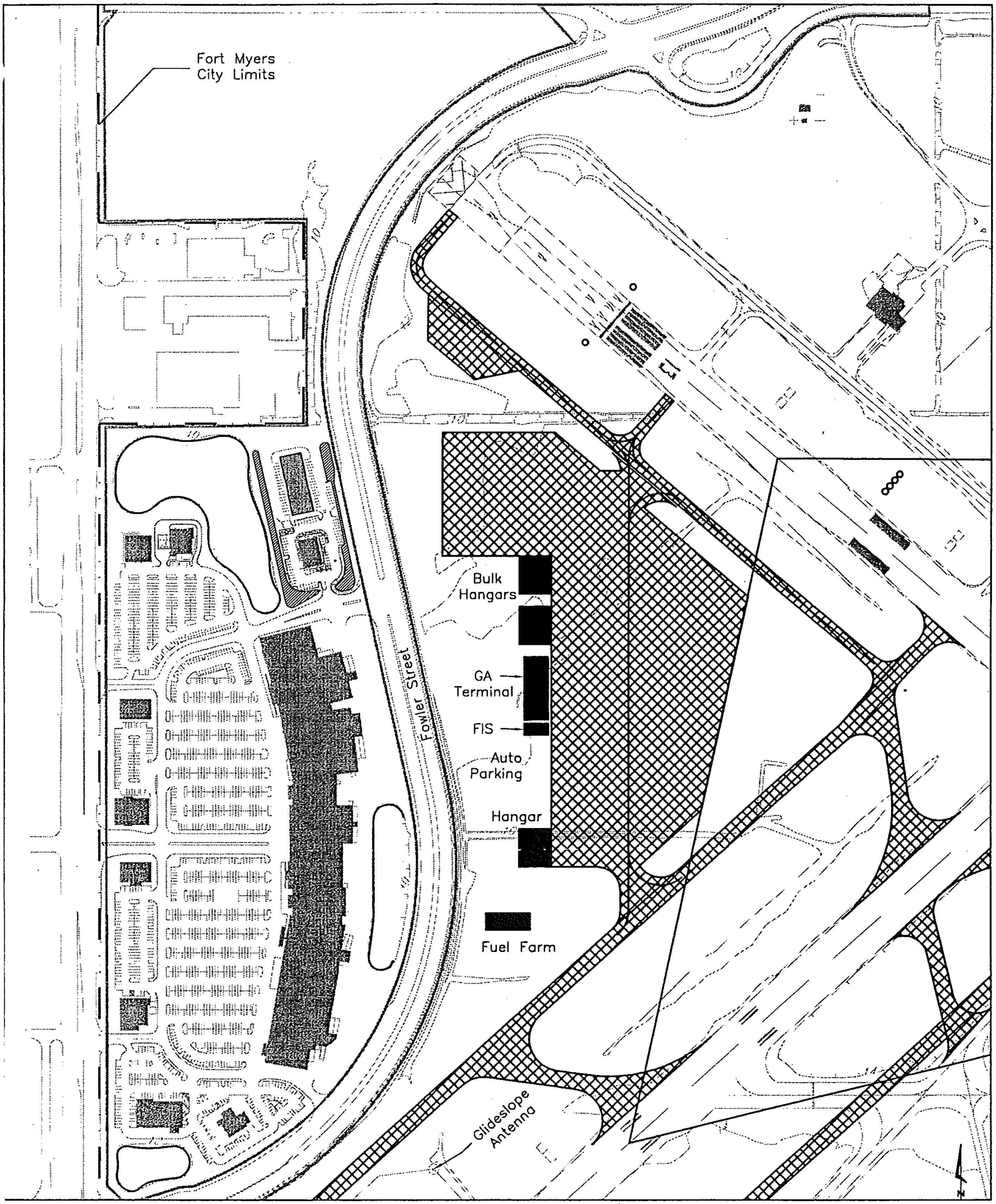
- Better ADG III handling than Alternative One or Two
- Good utilization of existing north ramp area
- Utilizes all of the existing auto parking associated with FDLE project
- Ultimately provides central access to apron areas from GA terminal
- Taxilane circulation more efficient on ramp – less head to head taxiing
- Allows for some commercial development potential on north side
- Alternative can be conveniently phased
- Potential for long term itinerant parking and storage on north side
- High profile access point and terminal drop-off area

Drawbacks

- Increases runway crossings on Runway 5-23 over other alternatives
- Ultimate expansion impacts fire station
- Runway crossings may call for west side parallel and glideslope relocation
- Potential drainage impacts
- ADG III problem with Taxiway B unless west parallel is constructed
- FIS facility may impact usable apron
- Most costly of any alternative for the north airfield
- Undesirable location of fuel farm

Terminal Alternative Four

Terminal Alternative Four outlines an option for the development of the GA Terminal and support facilities on the west side of the airfield. This pie shaped piece of property consists of approximately 52 acres of total land area located between Runway 5 and Runway 13. **Exhibit 6-4** outlines a conceptual layout of the terminal and support facilities associated with the development. Terminal Alternative Four represents a true greenfield concept. The site has no existing buildings or facilities other than the glideslope facility located at the southern end of the site. All infrastructure and utilities for the facilities would have to be constructed or extended into the site.



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Terminal Alternative Four
Exhibit 6-4

Since the site has no existing facilities, it does allow for an ideal layout of the GA terminal and support facilities. The terminal building for this alternative is centrally located with two bulk hangars located north of the proposed terminal to handle the demand through the planning period. Just south of the proposed terminal is the FIS/customs facility. It is anticipated that the FIS/customs facility will work in a similar fashion to Terminal Alternative One and Three, with a walkway connecting the terminal building to the FIS facility. Further to the south is the fuel farm, which will serve the West Quadrant only. Because of the lack of an access road on the west side of the airfield and no realistic means of accommodating one, it would be difficult to service the entire airfield from this single fuel farm. Vehicular access to the facility however, is excellent. An existing traffic light on Fowler Street adjacent the Page Field Commons shopping center provides a high profile access point with a major arterial connection to both Colonial and US 41.

While the site is ideal from a "start from scratch" perspective, a number of constraints limit the level of activity that this quadrant can support. Development in this quadrant is restricted by the runway visibility zone, the glideslope critical area, and the FAR Part 77 airspace surfaces, as well as by Fowler Street to the west. The site is relatively flat but tends to be low lying and, although it does have a number of deep drainage swales, standing water in this area after a major storm events are not uncommon. The flow of these swales is toward the west, away from the airport. Considerable provisions for the accommodation and treatment of stormwater can be expected with this alternative. Each of the referenced zones/critical areas etc., as well as the considerable drainage requirements, will work to reduce the amount of developable land in the West Quadrant.

In reviewing the itinerant ramp requirements throughout the 2020 planning period it can be determined that Terminal Alternative Four will be borderline in its ability to provide the required pavement. If itinerant demand were to exceed the level projected, the west side could, in fact, reach capacity prior to the end of the planning period with little or no opportunity for expansion.

A summary of the attributes and drawbacks for Terminal Alternative Four are listed below.

Attributes
- High profile access point with traffic light
- No impacts to existing facilities
- Taxilane circulation more efficient on ramp
- Minimizes head to head taxiing
- Opportunity to start from scratch
- Entire quadrant dedicated GA terminal and support facilities
- Leaves north side for commercial development

Drawbacks
- Considerable drainage impacts
- Most expensive of any of the alternatives
- May not meet the long term itinerant requirements
- Lack of available utilities, roadways and infrastructure
- Limited access to other portions of the airfield
- Limited expansion capability beyond the planning period
- Does not allow for use of existing North Apron and auto parking

Terminal Alternative Comparison Matrix

To assess the best GA terminal alternative for future consideration and refinement, a weighted comparison matrix was developed to provide an overall quantitative comparison of the alternatives based on individual factors having varying relative importance. These factors outline key areas of concern relative to operational, functional, environmental, cost and other considerations which assess the benefit of a given alternative while also considering potential negative aspects. The purpose of a weighted comparison matrix is to provide for an objective non-biased analysis that appropriately addresses the airport's local concerns and priorities.

There were twenty factors identified in the assessment of terminal alternatives for FMY, covering a broad range of items. The weighted value for each matrix factor was determined by selecting those areas deemed most significant to the community, the local environment, and the safety of aircraft operations. The following is a discussion of each of the factors or criteria used to determine the recommended alternative along with its relative weight. Factors with a higher weight are of higher importance.

Factors with a weighting of 12

- Noise concerns with adjacent land uses
  As the larger types of aircraft and frequency of aircraft visiting FMY increases, this factor relates to the potential noise impacts associated with the location of the proposed alternative.
- Expansion Potential
  This factor addresses the adequacy of land available to meet possible facility expansion such as terminal, apron, or the addition of hangars.
- Cost of Construction
  This element considers the relative costs of constructing the alternative.
- Meet projected itinerant aircraft demand
  This factor addresses how the proposed alternative meets the demand for the twenty year period in addition to how well it accommodates ADG III aircraft.

Factors with a weighting of 8

- Best utilization of north side infrastructure (includes aircraft apron, access, auto parking)
  This element addresses how effectively the alternative utilizes the new construction on the north side of the airfield.
- Use of existing utilities
  This factor is measured in terms of ease of obtaining power, water, sanitary sewage and telephone.
- Landside facilities / parking meets demand
  Evaluates whether the landside facilities, including automobile parking meet the demand placed on them by the projected forecasts.
- Potential for taxiing incursions
  This factor evaluates whether the aircraft taxiing incursions and conflicts are more likely to occur with the location of each alternative.

- Crossing of the primary runway for departures
  This factor evaluates taxiing delays as they pertain to the length of taxiing to the active runway as well as the requirement to cross the active runway for departure.
- Potential drainage impacts
  This factor addresses the level of stormwater management improvements required by the alternative.

  Fuel Farm accessibility
  Fuel farm accessibility addresses both landside and airside fuel farm access as well as how conveniently located the facilities are relative to servicing other areas of the airport.
- Commercial development potential
  This factor evaluates the potential for commercial development on airport property to provide an increased revenue stream.
- Aircraft circulation on ramp
  Assesses whether the ramp provides for ample circulation of aircraft including taxilanes to access the terminal and support facilities without eliminating aircraft tiedown positions.
- Phasing options
  Addresses how well the option can be phased and what flexibility the option offers as far as phasing alternatives.
- Environmental Impacts (animals and plants)
  This factor relates the potential environmental impacts to the proposed airport alternative.
- Accessibility to major arterial roadway
  Assesses how accessible the airport terminal alternative is from the major arterial roadways.

Factors with a weighting of 2

- Utilizes existing roadway access
  Addresses how well the alternative utilizes existing access roadways to access the terminal.
- Easy accessibility to apron for Runway 5 arrivals
  This factor evaluates taxiing to the apron and delays associated with arrival aircraft on Runway 5.
- Centrally located General Aviation Terminal
  Addresses the location of the terminal relative to other facilities and the aircraft parking apron.
- Potential for accommodating based aircraft
  Assesses the potential for the apron to provide for based aircraft parking, or long term (6 months or longer) itinerant parking.

Although it is not always easy to measure or quantify many of the criteria, alternatives can be evaluated based on the criteria and ranked relative to one another. The alternatives are rated against the criteria as: (5) best or highest rating, (4) second best or good rating, (3) third best or average rating, (2) fourth best or poor rating and (1) fifth best or worst rating. In certain circumstances more than one alternative might receive the same rating if they are perceived to have similar characteristics. An alternative was given a rating of three if there was nothing particularly positive or negative relative to the identified criteria. Each rating is then multiplied by the weighted value to arrive at the score for that alternative's factor. The scores for each criteria are summed to arrive at a total score. The alternative with the highest total score is considered the preferred alternative. **Table 6-1** presents the completed Terminal Comparison Matrix.

Table 6-1
Terminal Comparison Matrix through 2020

Review Criteria	Weighting Factor	Terminal Alternative 1		Terminal Alternative 2		Terminal Alternative 3		Terminal Alternative 4		South Alternative	
Operational											
Utilizes existing north side infrastructure effectively (aircraft apron, access, auto parking)	*8*	5	40	3	24	4	32	1	8	1	8
Best use of existing utilities	*8*	4	32	3	24	3	24	1	8	4	32
Utilizes existing roadway access	*2*	4	8	4	8	3	6	1	2	4	8
Accessibility from Runway 5 by arrival aircraft	*2*	5	10	5	10	5	10	3	6	2	4
Expansion Potential (beyond 20 year concept)	*12*	3	36	4	48	5	60	1	12	3	36
Noise concerns with adjacent land uses	*12*	5	60	4	48	4	48	3	36	2	24
Landside facilities / parking meets demand	*8*	5	40	4	32	4	32	3	24	3	24
Cost of construction	*12*	4	48	3	36	2	24	1	12	5	60
Potential for aircraft taxiing incursions	*8*	3	24	3	24	4	32	4	32	5	40
Crossing of primary runway for departures	*8*	2	16	2	16	3	24	4	32	5	40
Meets projected itinerant demand	*12*	3	36	3	36	4	48	1	12	3	36
Potential drainage impacts	*8*	4	32	3	24	3	24	1	8	4	32
Fuel farm accessibility from both airside and landside	*8*	5	40	5	40	4	32	3	24	3	24
Commercial development potential	*8*	4	32	4	32	4	32	4	32	5	40
Centrally located GA terminal (ultimate phase)	*2*	4	8	2	4	5	10	5	10	4	8
Aircraft circulation on ramp	*8*	4	32	2	16	3	24	4	32	4	32
Phasing options	*8*	5	40	4	32	5	40	2	16	3	24
Potential for accommodating based aircraft	*2*	1	2	2	4	4	8	1	2	3	6
Environmental Impacts (plants and animals)	*8*	4	32	4	32	4	32	1	8	5	40
Accessibility to major arterial roadway	*8*	4	32	4	32	4	32	5	40	5	40
TOTALS		78	**600**	68	**522**	76	**574**	49	**356**	73	**558**

Source: BHC Analysis 2000.

Table 6-1 indicates that Terminal Alternative One, with an overall point total of **600**, is the preferred alternative. Based on total points, the alternatives can be ranked as follows:

1. Terminal Alternative One (600 points)
2. Terminal Alternative Three (574 points)
3. South Alternative (558 points)
4. Terminal Alternative Two (522 points)
5. Terminal Alternative Four (356 points)

Preferred Terminal Layout

Based on a review of the layout, functionality, ease of expansion, and the comparative matrix, Terminal Alternative One appears to be the recommended, or preferred alternative, for further consideration and refinement. As such, the remaining facilities reviewed in this alternatives analysis will assume relocation of the existing GA terminal facility to a location and general configuration outlined for this alternative.

AIRFIELD ALTERNATIVES

The primary runway at Page Field, Runway 5-23, is not served by a full length parallel taxiway. Although a taxiway currently exists on the south side of Runway 5-23 and extends along its full length, its configuration is not ideal, reducing its efficiency and creating the potential for pilot confusion while taxiing. Given the considerable increase in traffic in 1999 and the projected increase throughout the 2020 planning period, parallel taxiway improvements will be required to maximize the capacity of the runway and airfield, as well as improve operational safety. The relocated general aviation terminal facility will be served by a partial parallel taxiway located in the North Quadrant, parallel to Runway 5-23. However, with the planned relocation of itinerant activity to the north, a full length north parallel taxiway would be desirable to limit the crossing of Runway 5-23 and provide itinerant aircraft access to the airport's primary departure runway end, Runway 5. Additionally, a full length north parallel taxiway is required to support the potential for aviation development in the West Quadrant of the airport.

It should be noted that the final Airport Layout Plan will reflect the build out of both parallel taxiways. However, with the separation of aircraft operations on the airfield, itinerant to the north and based to the south, the need for full improvements both north and south of the runway will not likely be needed until later in the planning period. As such, this analysis will serve to identify the best path for the phasing and development of these taxiways.

There are essentially three options for the initial parallel taxiway development. These include a reconfigured parallel taxiway on the south side of Runway 5-23, extension of the parallel taxiway on the north side of Runway 5-23, or a combination of the two. No matter which option is selected, any parallel taxiway to Runway 5-23 will need to be constructed with a minimum runway centerline to parallel taxiway centerline separation of 400 feet. This is based on the criteria contained in **FAA AC 150/5300-13 Change 5 "Airport Design"** for aircraft in Approach Category C and Design Group III. Likewise, whether the proposed parallel taxiway for Runway 5-23 is constructed on the north or south side of the runway, it should be constructed to a width of 50 feet and provide access to the existing taxiway system of the airport.

Alternative A – Straighten Parallel Taxiway "A"

Taxiway A runs along the south side of Runway 5-23 connecting the Runway 5 end to the Runway 23 end. The taxiway runs parallel to the runway with a 400-foot spacing north of the Runway 13-31 intersection but begins to diverge from its parallel orientation just south of the intersection. As it reaches a point west of the GA terminal area, at the westernmost point of Taxiway D, Taxiway A jogs back to a 400-foot spacing and continues to the Runway 5 end. While the divergence of the taxiway provides improved access for Runway 5 arrivals when transiting to the terminal area, it does create some confusion for pilots transitioning from the terminal area to the Runway 5 departure end since Taxiway A is encountered twice. Additionally the jog does create confusion and reduced efficiency for pilots from the east quadrant that are departing Runway 5. It also has the potential to create a bottleneck at the west ramp. Additional facilities are planned for this portion of the airfield that will result in increased activity from this quadrant, thus the problems associated with the orientation of the taxiway can be expected to get worse with time. Alternative A, depicted in **Exhibit 6-5**, proposes the reorientation of the parallel taxiway to allow for an improved parallel taxiway configuration that no longer requires the jog and reduces the potential for pilot confusion and bottlenecks. Specifically, the reorientation would affect the portion of Taxiway A between its intersection with Runway 13-31 and Taxiway D. This section would be reoriented so that is parallel to the runway with the same 400-foot spacing of the balance of the taxiway.

A summary of the attributes and drawbacks for Alternative A follows:

Attributes

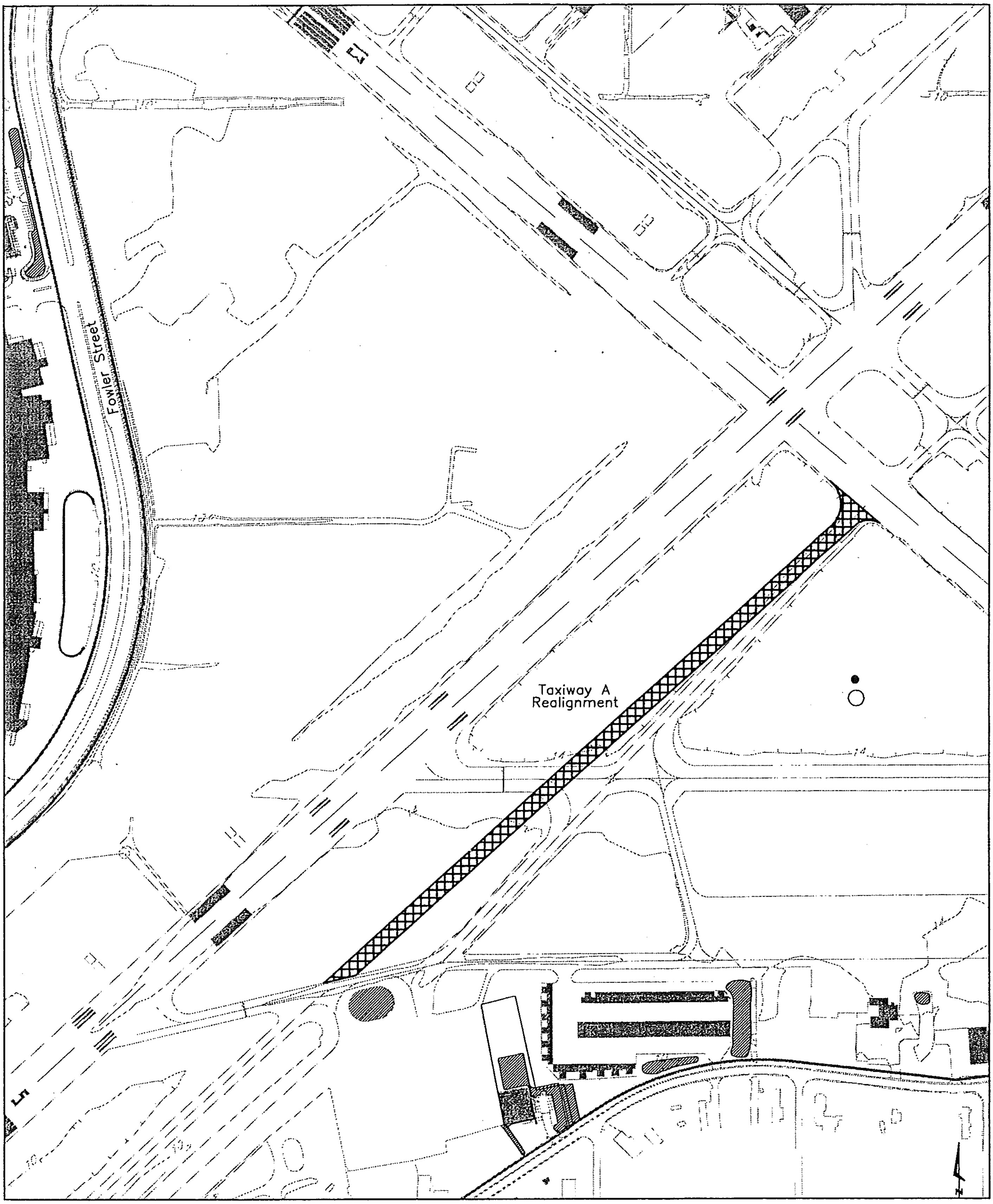
- Enhances access to Runway 5 departure queue for training activity
- Improves access to Runway 5 for the increased activity coming from the expanding t-hangar facilities in the East Quadrant
- Reduces pilot confusion when transitioning from Taxiway D to A-2/A
- Least costly approach
- Little or no storm water or drainage implications

Drawbacks

- With relocation of new terminal to the north, itinerant aircraft would benefit from reorientation only if the north parallel taxiway is not built
- New terminal location will result in added demand for Runway 23 departures over noise sensitive areas
- Would require the crossing of Runway 5-23 for itinerant departures on Runway 5, reducing airport capacity
- Long taxi distance for itinerant departures on Runway 5 and arrivals on Runway 23

Alternative B – Extend Taxiway "C" to Runway 5 End

Taxiway C is a partial parallel taxiway serving Runway 5-23 in the North Quadrant of the airport. The taxiway currently starts at the approach end of Runway 23 and extends along the south edge of the North Apron to Runway 13-31 while maintaining a parallel spacing of approximately 540 feet. Alternative B, outlined in **Exhibit 6-6**, recognizes the relocation of the GA terminal to the North Apron and provides a direct link between the North Quadrant and the primary runway, Runway 5, for departures. This direct link would consist of the extension of Taxiway C to the Runway 5 end. Although Category C-III would normally only require a 400' parallel spacing for this extension, the location of the glideslope antenna and its associated critical area requires a greater spacing to ensure aircraft taxiing past the glideslope do not affect its signal. In this case, providing the maximum possible clearance will also help to ensure that the glideslope grading requirements can be accommodated so that the height and location of the taxiway itself does not create a signal problem. Due to the location of Fowler Street connector, and the desire to accommodate ADG III aircraft, the maximum taxiway/runway spacing that can be maintained as it passes the most critical point of the roadway is 510 feet. This point is also directly adjacent the glideslope which is located 350 feet from the runway centerline. This would provide 160 feet of clearance between the taxiway and the glideslope antenna. Based on **FAA Order 6750.16C,** ***Siting Criteria for Instrument Landing Systems***, the glideslope critical area for a Category I ILS, with small aircraft, would extend 100 feet beyond the glideslope in the direction away from the runway. This is the "minimum allowable distance form the nearest point on the aircraft longitudinal axis (line from nose to tail) to the glideslope antenna". Small aircraft are defined as "aircraft with dimensions less than 60'in length or 20' in height; i.e. King air." Therefore, the 160 foot clearance provided by the 510 foot spacing would be sufficient for a vast majority of aircraft expected to serve FMY.



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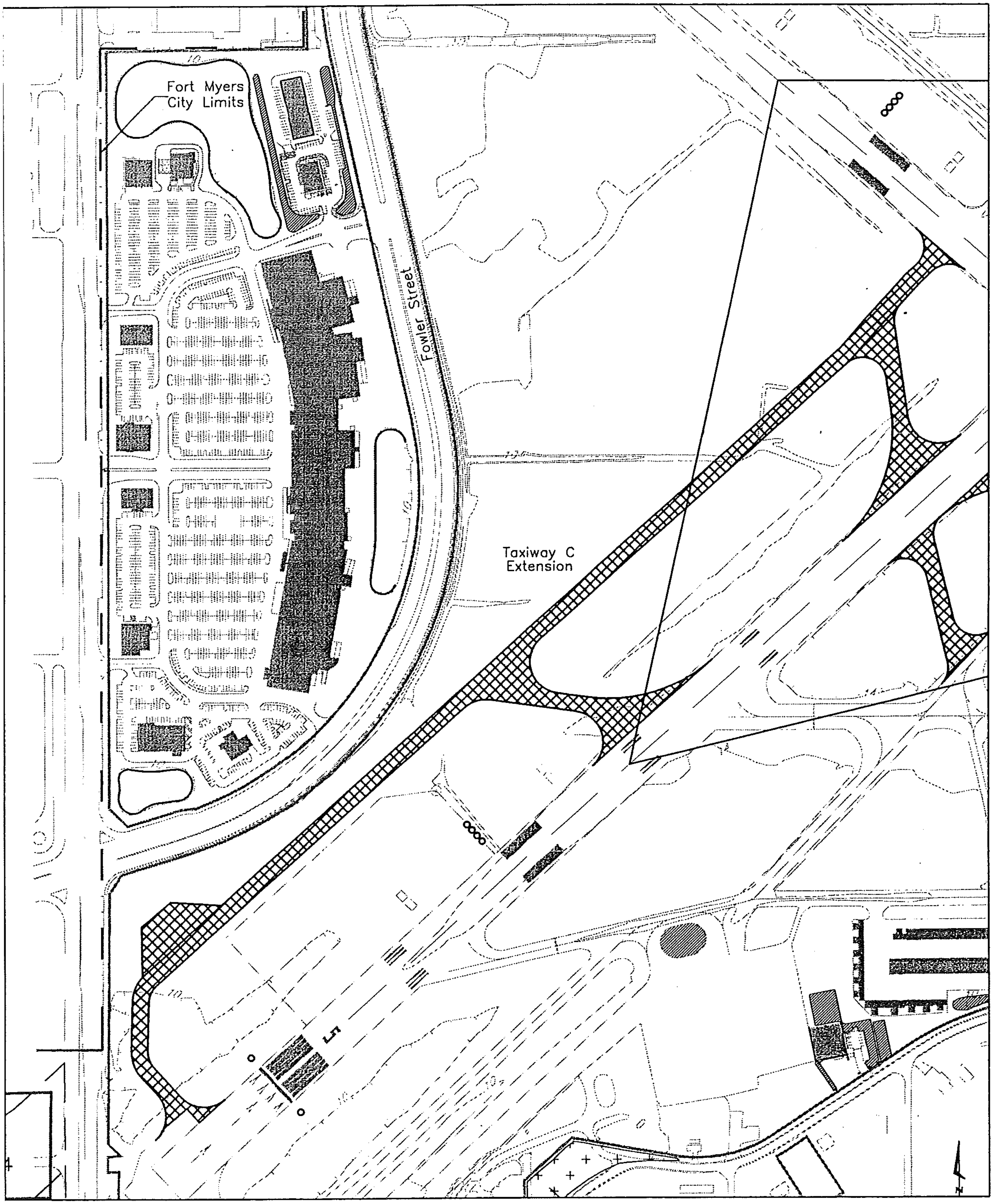
Airfield Alternative
A
Exhibit 6-5



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Airfield Alternative
B
Exhibit 6-6

When medium aircraft are using the taxiway operational restrictions may be required. Medium aircraft require that the critical area extend 200 feet beyond the glideslope versus the 100 feet identified for small aircraft. Medium aircraft are identified "as aircraft larger than small aircraft but less than 160 feet in length or 38 feet in height (i.e. B-727, MD-80). Some large business aircraft will fall into this category. Operational procedures should be put in place to ensure that these aircraft do not impact instrument operations

A summary of the attributes and drawbacks for Alternative B follows:

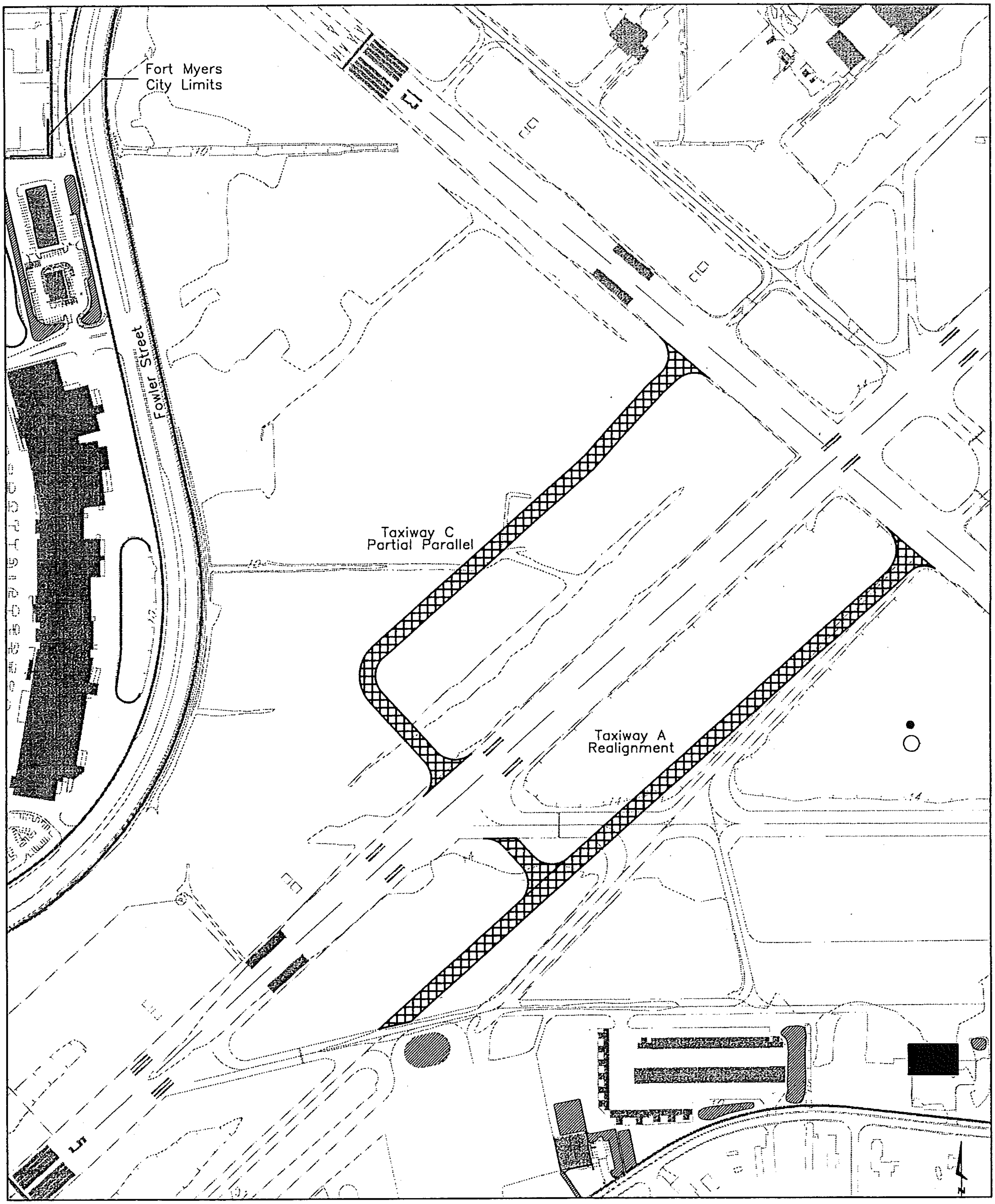
Attributes
- No crossing of Runway 5 for itinerant departures resulting in reduced delays
- Reduced potential for runway incursions
- Minimizes potential for noise impacts to southwest (minimizes need for Runway 23 departures)
- Provides ADG-III capability on both sides of 5-23
- Provides impetus for West Quadrant aviation related development
- Limits the mixing of itinerant and based aircraft
- Provides shortest taxiing route for both arriving and departing itinerant aircraft.
- Balances airfield capacity between both the north and south portions of the airport

Drawbacks
- Will require glideslope critical area improvements
- The glideslope not be available for approaches during a period of the construction
- Most costly approach
- Has stormwater and drainage implications

Alternative C – Realignment of Taxiway "A" and Partial Extension of Taxiway "C"

Alternative C, the third and final alternative, is a hybrid of the first two alternatives. In this alternative, Taxiway C is partially extended beyond Runway 13-31 delaying the need to extend the taxiway to a full length parallel taxiway on the north side of the runway. This alternative must be coordinated so that the realignment of Taxiway A occurs first. This will allow for the partial extension of Taxiway C to connect with Taxiway A, allowing for a smooth and straight transition when crossing Runway 5. This alternative is viable only if it is phased properly with the taxiway realignment improvement. Alternative C is presented in **Exhibit 6-7**.

Attributes
- Enhances access to Runway 5 departure queue for training activity
- Improves access to Runway 5 for the increased activity coming from the expanding t-hangar facilities in the east quadrant
- Reduces pilot confusion when transitioning from Taxiway D to A-2/A
- Second least costly approach
- Minimal stormwater management implications
- Improves flow and access to the north GA terminal area



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Airfield Alternative
C
Exhibit 6-7

Drawbacks

- Still requires crossing of Runway 5-23 to get to Runway 5 departure end
- Itinerant demand may increase for Runway 23 departures
- With relocation of new terminal to the north, itinerant aircraft would benefit from reorientation only if the north parallel taxiway is not built.
- New terminal location could still result in added demand for Runway 23 departures over noise sensitive areas
- Would require the crossing of Runway 5-23 for itinerant departures on Runway 5 and arrivals on Runway 23, reducing airport capacity.
- Longer taxi distance for itinerant departures on Runway 5 and arrivals on Runway 23 than with Alternative B

Preferred Alternative

As indicated prior, all of the development outlined by the alternatives in this section is planned for construction at some point during the planning period. However, the phasing and timing of implementation is the primary issue. Alternative A, reorientation of a portion of Taxiway A, is the least beneficial improvement from a capacity perspective due to the fact that the alternative represents a step enhancement to a taxiway that already exists. Alternative B, extension of Taxiway C to the approach end of Runway 05, is the most beneficial alternative. This alternative balances the capacity of the north and south airfield to support of the relocation of two-thirds of the airport's operations to the north airfield. Alternative C, the realignment of Taxiway A and partial extension of Taxiway C, represents a step improvement to Alternative A falling well short of the capacity improvements offered by Alternative B. Alternative C would still require the crossing of the runway by two thirds of the airport's activity presenting the opportunity for delays, congestion and runway incursions.

Finally, if Alternative B were constructed first, it will likely delay the need for Alternative A construction until later in the planning period, between 2011 and 2015. However, if Alternatives A or C were constructed first, Alternative B would likely be required early in the intermediate timeframe, between 2005 and 2007. In consideration of the issues outlined in the analysis, the preferred alternative for short term development is Alternative B. Alternative A improvements would follow early in the long term development period (2010 – 2020).

NAVIGATIONAL AIDS

The airport currently has a Cat I ILS approach to the primary runway end (Runway 05), and ASR, VOR and stand-alone non-precision GPS approaches to a number of the runway ends. No requirements for improvements to ceiling minimums are currently projected for any of the approaches although a reduction in visibility minimums relative to the CAT I approach would be desirable. Currently, the only opportunity to reduce visibility minimums for the primary approach would be through the addition of an approach lighting system (ALS) to serve Runway 5. Because of the extent of development in the area that would be required for siting of the lighting system, this will likely be a long and expensive undertaking. As such, other alternatives for visibility minimum reduction should be fully explored as they are made available through new technology.

When considering the long term outlook of navigational aids and the projected trend from land based navigational aids to satellite based navigational aids, the question arises as to how long the land based aids should be kept in service. Based on discussions with FAA personnel in the Southern Region, it does not appear that stand alone precision GPS approach capabilities will be available at an airport such as Page Field for approximately 8 to 10 years. Noting that the GPS equipment approved for CAT I use is still relatively expensive and that few aircraft in the general aviation fleet are equipped to perform stand-alone operations, it will likely be some time before a transition from CAT I ILS to GPS stand-alone precision equipment can be made. In all likelihood, if the installation of stand-alone precision capability proceeds in accordance with the FAA's schedule the earliest the ground based system could be decommissioned is ten years. However, providing an overlap between the two technologies for pilots to complete the transition may add as many as five or more years on to this period. Much will depend on the cost of the technology and the speed with which pilots incorporate it into their aircraft. Additionally, the cost of maintaining the ground based equipment will factor into this decision, as will the availability of parts. Based on existing available information, it is recommended that the ground based CAT I ILS equipment, along with its associated critical areas, be maintained in long range facility planning until the middle of the long term development program (between 2010 and 2020).

GENERAL AVIATION ALTERNATIVES

Overall, each of the Terminal Alternatives identified earlier include the required amount of apron space and hangars needed to accommodate the itinerant demand identified in the Facility Requirements. However, additional general aviation facilities relative to aircraft storage and aviation related services are required to support the airport's based aircraft. A number of alternatives have been prepared which address these additional facilities. The facilities outlined in the alternatives may exceed the projected requirements but are included in the event that the demand forecasts are exceeded during the planning period. This assists in preparing a development strategy that ensures the orderly development of future airfield improvements. However, provision for only those facilities outlined in the Facility Requirements chapter will appear in the phased Capital Improvements Program. The remaining hangars, apron space, and other facilities are contingent upon the airport's future needs and, therefore, have only been included for planning purposes.

The following section delineates a number of potential development options for each quadrant of the airport and provides a brief description of the best use of each area. Each alternative will have a number of attributes and drawbacks identified to assist in determining the preferred alternative for that specific quadrant. At the end of each development section the preferred alternative will be identified and a brief discussion will describe why it was chosen as the best alternative.

East Quadrant Development

The Eastern Quadrant is constrained to the east by the access road, the Lee Trans facility and a canal. Westward expansion is limited by FAR Part 77 obstacle restrictions and the runway visibility zone. The limited land available in the Eastern Quadrant and the need to accommodate automobile parking and water detention for any improvements further constrain this site. The northern half of the Eastern Quadrant of the airport is currently occupied by the Lee County DOT Depot 7 maintenance yard, while the southern half accommodates a number of T-hangars, the EAA building, and the SMS corporate hangar.

According to recent discussions with the LCPA, the Depot 7 Maintenance yard will be relocating off airport property sometime early in the first phase of the planning period. The vacated area is highly desirable for the continued development of similar aviation related uses that were established with the construction of two new sets of T-hangars in 1996. Recognizing this, the Port Authority recently approved the final design of twenty-six new T-hangars along Taxiway A in the northern half of the East Quadrant. Based on the considerable demand for additional inexpensive aircraft storage, a number of alternatives were developed which continue this established land use. A summary of the alternatives analyzed for the undeveloped portion of this quadrant include the following:

Alternative A – T-Hangars / Shade Hangars

Alternative A, depicted in **Exhibit 6-8,** continues the t-hangar development initiated by the LCPA, incorporating and expanding upon the recently designed twenty-six new t-hangars along Taxiway A. An additional twenty-six t-hangars, depicted as the three most northerly hangar buildings on **Exhibit 6-8,** are proposed, as well as an additional 8 t-hangars/shade hangars in a single building at the western side of the quadrant. Additional T-hangars to the south were not considered due to the location of the existing EAA facility and the potential for additional line-of-sight problems from the ATCT relative to Taxiway B. This concept proposes a total of sixty new hangars capable of accommodating a mix of ADG I and ADG II type aircraft.

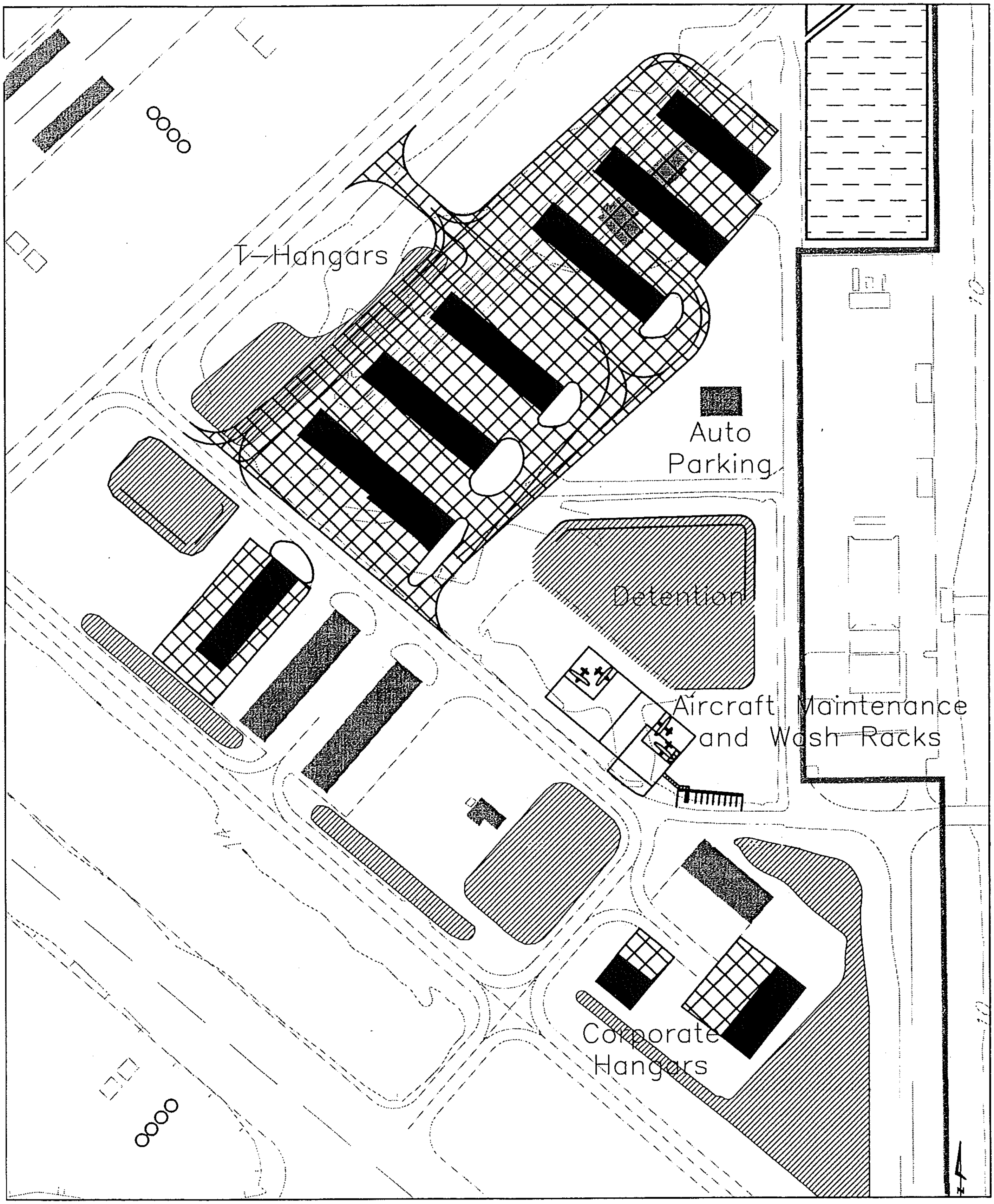
Attributes
- Development is extension of existing land use
- Full design of twenty-six T-hangars is already complete
- Maximizes number of aircraft accommodated in hangars with sixty new hangars
- Provides for homogenous mix of aircraft
- Initial demand is higher for these types of hangar facilities
- Less expensive for tenants
- Provides direct access to Taxiway A

Drawbacks
- Larger ADG III aircraft must be accommodated elsewhere
- More hangars result in potential for aircraft congestion for the East Quadrant

Alternative B – T-Hangar/Cabin Class Mix

Alternative B adds additional flexibility in the East Quadrant by providing two types of hangars. **Exhibit 6-9** depicts the layout of a T-hangar and cabin class hangar mix. While this layout can serve a greater number of larger ADG II type aircraft with a higher quality of service, it does not provide nearly the same volume of hangars due to the greater land area required for the larger hangars. The severe shortage of existing storage facilities and already established use in this quadrant of high density hangarage indicate that this may not represent the best use of the Eastern Quadrant.

Attributes
- Serves a range of aircraft sizes and types
- Gives customers some flexibility in choosing the type of hangar for storing their aircraft
- Airport can charge more for rental fees on a cabin class hangars
- Provides some higher quality, or top end, hangarage
- Direct access to parallel taxiway ("A")



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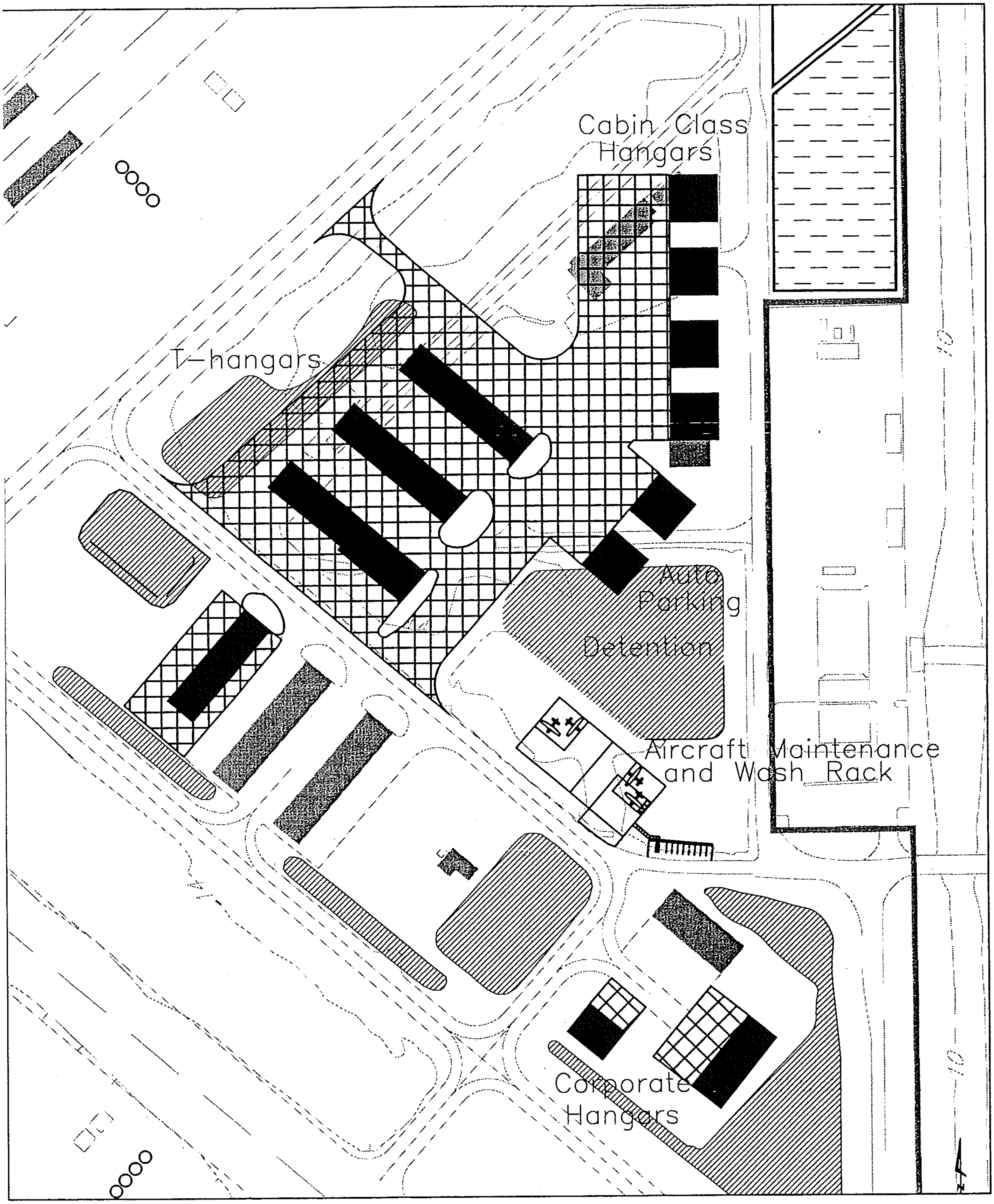
East Quadrant
Alternative A

Exhibit 6-8



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East Quadrant
Alternative B
Exhibit 6-9

Drawbacks
- Mixes large and small aircraft, and possibly some jet aircraft
- Can not serve ADG III aircraft
- Lower volume of aircraft stored relative to land required
- Impacts to detention area
- Limited automobile parking
- Most costly of the alternatives

Alternative C – Cabin Class Hangars

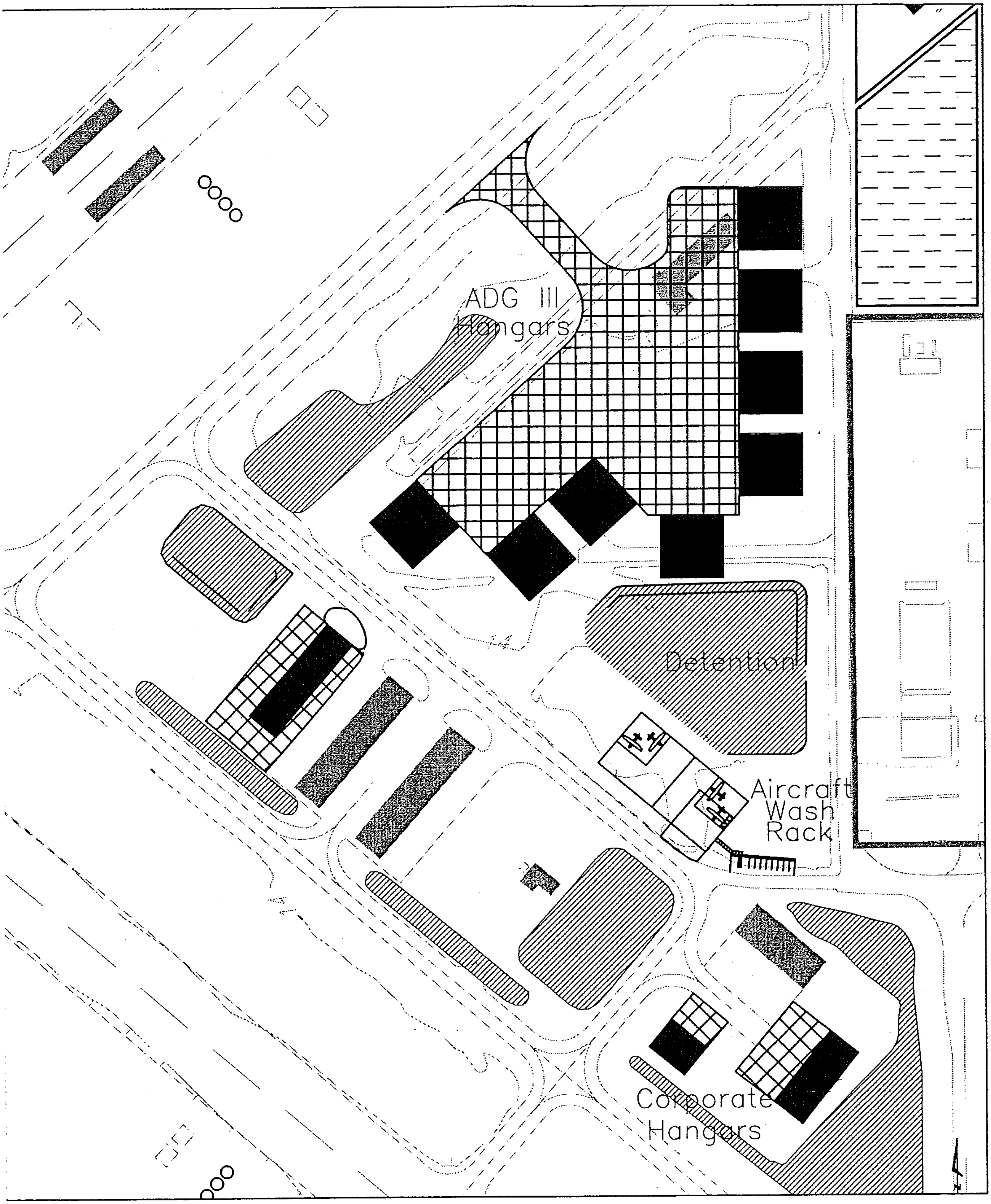
Alternative C was proposed to accommodate ADG III aircraft in the eastern quadrant as well as ADG I aircraft. The layout of an ADG III all cabin class hangar facility in the east quadrant is depicted in **Exhibit 6-10**. The main drawback of this alternative, as with Alternative B, is the large area requirement of the cabin class hangars. This alternative provides the lowest number of hangars of the three alternatives but, depending on the size of the aircraft, multiple smaller aircraft can be stored in one cabin class hangar. Additionally, there is not currently an established demand for this type of hangar in the near term and, because of the expense associated with these facilities, it will be more difficult to find or maintain tenants. As infrastructure in the East Quadrant becomes readily available to support additional hangar development, the land in this quadrant is better used to serve immediate demand.

Attributes
- Serves a range of aircraft sizes
- Can serve ADG III aircraft
- Potential direct access to the Group C-III parallel taxiway "A"
- High image

Drawbacks
- Full design already completed for next phase of T-hangars
- Limited number of aircraft that can be accommodated in hangars compared Alternatives A and B
- Expensive for customers to rent
- There is not yet an established demand for these types of hangars for based aircraft as compared to T-hangars
- Limited space to accommodate the size of hangars needed
- Mixes large jets with small piston aircraft
- Access to site is not high profile in line with image these hangars would present

Preferred Alternative-East Quadrant

The preferred alternative for the East Quadrant is Alternative A. This is based on a number of factors, which include the initial investment the Port Authority has already made in to the design of T-hangars on the east side of the airport as well as the extreme shortage of hangar facilities for the smaller ADG I and ADG II aircraft. The East Quadrant provides a location with the ability to address much of the immediate shortfall in aircraft hangar storage at the airport.



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East Quadrant
Alternative C

Exhibit 6-10

These facilities will also provide for a homogeneous mix aircraft mix in the East Quadrant limiting the potential for operational conflicts between jets and the smaller piston aircraft. Although the eastern portion of the South Quadrant also has the ability to accommodate similar hangars, they will impact the recently rehabilitated apron and newly constructed self-fueling facility (both in 1999), and that quadrant would be better served by delaying such development. It should be noted that the T-hangars outlined for both quadrants would require construction to meet the projected demand levels through the year 2020.

South Quadrant – Eastern Portion

The location of this parcel is west of the Ten Mile canal and just north of Danley Drive in the southeast corner of the airport property. Facilities in the east portion of Southern Quadrant currently include a 12,000 gallon self-serve Avgas fueling facility, with enough extra maneuvering ramp to accommodate six aircraft tie-down positions. The apron was recently rehabilitated in the Spring of 1999, and the fuel farm construction was completed shortly thereafter. However, due to its size and location, the site appears ideal to support additional hangar development to meet the large existing shortfall. The alternatives outlined in this section consider maintaining the existing facilities as well as the potential for new hangar development.

Alternative A – Maintain Tie-downs and Self Fueling Facility

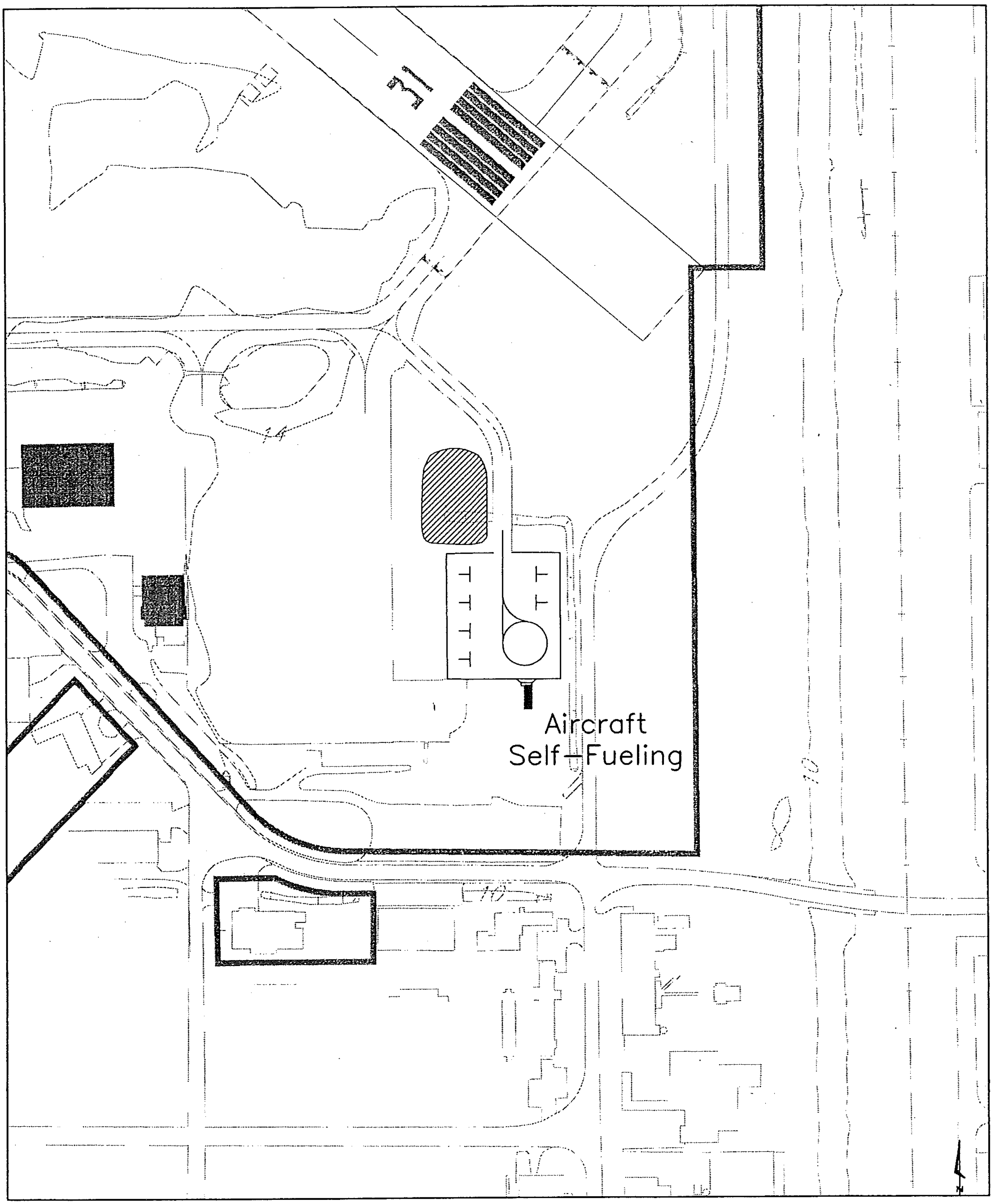
Currently, aircraft do not utilize the available tie-down positions permanently, but they do serve as a holding area for aircraft waiting to be fueled. It has been noted that the self-fueling station is very popular among the based aircraft users and it is recommended that the airport continue this type of service. However, the location of the facility is not ideal. It is difficult to access and a long taxi is typical for aircraft coming from other areas of the airport. **Exhibit 6-11** depicts the current layout of the southeastern quadrant.

Attributes
- Very little cost associated with this alternative
- Isolates self fueling facility from other activities in southern quadrant
- Expansion potential of ramp and fueling facility
- Good landside access to facility

Drawbacks
- Tie-downs are not currently being used
- Poor utilization of the land
- Facility is not centrally located / long taxi for customer on southwest side of airport
- Ideal location for additional T-hangars / shade hangars

Alternative B – T-Hangar and Ramp Expansion

Alternative B presents the first of two different options for T-hangar development and apron expansion in the Southeast Quadrant. The first option is depicted in **Exhibit 6-12** and proposes two rows of T-hangars / shade hangars with expanded apron for additional tie-downs. It is anticipated that approximately 22 aircraft could be accommodated with the two vertical sets of T-hangars and approximately 12-15 tie-down positions, depending upon the size of the aircraft.



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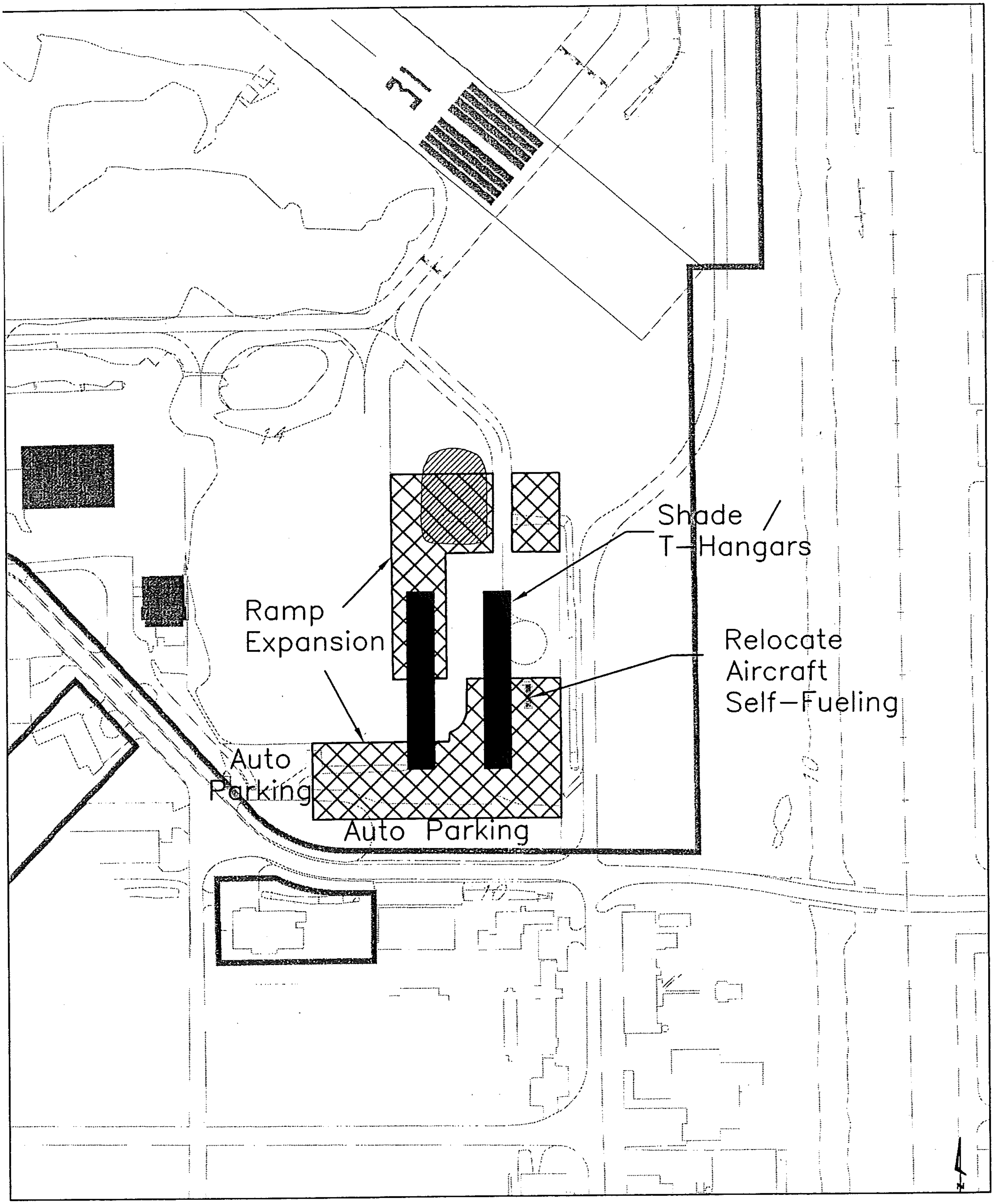
Southeast Quadrant
Alternative A

Exhibit 6-11



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Southeast Quadrant Alternative B

Exhibit 6-12

The types of aircraft anticipated to utilize these hangars are the ADG I and smaller ADG II type aircraft which represent the majority of the aircraft mix at Page Field. Between Danley Drive and the edge of apron, a single row parking lot can be developed to provide automobile parking for these facilities.

Attributes
- Adds 22 additional T-hangars
- Adds 12-15 additional tie-downs
- Site has good landside and airside access
- Space available to provide automobile parking for hangars
- High demand for type of hangars proposed
- Remaining locations on the airport with access and infrastructure that are suitable for hangar development require impacts to much larger portions of ramp and existing facilities.

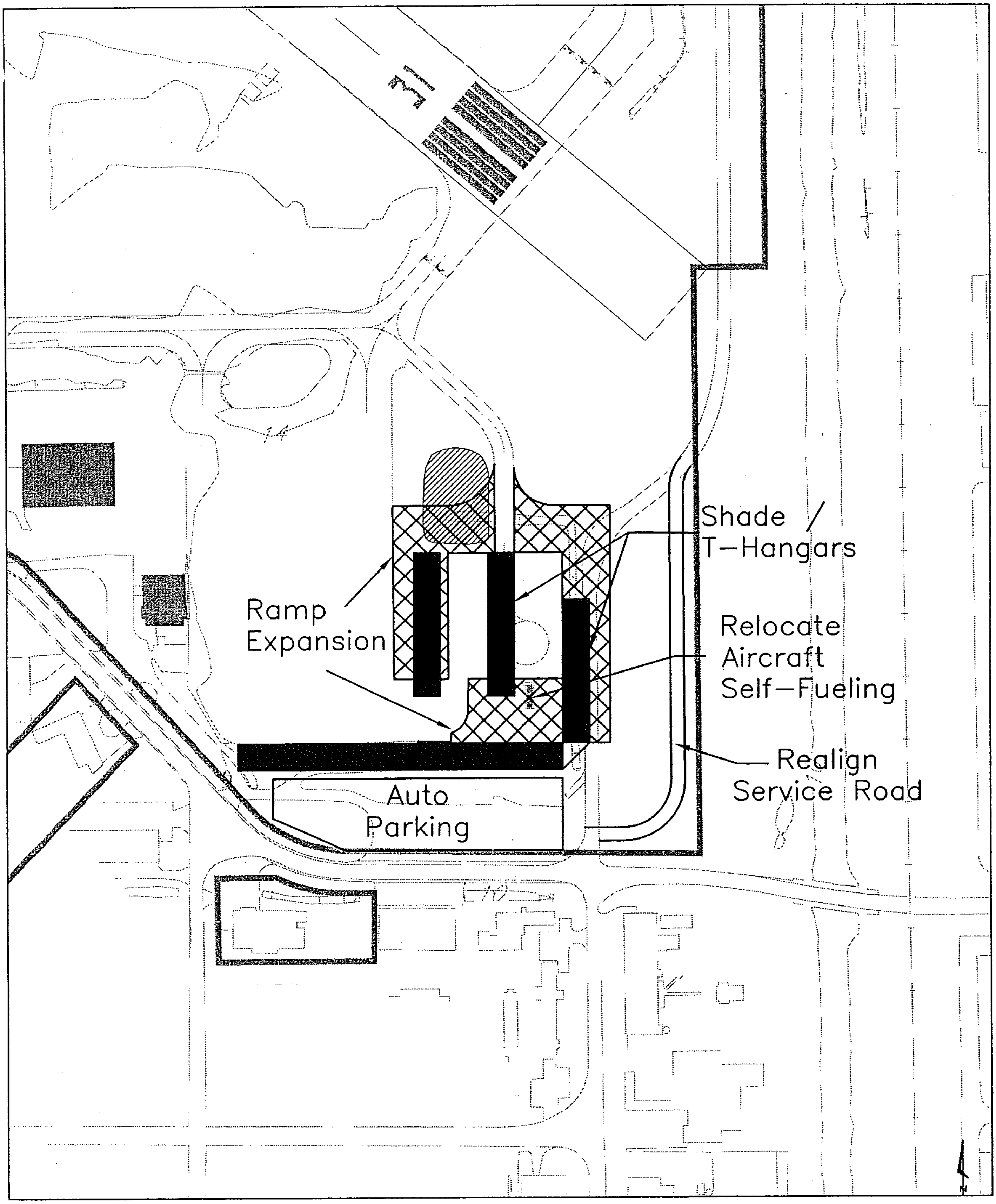
Drawbacks
- Requires relocation of new self fueling facility
- Will require reorienting service road
- Requires building T-hangars on some existing apron
- Long taxi to Runway 5 for departures

Alternative C – T-Hangar and Ramp Expansion

Alternative C, depicted in **Exhibit 6-13,** is the second option and proposes four buildings configured as T-hangers / shade hangars. The southernmost hangar is aligned in an east-west configuration, perpendicular to the other three hangar buildings, and will only be accessed from the north side. The number of aircraft it can accommodate as compared to the other nested hangar buildings is cut in half, but each hangar will have a larger interior space. Additional ramp expansion will be required with this option, but only to accommodate aircraft ingress and egress to the hangars, and will not accommodate additional tie-downs. It is anticipated that approximately 32 hangars could be accommodated with this option, depending upon the exact size of the hangars.

Attributes
- Adds 32 additional T-hangars
- Site has good landside and airside access
- Space to provide automobile parking for hangars
- High demand for type of hangars proposed
- Remaining locations on the airport with access and infrastructure that are suitable for hangar development require impacts to much larger portions of ramp and existing facilities.

Drawbacks
- Requires relocation of new self-fueling facility
- Will require reorienting service road
- Requires building T-hangars on existing apron
- Long taxi to Runway 5 for departures



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Southeast Quadrant
Alternative C

Exhibit 6-13

Preferred Alternative-South Quadrant East Portion

The preferred alternative for the Southeast Quadrant is Alternative C. This alternative maximizes the potential for t-hangars which are currently in short supply at the airport. Numerous options exist for the addition of tie-downs and aircraft parking ramp, as well as the accommodation of the aircraft self-fueling facility. In fact, relocation of the self-fueling facility to a central location will provide for better access by the users.

South Quadrant – Western Portion

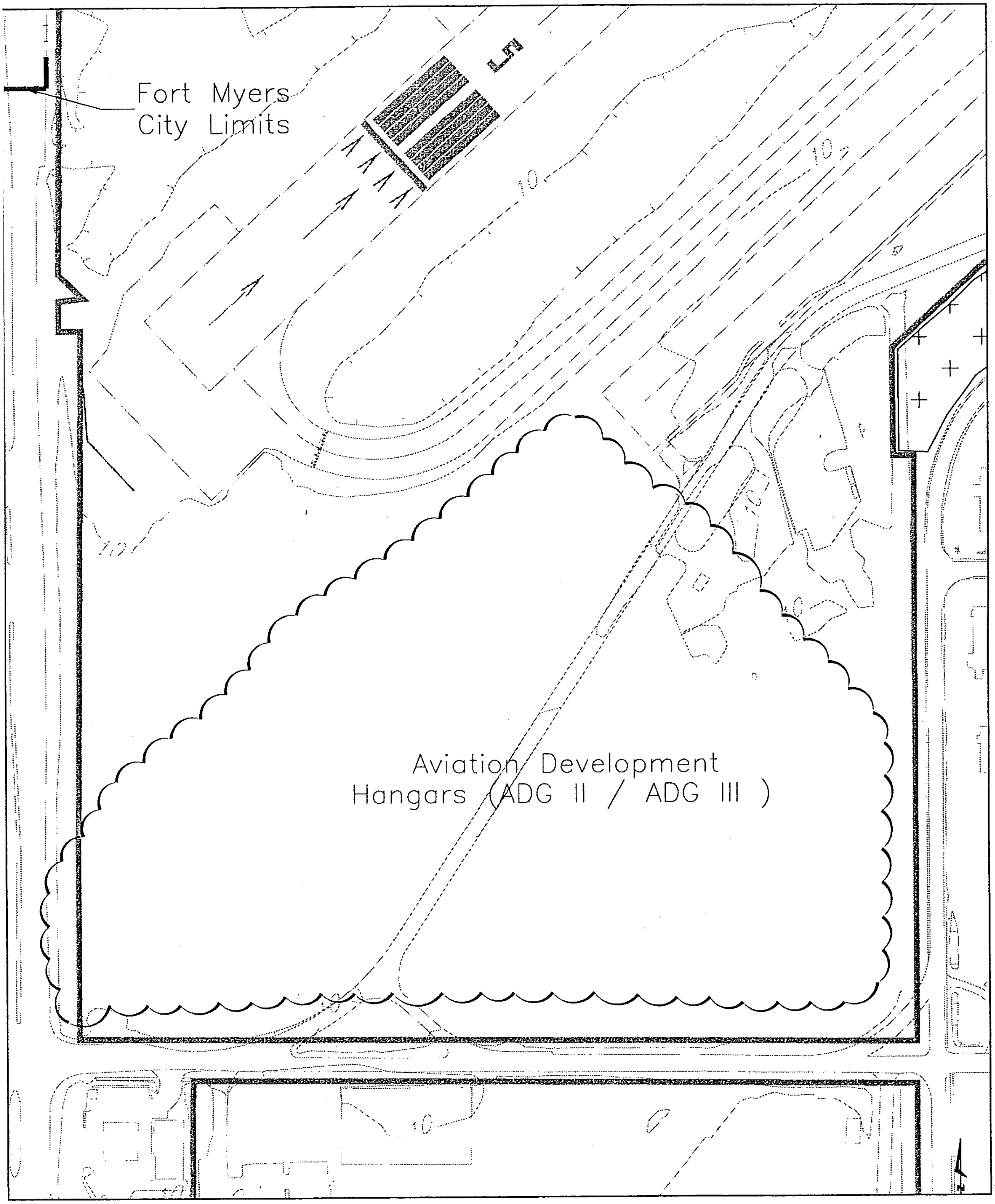
The area reviewed in this analysis includes approximately 20 acres of vacant land located east of US 41 and just north of Danley Drive. The property is constrained on the north side by the requirements of FAR Part 77, so building heights will be restricted. Development in this parcel requires the closure of a small section of the south airport road and the re-routing of all traffic. A strip of land along the south portion of the site is currently used for parking for the baseball fields across the street. Any alternatives for this development parcel must either maintain or incorporate adequate parking to service those facilities. The property has excellent frontage to US 41, and is accessible from Danley Drive.

Alternative A – ADG II and III Hangars

Alternative A utilizes approximately 17 acres for large cabin class hangars to service both ADG II and ADG III aircraft. Airside access is provided through a connector taxiway to the southwestern apron. Landside access is accommodated through two access roads connecting the facilities to Danley Drive. The layout of this proposed alternative is shown in **Exhibit 6-14**.

Attributes
- Good airside and landside access
- Site has a high profile
- Provides good access to the preferred runway for large jet aircraft
- Site is close to existing utility services
- No construction or modifications to existing taxiways required to accommodate ADG III aircraft

Drawbacks
- Proximity to residential neighborhood
- Requires closure or reorientation of a portion of Danley Drive
- No demand for these types of hangars
- Little expansion potential
- Access to site may be a problem due to aircraft departure queues for Runway 5
- Good commercial development site



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Southwest Quadrant
Alternative A
Exhibit 6-14

Alternative B – Mix of Hangars and Non-Aviation

This Alternative presents a mix of aviation and non-aviation development. The hangar development will be similar to Alternative A, although Alternative B proposes approximately 1.26 acres of hangar space as compared to 17 acres of facilities with Alternative A. The hangars will be capable of handling ADG III aircraft. Alternative B will also consist of the addition of 1.15 acres of commercial or retail space. Airside and landside access to both facilities is good. **Exhibit 6-15** outlines the potential layout of this land use.

Attributes
- Allows for both aviation and non aviation use of the property
- Good visibility from US 41 for retail or commercial uses
- Ability to accommodate ADG III if necessary

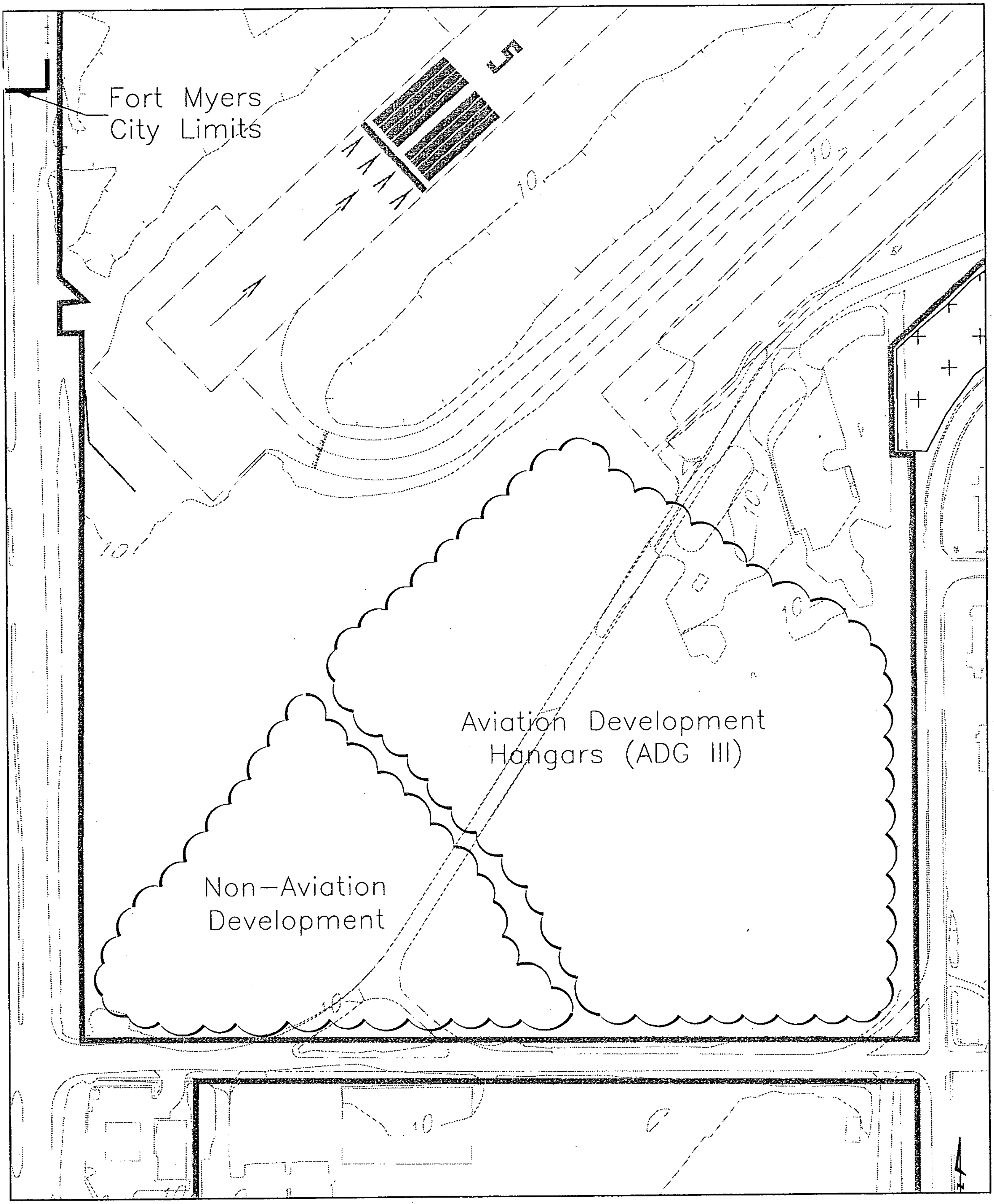
Drawbacks
- Small parcel to try to accommodate both types of activities
- Requires closure of roadway or reorientation
- No expansion ability for either use

Alternative C – Non-Aviation Development

Alternative C proposes 17 acres of commercial and retail development. This could include over 80,000ft^2 of single story building space (with the potential for more if multi-story). The site, located just east of US 41, has good frontage to US 41, which is a major arterial roadway. Additionally, the site is convenient to access from Danley Drive and provides ample automobile parking. This alternative is illustrated in **Exhibit 6-16.**

Attributes
- Offers considerable potential for revenue enhancement to support aviation development in other quadrants
- Compatible land use with adjacent properties
- Good visibility / frontage from US 41
- No expense for the airport if privately developed
- Site is close to existing utility services
- Airport already has interested parties

Drawbacks
- Perception of giving airport property away for non-aviation uses
- Requires limitations on building heights and setbacks associated with FAR Part 77
- Potential DRI issues may restrict amount of parcel that can be developed
- Will likely require improvements to Danley Drive



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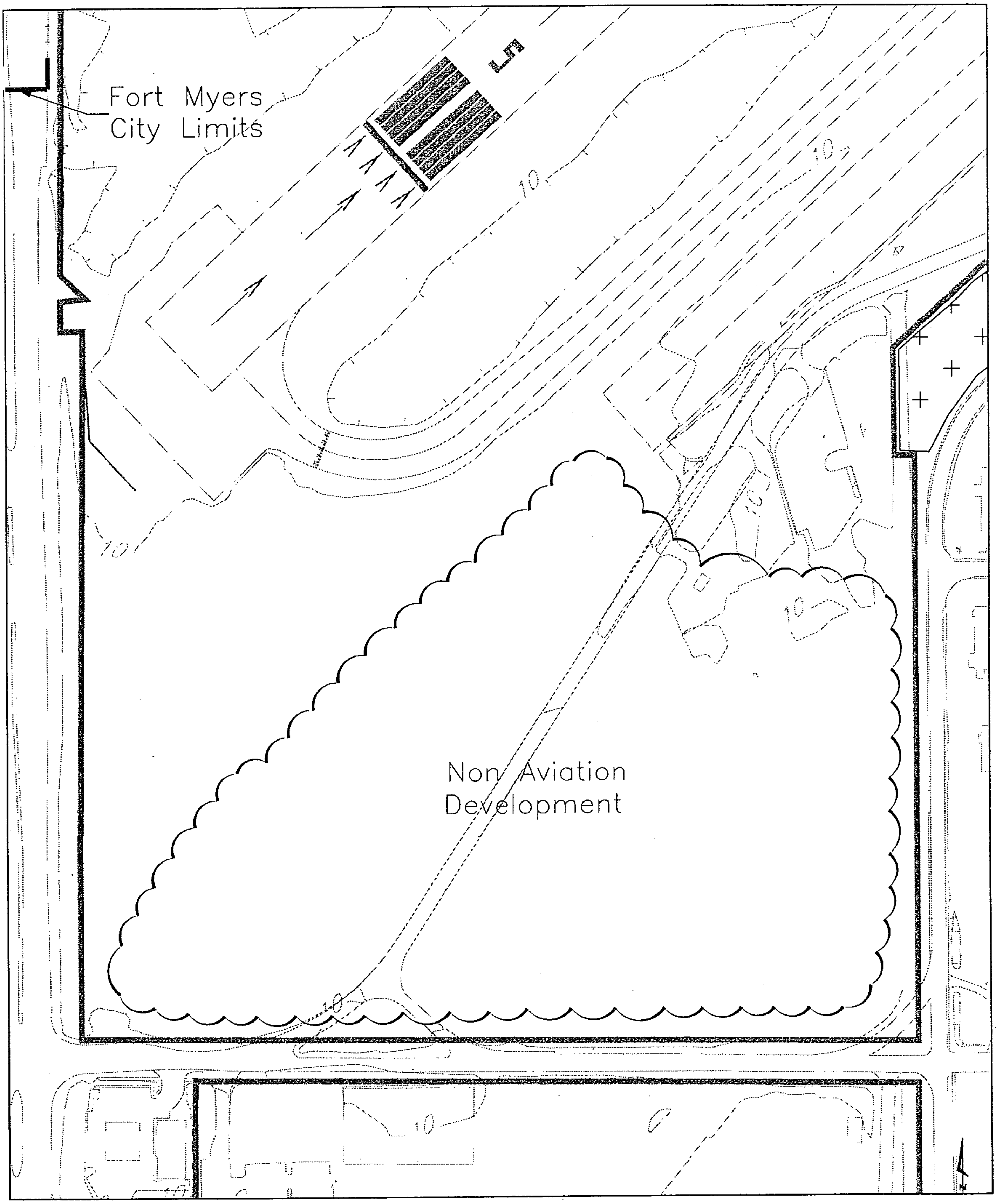
Southwest Quadrant
Alternative B
Exhibit 6-15



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Southwest Quadrant
Alternative C

Exhibit 6-16

Preferred Alternative - South Quadrant Western Portion

Few remaining options exist at the airport for revenue enhancement to support the construction of the aviation related facilities. The location and frontage to US 41 is so desirable for commercial and retail property that Alternative C is the preferred development alternative for this parcel of land. In fact, the airport already has parties interested in developing this parcel. ADG III aircraft can easily be accommodated in the West Quadrant of the airport which has more expansion capability and a high profile access. As there is no current demand for ADG III facilities, they are not critical to the medium or short term development program. Rather they can be accommodated along the south ramp or in the West Quadrant of the airport as demand dictates. More alternatives relative to the West Quadrant are outlined in the subsequent analysis.

West Quadrant

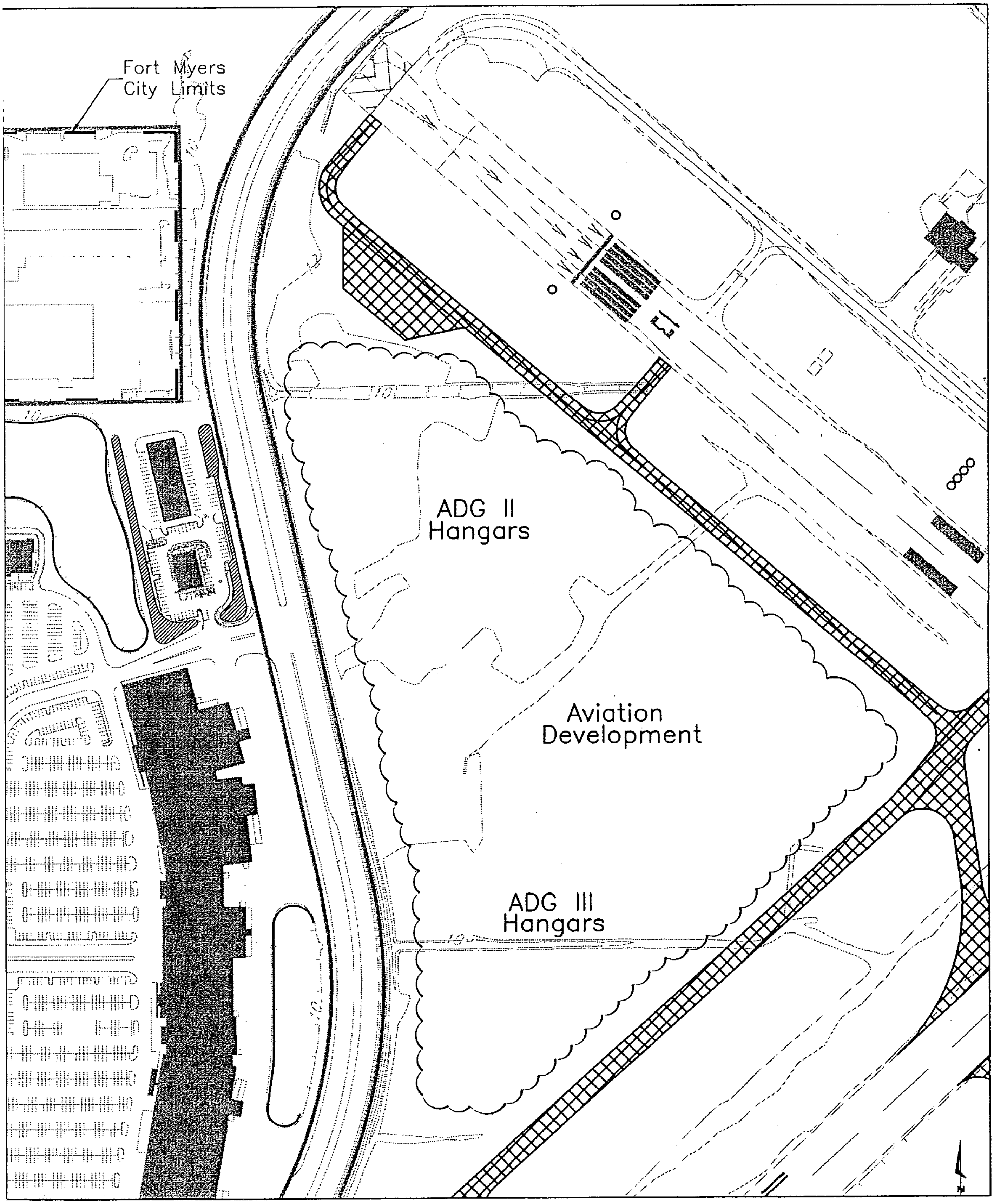
The West Quadrant of the airport is located east of Fowler Road and is presently a greenfield site, with no existing buildings and little infrastructure. A number of open ditches and drainage swales that provide storm water run-off from the airport's runways and taxiways currently transit the area. The area is fairly low lying so storm-water management will be a major issue when developing this area. Along the southern border of this quadrant is the glide slope antenna and glide slope critical area. Therefore, a small portion of the quadrant is restricted from development. No parallel taxiways exist on the west side of either runway so aviation development in this area will require additional infrastructure. An existing lighted intersection serving Page Field Commons shopping development offers the potential for good access into the site. Because of the frontage and access, the site offers a good opportunity for both aviation and non-aviation development.

Alternative A – ADG II and III Cabin Class Hangars

Alternative A proposes approximately 32 acres for a multi-hangar complex, including airside and landside access. This is more than any other hangar alternative previously discussed. The proposed land use for Alternative A is depicted in **Exhibit 6-17**.

Attributes
- Excellent location for hangar development, centrally located on airfield
- Good landside access with an existing signaled traffic light
- High profile access
- Good access to runway ends without a lot of runway crossings
- Incorporates ADG II and III activity efficiently into the traffic flow for Runway 5

Drawbacks
- Pushes need for taxiway infrastructure to be constructed on west side of airfield
- Utilities are limited
- Questionable demand and costly for airport to develop in short term
- Impacts to drainage swales
- Potential environmental impacts



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West Quadrant
Alternative A
Exhibit 6-17

Alternative B – Mix of Aviation and Non-Aviation uses

Alternative B is comprised of approximately six acres of commercial or retail property and 26 acres of future aviation related development. The property provides for excellent landside access with an existing lighted traffic signal on Fowler Road. This alternative combines the revenue generating potential of the site with the ability to meet the needs of aviation related demand well into the future. Similar to Alternative A, storm-water management will be a key issue with any development that occurs on the west side of the airport. **Exhibit 6-18** provides a layout of this proposed alternative.

Attributes
- Excellent frontage to Fowler and US 41for retail/commercial development
- Traffic light intersection already exists
- Can develop aviation facilities as demand requires
- High profile access
- Allows for considerable aviation related development
- Flexibility to develop non-aviation at any time during planning period
- Non aviation can build infrastructure base to help support aviation related expansion
- Good revenue generation potential to help support other airport development

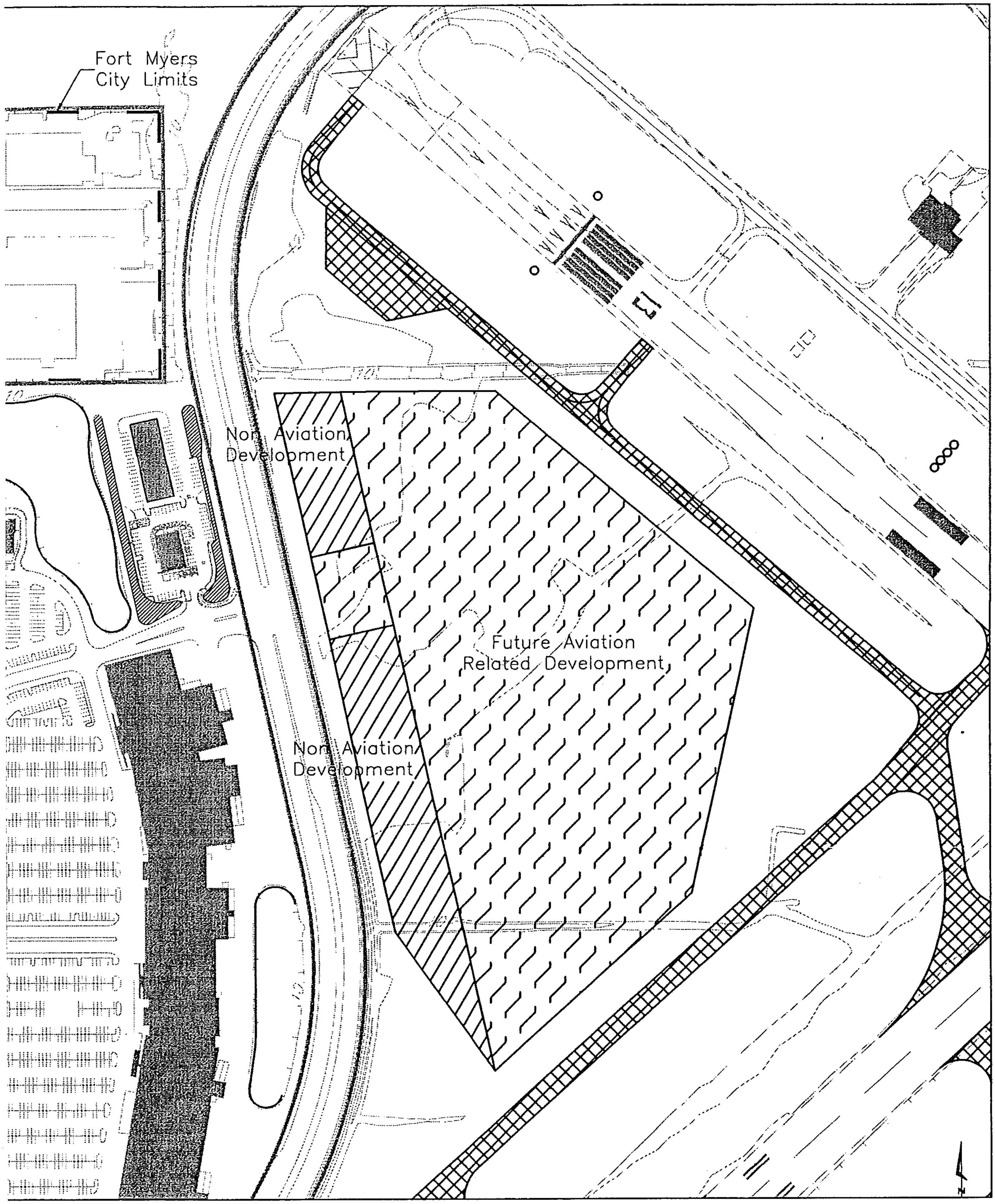
Drawbacks
- Utilities are not presently available
- Site limitations due to runway visibility zone and taxiway OFA requirements
- Requires taxiway infrastructure to be in place before aviation development occurs
- Commercial development may require DRI study

Alternative C – Non-Aviation Development

Alternative C consists of a commercial/industrial park. This alternative would give the airport extensive revenue potential but would potentially restrict the long-term aviation development of the airport. The location is ideal for commercial development, with good landside access to a major arterial road, and between 20 and 30 acres available for the development of multiple commercial or industrial buildings. Although revenue generating potential is a critical component of the feasibility of the development program for Page Field, this land is also well suited, as the infrastructure becomes available, to support a considerable amount of aviation development. A potential layout for the proposed land use is presented in **Exhibit 6-19**.

Attributes
- Little or no expense for the airport if a privately developed
- Good accessibility from Fowler road, a main arterial roadway
- Extensive revenue potential

Drawbacks
- Perception of "giving up" airport property for non aviation development
- May restrict long term aviation potential at the airport.
- Potential drainage and environmental impacts
- May never again be available for aviation
- Will likely require DRI study



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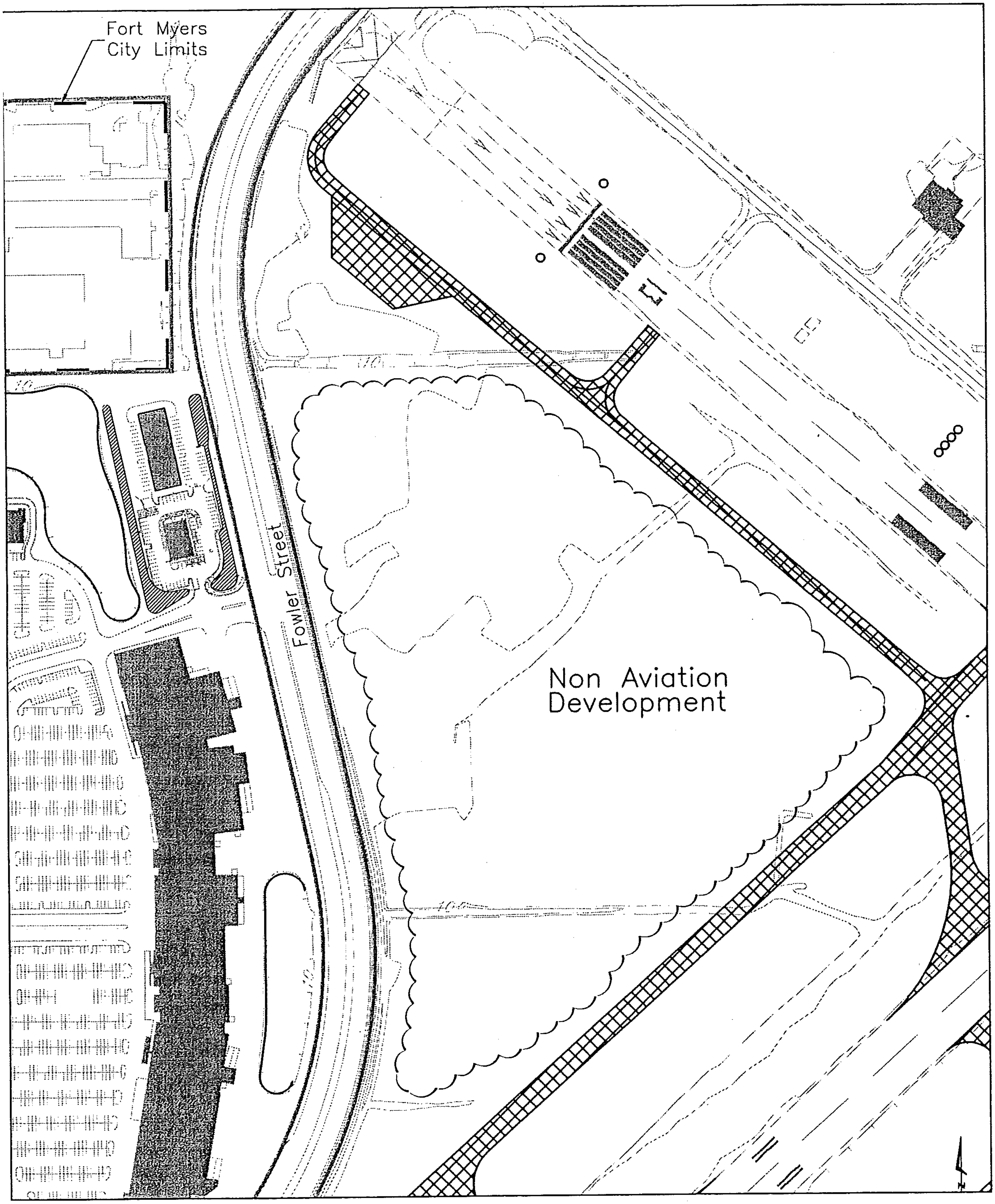
West Quadrant
Alternative B

Exhibit 6-18



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West Quadrant
Alternative C
Exhibit 6-19

Preferred Alternative-West Quadrant

The preferred alternative for the West Quadrant is Alternative B. Alternative B balances the need for additional revenue generation with the ultimate development requirements of aviation related facilities. It provides the airport the flexibility to develop this area when needed, as it is recommended that complete build out of the other quadrants occur before the aviation development commences on the west side (unless support infrastructure development and demand justifies otherwise).

SUMMARY

Preferred development alternatives were identified for each major facility and each area of the airport. The preferred alternative for the North Quadrant proposes the development of a GA Terminal and support facilities east of the Page Field Commerce Center. This allows the balance of the north side to support both aviation and non-aviation related development. The preferred alternative for the east quadrant of the airport proposes maximizing the development potential for T-hangars in support of the severe shortage that currently exists at the airport. The eastern portion of the South Quadrant is redeveloped to support the East Quadrant in meeting the demand for the T-hangars. The west portion of the South Quadrant is reconfigured to maximize the potential for commercial development while the balance of the South Quadrant remains available to support based aircraft parking and aviation related businesses. The proposed alternative for the West Quadrant of the airport provides for some additional revenue potential and the long term aviation development of the airport.

The combination of the preferred alternatives meets or exceeds all of the minimum requirements established in the Facility Requirements chapter. Additionally, the proposed improvements meet or satisfy the key requirements or issues for the strategic development of the airport, as put forth at the outset of this chapter. The preferred alternatives outlined herein will continue to be refined into the overall development program for the airport. Phasing of each component will be a key aspect of this program.

Chapter Seven – Environmental Overview

INTRODUCTION

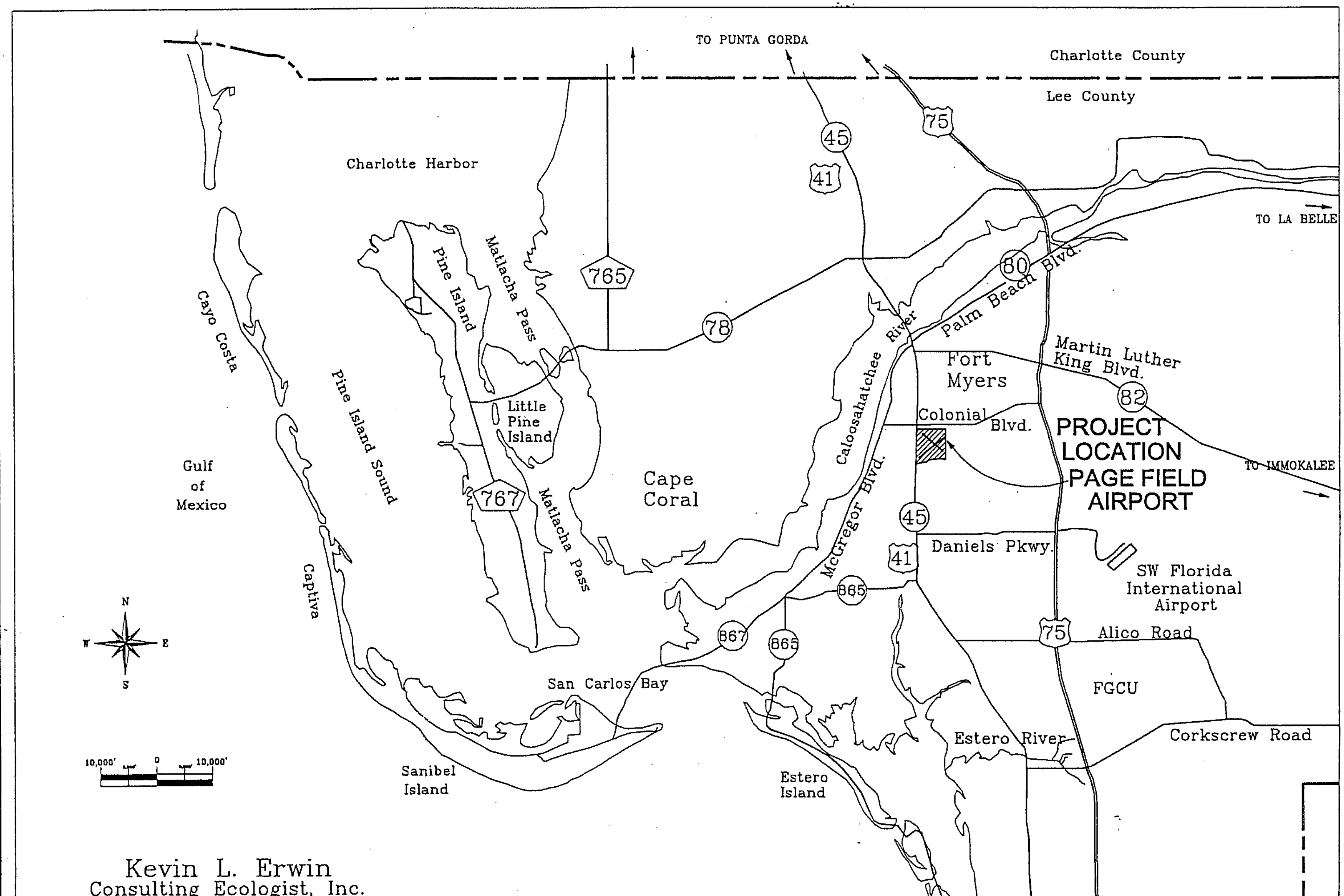
Page Field is located in portions of Sections 1 and 12, Township 45 South, Range 24 East in Fort Myers, Florida on the east side of U.S. 41 south of Colonial Blvd (**Exhibit 7-1**). The facility opened as an airport in 1927 with sod runways. Construction of three concrete runways by the Federal Work Projects Administration began on January 1, 1940. At this time the U.S. Army Air Corps used Page Field as a training facility. The airport was greatly expanded in late 1942, when the runways were extended and numerous buildings were constructed, mainly to the south of Danley Drive. The Army deactivated the airport shortly after the end of World War II. Further construction included development of the Fort Myers Airways AST Farm in the 1960's, the Fort Myers Airways Maintenance Building, and the construction of the Fort Myers Airways offices and Mike's Landing restaurant in the late 1950's. The airport served the commercial service transportation needs for Lee, Charlotte, Hendry, Collier, and Glades Counties until the Southwest Florida Regional Airport (RSW) opened in May of 1983. Page Field currently functions as a general aviation airport.

As part of the current Master Plan update, environmental conditions at Page Field were examined. The only modification that could have any environmental significance is the addition of an approach lighting system (ALS) to serve Runway 5. An approach lighting system represents an improvement to the operational capabilities of a runway that has the potential to result in a higher concentration of activity during nighttime hours. Further, the facility has equipment requirements that extend to either 1400 feet or 2400 feet prior to the landing threshold of a runway. The mounting structures for the lights as well as access and power requirements typically require that some site work be done along the extended centerline of the runway throughout this area. Finally, light emissions must be considered, particularly with respect to the Runway Alignment Indicator Lights (RAIL) which are located between 1400 feet and 2400 feet from the threshold and provide a progressive strobe effect which 'points' to the location of the runway end. These lights, primarily the strobe effect, have the potential to create a negative impact on homes or other light sensitive land uses near the lighting system.

The remainder of the proposed development is not expected to result in significant, if any, adverse environmental impact. Typically, non-runway development, that does not include land acquisition, rarely triggers the need for a formal environmental assessment.

Three categories of environmental review relevant to airport development are outlined in 40 Code of Federal Regulations (CFR), Parts 1500-1508. The three categories are:

- Categorical exclusions (CEQ 1508.4) - 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 (EA) (CEQ 1508.9) - Project normally requiring an EA are actions that have been found by experience to have significant environmental impacts.
- Actions normally requiring an Environmental Impact Statement (EIS) (CEQ 1508.11) - The purpose of an EA is to determine whether or not a project will have significant impacts. Based on the results reported in an EA, the Federal Aviation Administration (FAA) then prepares either a finding of no significant impact (FONSI) or an EIS.



Kevin L. Erwin
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Project File: LPAE3101	AutoCAD File: Page Field	Drawing Date: 2-15-06	Drawn By: MGV
Lee County	Township 46 S	Range 25 & 26 E	Section(s) 17,20,30,3
Approved By:		Date:	
Revision Date:	Comments		Verified By:

Exhibit 7-1. Page Field airport location map

According to FAA Order 5050.4A, an EA is needed to secure federal financial participation in, or airport layout plan approval of the following:

- New airport location
- New runway
- Major runway extension
- Runway strengthening what would result in 1.5 DNL or greater increase in noise over any other noise-sensitive area location within the 65 DNL contour.
- Construction or relocation of a service road that intersects public access road that affects the capacity of such public road.
- Land acquisitions in association with any of the above items plus land acquisition which results in a relocation of residential units when there is evidence of insufficient comparable replacement dwellings, major disruption of business activities, or acquisition that involves lands covered under U.S. Department of Transportation (DOT) Section 4 (f).
- Establishment or relocation of an instrument landing system (ILS) or an 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 environmental impacts; significant impacts on natural, ecological, cultural or scenic resources; use of wetlands; conversion of prime farmlands; endangered species; etc.

Considering the recommended improvements at Page Field, it is anticipated that only one proposed project may require a formal EA. As noted prior, this project is the addition of an approach lighting system to serve Runway 5. However, the high cost of acquiring the required land for this system may delay its development indefinitely and possibly even threaten its feasibility altogether.

The proposed improvements to Page Field are not anticipated to either significantly increase the volume of traffic or change the characteristics of this traffic. These are the major FAA criteria that determine if a formal EA will be required. Chapter 5 of the *Airport Environmental Handbook* (FAA Order 5050.4) requires the evaluation of airport development projects based on 20 potential impact categories for an airport as they relate to recommended improvements to Page Field.

ENVIRONMENTAL OVERVIEW

This overview, while not prepared to the level of detail required for an EA, provides a preliminary analysis of the issues that are typically assessed during the EA process. Preliminary analysis of environmental conditions related to the recommended Page Field improvements were conducted for these impact categories:

- Vegetation and wetlands
- Listed species
- Drainage and hydrology
- Water quality
- Flood hazards
- Air quality
- DOT Section 4 (f) lands
- Historical and archeological sites
- Energy and natural resource use
- Construction impacts
- Noise

An Environmental Overview was prepared in 1993 by Carter Burgess as part of the previous Master Plan study. That analysis concluded that the areas of potential environmental concern consisted of noise impacts and ground water contamination from previous land uses.

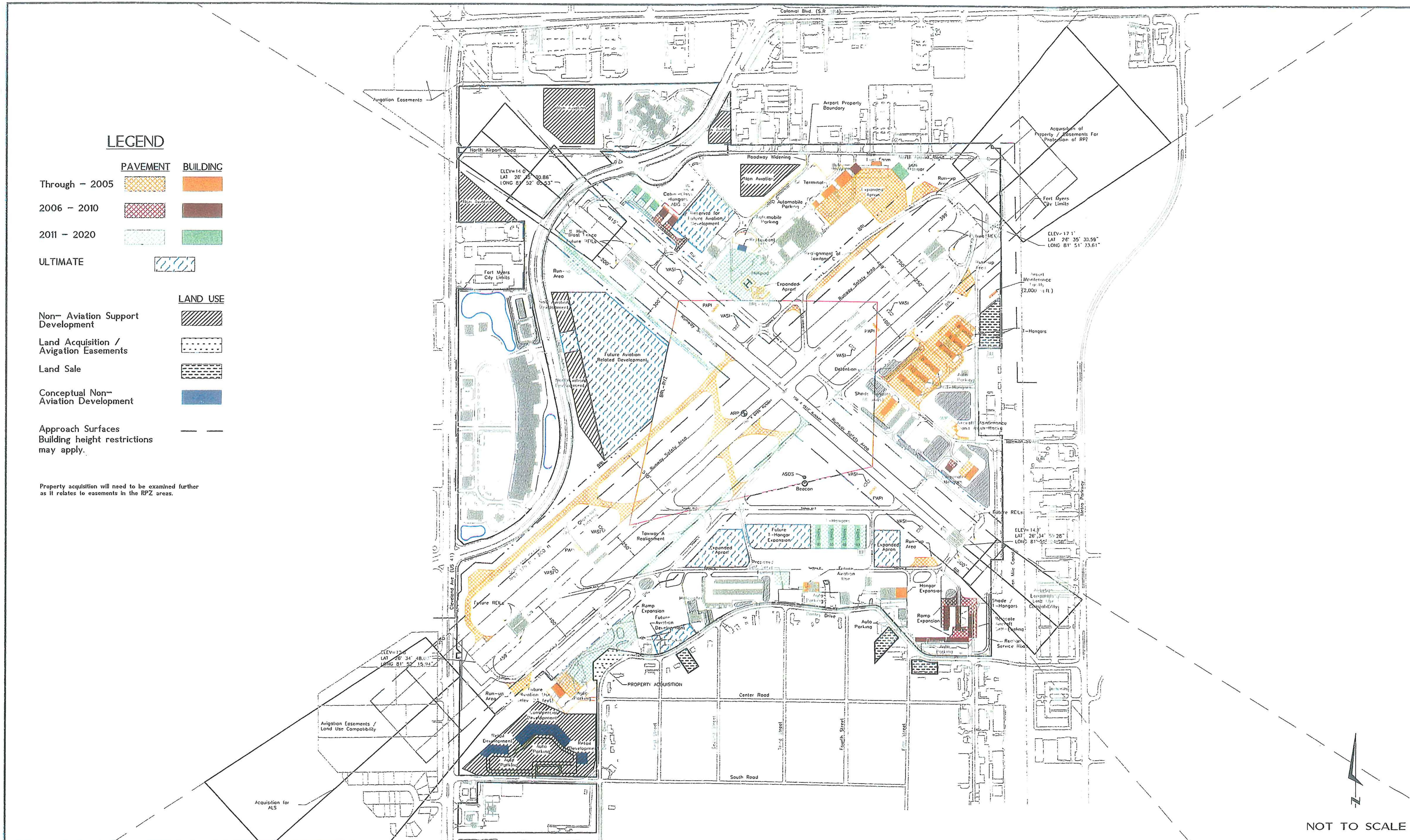
The 1999 Master Plan (**Exhibit 7-2**) proposes many new improvements that will improve safety at the airport and meet the needs and demands of the growing general aviation community in Southwest Florida. The largest project in terms of infrastructure, development and cost will be the relocation of the General Aviation Terminal from the South side of the airfield to the North side.

The new terminal is proposed for development before the year 2005 and is located Northeast of the Page Field Commerce Center, where the airport maintenance facility is currently located. The north ramp, which was recently rehabilitated and currently remains unused, will serve the new GA Terminal. The move will allow for a segregation of itinerant and local based aircraft at the airport. Larger jet aircraft including all itinerant traffic will be parked on the north ramp, while the smaller propeller driven aircraft, operated mostly by local based customers, will occupy the South ramp. To provide for adequate circulation and movement to and from the primary runway and other service facilities on the airport a new parallel taxiway will need to be constructed to the northwest of Runway 5-23. Additional development on the North side proposes five cabin class hangars on an unoccupied site located between the FAA's remote air to ground communication site and the fire station.

On the east side of the airport, at a site currently occupied by the Department of Transportation's maintenance and storage yard, the plan proposes development of a combination of fifty-eight T-hangars and shade hangars as well as an aircraft wash facility and aircraft self-maintenance facility. Two additional corporate hangars and the relocated airport maintenance facility will also be located on the east side of the airport.

On the Southeast side of the airfield thirty-two T-hangars are proposed along with some ramp expansion to accommodate the ingress and egress associated with the T-hangar operations. The Aviation Center's bulk hangar is scheduled for expansion to accommodate the growing demand for hangar facilities at the airport. Thirty-two additional T-hangars are also proposed for development on the South side of the airfield between Taxiway A-3 and Taxilane D. The Southwest side of the airfield will include ramp expansion and aviation related business development, as well as some retail and commercial development along U.S. 41. The feasibility of the addition of an approach lighting system to serve Runway 5 will require considerable land acquisition and is being further explored. The west side of the airfield has been reserved for future aviation related businesses and some commercial development.

During the preparation of this Environmental Chapter, Kevin L. Erwin Consulting Ecologist, Inc. (KLECE) reviewed pertinent available documents and permits. This included the Environmental Overview, prepared in 1993, site assessment reports for Page Field and the Fort Myers Airways lease sites prepared by TKW Consulting Engineers, Inc. in 1999, and permits for existing airport facilities provided by the Lee County Port Authority (LCPA) (**Table 7-1**).



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Page Field
Development Program

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Exhibit 7-2

Table 7-1 Permits Issued For Airport Property And Adjacent Lands			
Permit #	**Date Issued**	**Location**	**Description**
PRT-673842	1/1/90	Page Field	Take minimum number of migratory birds for depredation purposes, except listed species
AP 90-2	7/1/90	Page Field	Use of shotguns, Avitrol and other scare methods to take birds except listed species
PRT-808633 WN 95073	11/9/95 10/9/95	SE portion of airport	Removal of one inactive burrowing owl burrow
36-02961-S	9/21/95	Apron Expansion	No wetlands, no listed species
PRT-808282	10/27/95	Page Field	Take 9 inactive burrowing owl burrows
36-00110-D	11/9/95	Fowler Street Improvements	Impact 0.65 acres of manmade ditches, no natural wetlands Burrowing owls on site
PRT-808633	1/1/96	Page Field	Take one inactive burrowing owl burrow
AP 96-03	7/9/96	Page Field	Use of shotguns, Avitrol and other scare methods to take birds except listed species
36-02961-S	2/26/98	Page Field Ramp Rehabilitation	Modification of surface water management system Impact 0.27 acres of manmade ditches, no natural wetlands, No endangered species
WN 97121	8/20/97	Page Field	Take 3 inactive burrowing owl burrows
36-02961-S	3/9/99	Page Field Rehabilitation Ramp B Expansion	Modification of surface water management system No wetlands on site Suitable habitat for burrowing owl

Vegetation and Wetlands

A majority of the Page Field property consists of impervious surfaces (runways, taxiways, roads, and buildings) and maintained grass areas. Common species in these mowed grass areas include bahia grass (*Paspalum notatum*), broomsedge (*Andropogon* spp.), finger grass (*Chloris* sp.), spurge (*Chamaesyce* sp.), spemacoce (*Spermacoce* sp.), and frog-fruit (*Lippia nodiflora*). Less than one acre of remnant native upland habitat occurs in the southeast corner of the property. This area is a disturbed area of pine flatwoods that has become invaded by exotics. Common species in this area includes slash pine (*Pinus elliottii*), saw palmetto (*Sernoa repens*), melaleuca (*Melaleuca quinquenervia*), and Brazilian pepper (*Schinus terebinthifolius*) An area of scattered live oak (*Quercus virginiana*), cabbage palm (*Sabal palmetto*), slash pine, and laural oak (*Quercus larifolia*) in a mowed field is also present in the northwest corner of the property..

No natural state or federal jurisdictional wetlands occur on-site. However, the site does contain a network of upland cut drainage canals that convey surface water across the site. These ditches are vegetated by species such as cattail (*Typha* sp.), spike-rush (*Eleocharis* sp.), arrowhead,(*Sagittaria* sp.) and climbing hempvine (*Mikania scandens*). An area of mowed grasses, approximately 4 acres in size, located adjacent to the Fowler Street Extension currently ponds water after rainfall events. This area is slightly lower than the surrounding mowed area and may collect water due to drainage conditions associated with the adjacent roadway or commercial development to the northwest. This low spot does not currently meet the requirements of a jurisdictional wetland.

The ditches and the low spot adjacent to Fowler Street may or may not be considered to be jurisdictional wetlands or surface waters at the time of future airport expansion activities, depending on the condition of the areas and implementation of agency policies at that time of development. The South Florida Water Management District (SFWMD) did consider the portions of the man made ditches as jurisdictional surface waters (not wetlands) in their review and permitting of the Fowler Street improvements, Page Field Commons, and the Page Field Ramp Rehabilitation (**Table 7-1**).

The proposed development activities are not anticipated to have significant adverse impacts to the existing uplands and man made wetlands on the property. As discussed above, these features are highly disturbed and provide minimal ecological functions or values. An Environmental Resource Permit (ERP) from the State and/or a 404 Dredge and Fill Permit from the federal government may be required for impacts to the ditches and low area (if they are determined to be jurisdictional at the time of development). Wetland mitigation is not anticipated to be required for impacts to these areas.

Listed Species

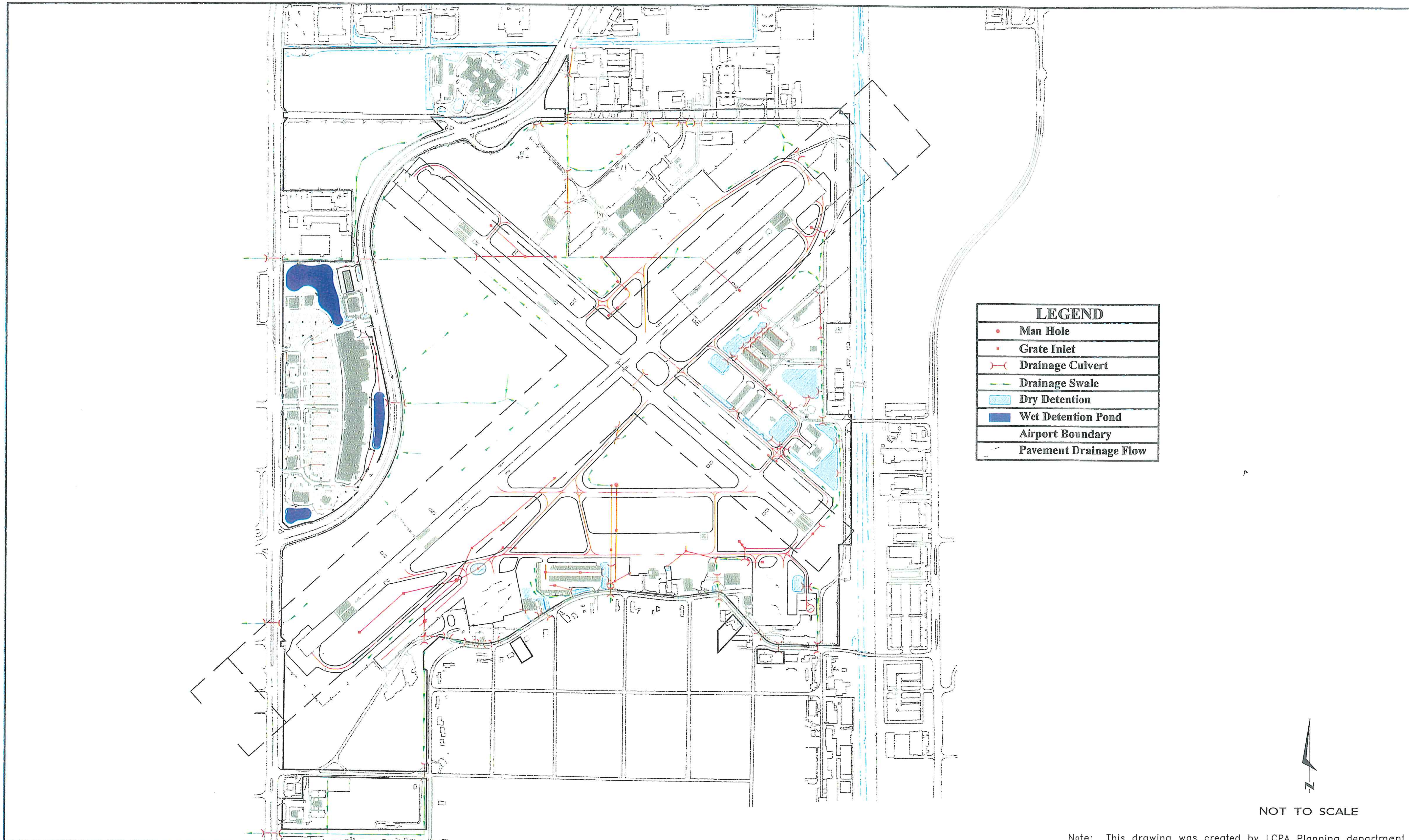
As described above, a majority of the Page Field property has been significantly disturbed and therefore provides minimal habitat for listed species. The upland grassed fields are regularly mowed and the ditches are periodically maintained. Therefore, the potential for listed plant species populations to become established is extremely low. No federally listed plant species have been reported to occur on-site.

The site does have the potential to provide limited habitat to listed bird species. Listed wading birds, such as the little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), and white ibis (*Eudocimus albus*) (all listed by the Florida Fish and Wildlife Conservation Commission (FWC) as a Species of Special Concern) may potentially forage in the ditches within the property. Burrowing owls (*Athene cunicularia*) (listed by the FWC as a Species of Special Concern) are known to nest on the property and adjacent lands. Nests have been observed in the maintained grass fields of the airport property. Burrowing owl nest removal permits have been issued for several areas on the airport property including the areas that are now Page Field Commons and the Fowler Street Extension (**Table 7-1**).

The proposed improvements to Page Field are not anticipated to have significant impacts to federally listed species. No nesting by federally listed species or critical habitat for federally listed species occur on the Page Field property. Periodic foraging by State listed wading birds will continue to occur in the man made canals. Continued maintenance of low growing grass areas associated with the airport runways will continue to provide potential burrowing owl habitat. Prior to development activities a survey for burrowing owls should be conducted and the required state and federal permits obtained to insure impacts to this species is minimized to the extent practicable. Permits to take inactive burrows outside of the nesting season (February through July 10th) can typically be obtained from the appropriate agencies.

Drainage and Hydrology

The existing property drains via a network of upland cut drainage ditches. Surface water flows in the ditches to the west, north, and south (depending on the portion of the property) and discharge off-site to existing drainage features (**Exhibit 7-3**). There is no direct connection between the drainage ditches on-site and the adjacent Ten Mile Canal to the east.



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Existing Airfield Drainage Plan

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Exhibit 7-3

As expansion of the airport facilities occurs, a surface water management system will be required by the SFWMD in order to meet applicable current state surface water management standards.

Water Quality

Site assessment reports have been previously prepared for Page Field. The 1993 Environmental Paper describes pesticide contamination at the Link Duster site and that 100 cubic yards of material was removed from the site. The January 1999 Phase 1 Environmental Site Assessment of Page Field Airport and Lee County Port Authority Adjacent Properties, prepared by TKW, indicated that this area had been remediated to the satisfaction of the Florida Department of Environmental Protection. This report identified ten potential areas of concern. The potential contamination sources were primarily fuel storage facilities that had been closed but did not have a closure assessments and facilities with septic systems that stored or used hazardous substances. The revised Site Assessment Report for Fort Myers Airways Lease Sites, prepared by TKW indicated that soil and shallow ground water contamination by petroleum products had occurred at this location. The report recommended that the contaminated soils be removed and ground water be monitored.

Flood Hazards

Page Field is located outside of the 100 year flood plain and is located in hurricane storm surge risk Category 3. The proposed improvements to the airport facilities will include an appropriate surface water management system to insure that potential on-site and off-site flooding will not occur as a result of the expansion activities.

Air Quality

The 1993 Environmental Overview concluded that the ambient air quality in the Fort Myers area is considered to be good. That report also concluded that vehicular traffic was the primary source of air pollution in the vicinity of Page Field and that aviation activity would have to rise beyond predicted levels in order for the proposed improvements to cause significant reductions in ambient air quality. The increase in airport activity predicted by this current Master Plan update is also not anticipated to adversely impact ambient air quality.

Section 4 (f) Lands

The Department of Transportation Act, Section 4(f), recodified at 49 USC, Subtitle I, Section 303 defines Section 4(f) lands as public parks and recreational areas, or wildlife and waterfowl refuge of national, state of local significance, or land of a historic site of national, state of local significance. Contacts with the Lee County Division of Planning indicated that a single Section 4(f) land is located on the airport property. This consists of the 13.7 acre Jerry Brooks Park located near the southwest corner of Page Field. This park contains baseball, football, and tennis facilities. The existing use of this park will not be adversely affected by the proposed Master Plan revisions.

Historical and Archaeological Sites

As discussed above, the entire Page Field property has been highly disturbed by previous land use activities. A letter was submitted to Florida Site File, Division of Historical Resources requesting information on potential historical or archeological sites on the property. The response confirms that no historical or archeological sites (other than the airport itself) are known to exist on-site. The landowner may petition the Division of Historical Resources and request that the property be removed from the Florida Site File. It is recommended that the Lee County Port Authority file the petition to remove Page Field from the Florida Site File.

Energy Supply and Natural Resource Use

Energy consumption at Page Field results from three primary sources: terminal/airfield power requirements, surface vehicular traffic, and aircraft movement. The proposed improvements at Page Field are not anticipated to result in significant increases in energy demands for any of these three categories.

According to FAA Order 5050.4A Chapter 5 the evaluation of natural resource use (other than fuel) is required only if the proposed action requires materials that are unusual or in short supply. The proposed improvements will not be using materials that are unusual or in short supply.

Construction Impacts

Construction activities at Page Field may have a potential to create short term localized impacts. These impacts may include increased noise, dust and vehicular traffic typically associated with standard construction activities. The use of Best Management Practices and incorporation of the applicable provisions of Advisory Circular 150/5370 10 Standards for Specifying Construction of Airports, (change 10), Item P 156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control will insure that construction activities do not significantly adversely affect the surrounding environment.

Aircraft Noise

This section provides information relative to existing and future noise conditions at Page Field General Aviation Airport. The noise analysis is based on the current flight operation procedures for Page Field with basic assumptions relative to future runway usage and overall fleet mix. Aircraft operational levels experienced in 1998 were used to represent the existing conditions while projected activity levels for 2010 were used to represent the future. Furthermore, the 2010 projected noise exposure contours were compared to those outlined for the same year in the previous master plan. This allowed for a determination of whether future noise exposure (2010) is expected to be greater or less than that originally anticipated. This section overviews the methodology for the measurement of noise, the general impact of noise on a community and details the existing and projected noise exposure relative to the operation of Page Field.

Noise Metric

Since 1981, the FAA has used the Day-Night Average Sound Level (DNL) as the primary means of defining aviation noise. DNL is better described as the average sound level occurring in a particular geographical area during a standard 24-hour period. In order to effectively quantify noise and evaluate its effect on people, the DNL provides a current and thoroughly tested noise assessment methodology. The DNL metric further allows for frequency weighting to reflect the greater human tolerance for low-pitched sound and the reduced tolerance toward high-pitched sound. Accounting for the time-of-day, the DNL adds a 10-dB penalty to account for a greater sensitivity to noise and/or a lower background sound level at night. Additionally, the DNL reading provides a mean value for the sound energy level, which varies with time to accommodate an average community response.

Noise Contours

DNL noise levels are depicted by a series of contour lines superimposed on an airport layout map which outlines the airport and the surrounding areas. The noise levels are calculated for locations on the ground from the weighted summation of the airport flight operations for both the baseline and the future, in this case 2010, to allow for comparison. Certain operations have a profound effect and dominate the noise exposure relative to a particular location while other operations may pose a minimal impact due to their respective noise levels and/or location. A computer model is used to compile the noise information and develop the contour for insertion into digital base mapping.

Integrated Noise Model (INM) – Version 6.0

The FAA, Office of Environment and Energy, developed the Integrated Noise Model (INM) with assistance from ATAC Corporation, the Department of Transportation Volpe National Transportation System Center, and LeTech Incorporated. The INM is widely used and endorsed by the FAA for evaluating aircraft noise impacts in the vicinity of an airport. INM Version 6.0 was used for the analysis outlined herein.

INM 6.0, released September 30, 1999, is the first full INM release since INM 5.1 (January, 1997), and it is the first in a new series of releases since INM 5.0 (August, 1995). INM enhancements are based on user experience, advances in computation technology and recommendation by the noise modeling community including the Society of Automotive Engineers (SAE), Aviation Noise Committee (A-21). INM 6.0 represents the beginning of a major change in noise modeling practices for the FAA, in that the data and noise computation algorithms are moving to a system that considers the spectral shape of the noise produced by aircraft. This change will eventually allow INM to incorporate state-of-the-art noise propagation algorithms that account for acoustic effects currently not modeled. These include terrain shielding, various meteorological conditions, and excess attenuation effects that are currently under review by SAE A-21.

INM 6.0 is an effective noise model and the standard methodology currently used by the FAA. It assesses changes in noise impact resulting from:

1. New or extended runways or runway configurations
2. New traffic demand and changes in fleet mix
3. Revised routings and airspace structures
4. Alternative flight profiles
5. Modifications to other operational procedures

The fundamental components for computing noise in this model are a flight path segment and an "observer". For a given observer location, noise computations are performed on a flight segment However, the INM is not designed for single-event noise prediction. The INM is an average value model that estimates long-term average effects using average annual input conditions. The methods used to compute the flight path segments and the methods for computing noise levels at an observer position are compiled into a comprehensive annual average.

INM Program Input Assumptions

The aircraft fleet mix, airport operations, runway usage and airport activity based on the time-of-day were input into a computer model to generate the level of noise exposure at Page Field Airport. Runway usage information and the corresponding airport flight tracks are vital to the effect of noise on the airport. Aircraft flight procedures identified for the analysis are straight-in for aircraft arrivals and departures follow their respective runway headings. These flight procedures are expected to remain the same throughout the period from the baseline year to 2010.

Fleet Mix

In 1998, there were 248 based fixed wing aircraft at the airport. The mix comprised of 211 single-engine, 30 twin-engine and 7 jet aircraft. The most influential component of the mix on noise is typically the jet aircraft category. For the purpose of this analysis, estimated jet activity was split between the INM Learjet 25 and Learjet 35 aircraft categories. The INM Learjet 25 category, the nosier of GA jet aircraft, is estimated to account for approximately 20 percent of the jet operations during the base year. The remaining 80% were grouped in the INM jet aircraft category represented by the Learjet 35 aircraft. These aircraft are quieter than the previously mentioned Learjet 25 category and are more representative of the current jet fleet using Page Field. For 2010 this mix is expected to continue its trend away from the nosier Lear 25's toward the quieter Lear 35's. For the purpose of this analysis Lear 35 aircraft were used to represent 90% of the jet fleet operating at Page Field.

Airport Operations

The noise contours developed for the baseline year were reflective of the 1998 existing conditions with annual total operations of 81,046 while the 2010 projections were based on annual total operations of 110,018. The average daily airport operations at Page Field were estimated at 266, split on the basis of expected operations during the day or night. Ninety five percent of the operations at the airport were estimated to occur during the day (designated as between 7:00 am and 10:00 pm by FAA/INM) with the remaining five percent or, in this case 13 operations occuring during the night. This split was used for both the existing and future operational scenarios.

Runway Usage

For the purpose of this analysis Runway 05-23, the primary runway, accommodates 70% of all the airport traffic with 30% percent utilizing the crosswind, Runway 13-31. Jet operations were estimated at 90% on the primary ILS Runway 05-23 and 10% on Runway 31. Based on the operational splits estimated for 1998, Runway 05-23 accounts for a total of 188 operations with 179 operations during the day and 9 operations at night. Runway 13-31 accounts for a total of 79 operations with 75 operations during the day and 4 operations at night. Arrival activity was estimated equal to departure activity for both runways.

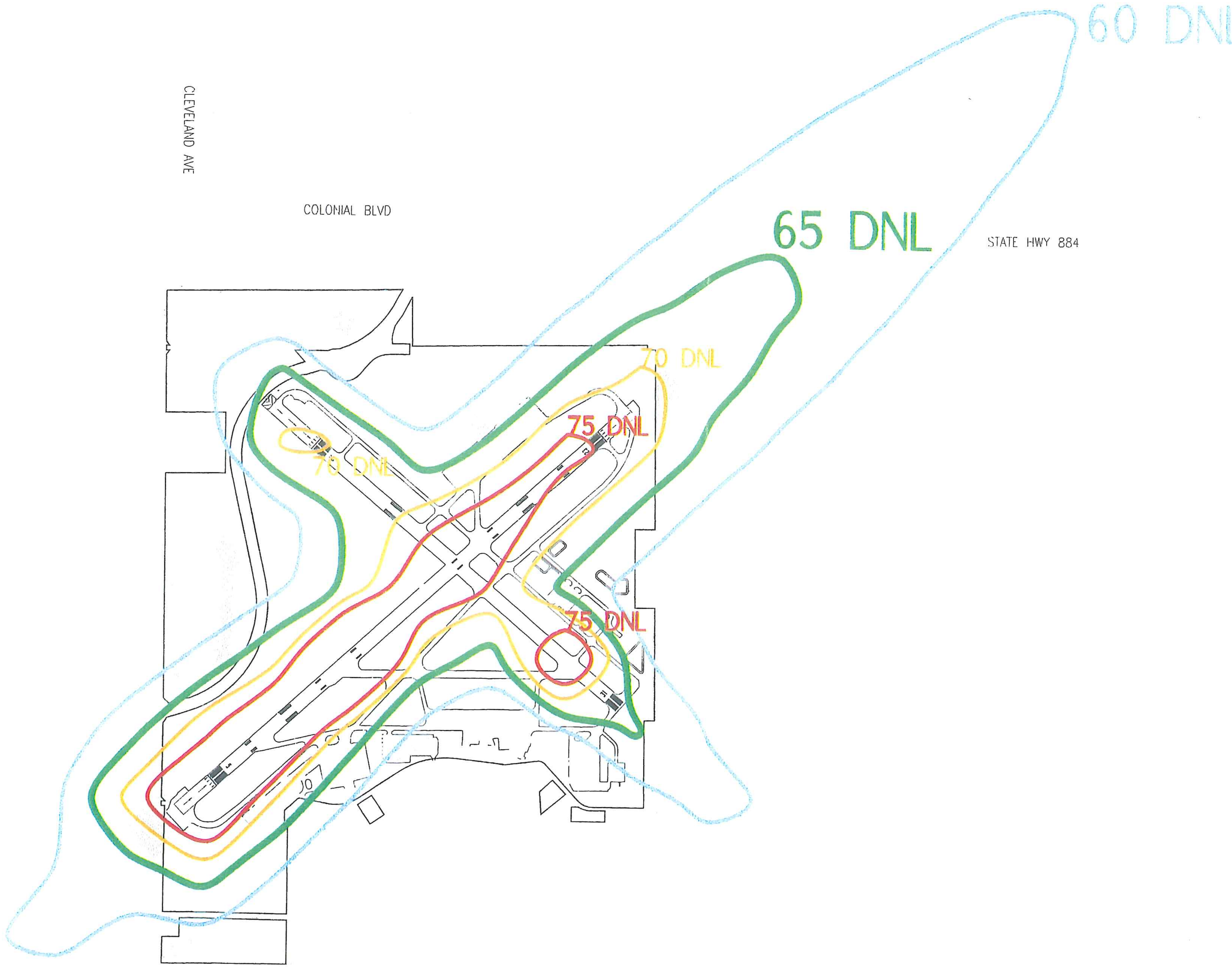
INM Program Output

Output from the INM program was generated in the form of graphical noise contours outlining the 60, 65, 70 and 75 DNL noise levels. **Exhibits 7-4** and **7-5** present noise exposure maps detailing the contours generated from the model for 1998 and 2010, respectively. As outlined in both the 1998 and the 2010 exhibits the noise contours extend farthest beyond airport property limits beyond the far end of Runway 5. This is due to the higher concentration of jet departures utilizing Runway 05. **Table 7-2** outlines the extent to which each contour extends beyond the runway end in both 1998 and 2010.

Table 7-2
Contour Extension Beyond Runway End

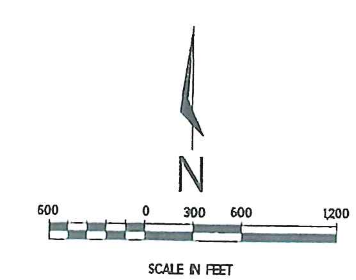
Runway End/Contour	1998	2010	Change
Runway 05 Approach			
60 DNL	2,228'	2,395'	167'
65 DNL	713'	713'	None
70 DNL	374'	321'	-53'
75 DNL	195'	149'	-46'
Runway 23 Approach			
60 DNL	6,287'	5,464'	-823'
65 DNL	2,272'	1,986''	-286'
70 DNL	454'	363'	-91'
75 DNL	-557'	-542'	15'
Runway 13 Approach			
60 DNL	675'	730'	55'
65 DNL	195'	273'	78'
70 DNL	723'	-177'	-900
75 DNL	N/A	N/A	N/A
Runway 31 Approach			
60 DNL	1,720'	1,844'	124'
65 DNL	336'	386'	50'
70 DNL	-398'	-371'	27'
75 DNL	-535'	-506'	29'

Table 7-2 also allows for a comparison of increases or decreases in noise exposure. As outlined in both the table and the graphical depiction in **Exhibit 7-6**, in 2010 there are slight increases in noise exposure off all runway ends with the exception of Runway 05 where a reduction in noise exposure occurs. These increases are due to increased aviation activity. The reduction of noise levels off Runway 05 is due to the reduction in Stage 2 Lear 25 departures. Although there is an increase in total jet departure activity on Runway 5 in 2010 compared to 1999, the reduction in noise exposure from the much larger Lear 25 more than offsets the increase in overall jet activity.



NOISE EXPOSURE CONTOUR SURFACE AREAS

DNL	ACRES	ACRES (WITHIN 5 DNL)
60	818.55	426.47 (60-65 DNL)
65	392.08	196.85 (65-70 DNL)
70	195.23	97.37 (70-75 DNL)
75	97.86	97.86 (75+ DNL)



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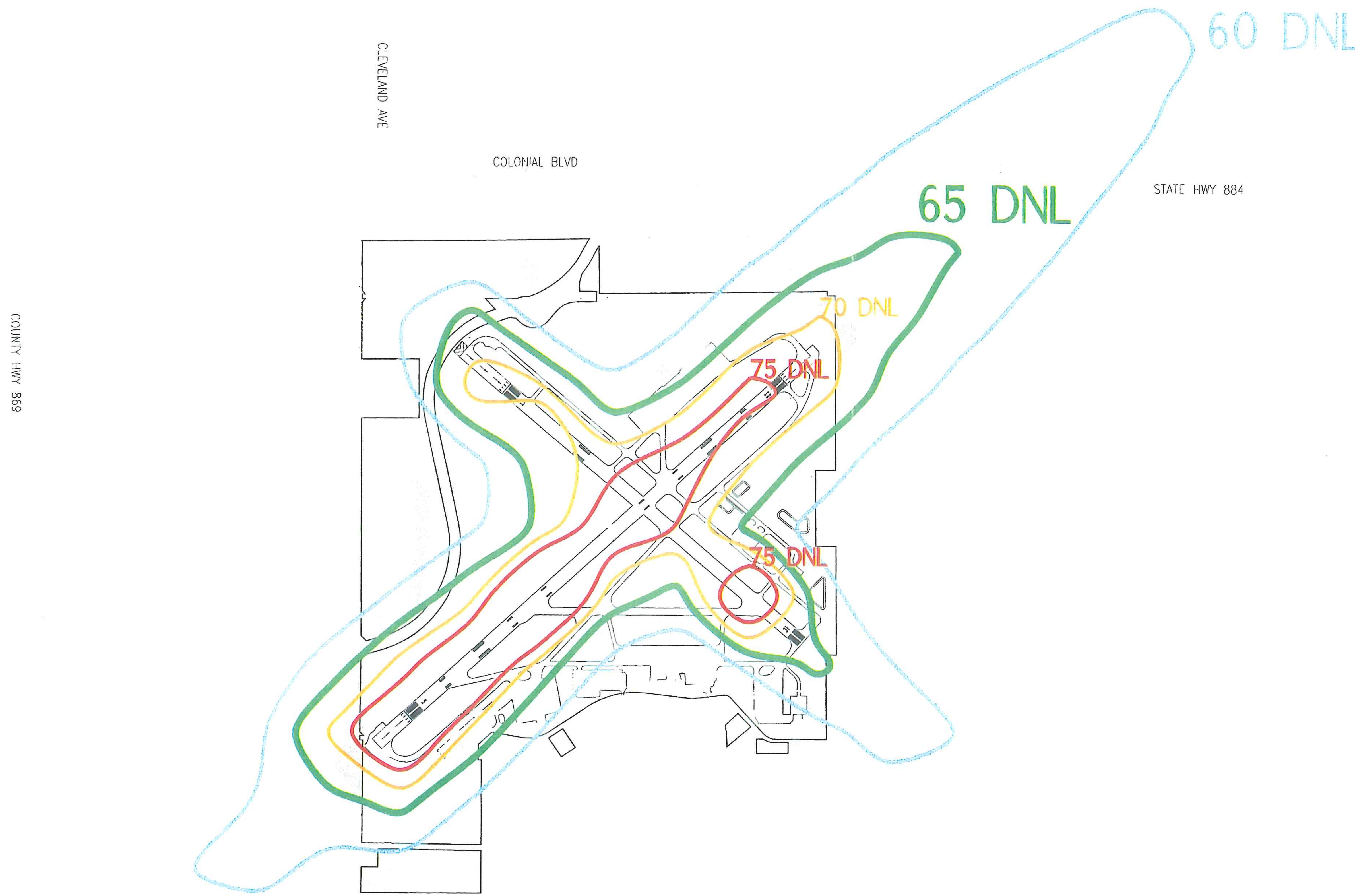
NOISE EXPOSURE MAP
1998

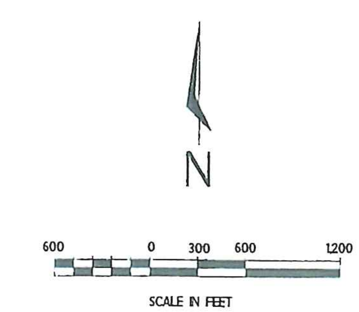
PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Exhibit 7-4



2010
NOISE EXPOSURE CONTOUR SURFACE AREAS

DNL	ACRES	ACRES (WITHIN 5 DNL)
60	789.51	411.90 (60-65 DNL)
65	377.61	181.73 (65-70 DNL)
70	195.88	103.70 (70-75 DNL)
75	92.18	92.18 (75+ DNL)



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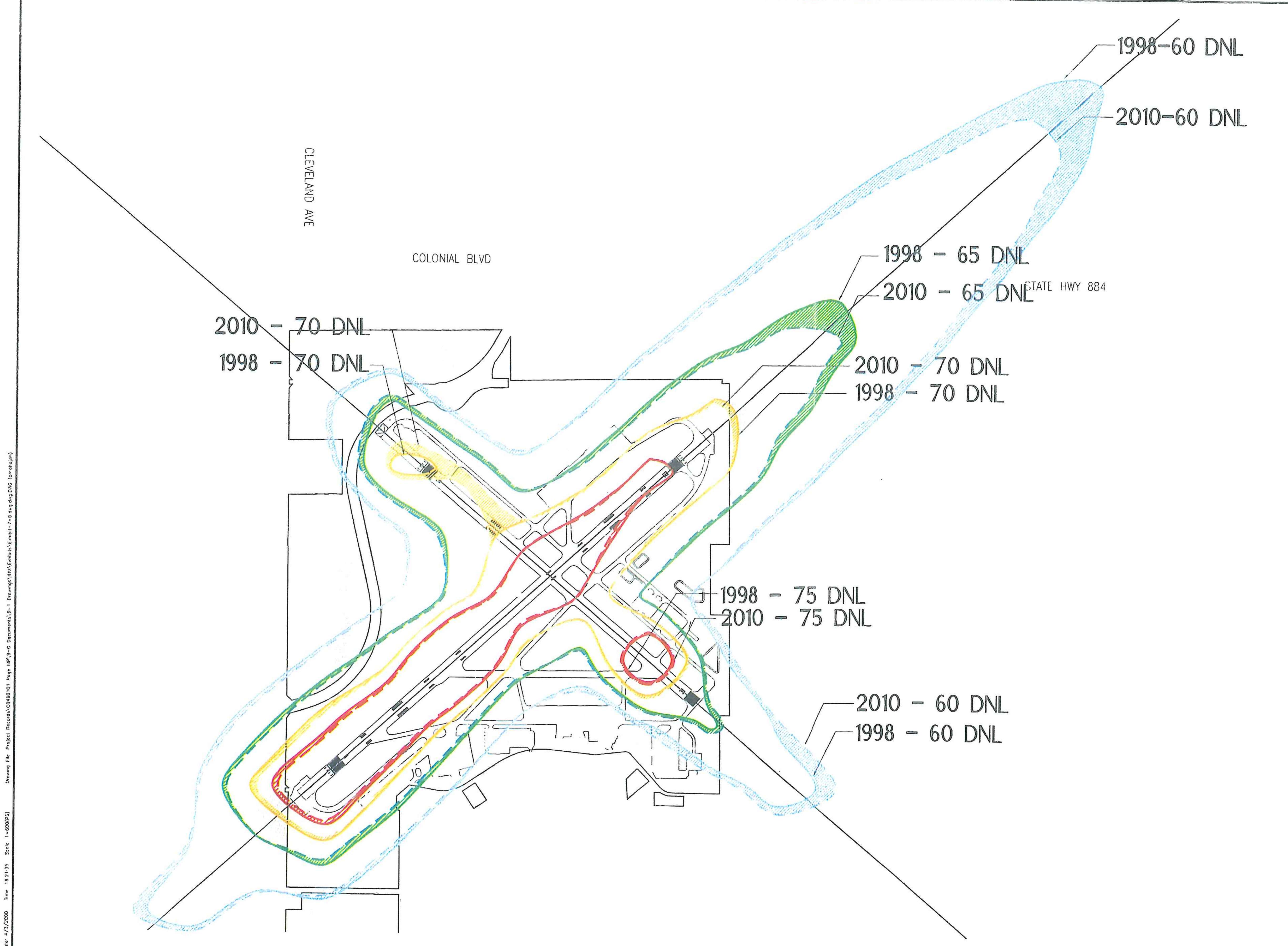
NOISE EXPOSURE MAP
2010

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

EXHIBIT 7-5



LEGEND

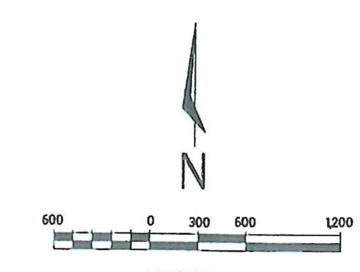
- 1998 - 60 DNL
- NOISE EXPOSURE CHANGE
- 2010 - 60 DNL
- 1998 - 65 DNL
- NOISE EXPOSURE CHANGE
- 2010 - 65 DNL
- 1998 - 70 DNL
- NOISE EXPOSURE CHANGE
- 2010 - 70 DNL
- 1998 - 75 DNL
- NOISE EXPOSURE CHANGE
- 2010 - 75 DNL

NOISE EXPOSURE SURFACE AREA (ACRES)

DNL	1998	2010
60	818.55	789.51
65	392.08	377.61
70	195.23	195.88
75	97.86	92.18

NOISE EXPOSURE ACREAGE (WITHIN 5 DNL)

DNL	1998	2010
60	426.47 (60-65 DNL)	411.90 (60-65 DNL)
65	196.85 (65-70 DNL)	181.73 (65-70 DNL)
70	97.37 (70-75 DNL)	103.70 (70-75 DNL)
75	97.86 (75+ DNL)	92.18 (75+ DNL)



Birk Hillman
Orlando · Miami · Atlanta

NOISE EXPOSURE MAP
(1998-2010)

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

EXHIBIT 7-6

Table 7-3 provides further information relative to the change in noise exposure between 1998 and 2010. This table outlines the total acreage falling within each contour as well as the incremental acreage between each contour.

Table 7-3
Area Within Contour Interval

	1998		2010		Difference	
DNL Contour	**Acres**	**Acres (w/in 5 DNL Range)**	**Acres**	**Acres (w/in 5 DNL Range)**	**Acres**	**Acres (within 5 DNL Range)**
60	818.55	426.47	789.51	411.90	-29.04	-14.57
65	392.08	196.85	377.61	181.73	-14.47	-15.12
70	195.23	195.23	195.88	195.88	.65	.65
75	97.86	97.86	92.18	92.18	-5.68	-5.68

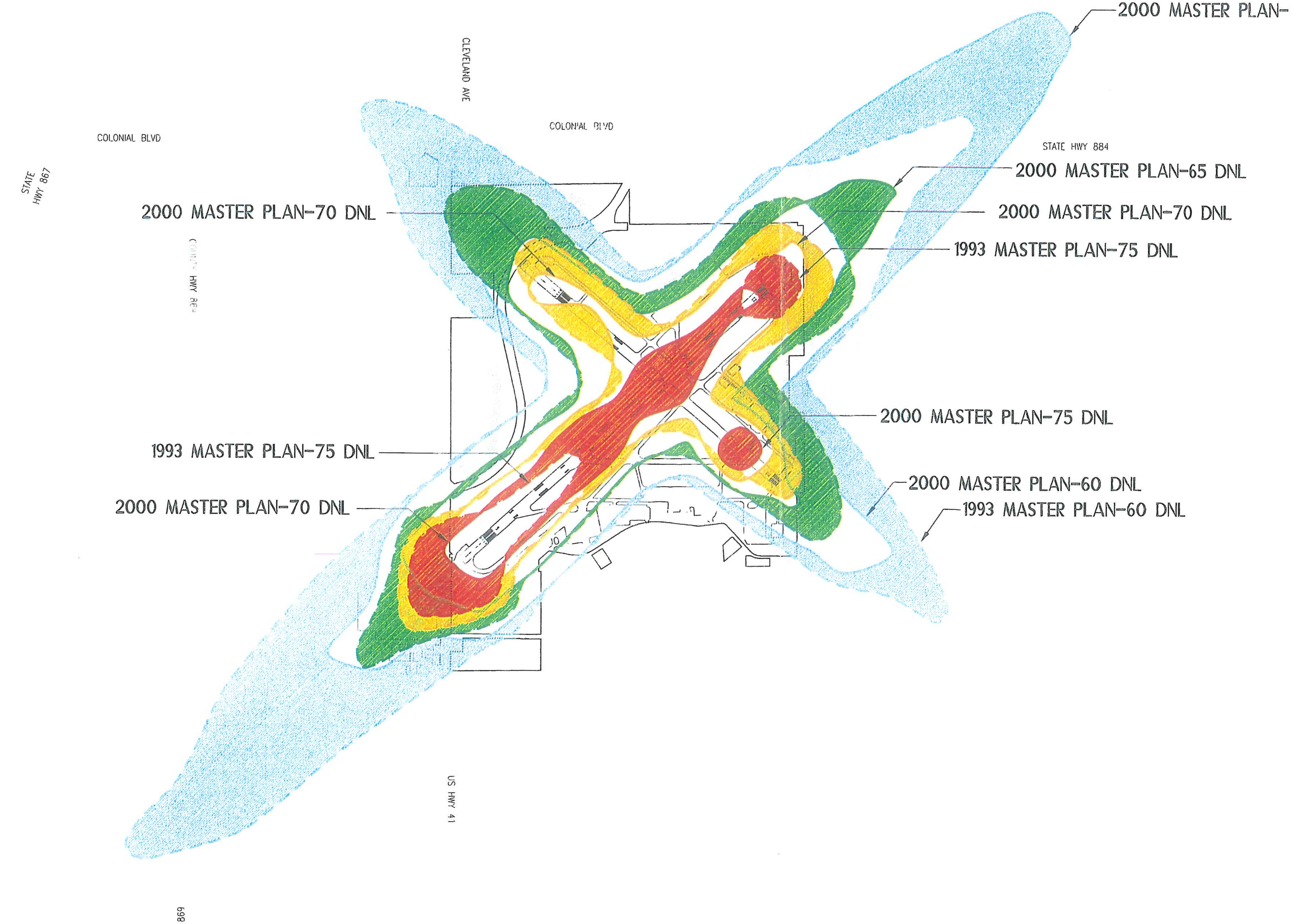
Table 7-3 indicates that, although the contours extend slightly on three of the four runway ends, the acreage falling within each of the contour intervals would, in most cases decrease. The overall acreage encompassed by the 60 DNL contour decreases from 818.55 acres in 1998 to 789.51 in 2010. Similarly, the 65 DNL decreases from just over 392 acres to just over 377 acres. The only contour that increases the acreage that it encompasses is the 70 DNL contour which increase by .65 acres to just under 196 acres of total coverage. This slight increase is contained within the airport boundary. Finally, the contour representing the highest noise level in this analysis, 75 DNL, decreases by over 5.5 acres for a reduction of roughly 5.5%.

Comparison to 1993 Master Plan

The 2010 noise exposure projection stemming from this study were compared to those identified in the 1993 Master Plan (using INM Version 3.9) to determine if the anticipated noise exposure was expected to be greater or less than that estimated in the previous study. **Exhibit 7-7** presents an overlay of the two noise exposure maps. It should be noted when comparing the two projections that the master plan update contours were based on a projected overall operational level of 110,018 in 2010, whereas the 1993 Master Plan was based on an annual activity level of 130,000 operations. As would be expected due to the higher activity levels, the area encompassed by the contours is considerably larger in the 1993 estimate of noise. Further, it can not be determined from the information available whether the 1993 Master Plan anticipated the considerable reduction in Stage 2 aircraft such as the Lear 25. All things considered, the projected noise exposure for 2010 outlined by this updated plan is considerably less than estimated in the approved version of the 1993 Master Plan.

Compatible Land Use

A review of the current use of land located in the vicinity of the airport combined with the anticipated future noise exposure provides guidance as to whether future mitigation will be required. Regardless of use, DNL levels below 65 are normally considered a compatible land use from a noise exposure perspective. It is important to note that land use compatibility relative to noise has no relation to land use compatibility relative to safety. That is, a land use can be deemed compatible from a noise perspective but incompatible due to safety considerations.



1999 PAGE FIELD MASTER PLAN
NOISE EXPOSURE CONTOUR SURFACE AREAS

DNL	ACRES	ACRES (WITHIN 5 DNL)
60	789.51	411.90 (60-65 DNL)
65	377.61	181.73 (65-70 DNL)
70	195.88	103.70 (70-75 DNL)
75	92.18	92.18 (75+ DNL)

1993 PAGE FIELD MASTER PLAN
NOISE EXPOSURE CONTOUR SURFACE AREAS

DNL	ACRES	ACRES (WITHIN 5 DNL)
60	1,069	562 (60-65 DNL)
65	507	214 (65-70 DNL)
70	294	222 (70-75 DNL)
75	72	72 (75+ DNL)

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1993 MASTER PLAN
2010 COMPARISON

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

EXHIBIT 7-7

As noise levels begin to exceed 65 DNL certain uses of land may be considered non-compatible or compatible with certain restrictions. These uses include residential, certain public uses such as schools, hospitals and churches, as well as certain agricultural and recreational uses. Commercial land uses and certain public, manufacturing and recreational uses are normally considered compatible with DNL levels below 70. As the noise levels begin to exceed 70 certain uses of land may be considered non compatible or compatible with certain restrictions.

When reviewing the contours for Page Field it can be determined that the 65 DNL level only extends off the airport boundary in two locations, beyond the Runway 23 approach end and the Runway 05 approach end. However, the current use of the land in these areas is considered compatible with the 65 DNL noise level. Land use falling within the 65 DNL contour beyond the Runway 23 end currently consists of pine and wet prairies, although a commercial shopping area is being considered for a portion of the land. Regardless, the use of the land is compatible with the 65 DNL level. Beyond the Runway 5 end, the 65 DNL level encompasses an area of commercial sales and service and light industrial development. Again, these uses are considered compatible with the 65 DNL level.

Reviewing the 70 DNL noise exposure level, it can be determined that the 70 DNL contour extends beyond the airport boundary at just one location, beyond the Runway 05 approach end. The small area of land encompassed by this contour has a use similar to that of the 65 DNL contour, namely commercial sales and service and light industrial development. Although this use is not automatically deemed compatible with the 70 DNL, it can be if proper construction techniques were used to minimize interior noise. It is important to note that the area falling within the 70 DNL area is expected to decrease by 2010.

Finally, although the 75 DNL contour does extend off the airport boundary slightly beyond the Runway 5 approach end, it barely crosses Cleveland Ave. and does not appear to impact any existing development nor any developable areas. As with the 70 DNL contour the area falling within the 75 DNL contour is expected to decrease by 2010.

Chapter Eight – Airport Layout Plan

INTRODUCTION

The airport layout plan chapter describes and graphically presents the recommended conceptual development at Page Field as delineated in the Alternatives Analysis chapter. The Airport Layout Plan (ALP) set consists of a number of drawings that depict the necessary information for the airport to show compliance with the FAA's design standards, airspace criteria, and overall safety requirements for a public use airport.

AIRPORT LAYOUT PLAN SET

The drawings included in the ALP set consist of the following:

- Cover Sheet
- Airport Layout Plan
- Airspace Drawing (with Approach Profiles)
- RPZ Plan and Profiles
- Land Use Map
- Property Map

All of the drawings are included at the end of this chapter.

Cover Sheet

The cover sheet is an introduction sheet for the ALP. It indicates the project name, airport name, names the airport sponsor, provides an index of sheets, the date the project was completed and approved, and provides a location and vicinity map.

Airport Layout Plan (ALP)

The ALP is a scaled graphic representation of the existing and ultimate airport facilities indicating their location and pertinent clearance as well as dimensional information to show conformance with applicable standards. The facilities and improvements on the ALP are identified by three colors; orange, red and green. The colors indicate the anticipated period during which demand will require each improvement. The first phase, 2000-2005, is depicted in orange, the second phase, 2006-2010, is depicted in red and the third phase, 2011-2020, is depicted in green. Two other colors are shown on the drawing. The brown hatch identifies non-aviation support or development which could occur anytime during the planning period. The light blue hatch indicates future aviation related development. Although the light blue areas are anticipated to occur after the planning period, they are outlined on the ALP to provide insight into to the potential ultimate use of the various areas.

The ALP consists of a number of data tables that include the Building Inventory, Runway Data, Declared Distances, Legend and Airport Data. These tables either provide supplemental information that could not easily be depicted graphically on the ALP or further define and clarify what is included in the graphic representation. The ALP also includes an all-weather wind rose, the approval block, and the phasing plan legend.

A letter dated August 7, 1989 was sent from the FAA Orlando ADO to Lee County Port Authority stating that an adaptation to standard applies to the Runway 5-23 runway safety area as well as Runway 13-31 runway safety area. Since the Fowler Street extension and the shortening of Runway 13-31 the adaptation to the safety area for this runway no longer exists due to modifications required to extend Fowler Street. Per this letter it is understood that the adaptation to standard still applies to the Runway 5-23 runway safety area, and has been carried through this Master plan and is noted on the ALP as an adaptation to standard. However, the declared distances associated with this modification have been revised to reflect the results of the detailed RSA Assessment included in **Appendix B** of this document. As per the FAA's final determination outlined in this assessment, the LDA and ASDA calculations associated with Runway 5/23 have been reduced.

Because of the size of the RPZ's and the defined approach surface criteria, the approach surfaces are slightly larger in width than the RPZ's.

The runway protection zones (RPZs) for Runway 13-31 have been sized accordingly for an aircraft design group (ADG) II, aircraft approach categories A & B, and non-precision approach visibility minimums not lower than 1-mile. The dimensions of the RPZ associated with this runway classification are 1,000 feet in length, 500 feet for an inner width and 700 feet for an outer width.

The approach surfaces for both runway ends are defined as follows:

> *"The inner edge of the approach surface is the same width as the primary surface and it extends uniformly to a width of 3,500 feet for that end of a utility runway with a non-precision instrument approach. The approach surface extends for a horizontal distance of 10,000 feet at a slope of 34:1 for all non-precision instrument runways other than utility runways".*

According to FAR Part 77, Objects Affecting Navigable Airspace, Runway 13-31 is defined as non-precision runway. The definition of a utility runway is one that is constructed for the intended use by propeller driven aircraft of 12,000 pounds maximum gross weight and less. This runway can and does accommodate the Gulfstream G-I and Cessna Citation III jet aircraft, both of which have maximum gross weights considerably over 12,500 pounds and still fall in the aircraft design group B-II. This results in a case where the approach surfaces do not exactly overlay the RPZ's.

Airspace Drawing (with Approach Profiles)

The Airspace Drawing is an illustration of the Part 77 surfaces including the approach surfaces, transitional surfaces, horizontal surface, and the conical surface. It identifies the relationship between the FAR Part 77 surfaces and the physical feature and terrain in the areas adjacent to Page Field General Aviation Airport. Part 77 prescribes that the surfaces be free from penetrations that represent potential hazards to air navigation. No obstructions were noted to any of the outer areas of the Part 77 surfaces, the Airspace Plan depicts graphically the approximate locations of any obstacles located in these surfaces.

RPZ Plan and Profiles

The Runway Protection Zone (RPZ) drawings for each runway end have a plan and profile view to identify the location and size of the area off each runway that should be restricted in use. Existing obstacles penetrating the approach surfaces are depicted on the drawings in both the plan and profile views. An obstruction data table lists the obstructions that lie within the RPZ, the penetrations to the approach surface and the recommended mitigation for each.

Land Use Map

The Land Use Map provides the airport management with a depiction of the existing and recommended use of all the land within the airport boundary. The land uses are classified by general use categories and include airfield operational, aeronautical, commercial, recreational, public facilities, land sale, future acquisition / easements. The drawing can be used a general guideline for the planning of facilities as well as the revenue producing areas of the airport.

Property Map

The Airport Property map depicts the existing airport ownership, both fee simple and avigation easements, which lie within the airport boundary. The purpose of this drawing is to provide information to analyze the present and future aeronautical uses of land acquired with Federal funds. The property map details who originally owned the land and in what year it was acquired by the airport. A legal description of the Page Field Airport property has also been listed on the drawing.

PAGE FIELD
AIRPORT MASTER PLAN
LEE COUNTY PORT AUTHORITY
Fort Myers, Florida

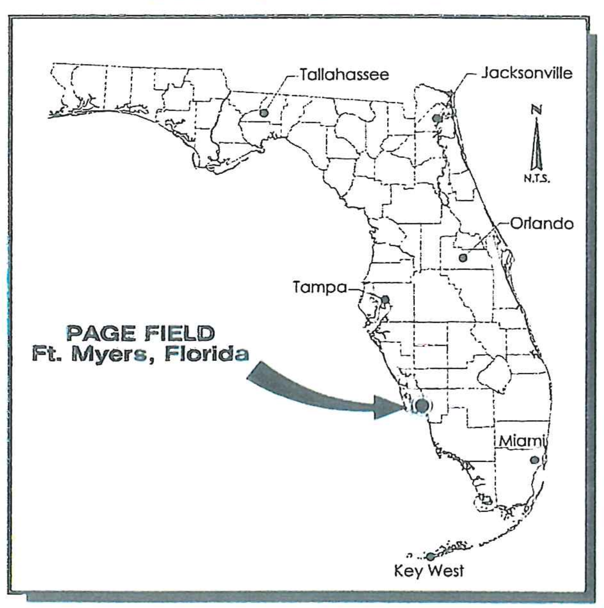
Lee County Port Authority
Page Field
General Aviation Airport

PREPARED BY:

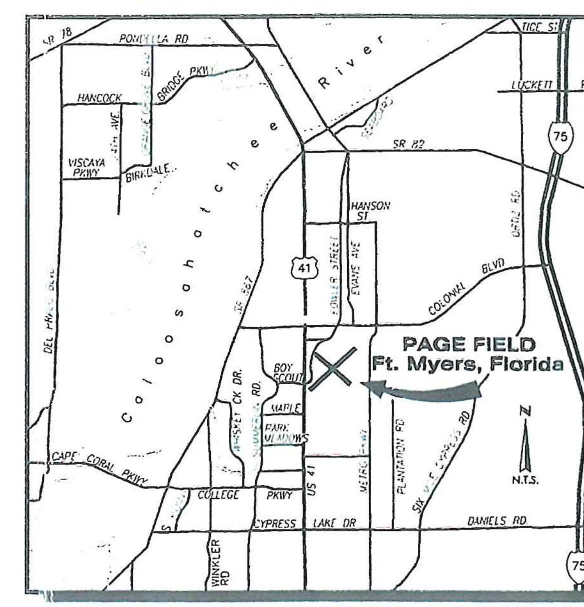
Birk Hillman
Orlando · Miami · Atlanta

May, 2002

VICINITY MAP



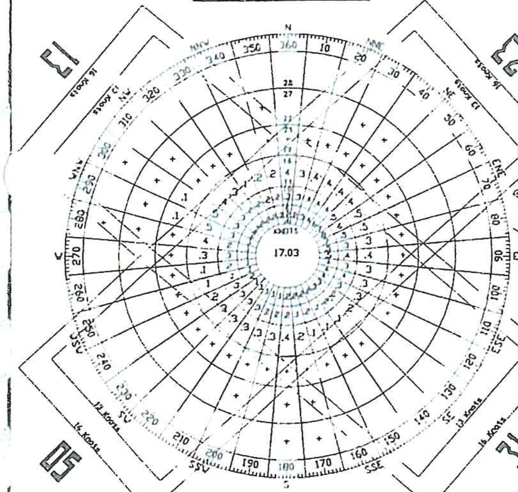
LOCATION MAP



INDEX OF DRAWINGS

SHEET NO.	EXHIBIT TITLE
1	COVER SHEET
2	AIRPORT LAYOUT PLAN
3	AIRPORT AIRSPACE PLAN
4	INNER PORTION-APPROACH SURFACE PLAN & PROFILE R/W 5
5	INNER PORTION-APPROACH SURFACE PLAN & PROFILE R/W 23
6	INNER PORTION-APPROACH SURFACE PLAN & PROFILE R/W 13
7	INNER PORTION-APPROACH SURFACE PLAN & PROFILE R/W 31
8	LAND USE PLAN
9	AIRPORT PROPERTY MAP
10	AIRPORT PROPERTY LEGAL DESCRIPTION

ALL WEATHER WIND ROSE



CROSSWIND COMPONENT: 16 KTS.

RUNWAY	COVERAGE
05/23	99.68%
13/31	99.67%

CROSSWIND COMPONENT: 13 KTS.

RUNWAY	COVERAGE
05/23	98.04%
13/31	97.31%

CROSSWIND COMPONENT: 10.5 KTS.

RUNWAY	COVERAGE
05/23	95.79%
13/31	94.61%

OBSERVATION PERIOD: 1990 – 1995
TOTAL OBSERVATIONS: 50,439

SOURCE: NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, N.C.

PHASING PLAN

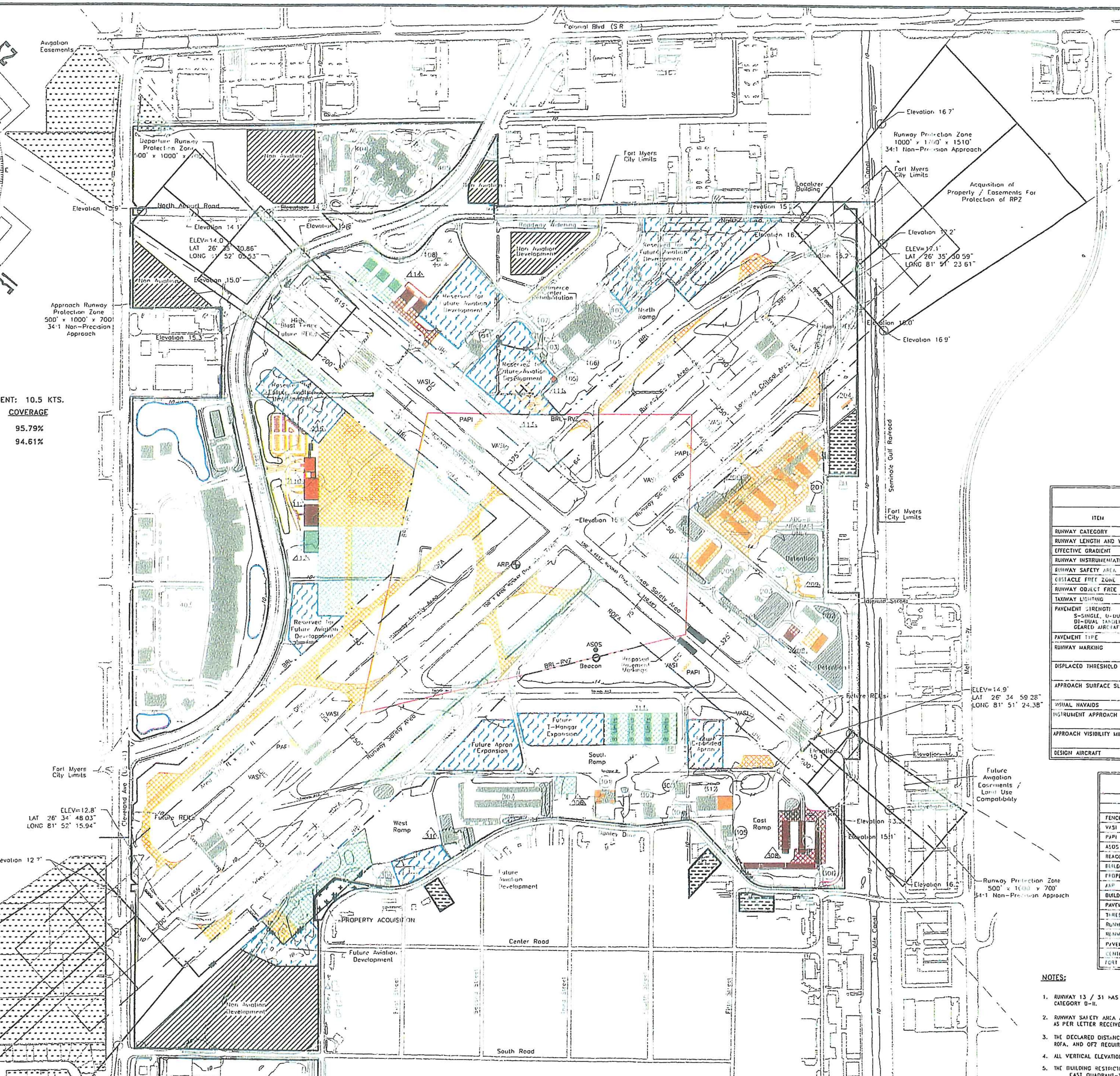
	PAVEMENT	BUILDING
Through – 2005		
2006 – 2010		
2011 – 2020		

LAND USE

- Non- Aviation Support Development
- Existing Avigation Easements
- Surplus Land Sale
- Land Acquisition
- Future Aviation

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.



AIRPORT DATA

AIRPORT ELEVATION	17' MSL
AIRPORT AND TERMINAL NAVIGATIONAL AIDS	TOWER
MEAN MAXIMUM TEMPERATURE – HOTTEST MONTH	91.4°F
AIRPORT REFERENCE POINT COORDINATES (ARP) (NAD 1983/1990 FINAL ADJUSTMENT)	26°35'11.80"N LAT 81°51'47.70"W LON
AIRPORT REFERENCE CODE (ARC)	C-III
AVERAGE STAGE LENGTH	1000 NM
MAGNETIC DEVIATION	3°W

DECLARED DISTANCES

AIRCRAFT APPROACH CATEGORY C
AIRPLANE DESIGN GROUP III
PRECISION INSTRUMENT RUNWAY & NON-PRECISION INSTRUMENT

	TORA	TODA	ASDA	LDA
RUNWAY 5	6,406'	6,406'	6,007'	5,548'
RUNWAY 23	6,406'	6,406'	5,947'	5,548'
RUNWAY 13	4,912'	4,912'	4,912'	4,297'
RUNWAY 31	4,707'	4,912'	4,707'	4,707'

BUILDING INVENTORY

DESCRIPTION	EXISTING	ULTIMATE
PAGE FIELD COMMERCE CENTER	101	same
PORT AUTHORITY AIRPORT MAINTENANCE	102	204
CONTROL TOWER	103	same
FIRE STATION	104	same
ELECTRICAL VAULT	105	same
COMMERCE CENTER ANNEX	106	same
FORMER WEATHER OFFICE	107	remove
REMOTE COMMUNICATIONS AIR TO GROUND (RCAG)	108	same
LEE COUNTY HOUSEHOLD HAZARDOUS WASTE TRANSFER FACILITY	109	remove
GA TERMINAL		110
FIS		111
BULK HANGARS		112
HELIPAD		113
NORTH CABIN CLASS HANGARS		114
RESTAURANT		116
LEE COUNTY DOT DEPOT 7 MAINTENANCE	201	remove
SMS CORPORATE HANGAR	202	same
EAA (EXPERIMENTAL AIRCRAFT ASSN.)	203	same
T-HANGARS (ADG-II only)	205	same
T-HANGARS (ADG-II only)		206
SHADE HANGARS (ADG-II only)		207
CORPORATE HANGAR EXPANSION AREA		208
AIRCRAFT WASH, RACK AND MAINTENANCE		209
THE AVIATION CENTER	301	same
TOMLINSON HANGAR	302	same
SWITLIK AVIATION HANGAR	303	same
AVIATION CENTER FUEL FARM	304	115
GENERAL AVIATION CENTER	305	same
SELF-SERVE FUEL FARM	306	306
T-HANGARS	307	same
T-HANGARS		308
FAA REMOTE COMMUNICATIONS OUTLET	309	same
PROPOSED GULFSHORE HELICOPTER SITE		310
T-HANGARS		311
THE AVIATION CENTER HANGAR	312	same
FLORIDA HIGHWAY PATROL	401	same
DEPARTMENT OF MOTOR VEHICLES	402	same
PAGE FIELD COMMONS	403	same
SHADY REST CARE PAVILION	404	same
JOSEPH H. MESSINA CHILDRENS CENTER	405	same

RUNWAY DATA

ITEM	RUNWAY 5/23		RUNWAY 13/31	
	EXISTING	ULTIMATE	EXISTING	ULTIMATE
RUNWAY CATEGORY	ADG C-III	ADG C-III/D-III	ADG B-II	SAME
RUNWAY LENGTH AND WIDTH	6,406' X 150'	SAME	4,912' X 150'	SAME
EFFECTIVE GRADIENT	.067 %	SAME	.018 %	SAME
RUNWAY INSTRUMENTATION	PRECISION	SAME	NON-PRECISION	SAME
RUNWAY SAFETY AREA	8,406' X 500'	SAME	5,212' X 150'	SAME
OBSTACLE FREE ZONE	6,806' X 400'	SAME	5,012' X 250'	SAME
RUNWAY OBJECT FREE AREA	8,406' X 800'	SAME	5,212' X 500'	SAME
TAXIWAY LIGHTING	MITL	SAME	MITL	SAME
PAVEMENT STRENGTH S-SINGLE, D-DUAL, DT-DUAL TANDEM GEARED AIRCRAFT	125,000# S	SAME	30,000# S	SAME
	155,000# D	SAME	35,000# D	SAME
	350,000# DT	SAME	N/A	SAME
PAVEMENT TYPE	ASPHALT CONCRETE	SAME	ASPHALT CONCRETE	SAME
RUNWAY MARKING	5 – P	SAME	13 – NP	SAME
	23 – NP	SAME	31 – VISUAL	31 – NP
DISPLACED THRESHOLD	5 – 459'	SAME	13 – 615'	SAME
	23 – 399'	SAME	N/A	SAME
APPROACH SURFACE SLOPE	5 – 50:1	SAME	13 – 34:1	SAME
	23 – 34:1	SAME	31 – 34:1	SAME
VISUAL NAVAIDS	MIRL, VASI	MIRL,PAPI,REIL	MIRL, VASI	MIRL,PAPI,REIL
INSTRUMENT APPROACH NAVAIDS	5– ILS,ASR,NDB,GPS	SAME	13 – VOR,ASR,GPS	SAME
	23– ASR, GPS	SAME	31 – ASR, GPS	SAME
APPROACH VISIBILITY MINIMUMS	5 – 1 MILE	SAME	13 – 1 MILE	SAME
	23 – 1 1/4 MILE	SAME	31 – 1 MILE	SAME
DESIGN AIRCRAFT	CL-604	BD-700 or G-V	LEAR 35	FALCON 900/2000

LEGEND

ITEM	EXISTING	ULTIMATE
FENCE		XX
VASI		remove
PAPI	N/A	
ASOS		same
BEACON		same
BUILDING RESTRICTION LINE	BRL	same
PROPERTY BOUNDARY		same
ARP		same
BUILDINGS		
PAVEMENT MARKINGS		
THRESHOLD LIGHTS		same
RUNWAY END LIGHTS		same
RUNWAY OBJECT FREE AREA	ROFA	same
PAVEMENT		
CONTOURS	10	same
FORT MYER CITY LIMITS		same

NOTES:

1. RUNWAY 13 / 31 HAS BEEN DESIGNATED AN AIRCRAFT DESIGN GROUP CATEGORY B-II.
2. RUNWAY SAFETY AREA ADAPTATION TO STANDARDS FOR RUNWAY 5 / 23 APPLIES AS PER LETTER RECEIVED AUGUST 7, 1989 FROM THE FAA ORLANDO ADO.
3. THE DECLARED DISTANCE CONCEPT WAS APPLIED TO PROVIDE STANDARD RSA ROFA, AND OFZ REQUIREMENTS FOR RUNWAY 13 / 31.
4. ALL VERTICAL ELEVATIONS WERE CALCULATED USING NAVD 88.
5. THE BUILDING RESTRICTION LINE (BRL) HAS BEEN DEFINED BY THE FOLLOWING:
   EAST QUADRANT–THE OFA REQUIRED BY TAXIWAY A, TAXILANE B, AND THE RVZ.
   SOUTH QUADRANT–THE OFA REQUIRED BY RUNWAY 13/31, TAXIWAY A, AND THE RVZ.
   WEST QUADRANT–THE OFA REQUIRED BY RUNWAY 5/23. THE GLIDESLOPE CRITICAL AREA, THE RVZ, AND THE OFA FOR RUNWAY 13/31.
   NORTH QUADRANT–THE OFA REQUIRED BY TAXIWAY D, TAXILANE C, AND THE RVZ.
6. LARGE JETS CANNOT HOLD WITHIN A 600' RADIUS OF THE GLIDESLOPE ANTENNA AS PER FAA ORDER 6750.16C SITING CRITERIA FOR INSTRUMENT LANDING SYSTEMS.

Magnetic Declination 3°W (1990)

GRAPHIC SCALE

400 0 200 400 800 1200

SCALE IN FEET

Lee County Port Authority

Page Field General Aviation Airport

Birk Hillman
Orlando Miami Atlanta
6751 Forum Drive, Ste 240, Orlando, FL 32821

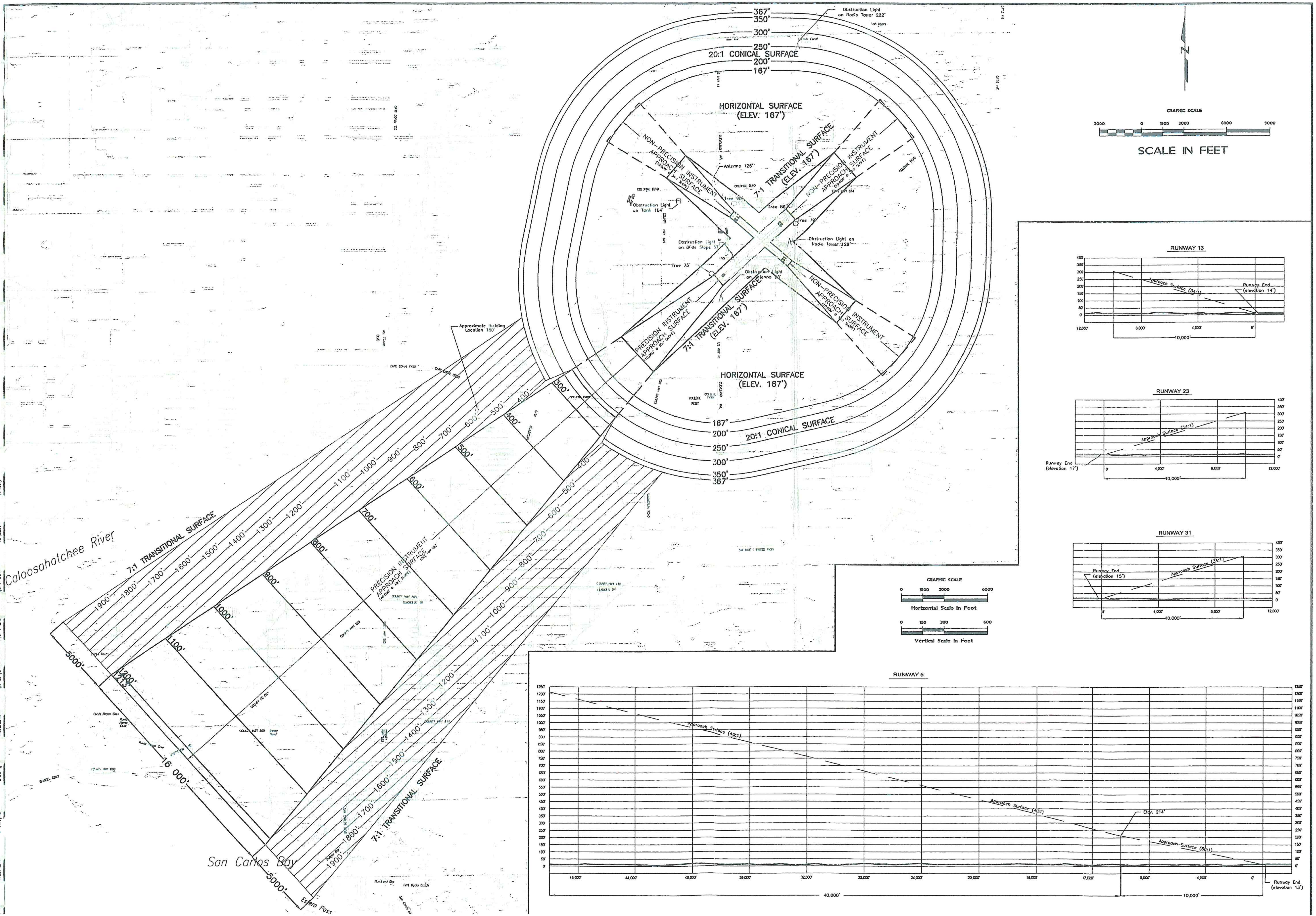
PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Airport Layout Plan

NO.	DATE	REVISION
1.	3/2002	Incorporated FAA RSA final determination
2.	3/2002	Relocated General Aviation Terminal
3.	5/2002	Incorporated FAA's final comments

DATE:	MAY 2002
PROJECT NO.	C046010
DESIGNED BY:	S.R.
DRAWN BY:	S.R.
CHECKED BY:	M.A.

SHEET 2 OF 10



Page Field
General Aviation Airport

Birk Hillman
Orlando · Miami · Atlanta
6751 Forum Drive, Ste. 240, Orlando, FL 32821

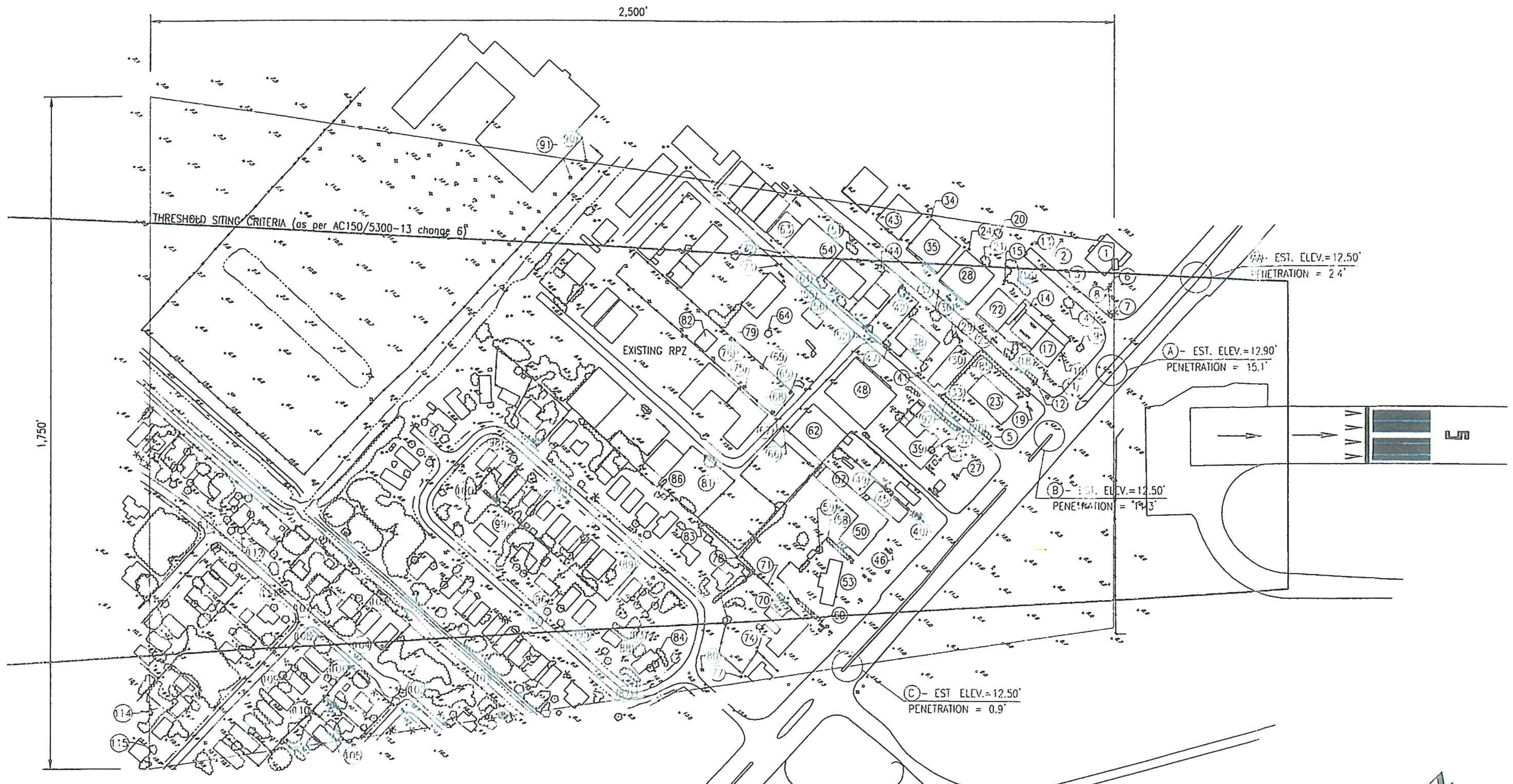
PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Airspace Drawing

NO.	DATE	REVISION

DATE: MAY 2002
PROJECT NO. C0460101
DESIGNED BY: A.B.
DRAWN BY: A.B.
CHECKED BY: M.A.

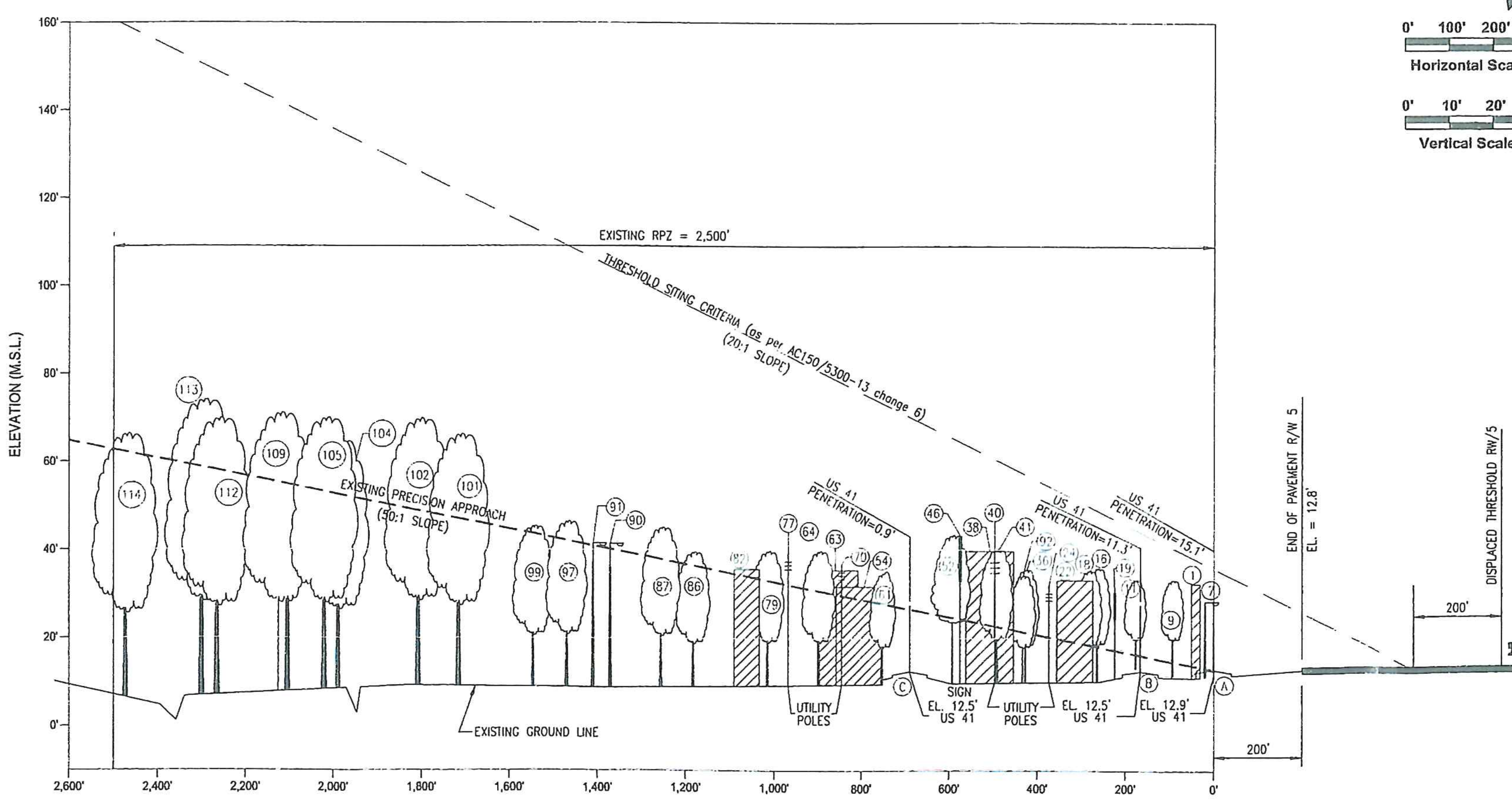
SHEET 3 OF 10



RUNWAY 5 PLAN

0' 100' 200' 400'
Horizontal Scale In Feet

0' 10' 20' 40'
Vertical Scale In Feet



RUNWAY 5 PROFILE

RUNWAY 5 OBSTRUCTION DATA TABLE

OBSTRUCTION ID NO.	DESCRIPTION	HEIGHT (M.S.L.)	APPROACH SURFACE PENETRATION	MITIGATION
1	BUILDING	32.3'	18.1'	NONE
□ 2	LIGHT POLE	29.7'	13.2'	NONE
□ 3	LIGHT POLE	29.0'	12.7'	NONE
□ 4	TREES	38.5'	22.3'	REMOVE/ REDUCE
□ 5	TREES	30.8'	11.3'	REMOVE/ REDUCE
□ 6	LIGHT POLE	29.1'	15.9'	NONE
7	LIGHT POLE	28.6'	15.5'	NONE
□ 8	TREES	25.7'	12.4'	REMOVE/ REDUCE
□ 9	TREES	33.5'	18.7'	REMOVE/ REDUCE
□ 10	TREES	30.4'	14.7'	REMOVE/ REDUCE
11	TREES	33.5'	16.9'	REMOVE/ REDUCE
□ 12	TREES	32.2'	14.9'	REMOVE/ REDUCE
□ 13	UTILITY POLE	32.7'	15.5'	NONE
□ 14	UTILITY POLE	30.9'	13.6'	NONE
□ 15	UTILITY POLE	31.1'	12.4'	NONE
16	TREES	35.9'	17.6'	REMOVE/ REDUCE
□ 17	BUILDING	35.6'	19.1'	NONE
□ 18	TREES	35.3'	16.7'	REMOVE/ REDUCE
□ 19	SIGN	30.4'	12.9'	NONE
□ 20	TREES	33.6'	14.6'	REMOVE/ REDUCE
□ 21	TREES	24.7'	5.0'	REMOVE/ REDUCE
22	BUILDING	33.3'	14.2'	NONE
□ 23	BUILDING	29.0'	9.6'	NONE
24	UTILITY POLE	32.2'	11.7'	NONE
□ 25	SIGN	26.7'	7.6'	NONE
□ 26	TREES	29.2'	7.4'	REMOVE/ REDUCE
□ 27	SIGN	29.5'	8.5'	NONE
□ 28	UTILITY POLE	30.3'	9.3'	NONE
□ 29	SIGN	30.6'	9.6'	NONE
□ 30	BUILDING	22.8'	1.3'	NONE
□ 31	FLAG POLE	33.4'	11.4'	NONE
□ 32	TREES	27.7'	3.3'	REMOVE/ REDUCE
□ 33	UTILITY POLE	28.6'	6.6'	NONE
□ 34	UTILITY POLE	32.0'	9.5'	NONE
□ 35	BUILDING	29.4'	7.2'	NONE
36	TREES	35.5'	14.0'	REMOVE/ REDUCE
□ 37	TREES	29.1'	6.9'	REMOVE/ REDUCE
□ 38	BUILDING	39.9'	16.5'	NONE
□ 39	BUILDING	30.2'	7.5'	NONE
40	SIGN	30.5'	7.6'	NONE
41	TREES	40.2'	17.4'	REMOVE/ REDUCE
□ 42	TREES	32.4'	9.0'	REMOVE/ REDUCE
□ 43	BUILDING	25.0'	0.8'	NONE
□ 44	TREES	32.7'	7.6'	REMOVE/ REDUCE
□ 45	BUILDING	29.3'	5.7'	NONE
46	SIGN	31.9'	7.4'	NONE
□ 47	UTILITY POLE	31.3'	6.6'	NONE
□ 48	BUILDING	32.4'	5.8'	NONE
□ 49	TREES	30.0'	5.1'	REMOVE/ REDUCE
□ 50	BUILDING	28.8'	3.4'	NONE
□ 51	TREES	34.4'	8.0'	REMOVE/ REDUCE
52	TREES	43.6'	18.8'	REMOVE/ REDUCE
□ 53	BUILDING	31.6'	4.0'	NONE
54	BUILDING	33.1'	4.9'	NONE
□ 55	TREES	34.8'	7.7'	REMOVE/ REDUCE
□ 56	UTILITY POLE	32.4'	6.9'	NONE
□ 57	TREES	32.2'	4.0'	REMOVE/ REDUCE
58	TREES	36.2'	8.5'	REMOVE/ REDUCE
□ 59	TREES	29.5'	0.8'	REMOVE/ REDUCE
□ 60	SIGN	32.5'	4.4'	NONE
61	TREES	35.9'	7.9'	REMOVE/ REDUCE
□ 62	BUILDING	32.8'	4.4'	NONE
63	BUILDING	35.6'	5.5'	NONE
64	TREES	35.7'	4.8'	REMOVE/ REDUCE
□ 65	UTILITY POLE	34.0'	4.3'	NONE
□ 66	UTILITY POLE	30.7'	0.5'	NONE
□ 67	UTILITY POLE	31.2'	0.6'	NONE
□ 68	LIGHT POLE	33.9'	3.2'	NONE
□ 69	LIGHT POLE	33.4'	2.1'	NONE
70	UTILITY POLE	37.1'	7.2'	NONE
□ 71	UTILITY POLE	35.0'	4.0'	NONE
□ 72	UTILITY POLE	31.7'	1.4'	NONE
□ 73	UTILITY POLE	32.6'	2.1'	NONE
□ 74	UTILITY POLE	36.9'	5.5'	NONE
□ 75	LIGHT POLE	33.6'	1.4'	NONE
□ 76	LIGHT POLE	33.3'	0.3'	NONE
77	UTILITY POLE	39.7'	7.2'	NONE
□ 78	UTILITY POLE	34.8'	2.2'	NONE
79	TREES	39.8'	6.5'	REMOVE/ REDUCE
□ 80	LIGHT POLE	36.0'	1.6'	NONE
□ 81	TREES	39.2'	5.2'	REMOVE/ REDUCE
82	BUILDING	35.8'	1.6'	NONE
□ 83	UTILITY POLE	35.4'	0.9'	NONE
□ 84	TREES	40.7'	4.0'	REMOVE/ REDUCE
□ 85	TREES	29.5'	8.4'	REMOVE/ REDUCE
86	TREES	40.2'	3.5'	REMOVE/ REDUCE
87	TREES	45.1'	6.8'	REMOVE/ REDUCE
□ 88	TREES	41.7'	4.0'	REMOVE/ REDUCE
□ 89	TREES	39.6'	0.5'	REMOVE/ REDUCE
□ 90	LIGHT POLE	41.6'	1.2'	NONE
□ 91	LIGHT POLE	41.8'	0.6'	NONE
□ 92	TREES	34.2'	12.5'	REMOVE/ REDUCE
□ 93	LIGHT POLE	38.7'	1.7'	NONE
□ 94	TREES	47.0'	4.0'	REMOVE/ REDUCE
□ 95	TREES	45.9'	4.1'	REMOVE/ REDUCE
□ 96	TREES	47.7'	6.0'	REMOVE/ REDUCE
□ 97	TREES	46.2'	3.9'	REMOVE/ REDUCE
□ 98	TREES	47.2'	3.1'	REMOVE/ REDUCE
99	TREES	45.4'	1.5'	REMOVE/ REDUCE
□ 100	TREES	49.0	3.8'	REMOVE/ REDUCE
101	TREES	66.5'	19.2'	REMOVE/ REDUCE
102	TREES	70.5'	21.3'	REMOVE/ REDUCE
□ 103	TREES	59.1'	7.5'	REMOVE/ REDUCE
104	TREES	65.2'	12.3'	REMOVE/ REDUCE
105	TREES	70.2'	16.5'	REMOVE/ REDUCE
□ 106	TREES	58.9'	4.9'	REMOVE/ REDUCE
□ 107	TREES	66.9'	13.1'	REMOVE/ REDUCE
□ 108	TREES	58.1'	3.8'	REMOVE/ REDUCE
109	TREES	71.1'	15.4'	REMOVE/ REDUCE
□ 110	TREES	57.2'	1.5'	REMOVE/ REDUCE
□ 111	TREES	71.5	16.4'	REMOVE/ REDUCE
112	TREES	70.0'	12.5'	REMOVE/ REDUCE
113	TREES	74.3'	15.3'	REMOVE/ REDUCE
114	TREES	66.6'	3.2'	REMOVE/ REDUCE
□ 115	TREES	66.2'	2.4'	REMOVE/ REDUCE
* A	US41	12.9'	15.1'	NONE
* B	US41	12.5'	11.3'	NONE
* C	US41	12.5'	0.9'	NONE
□ AA	US41	12.5'	2.4'	NONE

DOUBLE LETTER ID NO. DEPICT PENETRATIONS TO THE NEW THRESHOLD SITING CRITERIA
□ NOT SHOWN IN PROFILE BUT LOCATION SHOWN IN PLAN
* BASED ON A 15' CLEARANCE FOR A PUBLIC ROADWAY AS PER REQUIREMENTS IN FAR PART 77.
NOTE: IN CASES WHERE TREES ARE SHIELDED BY BUILDINGS, UTILITY POLES AND SIGNS, NO MITIGATION MAY BE REQUIRED.

EXISTING AIRPORT REFERENCE POINT
26°35'11.80"N LAT.
81°51'47.70"W LONG.
EXISTING AIRPORT ELEVATION 17.1 FT. (M.S.L.)

NOTE:
OBSTRUCTION DATA INFORMATION OBTAINED FROM PDS

Page Field
General Aviation Airport

Birk Hillman
Orlando Miami Atlanta
6751 Forum Drive, Ste. 240, Orlando, FL 32021

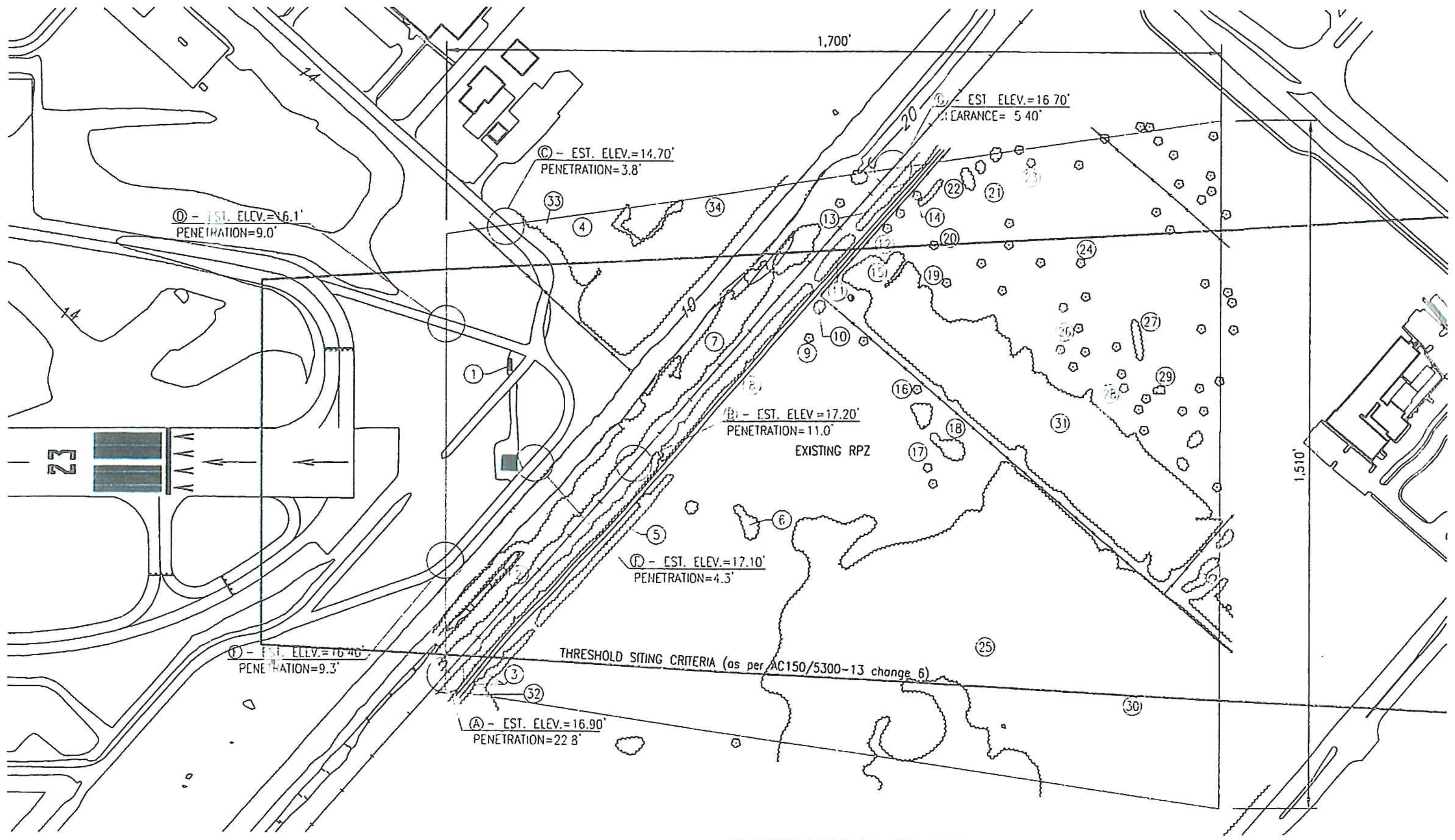
PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Inner Portion-Approach Surface Plan & Profile RUNWAY 5

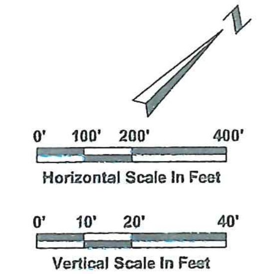
NO.	DATE	REVISION

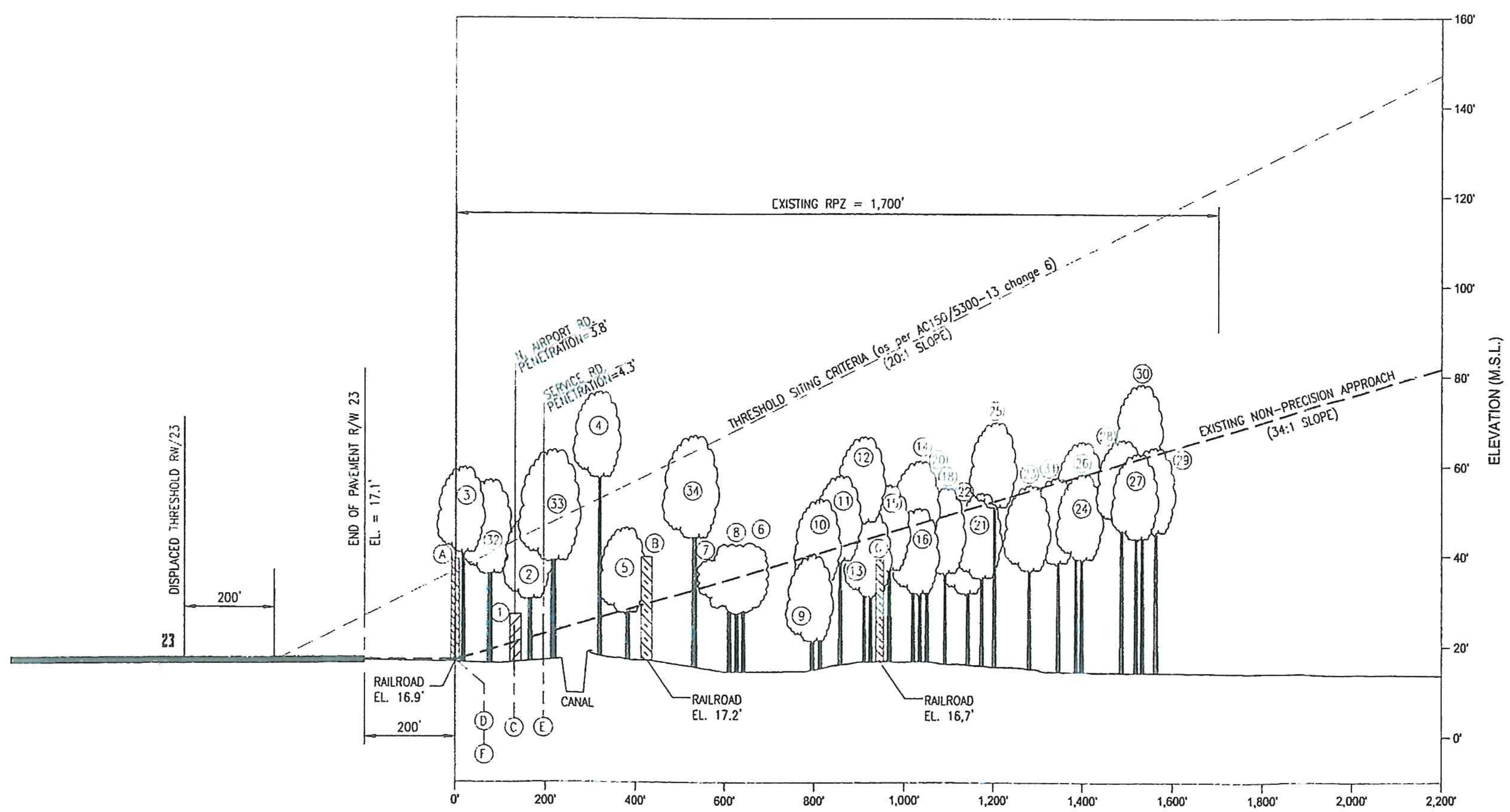
DATE: MAY 2002
PROJECT NO. C0460101
DESIGNED BY: G.W.
DRAWN BY: A.B.
CHECKED BY: M.A.

SHEET 4 OF 10



RUNWAY 23 PLAN





RUNWAY 23 PROFILE

RUNWAY 23 OBSTRUCTION DATA TABLE

OBSTRUCTION ID NO.	DESCRIPTION	HEIGHT (M.S.L.)	APPROACH SURFACE PENETRATION	MITIGATION
1	LOCALIZER SHED	27.6'	6.3'	FIXED BY FUNCTION
2	CLUSTER OF TREES	45.7'	27.6'	REMOVE/ REDUCE
3	CLUSTER OF TREES	60.2'	41.3'	REMOVE
4	CLUSTER OF TREES	76.7'	49.4'	REMOVE
5	CLUSTER OF TREES	46.8'	18.4'	REMOVE/ REDUCE
6	TREES	49.4'	13.4'	REMOVE/ REDUCE
7	CLUSTER OF TREES	35.9'	.92'	REMOVE/ REDUCE
8	CLUSTER OF TREES	44.9'	9.3'	REMOVE/ REDUCE
9	TREES	42.4'	1.9'	REMOVE/ REDUCE
10	TREES	55.5'	14.5'	REMOVE/ REDUCE
11	TREES	60.6'	18.2'	REMOVE/ REDUCE
12	TREES	66.8'	21.2'	REMOVE/ REDUCE
13	TREES	50.1'	5.7'	REMOVE/ REDUCE
14	TREES	61.4'	13.9'	REMOVE/ REDUCE
15	CLUSTER OF TREES	56.2'	12.2'	REMOVE/ REDUCE
16	TREES	50.9'	3.4'	REMOVE/ REDUCE
▫ 17	TREES	52.0'	4.0'	REMOVE/ REDUCE
18	TREES	55.4'	6.1'	REMOVE/ REDUCE
▫ 19	TREES	56.0'	6.6'	REMOVE/ REDUCE
20	TREES	52.8'	5.3'	REMOVE/ REDUCE
21	TREES	54.2'	2.6'	REMOVE/ REDUCE
22	TREES	51.1'	.39'	REMOVE/ REDUCE
23	TREES	56.0'	1.1'	REMOVE/ REDUCE
24	TREES	58.4'	.28'	REMOVE/ REDUCE
25	CLUSTER OF TREES	70.2'	17.6'	REMOVE/ REDUCE
26	TREES	65.8'	7.8'	REMOVE/ REDUCE
27	TREES	63.1'	1.1'	REMOVE/ REDUCE
28	TREES	66.1'	5.2'	REMOVE/ REDUCE
29	TREES	64.7'	1.6'	REMOVE/ REDUCE
30	CLUSTER OF TREES	78.7'	16.5'	REMOVE/ REDUCE
31	CLUSTER OF TREES	57.5'	.75'	REMOVE/ REDUCE
32	TREES	57.2'	37.2'	REMOVE/ REDUCE
33	TREES	63.8'	40.3'	REMOVE/ REDUCE
34	TREES	67.1'	34.4'	REMOVE/ REDUCE
** A	RAILROAD	16.9'	22.8'	NONE
** B	RAILROAD	17.2'	11.0'	NONE
* C	NORTH AIRPORT ROAD	14.7'	3.8'	NONE
* D	SERVICE ROAD (LIMITED USE)	16.1'	9.0'	NONE
* E	SERVICE ROAD (LIMITED USE)	17.1'	4.3'	NONE
* F	SERVICE ROAD (LIMITED USE)	16.4'	9.3'	NONE

▫ NOT SHOWN IN PROFILE

THE TERM CLUSTER OF TREES WAS USED TO DENOTE MORE THAN ONE ELEVATION WAS SURVEYED FOR THAT GROUPING OF TREES. THE HIGHEST ELEVATION WAS USED TO DETERMINE APPROACH SURFACE PENETRATION.

* BASED ON A 10' CLEARANCE FOR A PRIVATE ROAD AS PER REQUIREMENTS IN FAR PART 77.

** BASED ON A 23' CLEARANCE FOR A RAILROAD AS PER REQUIREMENTS IN FAR PART 77.

EXISTING AIRPORT REFERENCE POINT
26°35'11.80"N LAT.
81°51'47.70"W LONG.
EXISTING AIRPORT ELEVATION 17.1 FT. (M.S.L.)

NOTE:
OBSTRUCTION DATA INFORMATION OBTAINED FROM PDS JULY, 1999 DETAILED GROUND SURVEY.

Lee County Port Authority
Page Field
General Aviation Airport

Birk Hillman
Orlando · Miami · Atlanta
6751 Forum Drive, Ste. #240, Orlando, FL 32821

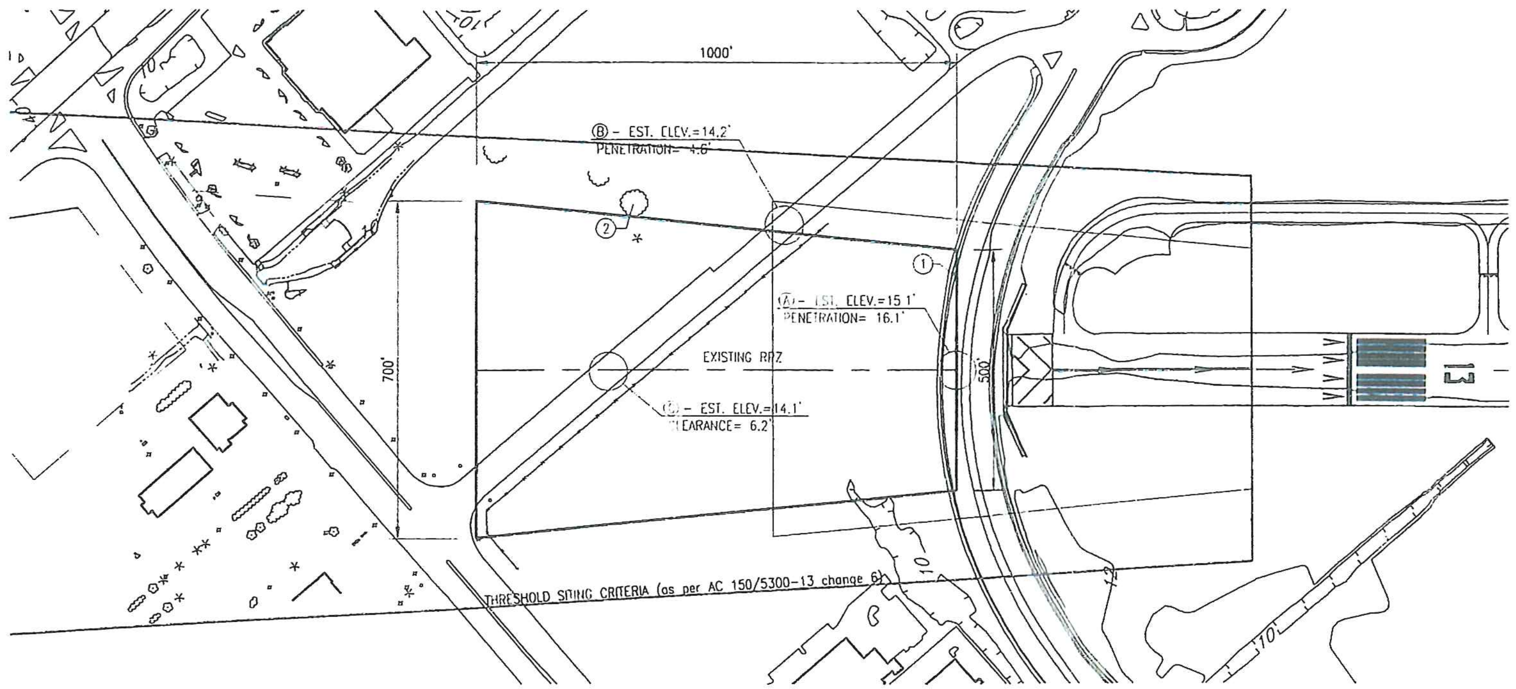
PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Inner Portion-Approach Surface Plan & Profile
RUNWAY 23

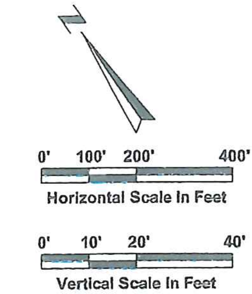
NO.	DATE	REVISION

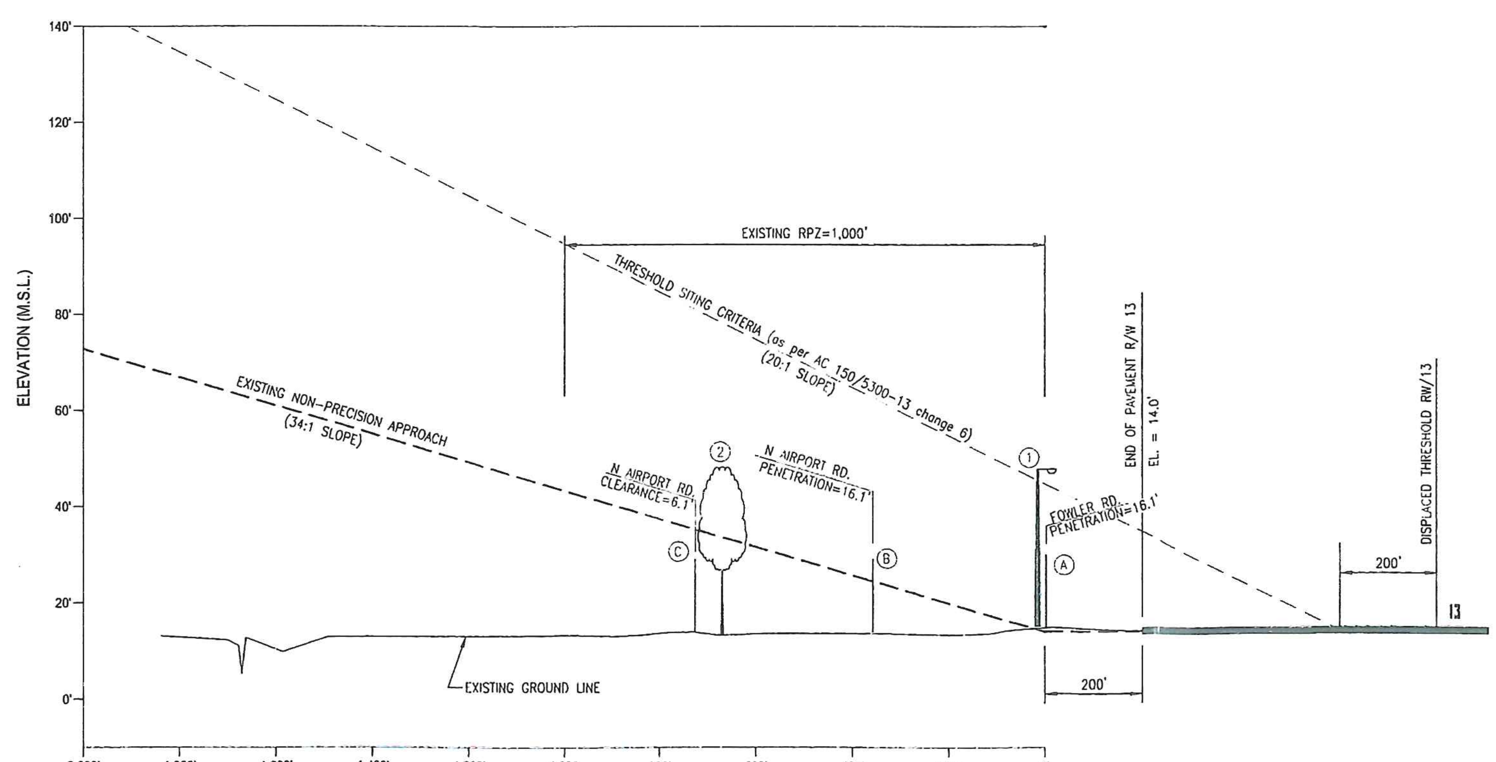
DATE:	MAY 2002
PROJECT NO.	C0460101
DESIGNED BY:	S.R.
DRAWN BY:	P.M.
CHECKED BY:	M.A.

SHEET 5 OF 10



RUNWAY 13 PLAN





RUNWAY 13 PROFILE

RUNWAY 13 OBSTRUCTION DATA TABLE				
OBSTRUCTION ID NO.	DESCRIPTION	HEIGHT (M.S.L.)	APPROACH SURFACE PENETRATION	MITIGATION
1	LIGHT POLE	47.9'	33.9'	SEE NOTE BELOW
2	TREES	48.3'	14.6'	REMOVE
* A	FOWLER STREET	15.1'	16.1'	NONE
* B	NORTH AIRPORT ROAD	14.2'	4.6'	NONE

* BASED ON 15' CLEARANCE FOR A PUBLIC ROADWAY AS PER REQUIREMENTS SET FORTH IN FAR PART 77.

NOTE: AIRSPACE ANALYSIS WAS CONDUCTED PRIOR TO FOWLER STREET REALLIGNMENT. LIGHT POLE HEIGHT AND LOCATION WAS COORDINATED AND APPROVED AS PART OF THIS ANALYSIS. AS SUCH, NO MITIGATION WAS PROPOSED.

EXISTING AIRPORT REFERENCE POINT
26°35'11.80"N LAT.
81°51'47.70"W LONG.
EXISTING AIRPORT ELEVATION 17.1 FT. (M.S.L.)

NOTE:
OBSTRUCTION DATA INFORMATION OBTAINED FROM PDS JULY, 1999 DETAILED GROUND SURVEY.

Lee County Port Authority
Page Field
General Aviation Airport

Birk Hillman
Orlando Miami Atlanta
6751 Forum Drive, Ste. #240, Orlando, FL 32021

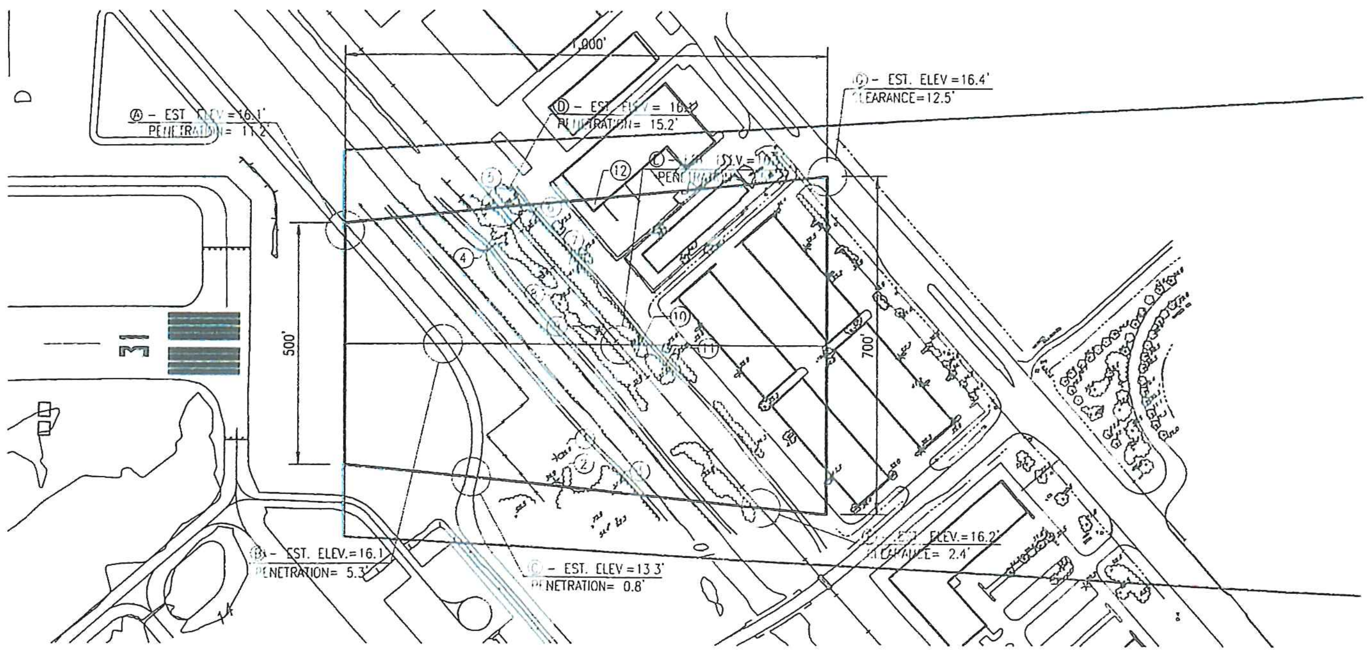
PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Inner Portion-Approach Surface Plan & Profile
RUNWAY 13

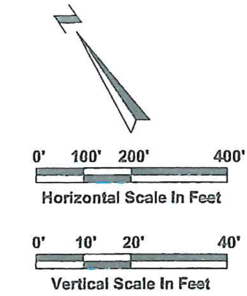
NO.	DATE	REVISION

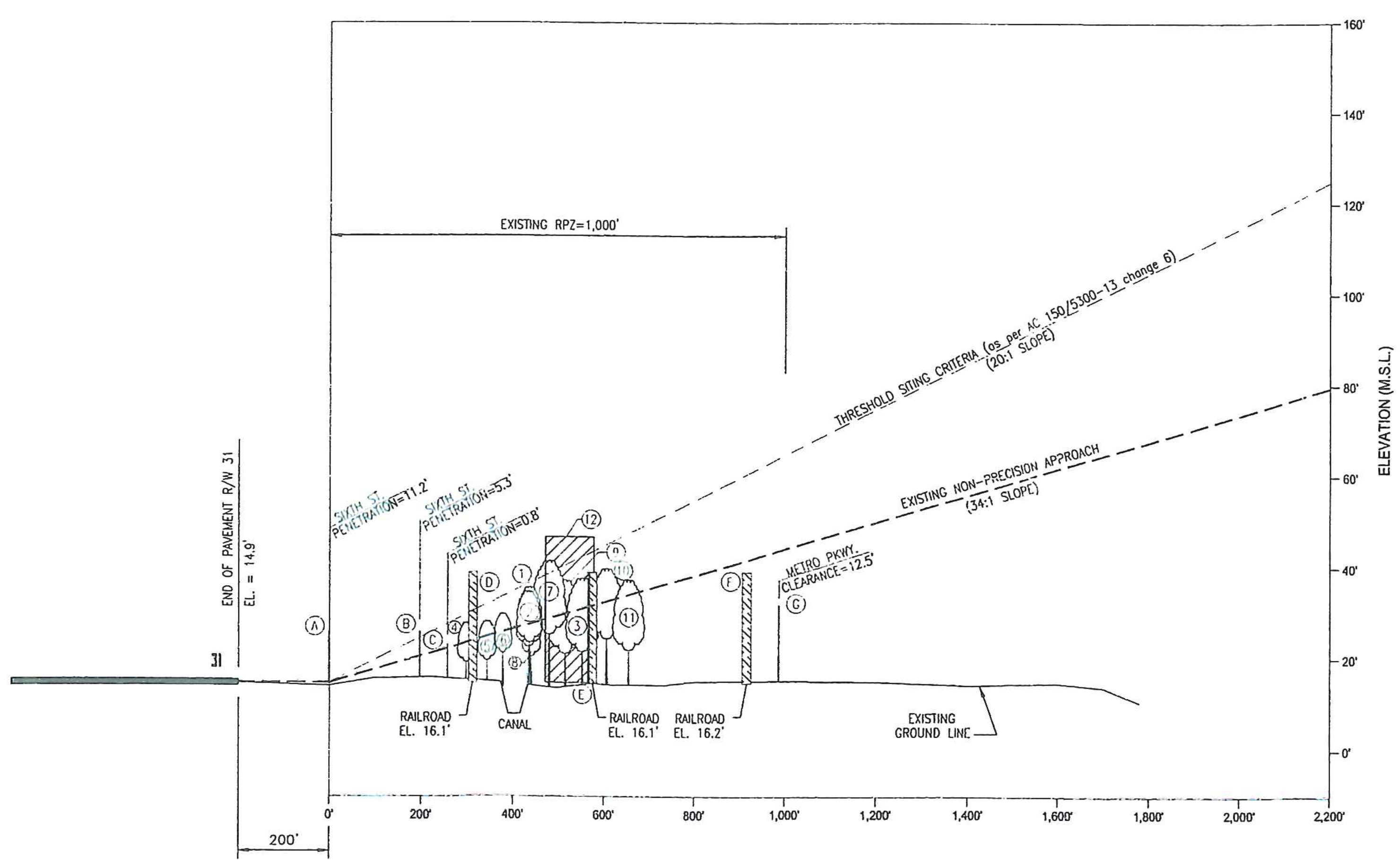
DATE:	MAY 200
PROJECT NO.	C046010
DESIGNED BY:	P.M.
DRAWN BY:	P.M.
CHECKED BY:	M.A.

SHEET
6
OF
10



RUNWAY 31 PLAN





RUNWAY 31 PROFILE

RUNWAY 31 OBSTRUCTION DATA TABLE				
OBSTRUCTION ID NO.	DESCRIPTION	HEIGHT (M.S.L.)	APPROACH SURFACE PENETRATION	MITIGATION
1	TREE	35.9'	8.1'	REMOVE/ REDUCE
2	TREE	34.9'	7.2'	REMOVE/ REDUCE
3	TREES	37.8'	6.6'	REMOVE/ REDUCE
4	TREES	28.0'	4.6'	REMOVE/ REDUCE
5	TREES	28.3'	3.3'	REMOVE/ REDUCE
6	TREES	30.0'	3.9'	REMOVE/ REDUCE
7	TREES	41.7'	12.6'	REMOVE/ REDUCE
8	TREES	29.3'	1.4'	REMOVE/ REDUCE
9	TREES	37.4'	7.4'	REMOVE/ REDUCE
10	TREES	39.9'	7.1'	REMOVE/ REDUCE
11	TREES	37.5'	3.2'	REMOVE/ REDUCE
12	BUILDING	46.9'	16.7'	NEEDS TO BE LIGHTED
* A	SERVICE ROAD (LIMITED USE)	16.1'	11.2'	NONE
* B	SERVICE ROAD (LIMITED USE)	16.1'	5.3'	NONE
* C	SERVICE ROAD (LIMITED USE)	13.3'	0.8'	NONE
** D	RAILROAD	16.1'	15.2'	NONE
** E	RAILROAD	11.1'	7.5'	NONE

* BASED ON A 10' CLEARANCE FOR A PRIVATE ROAD AS PER REQUIREMENTS IN FAR PART 77.
** BASED ON A 23' CLEARANCE FOR A RAILROAD AS PER REQUIREMENTS IN FAR PART 77.

EXISTING AIRPORT REFERENCE POINT
26°35'11.80"N LAT.
81°51'47.70"W LONG.
EXISTING AIRPORT ELEVATION 17.1 FT. (M.S.L.)

NOTE:
OBSTRUCTION DATA INFORMATION OBTAINED FROM PDS JULY, 1999 DETAILED GROUND SURVEY.

Page Field
General Aviation Airport

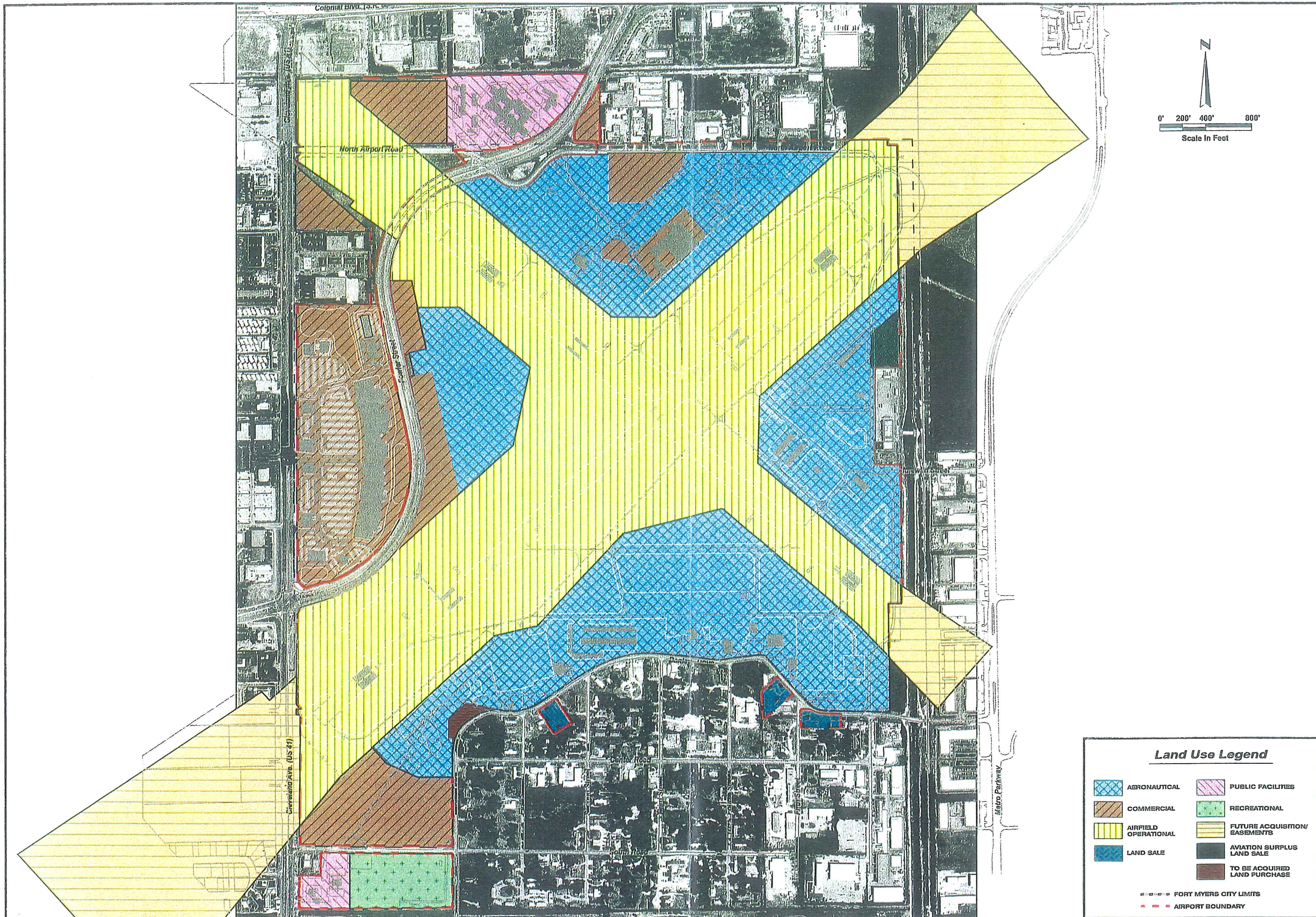
Birk Hillman
Orlando Miami Atlanta
6751 Forum Drive, Ste. #240, Orlando, FL 32821

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida

Inner Portion-Approach Surface Plan & Profile
RUNWAY 31

NO.	DATE	REVISION

DATE:	MAY 2002
PROJECT NO.	C0460101
DESIGNED BY:	S.R
DRAWN BY:	S.R
CHECKED BY:	M.A.



Lee County Port Authority

Page Field
General Aviation Airport

Birk Hillman

Orlando · Miami · Atlanta
6751 Forum Drive, Ste. 240, Orlando, FL 32821

PAGE FIELD AIRPORT MASTER PLAN

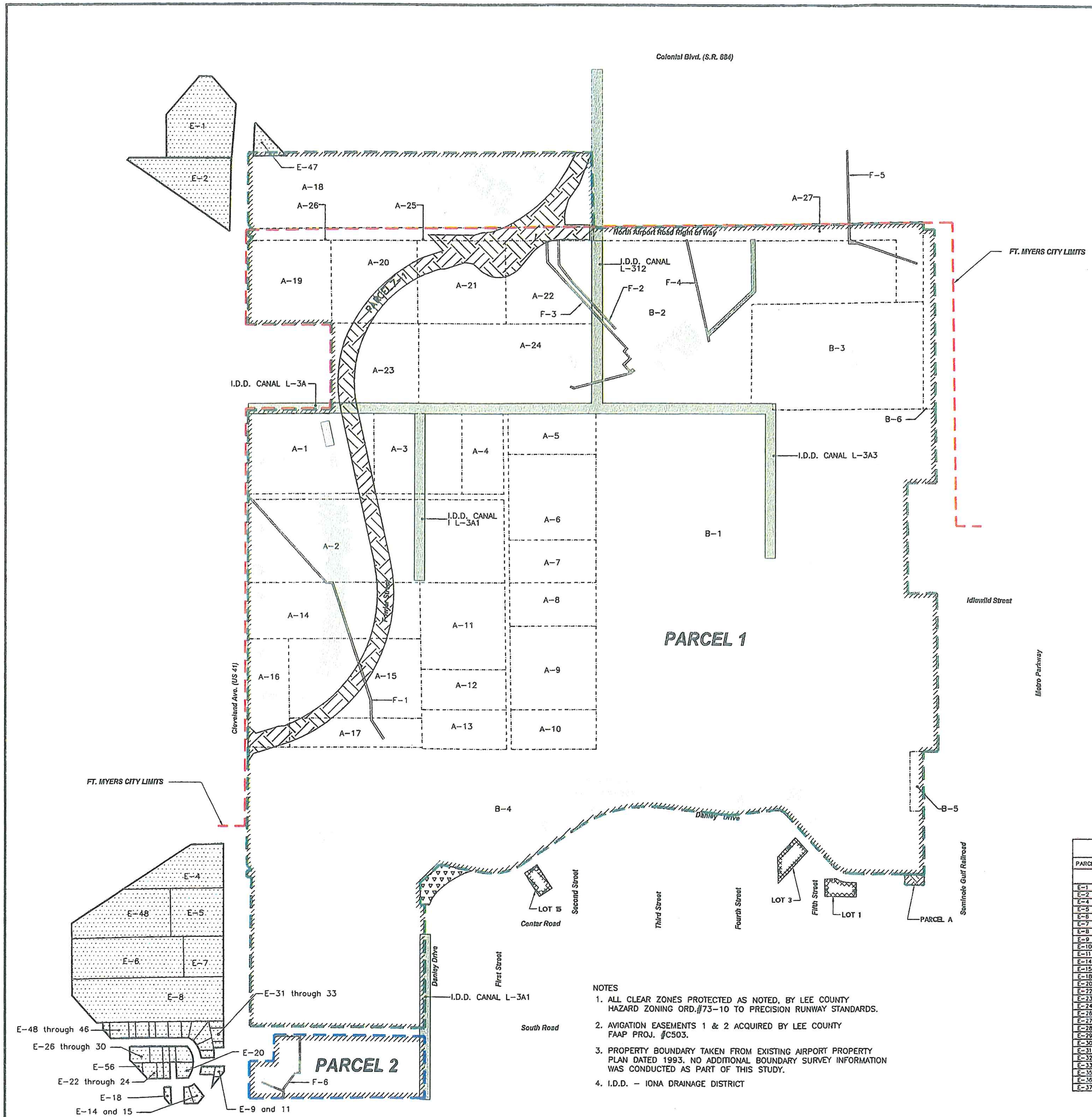
Fort Myers, Florida

Land Use Map

NO.	DATE	REVISION

DATE:	MAY 200
PROJECT NO.	C04601
DESIGNED BY:	G.W
DRAWN BY:	G.W.
CHECKED BY:	M.A.

SHEET 8 OF 10



NOTES

1. ALL CLEAR ZONES PROTECTED AS NOTED, BY LEE COUNTY HAZARD ZONING ORD.#73-10 TO PRECISION RUNWAY STANDARDS.
2. AVIGATION EASEMENTS 1 & 2 ACQUIRED BY LEE COUNTY FAAP PROJ. #C503.
3. PROPERTY BOUNDARY TAKEN FROM EXISTING AIRPORT PROPERTY PLAN DATED 1993. NO ADDITIONAL BOUNDARY SURVEY INFORMATION WAS CONDUCTED AS PART OF THIS STUDY.
4. I.D.D. - IONA DRAINAGE DISTRICT

N

0' 200' 400' 800'

Scale In Feet

LEGEND

	AIRPORT REFERENCE POINT (ARP)
	FT MYERS CITY LIMITS
	PARCEL 1 BOUNDARY
	PARCEL 2 BOUNDARY
	SUB PARCEL BOUNDARIES

AREAS (ACRES)

PARCELS: 1 & 2	+633.61
LOTS: 1,3 & 15	+ 2.09
TAKE AWAY: PARCELS 7-1 & A	- 17.48
TOTAL AIRPORT PROPERTY	618.22

PROPERTY LEGEND

- ORIGINAL PROPERTY
- PROPERTY PURCHASED WITH GENERAL OPERATING REVENUES
- EASEMENT
- PROPOSED PROPERTY PURCHASE
- AVIGATION EASEMENTS
- RIGHT AWAY TAKE

PAGE FIELD AIRPORT PROPERTY

PARCEL ID	BOOK & PAGE	DATE RECORDED	PROPERTY INTEREST	PROJECT NUMBER	PRIOR OWNER	PURPOSE OF ACQUISITION
PARCEL 1						
A-1	MISC 25/260	1946	FEE SIMPLE	ORIGINAL PURCHASE		AERONAUTICAL
A-2	MISC 25/260	1946	FEE SIMPLE	ORIGINAL PURCHASE		AERONAUTICAL
A-3	L.P. 4/245	1942	FEE SIMPLE	ORIGINAL PURCHASE	DOUGLAS & TANNEHER	AERONAUTICAL
A-4	DEED 140/486	1940	FEE SIMPLE	ORIGINAL PURCHASE	WHISNANT	AERONAUTICAL
A-5	D.B. 141/307	1940	FEE SIMPLE	ORIGINAL PURCHASE	Mc WHORTER	AERONAUTICAL
A-6	DEED 142/392	1940	FEE SIMPLE	ORIGINAL PURCHASE	LAYCOCK	AERONAUTICAL
A-7	DEED 143/165	1941	FEE SIMPLE	ORIGINAL PURCHASE	MONROE	AERONAUTICAL
A-8	DEED 143/187	1941	FEE SIMPLE	ORIGINAL PURCHASE	MONROE	AERONAUTICAL
A-9	DEED 141/432	1940	FEE SIMPLE	----------	IONA CORP.	AERONAUTICAL
A-10	DEED 143/21	1941	FEE SIMPLE	----------	B & PWC	AERONAUTICAL
A-11	DEED 141/375	1940	FEE SIMPLE	----------	SUMMERS	AERONAUTICAL
A-12	DEED 143/187	1941	FEE SIMPLE	----------	MONROE	AERONAUTICAL
A-13	DEED 141/306	1940	FEE SIMPLE	----------	HILL	AERONAUTICAL
A-14	MISC 25/260	1946	FEE SIMPLE	----------	USA	AERONAUTICAL
A-15	DEED 142/105	1941	FEE SIMPLE	----------	McWHARTER	AERONAUTICAL
A-16	DEED 142/106	1941	FEE SIMPLE	----------	REAHARD	AERONAUTICAL
A-17	MISC 25/260	1946	FEE SIMPLE	----------	USA	AERONAUTICAL
A-18	MISC 25/260	1946	FEE SIMPLE	----------	REAHARD	AERONAUTICAL
A-19	MISC 25/250	1946	FEE SIMPLE	----------	USA	AERONAUTICAL
A-20	DEED 143/545	1941	FEE SIMPLE	----------	ENSMINGER	AERONAUTICAL
A-21	DEED 143/575	1941	FEE SIMPLE	----------	IONA CORP.	AERONAUTICAL
A-22	MISC 25/260	1946	FEE SIMPLE	----------	USA	AERONAUTICAL
A-23	DEED 143/550	1941	FEE SIMPLE	----------	GILLENTINE	AERONAUTICAL
A-24	DEED 142/499	1941	FEE SIMPLE	----------	IONA	AERONAUTICAL
A-25	DEED 143/545	1941	FEE SIMPLE	----------	ENSMINGER	AERONAUTICAL
A-26	DEED 143/576	1941	FEE SIMPLE	----------	IONA CORP.	AERONAUTICAL
A-27	DEED 145/225	1941	FEE SIMPLE	----------	DIXIE TROPICAL TRUCKING CO.	AERONAUTICAL
B-1	DB 139/506	1940	FEE SIMPLE	----------	CITY OF FT. MYERS	AERONAUTICAL
B-2	MISC 25/260	1946	FEE SIMPLE	----------	U.S.A	AERONAUTICAL
B-3	DB 140/513	1940	FEE SIMPLE	----------	DIXIE TROPICAL TRUCKING CO.	AERONAUTICAL
B-4	DB 140/513	1946	FEE SIMPLE	----------	U.S.A	AERONAUTICAL
B-5	DB 148/313	1943	FEE SIMPLE	----------	S.A.L. RR	AERONAUTICAL
B-6	O.R. 1358/333	1940	FEE SIMPLE			AERONAUTICAL
PARCEL 2						
	MISC 25/260	1947	FEE SIMPLE	----------	U.S. Govt.	AERONAUTICAL
MISCELLANEOUS PARCELS						
LOT 1	PB 8/92-97	1995	FEE SIMPLE			
LOT 3	PB 8/92-97	1995	FEE SIMPLE			
LOT 15	PB 8/92-97	1995	FEE SIMPLE			

EXISTING EASEMENTS

PARCEL ID	BOOK & PAGE	PURPOSE OF EASEMENT	EASEMENT HOLDER
Clear/Zone Airspace			
E-1	O.R. 333, PG. 143	AVIGATION	LEE COUNTY
E-2	O.R. 645, PG. 352	AVIGATION	LEE COUNTY
E-4	O.R. 350, PG. 174	AVIGATION	LEE COUNTY
E-5	O.R. 303, PG. 308	AVIGATION	LEE COUNTY
E-6	O.R. 310, PG. 605	AVIGATION	LEE COUNTY
E-7	O.R. 303, PG. 308	AVIGATION	LEE COUNTY
E-8	O.R. 347, PG. 63	AVIGATION	LEE COUNTY
E-9	O.R. 350, PG. 187	AVIGATION	LEE COUNTY
E-10	O.R. 340, PG. 248	AVIGATION	LEE COUNTY
E-11	O.R. 351, PG. 372	AVIGATION	LEE COUNTY
E-14	O.R. 340, PG. 235	AVIGATION	LEE COUNTY
E-15	O.R. 344, PG. 525	AVIGATION	LEE COUNTY
E-18	O.R. 354, PG. 647	AVIGATION	LEE COUNTY
E-20	O.R. 347, PG. 51	AVIGATION	LEE COUNTY
E-22	O.R. 347, PG. 57	AVIGATION	LEE COUNTY
E-23	O.R. 347, PG. 45	AVIGATION	LEE COUNTY
E-24	O.R. 344, PG. 538	AVIGATION	LEE COUNTY
E-26	O.R. 337, PG. 848	AVIGATION	LEE COUNTY
E-27	O.R. 340, PG. 241	AVIGATION	LEE COUNTY
E-28	O.R. 344, PG. 532	AVIGATION	LEE COUNTY
E-29	O.R. 337, PG. 841	AVIGATION	LEE COUNTY
E-30	O.R. 375, PG. 518	AVIGATION	LEE COUNTY
E-31	O.R. 340, PG. 222	AVIGATION	LEE COUNTY
E-32	O.R. 356, PG. 279	AVIGATION	LEE COUNTY
E-33	O.R. 337, PG. 829	AVIGATION	LEE COUNTY
E-35	O.R. 351, PG. 372	AVIGATION	LEE COUNTY
E-36	O.R. 363, PG. 516	AVIGATION	LEE COUNTY
E-37	O.R. 340, PG. 229	AVIGATION	LEE COUNTY

EXISTING EASEMENTS

PARCEL ID	BOOK & PAGE	PURPOSE OF EASEMENT	EASEMENT HOLDER
Clear/Zone Airspace			
E-38	O.R. 585, PG. 878	AVIGATION	LEE COUNTY
E-39	O.R. 340, PG. 216	AVIGATION	LEE COUNTY
E-40	O.R. 337, PG. 841	AVIGATION	LEE COUNTY
E-41	O.R. 337, PG. 854	AVIGATION	LEE COUNTY
E-42	O.R. 467, PG. 395	AVIGATION	LEE COUNTY
E-43	O.R. 344, PG. 544	AVIGATION	LEE COUNTY
E-44	O.R. 340, PG. 209	AVIGATION	LEE COUNTY
E-45	O.R. 337, PG. 835	AVIGATION	LEE COUNTY
E-46	O.R. 350, PG. 181	AVIGATION	LEE COUNTY
E-47	O.R. 385, PG. 308	AVIGATION	LEE COUNTY
E-48	O.R. 372, PG. 412	AVIGATION	LEE COUNTY
E-56	O.R. 403, PG. 741	AVIGATION	LEE COUNTY
Florida Power & Light Easements			
F-1	O.R. 1084, PG. 1302	UTILITY	F.P.L.
F-2	O.R. 1084, PG. 1303	UTILITY	F.P.L.
F-3	O.R. 1159, PG. 205	UTILITY	F.P.L.
	O.R. 1224, PG. 1350	UTILITY	F.P.L.
F-4	O.R. 1084, PG. 255	UTILITY	F.P.L.
F-5	O.R. 1714, PG. 1447	UTILITY	F.P.L.
F-6	O.R. 1128, PG. 678	UTILITY	F.P.L.
IONA Drainage District (IDD) Easements			
L-3A		WATER MANAGEMENT	I.D.D.
L-3A1		WATER MANAGEMENT	I.D.D.
L-3A3		WATER MANAGEMENT	I.D.D.
L12		WATER MANAGEMENT	I.D.D.

Lee County Port Authority

Page Field General Aviation Airport

Birk Hillman

Orlando · Miami · Atlanta

6751 Forum Drive, Ste. #240, Orlando, FL 32821

PAGE FIELD AIRPORT MASTER PLAN

Fort Myers, Florida

Airport Property Map

NO.	DATE	REVISION

DATE:	MAY 2002
PROJECT NO.	C0460101
DESIGNED BY:	K.P.
DRAWN BY:	K.P.
CHECKED BY:	S.R.

SHEET 9 OF 10

Deni Associates prepared the attached two page legal description for Page Field Airport's Parcel 1 (Airport and Shady Rest Care Pavilion area and Parcel 2 (Area south of South Street) as part of the Airport Master Plan Update on November 16, 1990. At that time, Parcel 1 contained 620.05± acres and Parcel 2 contained13.56± acres. The Airport then totaled 633.61± acres.

In 1995, parcel 7-1 (totaling 17.234± acres) was sold to Lee County DOT for the Fowler Street Extension right-of-way Also in 1995, Parcel A (totaling 0.2517± acre) was sold to Lee County DOT for the Danley Drive Extension right-of-way. Legal descriptions for both of these parcels are attached.

The current area of Page Field Airport is therefore 616. 1243± acres. The Airport legal description is now the Deni Associates legal minus the right-of-way for Fowler Street Extension described under Parcel 7-1 and minus the right-of-way for Danley Drive described under Parcel A.

LEGAL DESCRIPTION
PARCEL 1

A TRACT OR PARCEL OF LAND LYING IN SECTIONS 1 AND 12, TOWNSHIP 45 SOUTH, RANGE 24 EAST, LEE COUNTY, FLORIDA, WHICH TRACT OR PARCEL IS DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF LOT 1, BLOCK U, PAGE PARK, AS SHOWN ON PLAT RECORDED IN PLAT BOOK 8 AT PAGES 92 THROUGH 97 OF THE PUBLIC RECORDS OF LEE COUNTY FLORIDA: THENCE N89°04'36" W (BASIS OF BEARINGS BEING THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE) ALONG THE NORTH LINE OF SAID LOT 1 FOR 137.16 FEET TO THE EAST RIGHT-OF-WAY LINE OF SIXTH STREET (65 FEET WIDE): THENCE N00°28'17" W ALONG SAID EAST LINE FOR 80.01 FEET TO THE NORTHEAST CORNER OF DANLEY DRIVE RIGHT-OF-WAY: THENCE N89°04'36" W ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID DANLEY DRIVE (65 FEET WIDE) FOR 418.29 FEET TO A POINT OF CURVATURE; THENCE NORTHWESTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE NORTHEAST RADIUS = 205.00 FEET, INTERIOR ANGLE = 46°45'05, CHORD BEARING AND DISTANCE N65°42'04" W, 162.67 FEET) FOR 167.27 FEET TO A POINT OF TANGENCY; THENCE N42°19'31" W FOR 525.73 FEET TO A POINT OF CURVATURE; THENCE NORTHWESTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE SOUTHWEST (RADIUS = 85.00 FEET, INTERIOR ANGLE 53°58'31", CHORD BEARING AND DISTANCE= N69°18'47" W, 77.15 FEET) FOR 80.07 FEET TO A POINT OF TANGENCY; THENCE S83°41'58" W FOR 265.90 FEET TO A POINT OF CURVATURE; THENCE WESTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE NORTH (RADIUS = 900.00 FEET, INTERIOR ANGLE= 12°35'23", CHORD BEARING AND DISTANCE= S89°59'39" W, 197.36 FEET) FOR 197.76 FEET TO A POINT OF TANGENCY: THENCE N83°42'38' W FOR 406.20 FEET TO A POINT OF CURVATURE; THENCE SOUTHWESTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE SOUTHEAST (RADIUS = 935.00 FEET, INTERIOR ANGLE = 39°46'38", CHORD BEARING AND DISTANCE= S76°24'03" W, 636.16 FEET) FOR 649.12 FEET TO A POINT OF TANGENCY; THENCE S56°30'44" W FOR 505.06 FEET TO A POINT OF CURVATURE; THENCE SOUTHWESTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE NORTHWEST (RADIUS= 435.00 FEET, INTERIOR ANGLE = 41°19'00", CHORD BEARING AND DISTANCE= S77°10'14" W, 306.93 FEET) FOR 313.68 FEET TO A POINT OF TANGENCY; THENCE N82°10'16" W FOR 132.78 FEET; THENCE N78°42'08" W ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF A ROADWAY 65 FEET WIDE FOR 207.77 FEET TO THE AIRPORT BUILDING RESTRICTION LINE AS SHOWN ON AFORESAID PLAT; THENCE S47°47'21" W ALONG SAID AIRPORT BUILDING RESTRICTION LINE FOR 200.66 FEET TO THE NORTHWEST CORNER OF LOT 2, BLOCK A OF AFORESAID PLAT; THENCE S00°21'46" E ALONG THE LINE COMMON TO LOT 2 AND LOT 1 OF SAID BLOCK A FOR 171.31 FEET; THENCE N89°38'14" E ALONG SAID COMMON LINE FOR 50.31 FEET TO THE WESTERLY RIGHT-OF-WAY LINE OF DANLEY DRIVE (65 FEET WIDE) TO A NON-TANGENT POINT OF CURVATURE; THENCE SOUTHWESTERLY ALONG SAID WESTERLY LINE AND ALONG THE ARC OF A CURVE CONCAVE TO THE SOUTHEAST (RADIUS= 337.50 FEET, INTERIOR ANGLE = 18°06'13", CHORD BEARING AND DISTANCE =S09°00'15" W, 106.20 FEET) FOR 106.64 FEET TO A POINT OF TANGENCY;THENCE S00°02'51 E FOR 658.41 FEET TO A POINT OF CURVATURE; THENCE SOUTHWESTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE NORTHWEST (Radius=167.50 FEET, INTERIOR ANGLE = 90°31'05", CHORD BEARING AND DISTANCE = S45°12'41" W, 237.95 FEET) FOR 264.62 FEET TO A POINT OF TANGENCY ON THE NORTH RIGHT-OF-WAY LINE OF SOUTH ROAD (65 FEET WIDE);THENCE N89°31'46" W ALONG SAID NORTHERLY LINE FOR 1134.47 FEET TO THE EASTERLY RIGHT-OF-WAY LINE OF CLEVELAND AVENUE (STATE ROAD 45, U.S. 41, 200 FEET WIDE): THENCE N00°29'36" E ALONG SAID EASTERLY LINE FOR 9.99 FEET, THENCE N89°30'24" W FOR 16.50 FEET, THENCE N00°29'36" E PARALLEL WITH AND 68 FEET EASTERLY OF THE WEST LINE OF AFORESAID SECTION 12 FOR 1114.87 FEET; THENCE S89°38'43" W FOR 35.00 FEET; THENCE N00°29'36" E FOR 47.42 FEET; THENCE N83°54'36" E ALONG THE NORTH LINE OF A FORMER ROADWAY 66 FEET WIDE FOR 39.00 FEET; THENCE N45°25'07" W FOR 53.94 FEET TO THE AFORESAID EASTERLY RIGHT-OF-WAY LINE OF CLEVELAND AVENUE (164 FEET WIDE), THENCE N00°29'36" E ALONG SAID RIGHT-OF-WAY LINE , PARALLEL WITH AND 33 FEET EASTERLY OF THE WEST LINE OF AFORESAID SECTION 12 FOR 854.96 FEET TO THE SOUTH LINE OF AFORESAID SECTION 1; THENCE N00°07'11" W CONTINUING ALONG SAID RIGHT-OF-WAY LINE OF CLEVELAND AVENUE, PARALLEL WITH AND 33 FEET EASTERLY OF THE WEST LINE OF SAID SECTION 1 FOR 2603.66 FEET TO THE EAST-WEST QUARTER SECTION LINE OF SAID SECTION 1; THENCE N89°20'39" E ALONG SAID QUARTER SECTION LINE FOR 629.17 FEET TO THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 1; THENCE N00°11'03" W ALONG THE EAST LINE OF SAID FRACTION FOR 650.04 FEET, THENCE S89°13'54" W ALONG THE NORTH LINE OF SAID FRACTION FOR 628.74 FEET TO THE AFORESAID EASTERLY RIGHT-OF-WAY LINE OF CLEVELAND AVENUE; THENCE N00°08'41" W ALONG SAID RIGHT-OF-WAY LINE AND AFORESAID PARALLEL LINE FOR 598.48 FEET; THENCE N35°46'18" E FOR 57.96 FEET; THENCE S89°57'19" W FOR 34 FEET TO SAID RIGHT-OF-WAY LINE OF CLEVELAND AVENUE; THENCE N00°08'41" W ALONG SAID RIGHT-OF-WAY LINE FOR 50.02 FEET; THENCE N89°57'19" E FOR 34.00 FEET; THENCE N35°59'33" W FOR 58.06 FEET TO SAID RIGHT-OF-WAY LINE OF CLEVELAND AVENUE; THENCE N00°08'41" W ALONG SAID RIGHT-OF-WAY LINE AND SAID PARALLEL LINE FOR 555.13 FEET TO THE NORTH LINE OF THE SOUTH HALF OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 1, THENCE N88° 59'49" E ALONG SAID NORTH LINE FOR 2610.49 FEET TO THE EAST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 1; THENCE S00°18'07" E ALONG SAID EAST LINE FOR 604.36 FEET TO THE NORTH RIGHT-OF-WAY LINE OF NORTH AIRPORT ROAD (70 FEET WIDE); THENCE N89°06'29" E ALONG SAID NORTH RIGHT-OF-WAY LINE, PARALLEL WITH AND 50.00 FEET NORTHERLY OF THE NORTH LINE OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF AFORESAID SECTION 1 FOR 2499.48 FEET TO THE WEST LINE OF THE FORMER SEABOARD AIR LINE RAILROAD RLGHT-OF-WAY; THENCE S00°25'44" E ALONG SAID RIGHT-OF-WAY LINE FOR 50.00 FEET TO THE NORTH LINE OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF AFORESAID SECTION 1; THENCE N89°06'29" E ALONG SAID NORTH LINE FOR 85.85 FEET TO THE WEST LINE OF TEN MILE CANAL (FORMER IONA DRAINAGE DISTRICT CANAL A); THENCE S00°35'46" E ALONG SAID WEST LINE FOR 1318.50 FEET TO THE EAST-WEST QUARTER SECTION LINE OF AFORESAID SECTION 1; THENCE S00°30'35" E CONTINUING ALONG SAID WEST LINE OF TEN MILE CANAL FOR 600.82 FEET TO THE NORTH LINE OF A PARCEL OF LAND AS DESCRIBED IN A DEED RECORDED IN O.R. 1348, P.G. 1981 OF AFORESAID PUBIC RECORDS; THENCE S89°29'25" W ALONG THE NORTH LINE OF SAID PARCEL FOR 220.00 FEET; THENCE S00°30'35" E ALONG THE WEST LINE OF SAID PARCEL FOR 840.00 FEET; THENCE N89T0'29'25" E ALONG THE SOUTH LINE OF SAID PARCEL TO THE WEST LINE OF AFORESAID TEN MILE CANAL; THENCE S00°30'35" E ALONG SAID WEST LINE FOR 1200.00 FEET TO THE NORTH LINE OF AFORESAID SECTION 12; THENCE S89°46'15" W ALONG SAID SOUTH LINE FOR 113.60 FEET TO THE WEST LINE OF AFORESAID FORMER SEABOARD AIR LINE RAILROAD RIGHT-OF-WAY; THENCE S00°28'16" E ALONG SAID WEST LINE FOR 1013.29 FEET TO THE POINT OF BEGINNING TOGETHER WITH AND SUBJECT TO COVENANTS, EASEMENTS, AND RESTRICTIONS OF RECORD. SAID PROPERTY CONTAINS 620.05 ACRES, MORE OR LESS.

LEGAL DESCRIPTION
PARCEL 2

A TRACT OR PARCEL OF LAND LYING IN BLOCK 8, PAGE PARK, SECTION 12, TOWNSHIP 45 SOUTH, RANGE 24 EAST, LEE COUNTY, FLORIDA AS SHOWN ON PLAT RECORDED IN PLAT BOOK 8 AT PAGES 92 THROUGH 97 OF THE PUBIC RECORDS OF LEE COUNTY, FLORIDA, WHICH TRACT OR PARCEL IS DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHEAST CORNER OF BLOCK B AS SHOWN ON SAID PLAT;
THENCE S89°33'23' W (BASIS OF BEARING BEING FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE) ALONG THE SOUTH LINE OF SAID BLOCK B FOR 1325.16 FEET TO THE EAST RIGHT-OF-WAY LINE OF CLEVELAND AVENUE (STATE ROAD 45, 200 FEET WIDE);
THENCE N00°29'36" E ALONG SAID RIGHT-OF-WAY LINE , PARALLEL WITH AND 68.00 FEET EAST OF THE WEST LINE OF AFORESAID SECTION 12, FOR 784.62 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 200 FEET OF SAID BLOCK B;
THENCE S89°31'46" E ALONG SAID SOUTH LINE FOR 182.00 FEET;
THENCE N00°29'36" E FOR 200.00 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF SOUTH ROAD (65 FEET WIDE);
THENCE S89°31'46" E ALONG SAID RIGHT-OF-WAY LINE FOR 1118.78 FEET TO A POINT OF CURVATURE;
THENCE SOUTHEASTERLY ALONG THE ARC OF A CURVE CONCAVE TO THE SOUTHWEST (RADIUS= 20.00 FEET, INTERIOR ANGLE= 89°28'55", CHORD BEARING AND DISTANCE= 14°47'19" E, 28.16 FEET) FOR 31.24 FEET TO A POINT OF TANGENCY ON THE WEST RIGHT-OF-WAY LINE OF DANLEY DRIVE (65 FEET WIDE);

THENCE S00°02'51" E ALONG SAID RIGHT-OF-WAY LINE FOR 443.68 FEET TO THE POINT OF BEGINNING.
TOGETHER WITH AND SUBJECT TO COVENANTS, EASEMENTS AND RESTRICTIONS OF RECORD.

SAID PROPERTY CONTAINS 13.56 ACRES, MORE OR LESS.

HMA PROJECT #94.43
JULY 19, 1995
REF.DWG. #B-1736
PAGE 1 OF 2

LEGAL DESCRIPTION

606 DANLEY DRIVE.LOT 15, BLOCK 0, PAGE PARK SUBDIVISION, AS RECORDED IN PLAT BOOK 8, PAGES 92 THROUGH 97,OF PUBLIC RECORDS OF LEE COUNTY OF FLORIDA.
ACQUISITION SETTLEMENT DATE. APRIL13,1995.

LEGAL DESCRIPTION

210 FIFTH STREET - LOT 1,BLOCK T, PAGE PARK SUBDIVISION AS RECORDED IN PLAT BOOK 8, PAGES 92 THROUGH 97, OF PUBLIC RECORDS OF LEE COUNTY, FLORIDA
ACQUISITION SETTLEMENT DATE: APRIL13,1995.

LEGAL DESCRIPTION

320 DANLEY DRIVE - LOT 3,BLOCK H, PAGE PARK SUBDIVISION AS RECORDED IN PLAT BOOK 8, PAGES 92 THROUGH 97, OF PUBLIC RECORDS OF LEE COUNTY, FLORIDA
ACQUISITION SETTLEMENT DATE: FEBRUARY 10,1995.

DESCRIPTION OF RIGHT OF WAY TAKE
PARCEL 7 -1

A PARCEL OF LAND LYING IN THE WEST ONE-HALF OF SECTIONS 1 AND 12, TOWNSHIP 45 SOUTH, RANGE 24 EAST, LEE COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHWEST CORNER OF SECTION 12, TOWNSHIP 45 SOUTH, RANGE 24 EAST, THE SAME BEING THE SOUTHWEST CORNER OF SECTION 1, TOWNSHIP 45 SOUTH, RANGE 24 EAST, LEE COUNTY, FLORIDA; THENCE RUN S. 00°31'15"W., ALONG THE WEST LINE OF THE NORTHWEST 1/4 OF SAID SECTION 12, FOR A DISTANCE OF 65.85 FEET; THENCE RUN S. 89.28'45" E., PERPENDICULAR TO THE WEST LINE OF THE NORTHWEST 1/4 OF SAID SECTION 12, FOR A DISTANCE OF 33.00 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF U S. HIGHWAY NO. 41 (STATE ROAD NO. 45) AND THE POINT OP BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED THENCE RUN N. 32°55'27" E FOR A DISTANCE OF 70.57 FEET; THENCE RUN N. 72.31'00" E. FOR A DISTANCE OF 224.29 FEET TO THE BEGINNING OF A TANGENTIAL CIRCULAR CURVE, CONCAVE NORTHWESTERLY THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE LEFT, HAVING A RADIUS OF 1208.92 FEET, THROUGH A CENTRAL ANGLE OF 17°54'26", SUBTENDED BY A CHORD OF 376.30 FEET AT A BEARING OF N. 63°33'47" E., FOR A DISTANCE OP 377.83 FEET TO THE END OF SAID CURVE; THENCE RUN N. 50°29'49" E. FOR A DISTANCE OF 103.19 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENTIAL CIRCULAR CURVE, CONCAVE WESTERLY WHOSE RADIUS POINT BEARS N. 40°17'12" W. A DISTANCE OF 1205.92 FEET THEREFROM; THENCE RUN NORTHEASTERLY AND NORTHERLY ALONG THE ARC OF SAID CURVE TO THE LEFT, HAVING A RADIUS OF 1205.92 FEET, THROUGH A CENTRAL ANGLE OF 62°03'57", SUBTENDED BY A CHORD OF 1243.37 FEET AT A BEARING OF N. 18° 10'50" E., FOR A DISTANCE OF 1306.31 FEET TO A POINT OF TANGENCY; THENCE RUN N. 12°21'09" W FOR A DISTANCE OF 1182.45 FEET TO THE BEGINNING OF A TANGENTIAL CIRCULAR CURVE, CONCAVE SOUTHEASTERLY THENCE RUN NORTHERLY AND NORTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 894.93 FEET, THROUGH A CENTRAL ANGLE OF 84°15'40", SUBTENDED BY A CHORD OF 1200.68 FEET AT A BEARING OF N. 29° 46'41" E., FOR A DISTANCE OF 1316.12 FEET TO A POINT OF TANGENCY; THENCE RUN N. 71° 54'32" E. FOR A DISTANCE OF 21.85 FEET; THENCE RUN N 85°24'16" E., FOR A DISTANCE OF 51.42 FEET; THENCE RUN N. 71°54'32" E. FOR A DISTANCE OF 153.11 FEET, THENCE RUN S 80°26'03" E. FOR A DISTANCE OF 63.55 FEET;THENCE RUN S. 48°05'28" E. FOR A DISTANCE OP 71.91 FEET TO THE BEGINNING OF A TANGENTIAL CIRCULAR CURVE, CONCAVE NORTHERLY; THENCE RUN SOUTHEASTERLY, EASTERLY AND NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, HAVING A RADIUS OF 212.00 FEET, THROUGH A CENTRAL ANGLE OF 91°30'15", SUBTENDED BY A CHORD OF 303.72 FEET AT A BEARING OF N. 86°09'31" E., FOR A DISTANCE OF 338.57 FEET TO A POINT OF TANGENCY, THENCE RUN N. 40°24'32" E. FOR A DISTANCE OF 149.52 FEET TO THE BEGINNING OF A TANGENTIAL CIRCULAR CURVE, CONCAVE SOUTHEASTERLY; THENCE RUN NORTHEASTERLY AND EASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT HAVING A RADIUS OF 278.00 FEET, THROUGH A CENTRAL ANGLE OF 49°22'43", SUBTENDED BY A CHORD OF 232.24 FEET AT A BEARING OF N. 65° 05' 53" E., FOR A DISTANCE OF 239.59 FEET TO A POINT OF TANGENCY; THENCE RUN N 89° 47'14" E. FOR A DISTANCE OF 219.38 FEET; THENCE RUN N. 00°18'07" W. FOR A DISTANCE OF 19.83 FEET TO A POINT 20.00 FEET SOUTHERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE NORTH LINE OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 OF SAID SECTION 1, THE SAME BEING A POINT ON THE SOUTHERLY BOUNDARY OF THAT PARCEL OF LAND DESCRIBED IN DEED BOOK 143 OF PAGE 576 OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA; THENCE RUN S. 89° 06'35" W PARALLEL WITH THE NORTH LINE OF THE SOUTH 1/2 OF THE NORTHWEST 1/4 OF SAID SECTION 1 AND ALONG THE SOUTHERLY BOUNDARY OF SAID PARCEL OF LAND DESCRIBED IN SAID DEED BOOK 143 AT PAGE 576, FOR A DISTANCE OF 1193.27 FEET, THENCE RUN S. 42°46'42" E. FOR A DISTANCE OF 119.45 FEET; THENCE RUN S.71°54'32" W. FOR A DISTANCE OF 94.52 FEET TO THE BEGINNING OF A TANGENTIAL CIRCULAR CURVE, CONCAVE SOUTHEASTERLY; THENCE RUN SOUTHWESTERLY AND SOUTHERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, HAVING A RADIUS OF 1017.93 FEET, THROUGH A CENTRAL ANGLE OF 84°15'40", SUBTENDED BY A CHORD OF 1365.70 FEET AT A BEARING OF S. 29°46'41" W., FOR A DISTANCE OF 1497.00 FEET TO A POINT OF TANGENCY; THENCE RUN S. 12°21'09" E. FOR A DISTANCE OF 118245 FEET TO THE BEGINNING OF A TANGENTIAL CIRCULAR CURVE, CONCAVE NORTHWESTERLY; THENCE RUN SOUTHERLY AND SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 1082.92 FEET, THROUGH A CENTRAL ANGLE OF 61°48'25", SUBTENDED BY A CHORD OF 1112.35 FEET AT A BEARING OF S.18°33'04" W., FOR A DISTANCE OF 1168.18 FEET TO THE END OF SAID CURVED THENCE RUN S. 53°48'02" W. FOR A DISTANCE OF 97.76 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENTIAL CIRCULAR CURVE, CONCAVE NORTHWESTERLY WHOSE RADIUS POINT BEARS N. 35°22'00" W. A DISTANCE OF 1079.92 FEET THEREFROM; THENCE RUN SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 1079.92 FEET, THROUGH A CENTRAL ANGLE OF 14°32'14", SUBTENDED BY A CHORD OF 273.25 FEET AT A BEARING OF S.61°54'07" W., FOR A DISTANCE OF 274.00 FEET TO THE END OF SAID CURVE; THENCE RUN S. 85°05'58" W FOR A DISTANCE OF 47.25 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENTIAL CIRCULAR CURVE, CONCAVE NORTHWESTERLY WHOSE RADIUS POINT BEARS N. 18°23'28" W A DISTANCE OF 1067.92 FEET THEREFROM; THENCE RUN SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 1067.92 FEET, THROUGH A CENTRAL ANGLE OF 00°54'28", SUBTENDED BY A CHORD OF 16.92 FEET AT A BEARING OF S. 72°03'46" W., FOR A DISTANCE OF 16.92 FEET TO A POINT OF TANGENCY; THENCE RUN S. 72°31'00" W FOR A DISTANCE OF 158.58 FEET, THENCE RUN N. 45°59'18" W. FOR A DISTANCE OF 81.31 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY 41; THENCE RUN S 00°06'55" E., ALONG SAID EASTERLY RIGHT-OF-WAY LINE, FOR A DISTANCE OF 203.94 FEET; THENCE RUN S. 00°31'15" W., ALONG SAID EASTERLY RIGHT-OF-WAY LINE FOR A DISTANCE OF 66.03 FEET TO THE POINT OF BEGINNING, CONTAINING 17.234 ACRES, MORE OR LESS.

SUBJECT TO EASEMENT RESERVATIONS OR RESTRICTIONS OF RECORD.

BEARINGS REFER TO THE WEST LINE OF THE SOUTHWEST 1/4 OF SECTION 1, TOWNSHIP 45 SOUTH, RANGE 24 EAST, LEE COUNTY FLORIDA, AS BEING S. 00°06'55" E.

HOLE, MONTES & ASSOCIATES, INC

(PARCEL A)
DESCRIPTION OF

A tract or parcel of land lying in and being a part of Lee County Airport (Page Field) bounded on the south by Lot 1, Block U, on the west by the east right-of -way line of Sixth Street, on the north by the easterly prolongation of the north right-of-way line of Danley Drive, all of which are shown on the Plat of Page Park, a Subdivision recorded in Plat Book 8 at Pages 92 through 97, Public Records of Lee County, Florida, and on the east by a parcel recorded in Official Record Book 990 at Pages 290 and 291 Public Records of Lee County, Florida, Section 12, Township 45 South, Range 24 East being more particularly described as follows:

Commencing at the northeast corner of Lot 1, Block U at the northeast. corner of Page Park Subdivision as recorded in Plat Book 8 at Pages 92 through 97, Public Records of Lee County, Florida, said northeast corner being the point of beginning of the tract or parcel described herein; thence N89°04'46 " W (N89°04'20" W-Plat) along the north line of said lot 1, Block U for 137.20 feet (137.16 feet-Plat) to the northwest corner of said Lot 1 and the east right of way line of Sixth Street (65 feet in width); thence N00°28'27 " W (N00°28'01" W-Plat) for 79.94 feet (80.01 feet-Plat) to the north right of way line of Danley Drive: thence S89°04'46" E (S89°04'20" E-Plat) along the easterly prolongation of the north right of way line of Danley Drive for 137.20 feet to the westerly line of the former S.A.L. Railroad right of way as recorded in Official Record Book 990 at Pages 290 and 291, Public Records of Lee County, Florida, thence S00°28'38" E along said right of way line for 79.94 feet to the northeast. corner of said Lot 1, Block U of aforesaid Page Park Subdivision and the point of beginning, containing 10,964.72 square feet (0.2517 acres) more or less.

Bearings mentioned herein above are based on The Florida Coordinate System,. West Zone (NAD 83) 1990 Adjustment with the north line of the northeast quarter (NE 1/4) of Section 12, Township 45 south, 24 east as bearing N89°46'15" E.

Arthur W. Parsons, County Surveyor
Professional Surveyor and Mapper
Florida Certificate No. 2987

Lee County Port Authority
Page Field
General Aviation Airport

Birk Hillman
Orlando · Miami · Atlanta
6751 Forum Drive, Ste. #240, Orlando, FL 32821

PAGE FIELD AIRPORT MASTER PLAN
Fort Myers, Florida
Airport Property Map

NO.	DATE	REVISION

DATE:	MAY 200:
PROJECT NO.	C046010
DESIGNED BY:	K.P.
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Chapter Nine – Financial Plan

INTRODUCTION

The previous chapters of the Master Plan Update evaluate the existing facilities, project the future activity levels, identify potential facility shortfalls, and detail alternatives and recommendations for addressing these shortfalls throughout the 20 year planning period. The previous analysis is based on operational efficiency, safety, environmental factors and, to a lesser extent, cost, with a primary focus of identifying the need for specific improvements and identifying the general configuration of such. Regardless of the identified need for improvements, the ability to pay for a project will ultimately be a major factor influencing when it is implemented. This chapter addresses the financial implications of the various improvements.

Following an overview of both the state and federal grant programs and a general overview of potential funding sources, each project in the development program is summarized in this chapter along with its rough order of magnitude (ROM) cost for the short, medium and long term phases. Each project's eligibility relative to state and federal funding programs is also outlined. Finally, the net operating position of the airport is highlighted along with a review of future potential revenue sources that may assist in meeting the local funding share requirements.

SOURCES for FUNDING AIRPORT DEVELOPMENT

It is important to understand the FMY's development history and current condition in defining a future funding strategy for the airport. Following the opening of Southwest Florida International Airport and the shift of commercial activity from FMY in 1983, few improvements were made to FMY until the mid 1990's. By this time, activity at the airport had decreased considerably, not only due to the transfer of commercial activity, but also due to the loss of regional GA market share. A contributing factor to this loss of market share was the lack of ongoing maintenance of the facility which left many of the airport's facilities in extreme disrepair. This was exacerbated by the constraints of the GA terminal building and the severe shortage of adequate aircraft storage at the airport. While the airport had generally deteriorated since the early 1980's, by the mid 1990's, the LCPA was taking major strides to breath new life into the facility.

The first major improvement at the airport took place in 1996 with the design and construction of new t-hangar facilities on the east side of the airport which were funded with assistance from the Florida Department of Transportation (FDOT). Recognizing that considerable additional facility and service improvements were required to bring the airport in line with the expected service level of GA airports being developed today, in 1996, the LCPA took over the day-to-day operation of the PFAC. In 1998, the LCPA took over sole operation of fueling and property management. Beginning in 1998, and continuing through 1999, every aircraft parking apron on the airport was rehabilitated, with funding assistance from the FDOT and FAA. The services offered at the airport were also assessed and upgraded during this period in efforts to reestablish a loyal base of users. The recent development of surplus land has provided the airport with additional revenues for the operation and enhancement of the facilities and contributed to an operating surplus at FMY in 1999, the first such surplus since 1982.

Regardless of the strides made to date, additional improvements are required in the short term to bring FMY's facilities to the level required to adequately serve the local aviation and business community and to support its role as the region's only designated reliever airport.

Airports have historically depended heavily on non-local (state and federal) financial assistance for funding essential airport development projects. However, funding sources such as the Federal Aviation Administration's Airport Improvement Program (AIP) have increasingly lagged behind the growing nationwide demand for new or upgraded facilities. Additionally, the future of the AIP has been called into question as the FAA explores alternative methods for the funding of airport developments. While some alternative methods may supplement the AIP others could replace it outright. Reductions in the AIP over the past few years and the lack of a full year AIP bill (let alone a multi year bill) have caused airports to place a major emphasis on supplementing this assistance through the use of other funding sources. These sources include the development of non-aviation use airport lands to support commercial development. The various potential funding sources for development of facilities at FMY will be identified and detailed further in the following sections.

Airport Improvement Program (AIP)

One of the main sources for the funding of airport improvements is the Federal Airport Improvement Program (AIP). The AIP was authorized by the Airport and Airway Improvement Act of 1982 to assist in the funding of planning, development and noise compatibility projects at public-use airports nationwide in order to meet projections of civil aviation growth. To be eligible for funding assistance under the Airway Improvement Act, an airport must be included in the National Plan of Integrated Airport Systems (NPIAS).

Funding for the AIP comes from the Aviation Trust Fund which was established by the Airport and Airway Revenue Act of 1970. The Aviation Trust Fund derives its revenues through the levying of taxes and fees on aviation fuel and lubricants, airline tickets, international departure passengers, aircraft freight and other components of the aviation community. Funds collected and deposited in the Aviation Trust Fund are distributed to eligible airports throughout the United States and its trust territories through grants administrated by the Federal Aviation Administration under appropriations limits established by the United States Congress.

While AIP appropriations limits have included multi-year reauthorization approvals in the past, more recent history has exhibited a less stable funding environment. In 1999, although a record level of \$1.95 billion in improvements was funded, it required four separate allocations, with the final allocation of \$290 million distributed just 36 hours before the end of the fiscal year. This is by no means an ideal situation from the standpoint of planning and programming airport improvements. Estimates for funding in Fiscal Year (FY) 2000 have ranged as high as \$2.475 billion although it now appears unlikely that the funding level will exceed \$1.9 billion. Additionally, while potential funding levels ranging between \$3.2 and \$3.4 billion have been identified for FY 2001 through 2003, respectively, recent indications are that funding levels could be considerably lower in FY 2001, with a newly proposed level of \$1.688 billion by the current administration. These fluctuations in funding levels and lack of a long term AIP program have presented a major challenge to the planning of improvements and timeframe in which funds are allocated to a specific project.

Allocation of funds from the FAA to the nation's airports is based upon a number of eligibility criteria and tied to a priority system that is used to rank each request and determine which projects will be funded and which will not during any given fiscal year. The priority system employed by the FAA has different criteria for different projects. For instance, planning projects are assessed using specific criteria that are applicable to planning types of projects. Generally, projects that enhance the safety of aircraft operations and those that enhance capacity in the system are higher priority projects. The priority system also ranks projects based on the size of the airport and the number of aircraft and aircraft operations at the facility.

In addition to the use of the priority system for the evaluation of projects, the AIP has identified a number of projects that are either eligible or ineligible for Federal funding assistance. Even if a proposed airport improvement is considered to be eligible for Federal funding the airport must first conform to several requirements. These requirements are listed below (from FAA Order 5100.38A, *Airport Improvement Handbook*):

1. An airport development project must be shown on a current Airport Layout Plan (ALP) which has FAA approval from the standpoint of safety, utility and efficiency of the airport.
2. The project sponsorship requirements must have been met.
3. The proposed project will be reasonably consistent with the plans for planning agencies for the development of the area in which the airport is located.
4. Sufficient funds must be available for the portion of the project not paid for by the Federal government. (i.e. local and/or state matching share.)
5. The project will be completed without undue delay.
6. The airport location is included in the current version of the National Plan of Integrated Airport Systems (NPIAS).
7. The project involves more than $25,000 in AIP funds unless, in the judgement of the responsible airports office it would be in the best interest of the Government to award a lesser grant amount.
8. All AIP projects require either a determination that the project is categorically excluded from environmental requirements, an environmental assessment resulting in either a "Finding of No Significant Impact" (FONSI) or preparation of an Environmental Impact Statement (EIS).

Close agency coordination is often required to address more complex issues relative to project eligibility. Additionally, it is reasonable to assume that there may be changes in eligibility criteria over the course of the planning period. Guidance on issues of eligibility is provided in FAA Order 5100.38A, Airport Improvement Program Handbook. The Federal funding share for these projects is generally 90 percent for small commercial and GA airports and 75% for medium and large hub commercial airports. Based on current eligibility criteria, the following projects are generally considered eligible under FAA guidance:

- Ramps (non-exclusive)
- Land acquisition costs and costs incidental to the acquisition, including relocation assistance of displaced persons or businesses, of any property interest necessary for airport purposes. Reimbursement for land previously acquired is also eligible.
- The cost of planning and engineering services needed in connection with an airport development or noise implementation project.
- Site preparation for new facilities and for existing facilities where these facilities must be brought into compliance with applicable airport design standards.
- Construction, alteration and reconstruction of runways and taxiways available for general public use. This includes the surface friction treatments such as grooving, aggregate seal coats or porous friction coats.
- Initial marking of eligible runways, taxiways, helipads and portions of aprons associated with the taxiway system as well as the re-marking of these pavements under certain conditions.
- Airfield signs including destination, intersection, runway distance remaining markers and signs necessary to provide information to pilots.

- Installation, alternation and rehabilitation of airfield lighting including runways, taxiways and aprons conforming to FAA design and engineering standards. Retro-reflective markers are also eligible as long as they provide sufficient and safe guidance.
- Navaids are eligible for funding under the Airport Improvement Program, although most Navaids are funded through FAA's Facilities and Equipment program.
- Construction, reconstruction and alteration of airport roads and related facilities are eligible to varying degrees depending upon their designated use.
- Portions of terminal facilities devoted to use by the general public.
- Perimeter fencing and fencing between the airport property and public areas such as roads to discourage the access of wildlife on runways and taxiways.
- Removal and relocation of objects in the Runway Protection Zone or removal, lowering or relocation of an object constituting a hazard to air navigation.
- Environmental mitigation, if it is a condition of approval of an environmental action associated with an airport development project.

Projects which are specifically referenced (Appendix 2, FAA Order 5100.38A) as <u>non-eligible</u> for FAA AIP funding assistance include the following (although t-hangars are not specifically referenced in this appendix, they are also ineligible) :

- Fuel farms.
- Emergency Planning.
- Landscaping, unless an incidental part of an eligible project.
- Communication systems (except that which is used for safety/security).
- Training facilities except those which are included in an otherwise eligible project as an integral part of that project and which are of a relatively minor or incidental cost, i.e., less than 10% of the project cost. An example of exception would be would be a training room included as part of a new ARFF facility.
- Roads, whatever length, used exclusively for the purpose of connecting public parking facilities to an access road.
- Roads serving principally industrial or non-aviation related areas or facilities.
- Construction or relocation of Air Traffic Control Towers.
- General aviation terminals.
- Airport surface detection systems (ASDE).
- Maintenance/service facilities except for those allowed to service required ARFF equipment.
- Projects for the determination of latitude, longitude, and elevation except as an incidental part of master planning.
- Development of new flight procedures or demonstration programs for noise compatibility purposes.

The availability of AIP funding for projects at FMY will depend directly on the priority and the funding availability for reliever airport projects. In FY 1999, which was a record AIP funding year for the national airport system, Florida airports received $45.99 million in discretionary grants and $44.89 million in entitlement grants for a total AIP allocation of $90.9 million. Of this, $4.9 million in discretionary funding was allocated to reliever airport projects. With such a small funding allocation for reliever airports in 1999, even though it was a record year for national airport project funding, it is not clear to what level the eligible projects will receive AIP assistance.

Florida Department of Transportation (FDOT)

Similar to the AIP on the federal level, the FDOT Aviation Grant Program is funded from the state Transportation Trust Fund. The state Transportation Trust Fund consists, in part, of funds collected through the State's aviation fuel tax. The FDOT Aviation Office administers the aviation grant program to help provide a safe, cost-effective, and efficient statewide aviation system. The FDOT grant program supplements the AIP, providing a portion of the sponsors matching share when federal funding is available and 50 percent to 80 percent of the overall project cost when it is not. FDOT grant funds help airports build T-hangars, build and maintain runways and taxiways, eliminate airport hazards, protect the air space, and build terminals and other facilities. In 1998, FDOT spent more than $90 million in state grants for Florida's airports. In that same year, the FAA provided $60 million in federal grants developing Florida's public airport system.

FDOT participation in aviation projects can be summarized as follows

Commercial Service Airports – FDOT provides ½ of the local share of commercial service airport project costs when federal funding is available. Stated again, FDOT provides 12.5 percent of the project costs when the FAA funds 75 percent. If there is no FAA funding for a project, FDOT provides 50 percent of the project costs.

General Aviation Airports – FDOT provides ½ of the local share of GA airport project costs when FAA funding is available. Stated again, FDOT provides 5 percent of the project costs when the FAA provides 90 percent of the funding. If there is no FAA funding for a project, FDOT provides up to 80 percent of the project costs.

Economic Development – Airport economic development provides 50 percent of airport development funds to build on-airport revenue-producing capital improvements, like industrial/commercial parks.

Airport Loans – Airport loans are used to help airports acquire land in the near term and allows time to apply for FAA funding. FDOT provides interest free loans for 75 percent of the cost of airport land purchases for both commercial service and general aviation airports. These loans are repaid at the normal FDOT funding ratio when FAA funds become available, or in 10 years, whichever comes first.

All publicly owned Florida airports that are open for public use are eligible for state funding. In addition, privately owned airports that are classified with "reliever" status are eligible for FAA funding. Florida law generally allows the FDOT to fund any capital project on airport property and any service that leads to capital projects, such as planning and design services. The only off-airport projects allowed are the purchase of mitigation lands, the purchase of avigation easements, and the access projects for intercontinental airports. Airport capital equipment is eligible, except equipment closely related to the day-to-day operations (mowing machines, weed eaters, airport vehicles, etc.). In general, operational costs such as maintenance services, equipment, and supplies are not eligible for aviation grants. To be eligible for FDOT grants, each airport project must be consistent with the airport's role as defined in the Florida Aviation System Plan (FASP), and capital projects must be part of an FDOT approved airport master plan or airport layout plan. Additionally, for projects to be eligible for state funding, they must also be included in the Joint Automated Capital Improvement Plan (JACIP). This plan accepts requests from airports for project funding along with each airport's priority for individual projects. The JACIP does not represent a commitment by the FDOT or FAA to fund a particular project or projects. The Plan is intended to coordinate state and federal funding efforts and provide a realistic approach based on the best and most current information available of projects at Florida grant eligible airports.

As with the federal grant program the state program commits funds through its district offices to eligible airport projects according to a project priority system. The following is a summary of this system presented in order of priority:

A. **Federally Funded Projects.** The State's share will be up to one-half of the non-Federal share.

B. **Non-federally Funded Airside Projects – Priority Order**
1. Safety or security of the travelling public.
2. Preserve existing airfield infrastructure.
3. Increase capacity of Florida's airports.
4. Projects of significant importance that cannot be fully funded by the Federal government and can be funded per the provisions of F.S. Section 332.007(6)(a) 1 and 2, if State funds are available.

C. **Non-Federally Funded – Other**
1. Airport planning projects.
2. Land acquisition for airfield infrastructure.
3. Airport terminal projects.
4. Airport access projects, if Department intermodal funds are not available.
5. Navigational Aids (Navaids) projects under certain criteria.

D. **Economic Development Projects**

Local Funding Sources

Recognizing the major facility improvements required at FMY and the strained resources of the Federal and State funding programs, it is anticipated that local sources will be a primary component for the funding of the future development program. Local funding of airport improvements can come from several sources including fees for airport services, airport land and facility leases and other user charges, or from issuance of bonds to cover the cost of capital improvements. The LCPA is currently aggressively pursuing enhancement of local funding sources and this will be outlined further later in this chapter. Components that will be discussed in overviewing FMY's future revenue generation strategy include the following:

- Airport Land Leases
- Airport Facility Leases
- Hangar Rental
- Landing Fees
- Rental Car Fees
- Net Surplus from the Operation of the PFAC
- Other Miscellaneous Revenue Sources

CAPITAL IMPROVEMENT PROGRAM

The following sections detail the 20 year Capital Improvement Program (CIP) for the short, medium and long term development periods.

Ongoing Airport Improvements

Lighted Airfield Signage (Includes Upgrade to Vault) – Phase I ***ROM Cost = $970,000***

This project is the first phase of improvements to the airfield signage in support of the projected increase of aircraft activity at the airport. This project is a key component for improving operational safety at the airport, particularly during nighttime operations. An upgrade to the electrical vault is required a part of this project to accommodate the additional electrical requirements. This project is broken into a primary component and three bid alternates. The budget provides for the primary component and first of the bid alternates with the remaining two being deferred until the second phase. This project is currently under grant for 80% state funding participation.

East Ramp Expansion ***ROM Cost = $1,325,125***

This project includes expansion of the east ramp and addition a plane wash facility. The septic tank for the plane wash facility was added during construction of the earlier east quadrant t-hangar facilities. This project is currently under grant for 80% state funding participation.

Short Term Improvements – Year 2000 Through 2005

The following development projects are included in the short term development program for the airport. The eligibility of each project relative to state and federal funding assistance is outlined along with its rough order of magnitude (ROM) cost. It should be noted that the ROM cost estimates provide for a 10% design and administration cost and a 10% overall contingency. A summary of the projects, ROM costs and funding for the short term development program is outlined in **Table 9-1**.

East T-Hangars (26 units) ***ROM Cost = $1,007,000***

This project is the first of two t-hangar project during the short-term period of development. This project consists of the construction of 24 t-hangar units with 2 cabin class units configured in three parallel buildings in the eastern quadrant of the airport. Recognizing the severe shortage of t-hangars at the airport, the LCPA has moved forward with the design of these facilities (currently at 100%) in hopes that FDOT funding becomes available in the short term. This project is eligible for up to 50 percent state funding assistance.

East Shade Hangars (8 Units) ***ROM Cost = $407,831***

This project will provide a lower cost solution to the t-hangar shortage through the development of a row of 8 shade hangars to the west of the existing t-hangars in the East Quadrant. The shade hangar structure will provide protection from directly above relative to sun and rain allowing for some protection at a nominal cost to users. This project is ineligible for federal or state funding assistance.

Relocation of Airport Maintenance Facility ***ROM Cost = $181,500***

This project is the first step in providing for the relocation and expansion of the GA terminal on the north airfield. The existing airport maintenance facility occupies the future site of the GA terminal and the expanded itinerant parking ramp and requires relocation prior to the GA terminal's construction. The proposed site for the relocated airport maintenance facilities is a one acre parcel in the east quadrant of the airport, just south of the Runway 23 end. This project is eligible for up to 80 percent state funding assistance.

Development Costs and Funding by Phase

TABLE 9-1

Short Term - Year 2000 through 2005

Project Description	Total Cost (2000 Dollars)	Maximum Possible FAA Grants	Maximum Possible State Grants	Sponsor's Share Remaining Costs
Phase I Signage	$ 970,000	$ -	$ 776,000	$ 194,000
East T-Hangars - 24 Units Plus 2 Cabin Class Hangars	$ 1,007,000	$ -	$ 503,500	$ 503,500
East Ramp Expansion and Wash Rack	$ 1,325,125	$ -	$ 1,060,100	$ 265,025
East Shade Hangar (8 Units)	$ 407,831	$ -	$ -	$ 407,831
Relocate Airport Maintenance Facility	$ 181,500	$ -	$ 145,200	$ 36,300
North Ramp Expansion	$ 2,090,402	$ 1,881,362	$ 104,520	$ 104,520
New GA Terminal	$ 1,390,000	$ -	$ 1,112,000	$ 278,000
Helipad	$ 70,000	$ -	$ 56,000	$ 14,000
Taxilane "C" Widening	$ 363,000	$ 326,700	$ 18,150	$ 18,150
New Fuel Farm (Partial Relocation)	$ 187,500	$ -	$ 150,000	$ 37,500
Bulk/Multi Use Hangar - 120' x125 '	$ 1,089,000	$ -	$ 544,500	$ 544,500
FIS Facility	$ 635,250	$ -	$ 317,625	$ 317,625
Northside Entrance Road Improvements	$ 102,850	$ -	$ 82,280	$ 20,570
Miscellaneous Drainage Improvements	$ 242,000	$ -	$ 121,000	$ 121,000
Page Field Commerce Center Rehabilitation	$ 2,400,000	$ -	$ 1,200,000	$ 1,200,000
Expansion of South Bulk/Multi Use Hangar	$ 880,880	$ -	$ 440,440	$ 440,440
Runup Areas - Runway 23 (2) & Runway 31 (1)	$ 468,875	$ 421,988	$ 23,444	$ 23,444
Taxiway "B" Pavement Rehabilitation	$ 885,115	$ 796,604	$ 44,256	$ 44,256
Runway and Taxiway Lighting Improvements	$ 343,640	$ -	$ 171,820	$ 171,820
Lighted Airfield Signage (Includes Upgrade to Vault) - Phase II	$ 400,000	$ -	$ 320,000	$ 80,000
East T-Hangars - 24 Units	$ 824,494	$ -	$ 412,247	$ 412,247
East Ramp Expansion	$ 1,384,482	$ -	$ 692,241	$ 692,241
Upgrade Markings on Runway 31 to Non-precision	$ 10,890	$ -	$ 8,712	$ 2,178
Taxiway "C" Extension, High Speed Txwys and Runup Areas (2) for Runway 5	$ 4,291,386	$ 3,862,247	$ 214,569	$ 214,569
Service Road Construction (1 lane up to 1 lineal mile)	$ 553,696	$ 498,326	$ 27,685	$ 27,685
Environmental Cleanup	$ 574,750	$ -	$ 400,000	$ 174,750
Property Acquisition - Southwest Parcel Adjacent Danley Drive	$ 77,500	$ 69,750	$ 3,875	$ 3,875
Land Acquisition for ALS	$ 785,000	$ 706,500	$ 39,250	$ 39,250
Land Easements/Easements for RPZ's - Developed Land	$ 785,000	$ 706,500	$ 39,250	$ 39,250
Land Easements/Easements for RPZ' - Undeveloped Land	$ 432,000	$ 388,800	$ 21,600	$ 21,600
East Airfield Rest Rooms	$ 18,876	$ -	$ -	$ 18,876
Demolition of Depot 7 Buildings	$ 145,200	$ -	$ -	$ 145,200
Southwest Access Road Closure	$ 35,000	$ -	$ -	$ 35,000
Southwest Ramp Expansion	$ 349,388	$ 314,449	$ 17,469	$ 17,469
Total Investments (2000-2005)	*$ 24,737,628*	*$ 9,973,225*	*$ 8,291,733*	*$ 6,472,670*

Indicates that funding has been committed	*$ 1,836,100*
Indicates that project is programmed for future funding assistance	*$ 1,718,000*
Additional funding required to complete Short Term Program	*$ 21,183,528*

Note: Funding schedule assumes full federal and state participation for all eligible projects. Any funds not received by LCPA would cause the local share (remaining costs) to increase. These increases may cause the project(s) to be delayed or cancelled. Completion of any and\or all of the project shown are contingent upon receipt of federal or state grants and

North Apron Expansion — ***ROM Cost = $2,090,402***

Expansion of the recently rehabilitated North Apron is required to provide for the existing and projected itinerant aircraft parking requirements in support of the relocated GA terminal. This expanded ramp will also provide access to the new terminal, the FIS, and the bulk hangar. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

New GA Terminal — ***ROM Cost = $1,390,000***

This project involves the construction of a much larger 15,000 ft² facility on the north airfield, adjacent the expanded North Apron. Relocation of this facility to the north airfield allows for the airport to utilize the recently rehabilitated high strength North Apron and provides for considerable landside improvements and a general increase in level of service in line with the facilities at similar airports that are in development today. Along with the increase of capacity, in and around the GA terminal area, is the ability to generate increased airport revenues as the airport becomes better able to accommodate the demands of the local business and aviation community. This project is eligible for up to 80 percent state funding assistance.

Helipad — ***ROM Cost = $70,000***

This facility is located on the North side of the airfield, adjacent to the North apron area, between Taxiway B and Taxiway C, just south of the ATCT. The helipad will consist of a Final Approach and Takeoff Area (FATO), a Touchdown and Lift-off Area (TLOF) and two designated helicopter parking positions. The proposed location will be convenient for itinerant helicopter operators to the general aviation terminal and the other support facilities located on the North side of the airfield. This project is eligible for up to 80 percent state funding assistance.

Taxilane "C" Widening — ***ROM Cost = $363,000***

This project goes hand-in-hand with the North Apron expansion. By widening Taxilane "C" where it runs adjacent the North Apron and shifting the centerline and parking limit lines south, more ramp will become available as required to support the itinerant aircraft parking requirements. This relocation will not negatively impact the ADG C-III classification of the runway and will provide for deeper apron and more operational flexibility. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

New Fuel Farm (partial relocation) — ***ROM Cost = $187,500***

With this project, a new fuel storage facility will be constructed north of the expanded ramp and east of the new GA terminal to support the relocated itinerant aircraft operations. The facility will consist of two 12,000 gallon Jet A-1 tanks and one 12,000 gallon 100LL tank. One of the 12,000 Jet A-1 tanks will be relocated from the existing fuel farm where a single 12,000 gallon Jet A-1 tank and 12,000 gallon 100LL tank will be maintained to serve the south and east quadrants of the airfield. This project is eligible for up to 80 percent state funding assistance.

Bulk/Multi-Use Hangar – 120'x 125' — ***ROM Cost = $1,089,000***

This project includes construction of a 15,000 ft² bulk/multi-use hangar to provide for itinerant aircraft storage and servicing. The existing clearspan used for storage on the south airfield will only provide for based aircraft in the future, rather than the current mixed use. The improved storage and servicing capabilities for itinerant aircraft will result in a higher level of service as well as improved revenues. This project is eligible for up to 50 percent state funding assistance.

FIS Facility ***ROM Cost = $635,250***

This project consists of the construction of a 3000ft^2 general aviation federal inspection station (FIS or GAF). The FIS will be used to process international arrival GA aircraft as a U.S. Port of Entry. The facility will be located adjacent the GA terminal to allow for a high level of passenger service and efficient servicing of international aircraft. This facility will provide a service that does not already exist on the west coast of Florida and will result in improved level of service for the region and increased activity and revenues for the airport. This project is eligible for up to 50 percent state funding assistance.

Northside Entrance Road Improvements ***ROM Cost = $102,850***

Access in the vicinity of the future GA terminal area is currently provided by a single lane one-way road that serves the entire north quadrant. This project improves a portion of this roadway to allow for two way access into the immediate GA terminal area. This project is eligible for up to 80 percent state funding assistance.

Miscellaneous Drainage Improvements ***ROM Cost = $242,000***

This project is required to support the expansion and addition of facilities in the north quadrant. Facilities supported include expansion of the North Apron, the development of the new GA terminal, the development of the new fuel farm, construction of the new multi-use/bulk hangar, development of the FIS and the entrance road improvements. This project is eligible for up to 50 percent state funding assistance.

Page Field Commerce Center Rehabilitation ***ROM Cost = $2,400,000***

This project consists of the rehabilitation of roughly 50 plus percent of the Page Field Commerce Center which was not included in the FDLE leasehold. This will provide for completely reconditioning the balance of the building to provide for its lease to a future user(s). This un-leased portion of the building represents the largest revenue generation potential relative to investment cost of any facility on the airport. This project may be eligible for up to 50 percent state funding assistance.

Expansion of South Bulk/Multi-Use Hangar ***ROM Cost = $880,880***

The existing bulk /multi-use storage hangar on the south airfield is used to store based aircraft during the off-season and a mix of based and itinerant aircraft during the peak season. With the relocation of the itinerant aircraft to the north airfield and the severe shortage of hangar storage at the airport, this project includes the extension of the existing bulk hangar eastward adjacent the southeast aircraft parking apron. This expansion will allow for the storage and servicing of additional larger based aircraft or multiple smaller aircraft at the airport and provides considerable flexibility relative to aircraft size. This project will result in additional based aircraft and improved airport revenues and is eligible for up to 50 percent state funding assistance.

Run-up Areas – Runway 23 (2) and Runway 31 (1) ***ROM Cost = $468,875***

Lack of run-up areas at the runway ends has been cited as a major contributing factor to congestion and inefficient movement of aircraft in and around the terminal area. With activity levels increasing considerably in the short term and approaching historical highs in the long term, the addition of these run-up areas will result directly in improved airport capacity, efficiency and safety. It will also result in a reduction in delays and air traffic controller workload. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Taxiway "B" Pavement Rehabilitation ***ROM Cost = $885,115***

Based on the latest inspection of the pavements at FMY, Taxiway "B" should be rehabilitated during the short-term development program. This project allows for the full length rehabilitation of the taxiway and the reconstruction of areas exhibiting extreme deterioration. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Runway and Taxiway Lighting Improvements ***ROM Cost = $343,640***

This project includes the upgrade and enhancement of the runway and taxiway lighting at the airport. With this project, the existing visual approach slope indicators (VASI's) will be upgraded to precision approach path indicators (PAPI's) for each runway end. Additionally, runway end instrument lights (REIL's) will be added to each runway end to improve the pilot's orientation with respect to encroachment of surrounding development. Finally, this project includes the upgrade of reflective cans to medium intensity taxiway lighting (MITL). Although MITL does exist at a number of locations throughout the airfield, some areas are currently only equipped with reflective cans. This was due to either a lack of funds at the time the existing lights were added or the fact that many of the areas had very little nighttime activity. With the considerable expansion of the east quadrant of the airport and relocation of itinerant aircraft to the north airfield, many formerly low traffic areas will now experience increased activity. As such, this project will include the upgrade of the lighting on all taxiway movement areas to MITL as well as the resulting airfield electrical vault improvements. This project is eligible for up to 50 percent state funding assistance.

Lighted Airfield Signage (Includes Upgrade to Vault) – Phase II ***ROM Cost = $400,000***

This project is the second phase of improvements to the airfield signage in support of the projected increase of aircraft activity at the airport. The first phase was initiated in FY 2000. This project is a key component for improving operational safety at the airport, particularly during nighttime operations. An upgrade to the electrical vault will be required as a part of this project to accommodate the additional electrical requirements. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

East T-Hangars - 24 Units ***ROM Cost = $824,494***

This project is the second of two t-hangar projects during the short-term period of development. This project consists of the construction of 24 t-hangar units configured in three parallel buildings in the eastern quadrant of the airport. These t-hangars will be located parallel to and northeast of the initial set of t-hangars constructed during the short-term development period. This project is eligible for up to 50 percent state funding assistance.

East Ramp Expansion ***ROM Cost = $1,384,482***

This project is the second of two expansions of the east ramp during the 2005 development period. This project is eligible for up to 90 percent federal funding and five percent state funding assistance or 80 percent funding assistance in the case that federal funds are not available.

Upgrade Markings on Runway 31 to Non-precision ***ROM Cost = $10,890***

This project consists of the upgrade of the Runway 31 pavement markings from visual to non-precision. This project resulted from the addition, in July 1999, of a non-precision stand alone GPS approach procedure which provides Runway 31 with a decision height of less than 400 feet agl. This project is eligible for up to 90 percent federal funding and five percent state funding assistance. However, this project does not meet the FAA's typical minimum grant threshold of $25,000. In this case, without federal participation the state may provide funding assistance up to 80 percent of the project value.

Taxiway "C" Extension, Highspeed Exits, and Runup Areas (2) for Runway 5 ROM = $4,291,386
This project provides for the extension of the parallel Taxiway "C" from its intersection with Runway 13-31 to the Runway 05 end in support of the large percentage of activity that will be relocated to the north airfield. This project will remove the need for itinerant departure activity to cross the primary runway, Runway 5-23. It will also reduce runway occupancy time and improve runway capacity through the addition of two highspeed exits, one serving the north airfield and one serving the south. Run-up areas will be added both north and south of the Runway 05 end to improve efficiency for the primary departure runway. This project also provides for the regrading of the glideslope critical area to ensure that the ILS signal is not impacted by the addition of the new taxiway. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Service Road Construction (1 lane up to 1 lineal mile) ROM Cost = $553,696
Construction of a service road connecting the north, east and south quadrants of the airport is a key project to facilitate servicing in all three quadrants of the airport. This service road will be a single lane restricted access service road due to its proximity to the Runway 23 and Runway 31 ends. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Environmental Cleanup ROM Cost = $574,750
Environmental audits of the airport have identified a number of sites that were occupied by former facilities that require cleanup. This project provides for the mitigation of each site and is eligible for state funding assistance (DEP).

Property Acquisition - Southwest Parcel Adjacent Danley Drive ROM Cost = $77,500
This project includes the acquisition of a parcel located on the north side of Danley Drive near the southwest airfield. This approximately 43,000 ft^2 parcel will allow for the closure of the existing southwest airport access road to provide for the future expansion of the southwest parking apron. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Land Acquisition for ALS ROM Cost = $785,000
This project consists of the acquisition of land to provide for the future development of an approach lighting system (ALS) to serve the Runway 5 approach. This project provides for acquisition of up to 4 acres of high density commercial property. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Land Acquisition/Easements for RPZ's - Developed Land ROM Cost = $785,000
This project consists of the acquisition of parcels and easements for developed land falling within the airport's runway protection zones (RPZ's). The purpose of this acquisition is to ensure that the airport obtains a means to control the future land use within the RPZ areas. The primary concentration of developed land falling within the RPZ's at FMY is located off the Runway 5 and 31 ends. This project provides for acquisition of up to 4 acres of this high density commercial property. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Land Acquisition/Easements for RPZ's - Undeveloped Land ***ROM Cost = $432,000***
This project consists of the acquisition of parcels and easements for undeveloped land falling within the airport's runway protection zones (RPZ's). As with the prior project, the purpose of this acquisition is to ensure that the airport obtains a means to control the future land use within the RPZ areas. The primary concentration of undeveloped land falling within the RPZ's at FMY is located off the Runway 23 end. This project provides for acquisition of up to 6 acres of undeveloped land. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

East Airfield Rest Rooms ***ROM Cost = $18,876***
With the recent development of t-hangars in the East Quadrant, and the pending expansion of the east ramp, the lack of restroom facilities in this quadrant of the airport is an inconvenience to an increasing number of pilots and their passengers. This project includes development of restroom facilities in the East Quadrant of the airport adjacent the future plane wash facility. This project may be eligible for federal or state funding assistance.

Demolition of Depot 7 Buildings ***ROM Cost = $145,200***
The existing Depot 7 lease, which encompasses the northern half of the East Quadrant of the airport, requires turnover of all buildings located on the site to the airport upon termination or expiration of the lease. In order to provide for the expansion of the east ramp planned for this area during the short term, demolition of these facilities will be required. This project may be eligible for federal or state funding assistance.

Southwest Access Road Closure ***ROM Cost = $35,000***
This project includes the closure of southwestern portion of the airport access road and diversion of traffic to South Road and Danley Drive. This portion of the road is not used as the single means of access to any of the existing facilities and isolates a portion of the developable airport property. This project provides for some pavement removal and signage modifications required to close the existing road. This project may be eligible for federal or state funding assistance.

Southwest Ramp Expansion ***ROM Cost = $349,388***
This project is the first phase of a ramp expansion project on the southwest side of the airport. This expansion project will provide additional aircraft parking and will support aviation related development in this area of the airfield. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Intermediate Term Improvements – Year 2006 Through 2010

The following development projects are included in the intermediate term development program for the airport. As with the short term improvements, the associated rough order of magnitude (ROM) cost estimates provide for 10% design and administration costs and a 10% overall contingency. A summary of the projects, ROM costs and funding for the intermediate term development program is outlined in **Table 9-2**.

Development Costs and Funding by Phase

TABLE 9-2

Intermediate - Year 2006 through 2010

Project Description	Estimated Cost (2000 Dollars)	Maximum Possible FAA Grants	Maximum Possible State Grants	Sponsor's Share Remaining Costs
Bulk/Multi Use Hangar - 75' x 100'	$ 408,375	$ -	$ 204,188	$ 204,188
2 North Cabin Class Hangars - 70' x 80' Units and Infrastructure	$ 901,450	$ -	$ 450,725	$ 450,725
Relocation of Self Fueling Facility	$ 50,000	$ -	$ 25,000	$ 25,000
Southeast T-Hangars - 32 Units	$ 1,213,509	$ -	$ 606,755	$ 606,755
Southeast Ramp Expansion	$ 871,805	$ 784,625	$ 43,590	$ 43,590
Rehabilitate Runway 13/31	$ 2,182,840	$ 1,964,556	$ 109,142	$ 109,142
Land Acquisition for ALS	$ 725,000	$ 652,500	$ 36,250	$ 36,250
Installation Of Approach Lighting System	$ 605,000	$ 544,500	$ 30,250	$ 30,250
Land Easements/Easements for RPZ's - Developed Land	$ 785,000	$ 706,500	$ 39,250	$ 39,250
Land Easements/Easements for RPZ's - Undeveloped Land	$ 576,000	$ 518,400	$ 28,800	$ 28,800
Master Plan Update	$ 150,000	$ 135,000	$ 7,500	$ 7,500
Total Investments (2006-2010)	*$ 8,468,979*	*$ 5,306,081*	*$ 1,581,449*	*$ 1,581,449*

Note: Funding schedule assumes full federal and state participation for all eligible projects. Any funds not received by LCPA would cause the local share (remaining costs) to increase. These increases may cause the project(s) to be delayed or cancelled. Completion of any and\or all of the project shown are contingent upon receipt of federal or state grants and Each line item includes 10% for design & administration and a 10 % contingency.

Bulk/Multi Use Hangar - 75' x 100' ***ROM Cost = $408,375***

This project consists of the development of a 7,500 ft² bulk/mutli-use hangar to support the storage and servicing of itinerant aircraft. The new facility will be developed adjacent the expanded north ramp, east of the short term bulk hangar and west of the new fuel farm. The improved storage and servicing capabilities for itinerant aircraft will result in an improved level of service, increase activity and increased airport revenues. This project is eligible for up to 50 percent state funding assistance.

2 North Cabin Class Hangars - 70' x 80' Units and Infrastructure ***ROM Cost = $901,450***

This project includes the development of two 70'x80'cabin class hangars and associated airfield pavement for the storage of larger corporate type aircraft on the north airfield northwest of the airport fire station. Each of these corporate style hangars will also have the capability to store multiple smaller aircraft. Development of these facilities will be based upon specific identified demand. This project is eligible for up to 50 percent state funding assistance.

Relocation of Self Fueling Facility ***ROM Cost = $50,000***

Relocation of the self fueling facility is required to provide for the development of t-hangars on the southeast parcel of the airport. This project relocates the self fueling facility to a more central location just west of the existing Page Field Aviation Center. Approximately 1925 yd² of apron will also be constructed to improve access to this facility. This project is eligible for up to 50 percent state funding.

Southeast T-Hangars - 32 units ***ROM Cost = $1,213,509***

This project consists of the development of 32 additional t-hangars in the southeastern area of the airport to continue to support the airport's hangar demand. The new t-hangars will require relocation of the existing self fueling facility and construction of additional apron area. The units will be configured in three sets of parallel north-south oriented t-hangars and one set of non-nested east-west oriented hangars. This project is eligible for up to 50 percent state funding assistance.

Southeast Ramp Expansion ***ROM Cost = $871,805***

This project includes expansion of the southeast ramp to allow for more efficiency and improved capacity in support of facilities being developed in this area of the airfield. This project is eligible for up to 90 percent federal funding and five percent state funding assistance or 80 percent funding assistance in the case that federal funds are not available.

Rehabilitate Runway 13/31 ***ROM Cost = $2,182,840***

The full length rehabilitation of Runway 13/31 is anticipated during the intermediate term based on the existing condition of the airfield pavement. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Land Acquisition for an Approach Lighting System (ALS) ***ROM Cost = $725,000***

This project consists of the acquisition of land to provide for the future development of an approach lighting system (ALS) to serve the Runway 5 approach. This project provides for acquisition of up to 3.7 acres of high density commercial land. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Installation Of Approach Lighting System ***ROM Cost = $605,000***

Runway 5 is the primary approach runway and is currently equipped with an instrument landing system (ILS) that consists of a glideslope and a localizer. While the ILS minimizes the decision height for this approach, an approach lighting system (ALS) is required to reduce the visibility minimums below the current one mile requirement. This project consists of the addition of an ALS to supplement the existing ILS equipment and provide the primary approach with improved visibility minimums. This project is eligible for up to 90 percent federal funding and five percent state funding assistance with the remaining five percent to be funded by the sponsor.

Land Acquisition/Easements for RPZ's - Developed Land ***ROM Cost = $785,000***
This project consists of the acquisition of parcels and easements for developed land falling within the airport's runway protection zones (RPZ's). The purpose of this acquisition is to ensure that the airport obtains a means to control the future land use within the RPZ areas. The primary concentration of developed land falling within the RPZ's at FMY is located off the Runway 5 and 31 ends. This project provides for acquisition of up to 4 acres of this high density commercial property. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Land Acquisition/Easements for RPZ's - Undeveloped Land ***ROM Cost = $576,000***
This project consists of the acquisition of parcels and easements for undeveloped land falling within the airport's runway protection zones (RPZ's). As with the prior project, the purpose of this acquisition is to ensure that the airport obtains a means to control the future land use within the RPZ areas. The primary concentration of undeveloped land falling within the RPZ's at FMY is located off the Runway 23 end. This project provides for acquisition of up to 8 acres of undeveloped land. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Airport Master Plan Update ***ROM Cost = $150,000***
Airport Master Plans are typically updated every five to ten years depending on the validity of the prior planning analysis and assumptions. Changes occurring in aircraft activity levels, the local business community, the profile of the users, etc., will help to determine the need to revisit and update the plan. This project provides for the update of the existing plan, completed in the year 2000, during the intermediate development period of the airport. By revisiting the assumptions, projections and development accomplished to date, the existing plan can be modified and refocused to better address a continued strategy of development. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Long Term Improvements – Year 2011 Through 2020

The following development projects are included in the long term development program for the airport. As with the short and intermediate term improvements, the associated rough order of magnitude (ROM) cost estimates provide for 10% design and administration costs and a 10% overall contingency. A summary of the projects, ROM costs and funding for the long term development program is outlined in **Table 9-3**.

Bulk/Multi Use Hangar - 120' x 125' ***ROM Cost = $1,089,000***
This project consists of the development of a 15,000 ft² bulk/mutli-use hangar to support the storage and servicing of itinerant aircraft. The new facility will be third such hangar constructed during the 2020 developed program and will be located adjacent the east end of the expanded North Apron. The improved storage and servicing capabilities for itinerant aircraft will maintain an improved level of service, and result in an increase in activity and airport revenues. This project is eligible for up to 50 percent state funding assistance.

Development Costs and Funding by Phase

TABLE 9-3

Long Term - Year 2011 through 2020

Project Description	Estimated Cost (2000 Dollars)	Maximum Possible FAA Grants	Maximum Possible State Grants	Sponsor's Share Remaining Costs
Bulk/Multi Use Hangar - 120' x 125'	$ 1,089,000	$ -	$ 544,500	$ 544,500
North Ramp Expansion	$ 2,342,560	$ 2,108,304	$ 117,128	$ 117,128
3 North Cabin Class Hangars - 70' x 80' Units and Infrastructure	$ 1,146,778	$ -	$ 573,389	$ 573,389
Expand Wash Rack Facility and Self Maintenance Area	$ 53,240	$ -	$ 26,620	$ 26,620
South Central T-Hangars-32 Units	$ 1,145,628	$ -	$ 572,814	$ 572,814
Expansion of South Ramp	$ 620,549	$ 558,494	$ 31,027	$ 31,027
Expansion of Southwest Ramp	$ 2,089,295	$ 1,880,365	$ 104,465	$ 104,465
Construct section of Taxiway A	$ 1,101,100	$ 990,990	$ 55,055	$ 55,055
Construct 13/31 West Partial Parallel Taxiway	$ 1,694,000	$ 1,524,600	$ 84,700	$ 84,700
Rehabilitate Runway 5/23	$ 2,584,560	$ 2,326,104	$ 129,228	$ 129,228
Rehabilitate Taxiway A	$ 1,062,138	$ 955,924	$ 53,107	$ 53,107
Rehabilitate Taxiway D	$ 415,272	$ 373,745	$ 20,764	$ 20,764
Rehabilitate Taxilane E	$ 133,366	$ 120,030	$ 6,668	$ 6,668
Total Investments (2011-2020)	*$ 15,477,485*	*$ 10,838,556*	*$ 2,319,465*	*$ 2,319,465*
Total Investment Program	*$ 48,684,092*	*$ 26,117,862*	*$ 12,192,646*	*$ 10,373,584*

Note: Funding schedule assumes full federal and state participation for all eligible projects. Any funds not received by LCPA would cause the local share (remaining costs) to increase. These increases may cause the project(s) to be delayed or cancelled. Completion of any and\or all of the project shown are contingent upon receipt of federal or state grants and Each line item includes 10% for design & administration and a 10 % contingency.

North Ramp Expansion ***ROM Cost = $2,342,560***
This project involves the westward expansion of the North Apron to provide for the increased parking requirements of itinerant aircraft. The expansion of the ramp will displace the helipad which will be relocated to a location west of the airport fire station. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

3 North Cabin Class Hangars - 70' x 80' Units and Infrastructure ***ROM Cost = $1,146,778***
This project consists of Phase 2 of cabin class hangar development. Phase 2 consists of the addition of three 70'x80'cabin class hangars and associated airfield pavement for the storage of larger corporate type aircraft on the north airfield northwest of the airport fire station. Each of these corporate style hangars will also have the capability to store multiple smaller aircraft. Development of these facilities will continue to be based upon specific identified demand. This project is eligible for up to 50 percent state funding assistance.

Expand Wash Rack Facility and Self Maintenance Area ***ROM Cost = $53,240***
The wash rack facility and self maintenance area in the East Quadrant of the airport will be expanded during the long term development period to allow for the concurrent washing/servicing of four aircraft. This project is eligible for up to 50 percent state funding assistance.

South-Central T-Hangars - 32 units ***ROM Cost = $1,145,628***
This project consists of the development of 32 additional t-hangars in the south-central area of the airport to continue to support the airport's long term hangar demand. The 32 units will be configured in four sets of parallel north-south oriented t-hangars located adjacent and north of the existing itinerant parking apron. This project is eligible for up to 50 percent state funding assistance.

South-Central Ramp Expansion ***ROM Cost = $620,549***
The project will include the development of taxiways and infrastructure including drainage improvements adjacent to the north edge of the south ramp. This project is eligible for up to 90 percent federal funding and five percent state funding assistance or 80 percent funding assistance in the case that federal funds are not available.

Expansion of Southwest Ramp ***ROM Cost = $2,089,295***
This project consists of the expansion of the southwest ramp to accommodate the parking of based aircraft. Although a greater percentage of based aircraft will be utilizing storage hangars by this period, the considerable service improvements at the airport could impact the availability of ramp space for based aircraft and result in the need for an additional parking apron. This ramp expansion would provide flexibility in accommodating this demand with a large contiguous apron capable of accommodating numerous aircraft. If demand dictates, this project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Reorientation of Taxiway A (Demolish Existing) ***ROM Cost = $1,101,100***
This project consists of the reorientation of Taxiway A to a parallel configuration south of the intersection of the two runways. The current divergence of the taxiway creates confusion and reduced efficiency for pilots from the east quadrant that are departing Runway 5 as well as those that are transitioning from the based aircraft parking aprons. As activity increases at the airport, this has the potential to impact capacity and operational safety, providing the potential for runway and taxiway incursions. The reorientation of

Taxiway A between its intersection with Runway 13-31 and Taxiway D would remove this potential safety concern. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Construct 13/31 West Partial Parallel Taxiway ***ROM Cost = $1,694,000***
This project consists of the development of a partial parallel taxiway extending from the Runway 13 end to Taxiway C. The parallel taxiway will be spaced at 300 feet from the Runway 13-31 centerline and will include two connectors to the runway as well as construction of a run-up area serving Runway 13. The taxiway will be designed to accommodate ADG B-II aircraft. The taxiway will provide for improved access to and from the south airfield for aircraft operations on Runway 13-31. The taxiway will also improve access to the future aviation development parcels on the west side of the airport. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Rehabilitate Runway 5/23 ***ROM Cost = $2,584,560***
The full length rehabilitation of Runway 5/23 is anticipated during the long term based on the existing condition of the airfield pavement. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Rehabilitate Taxiway A ***ROM Cost = $1,062,138***
The full length rehabilitation of Taxiway A is anticipated during the long term based on the existing condition of the airfield pavement. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Rehabilitate Taxiway D ***ROM Cost = $415,272***
The full length rehabilitation of Taxiway D is anticipated during the long term based on the existing condition of the airfield pavement. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

Rehabilitate Taxilane E ***ROM Cost = $133,366***
The full length rehabilitation of Taxiway E is anticipated during the long term based on the existing condition of the airfield pavement. This project is eligible for up to 90 percent federal funding and five percent state funding assistance.

AIRPORT REVENUE SOURCES

With the LCPA taking over day-to-day operation of FMY in 1996, the airport essentially operates with two different cost centers. The Page Field Aviation Center (PFAC) cost center primarily consists of the components that fell under the purview of the prior fixed base operator. This cost center includes the revenue streams associated with most of the facilities in the south quadrant of the airport including the PFAC, the General Aviation Center, the t-hangars in the south quadrant of the airport, the aircraft maintenance shop, the bulk hangar, etc. This revenue stream directly supports the day-to-day costs of providing the services at the airport.

The Page Field Operating cost center encompasses the balance of facilities and land in the three remaining quadrants of the airport as well as the costs associated with maintaining the airfield and basic aviation infrastructure. This cost center relates more to the operation of the facility as a whole and accounts for the majority of revenues as well as the capital expenditures. It is this cost center that will be the primary component of the future expansion of facilities and from which the revenues outlined herein are directly related to.

As mentioned earlier, 1999 was the first year since 1982 in which FMY had a net operating surplus. This resulted from the considerable increase in revenue as the result of new leases that were started in 1999. The FY 1999 Page Field Operating revenues came from eight primary sources, four of which were land lease or facility lease related and accounted for 90 percent of the total airport revenues. Building rental was the largest of the income streams providing over 49 percent of the airport's total revenues. Land rental was the second highest accounting for 20 percent of revenues through various commercial sources and an additional 9 percent from the Depot 7 lease. Hangar rental accounted for 11.5 percent. Of the four non-lease related revenue streams, rental cars accounted for 4.6 percent and miscellaneous landing fees, provider permits and miscellaneous sources accounted for 2.5, 2.1, and .7 percent, respectively.

The future revenue streams at the airport will be influenced by a variety of factors. The primary factors include how quickly the construction of new leasable facilities is completed, the ability to attract and develop commercial use land, etc. and business cycles.

Airport Land Leases

Page Field currently generates revenue from five different airport parcels. Depot 7 occupies the northern half of the eastern quadrant of the airport and is used as an equipment and supply storage yard by the Lee County Department of Transportation. The Lee County Solid Waste facility, which is used as a collection point for household hazardous waste, occupies a parcel of land in the northern quadrant of the airport, northeast of the airport maintenance facility. Southern Machine leases a parcel of land in the eastern quadrant of the airport, which is partially occupied by their corporate hangar. The Experimental Aircraft Association also leases a small parcel in the eastern quadrant on which their facility is located. Finally, with construction completed near the end of FY 1999, the Page Field Commons commercial and retail development occupies the largest parcel of airport land under lease. The Page Field Commons parcel, located west of the primary airport parcel, was isolated from the contiguous airport property boundary with the extension of the Fowler Street connector.

Land leases, which accounted for revenues of $115,408 in FY 1999, are projected to increase to $354,528 in FY 2000, when Page Field Commons makes a full year of lease payments. Additionally, the Page Field Commons lease provides for the payment of additional revenues to the airport based on the net profit of the commercial development.

Projecting land lease revenues through 2020, a number of changes can be expected. Since Depot 7 currently occupies a site slated for short term t-hangar development, revenues from Depot 7 will not likely extend into FY 2001. Additionally, the Lee County Solid Waste facility will require removal in roughly the same timeframe to accommodate the expansion of the aircraft parking ramp and development of the new GA terminal and associated facilities. However, a number of land parcels have been identified with the potential to offset this loss.

Gulfshore Helicopters has signed a land lease to allow for the development of a helicopter storage hanger and offices at a site west of the PFAC.

Three parcels on the north side of the airport, two on the west and one on the southwest have the potential to be developed for non-aviation purposes. Each parcel has varying levels of attractiveness relative to location, access and infrastructure and a number of the parcels have already had a developer express interest in them. However, the implications and potential DRI requirements to allow development of these parcels may reduce the positive impact on the airport's revenue stream. This consideration is currently being further explored.

Airport Facility Leases

Revenues from building rents/leases has been fairly limited prior to 1999, with a single lease, accounting for \$12,780 in 1998. This single lease was ABC Electric's lease of a building which occupies an airport owned parcel located south of Danley Drive. In 1999, the LCPA reconditioned a portion of the Page Field Commerce Center (former air carrier terminal) and starting leasing just over 24,000 ft² of space in the 64,000+ ft² facility to the Florida Department of Law Enforcement (FDLE). This lease resulted in an increase in building related gross revenues (the LCPA pays utilities, maintenance, etc.) to \$194,411 in FY 1999. A further increase in total gross building rent/leases to \$343,416 is projected for FY 2000 as FDLE makes the first full year of lease payments.

The primary opportunity to increase building related revenue would include leasing the remaining portion of the Page Field Commerce Center (PFCC). The PFCC has approximately 40,000 ft² of leasable space remaining beyond that which the FDLE has leased. This space has the generation potential of over \$500,000 in additional gross revenues if leased at the same rate as the FDLE portion of the building.

The existing cargo building also has the potential to generate additional rental revenues for the airport. The condition and age of the building may require some minimal level of improvement and maintenance depending on the intended use. The LCPA has already repainted this facility and sealed the roof. NIC leases one bay at \$3.25 ft² with an option for two more. All improvements relative to NIC are their responsibility.

Hangar Rental

The 16 single t-hangars and 2 cabin class t-hangars located in the east quadrant of the airport fall in the Page Field Operating cost center. These hangars generated revenue of \$45,450 in FY 1999, up from \$29,213 in FY 1998.

The short term development program provides for the construction of 48 single t-hangars and two cabin class hangars to be developed in two phases in the east quadrant of the airport. The short term program also includes construction of 8 shade hangars in the same quadrant. Both the intermediate and long term development programs include construction of an additional 32 single hangars each. The intermediate term hangars will be developed in the southeast portion of the airport, while the long term hangars will be developed in the south central area. Current t-hangar lease rates are \$275 for single engine t-hangars and \$325 for cabin class hangars.

Airport Land Sale

Four parcels at the airport are identified for potential land sale to generate additional revenues. Three of the four parcels were purchased in the early 1990's when the airport was considering an expansion to the south. This approach has since changed and the parcels, which are not located within the contiguous airport property boundary, are no longer required for airport development. Unless a good use for the land can be identified, the airport may wish to consider selling them to generate additional revenues for the development of the airport. If sufficient funds cannot be generated to justify the sale, it may be advisable to retain the parcels until a use can be determined.

The fourth parcel is located in the east quadrant, just north of the Lee Trans facilities. Lee Tran has expressed interest in purchasing land adjacent to their current site which was acquired from the airport in a similar transaction in the late 1980's.

It should be noted that proceeds from the sale of certain airport lands may be restricted for use in place of a portion of the federal funding share on an AIP eligible project.

Landing Fees

One of the user generated sources of airport revenues comes from the landing fees that are assessed on commercial aircraft operating at FMY. These fees, which do not apply to non-commercial public or training activity, accounted for $9,902 in revenues in FY 1999, down from $12,677 in FY 1998. However, increasing activity at the airport is expected to increase this component of revenues as well.

FIS Fees

A new general aviation Federal Inspection Station (FIS) will represent a considerable service enhancement for GA pilots on the west coast of Florida. However, establishment of such a facility may require the imposition of user fees to offset the construction and operating costs of this facility. These fees may be imposed by Federal agencies, the Authority or both. Fees imposed by Federal agencies would be retained by them and would not be available for investment into FMY.

Rental Car Fees

Rental car fees are privilege fees assessed to the rental car operators for the right to provide services to users of the airport. This fee allows the airport to recover some revenue from commercial users who achieve some benefit from the airport facilities. Rental car fees totaled $19,216 in FY 1999, up from $18,009 in FY 1998. FY 2000 projections for this category of revenue are $20,200.

Provider Permits

Provider permits are basically licensing fees to entities that utilize the airport facilities for commercial use. It basically confers the rights to conduct business using airport property. These miscellaneous fees totaled $8,325 in FY 1999, down from FY 1998 revenues of $12,645. Although it can be expected that these fees will increase as activity at the airport does, considerable fluctuation between FY 1998 and FY 1999 initially indicates the opposite.

Net Surplus from the Operation of the PFAC

The net surplus from the operation of the PFAC is a potentially major category of revenues to that can assist in offsetting the cost of operating the airport as well as providing for additional investment in airport facilities. The PFAC operation generates revenues from a number of sources including building and office leases, t-hangar leases, fuel flowage revenues and other revenues associated with the services provided as part of the PFAC operation. Maintaining an efficient operation will improve the potential for growth of the net surplus revenues associated with this facility as activity at the airport increases.

Other

Other revenues include miscellaneous one time revenues for use of airport facilities, etc. The revenues from miscellaneous sources were almost identical in FY 1998 and FY 1999 accounting for $3,056 and $3,055, respectively.

AIRPORT OPERATING & MAINTENANCE EXPENDITURES

In FY 1999, FMY had a total operating and maintenance cost of $697,886, a 13 percent increase from FY 1998 expenditures of $617,508. Expenditures at FMY are broken into two primary categories, personnel expenditures and "other". In FY 1999, personnel expenditures accounted for 62 percent of the total airport expenditures, down from 74 percent in 1998, with "other" accounting for the balance.

Personnel Expenditures

Personnel expenditures at FMY, totaling $436,175 in FY 1999, fall into three groups which include administration, development, and aviation services. Of these, aviation services accounts for the majority of expenditures with $338,286 in FY 1999. In the same fiscal year, development and administration account for $55,064 and $42,825, respectively.

Other Expenditures

Other expenditures at FMY, accounting for $261,711 in FY 1999, fall into four groups which include material/supplies, contract maintenance, utilities and "other". Material/supplies accounted for the greatest expenditure of these groups in FY 1999, with an outlay of $131,990. The balance of expenditures was split between utilities, "other", and contract maintenance accounting for $91,631, $30,823, and $7,267, respectively.

Appendix A – Tenant/User Survey

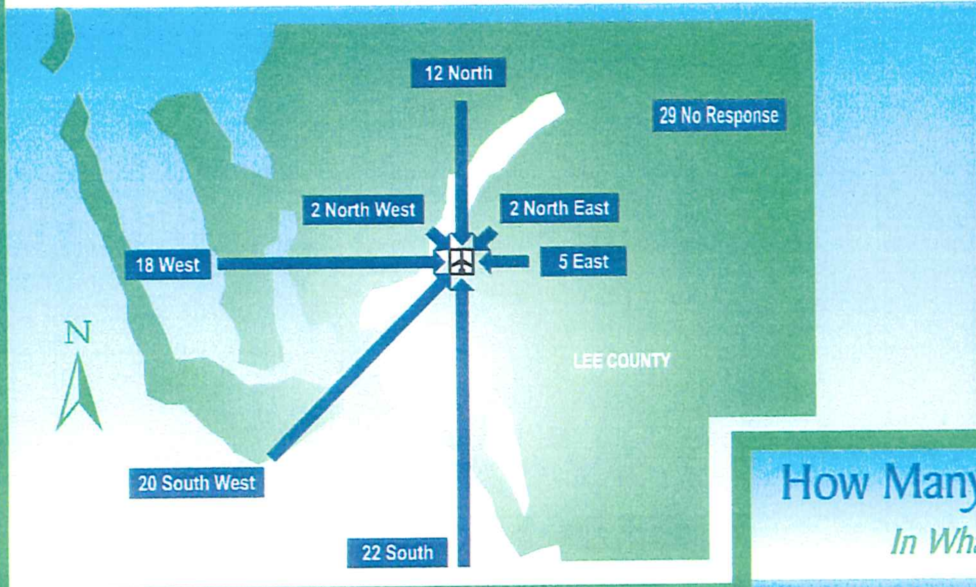
INTRODUCTION

To ensure that the desires of the users of Page Field were adequately reflected in the Master Plan Update, a survey was distributed to pilots tenant and users early in the master plan process. The survey, which includes questions to provide insight into the users, shortfalls and strengths of Page Field, was forwarded to approximately 400 users, of which approximately 114 responses were received. Each response was compiled and tabulated and a summary of the results is provided in the attached exhibits.

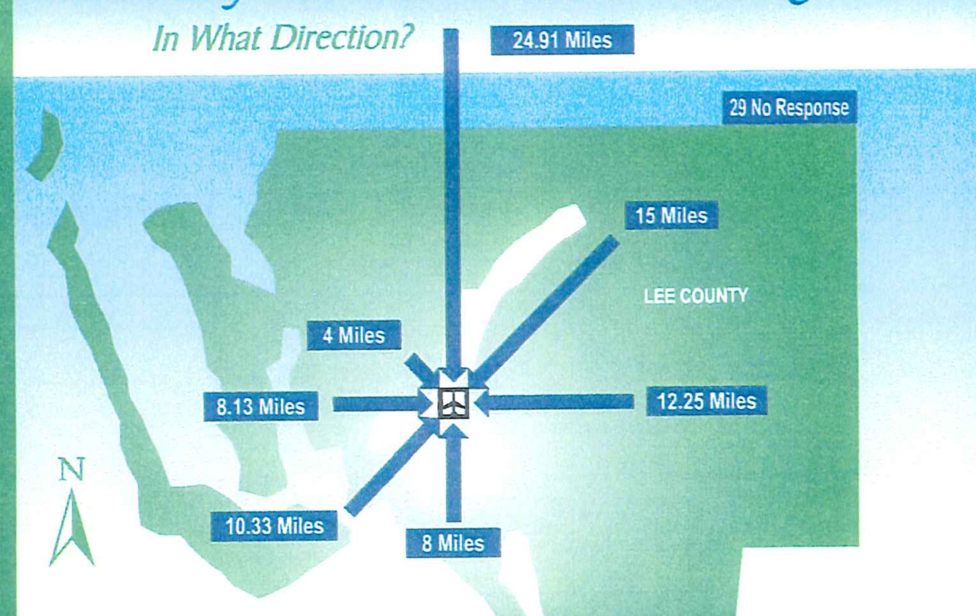
Subsequent to this survey, two workshops were held with the tenant and user groups at the airport. The first, on Wednesday, December 8, 1999, provided an overview of the user survey and detailed forecasts, facility requirements and alternatives analyzed to date. Comments and suggestions relative to this meeting were reviewed and incorporated into the overall plan as required. A second follow-up workshop took place on Wednesday, February 16, 2000 in which each comment stemming from the first workshop was addressed to identify how or if it was incorporated into the final development plan for the airport. At the conclusion of this meeting the Page Field Association (the group that represents Page Field's tenants and users) unanimously voted to endorse the final plan.

Pilot Survey Overview

Number of Respondents By Direction



How Many Miles Do You Live From Page Field?

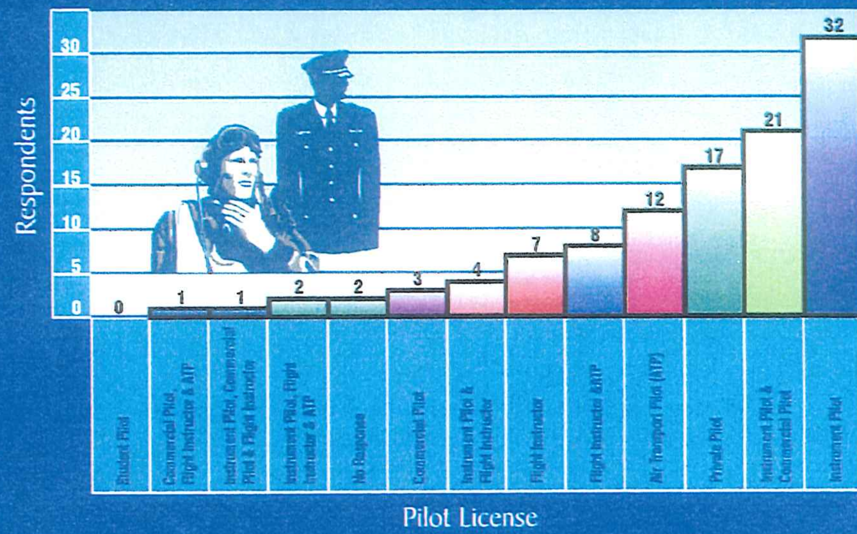


Lee County Port Authority

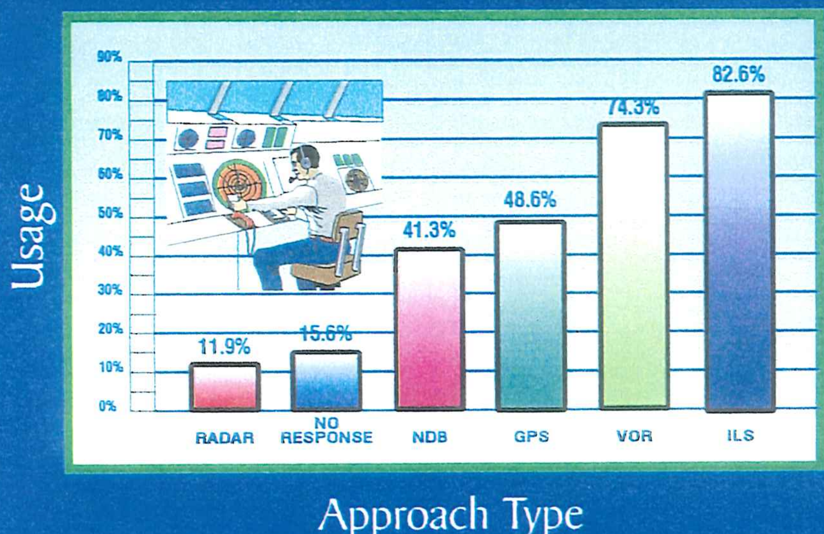
Page Field
General Aviation Airport

Pilot Survey Overview

What type of Pilot Certificate and Rating do you hold?



What Instrument Approaches Do You Use?

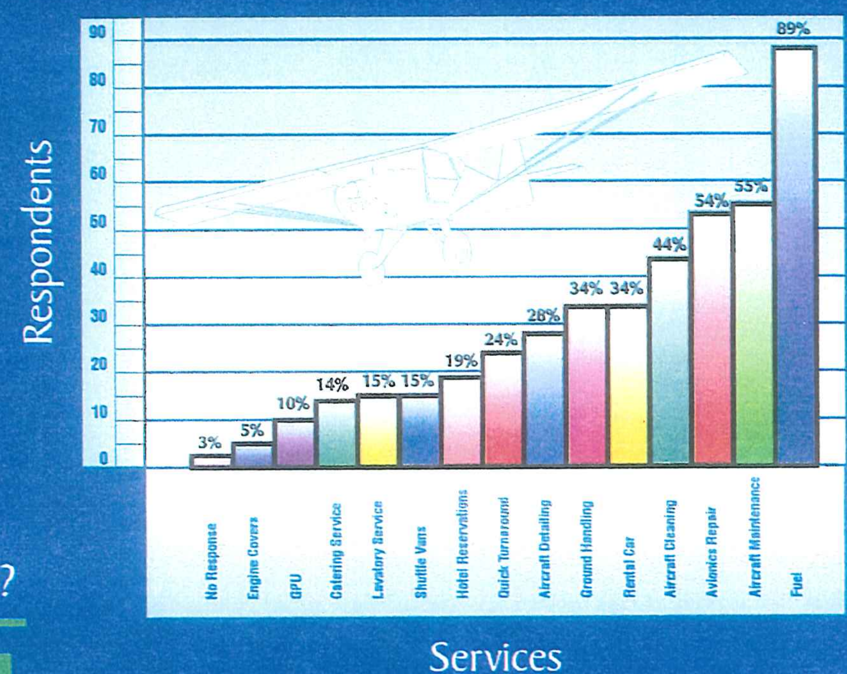


Lee County Port Authority

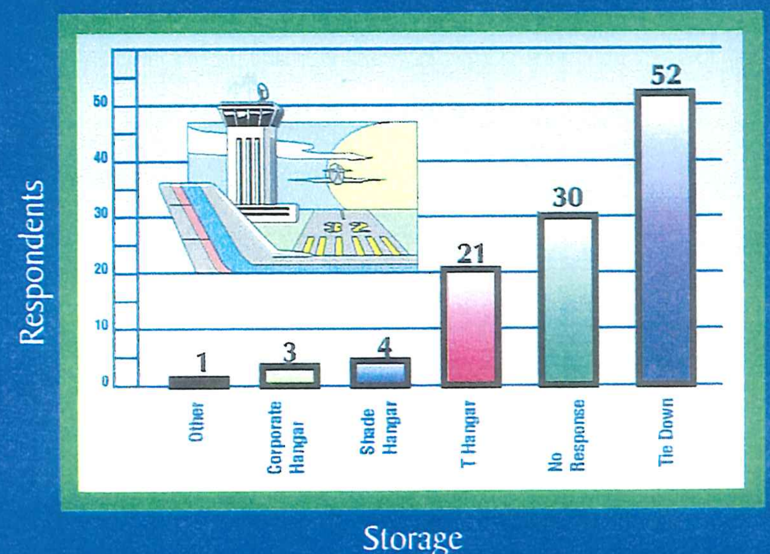
Page Field
General Aviation Airport

Pilot Survey Overview

What Aircraft Pilot Services would you use at Page Field?



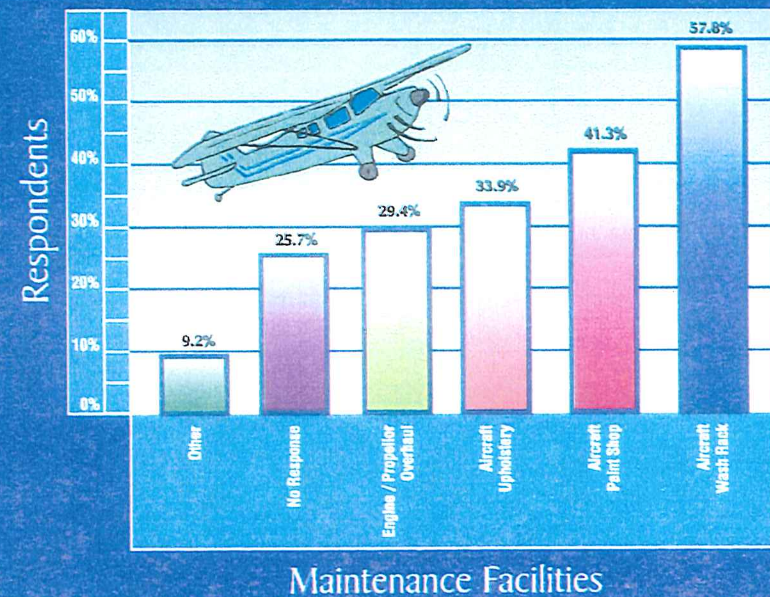
How Is Your Aircraft Stored At Page Field?



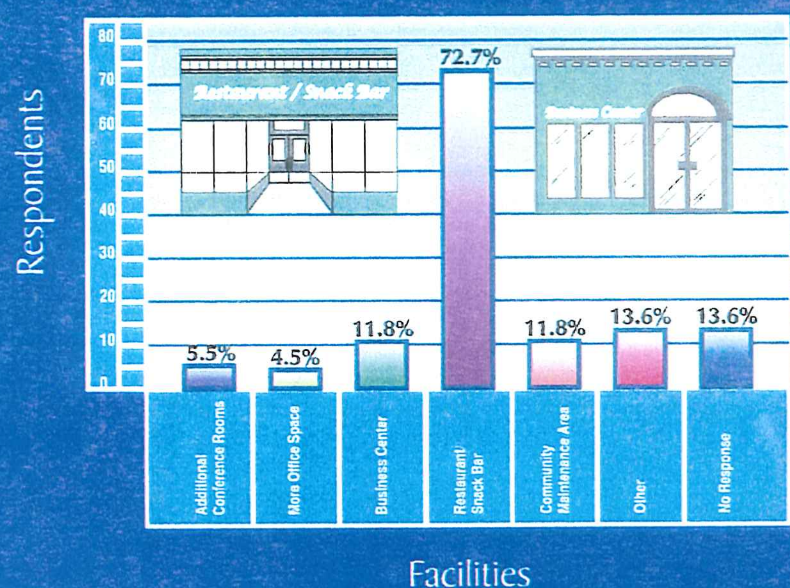
Lee County Port Authority
Page Field
General Aviation Airport

Pilot Survey Overview

What type of Maintenance Facilities would you like to see developed at Page Field?



What other type of Facilities would you like to see developed at Page Field?

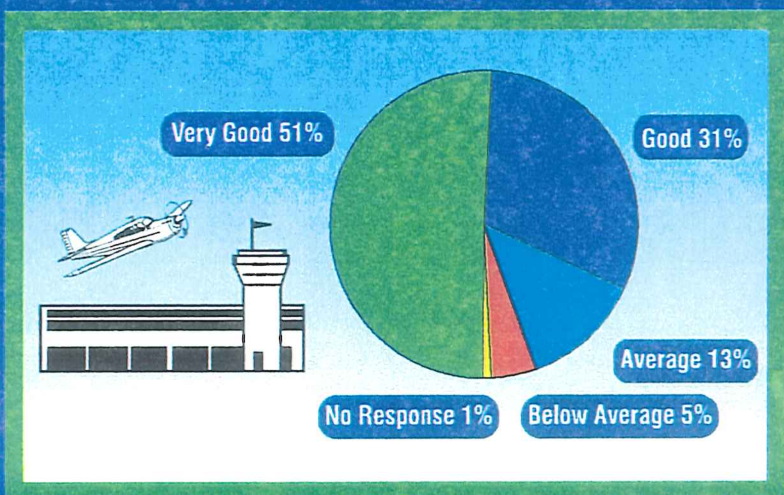


Lee County Port Authority
Page Field
General Aviation Airport

Pilot Survey Overview

Do You Feel the Goods and Services at the Airport Are Priced Competitively?

How Would You Rate Page Field Overall?



Pilot Survey Overview

Comments

"The changes that have occurred so far are wonderful. I brag to everyone what a great facility you have!"

"I think its great... New Tie-Downs... New T-Hangars ... we need to continue with the present trend."

"This airport will attract more corporate business to the area with the current positive direction that you are going. Thanks for your interest in aviation."

"Need more inexpensive T-Hangars."

"Our facilities are really starting to take shape."

"We need good quality hangar space fairly priced."

"Lower fuel prices"

"The Aviation Center has provided us with excellent courteous service."

"Friendly, trained staff willing to help."

"Excellent FBO."

"The lack of available hangar space is the main problem I have at Page."

"I have kept my airplane on the FBO property since 1981 and through many owners, The line crew is tops in my opinion."

"We need a nice restaurant at the field, everything else is excellent."

"For six years I have wintered at FMY. This facility is a pilot's dream."

Appendix B – Runway Safety Area Assessment

I. INTRODUCTION

In October 1999, the Federal Aviation Administration (FAA) adopted the Runway Safety Area Program (FAA Order 5200.8) requesting that all Runway Safety Areas (RSA) at airports certified under 14 CFR Part 139 conform to the standards set forth in AC 150/5300-13 Change 6, Airport Design, to the extent possible. As part of the Page Field Master Plan, the Lee County Port Authority was requested to conduct a more detailed runway safety area (RSA) assessment to ensure all options for compliance have been thoroughly considered.

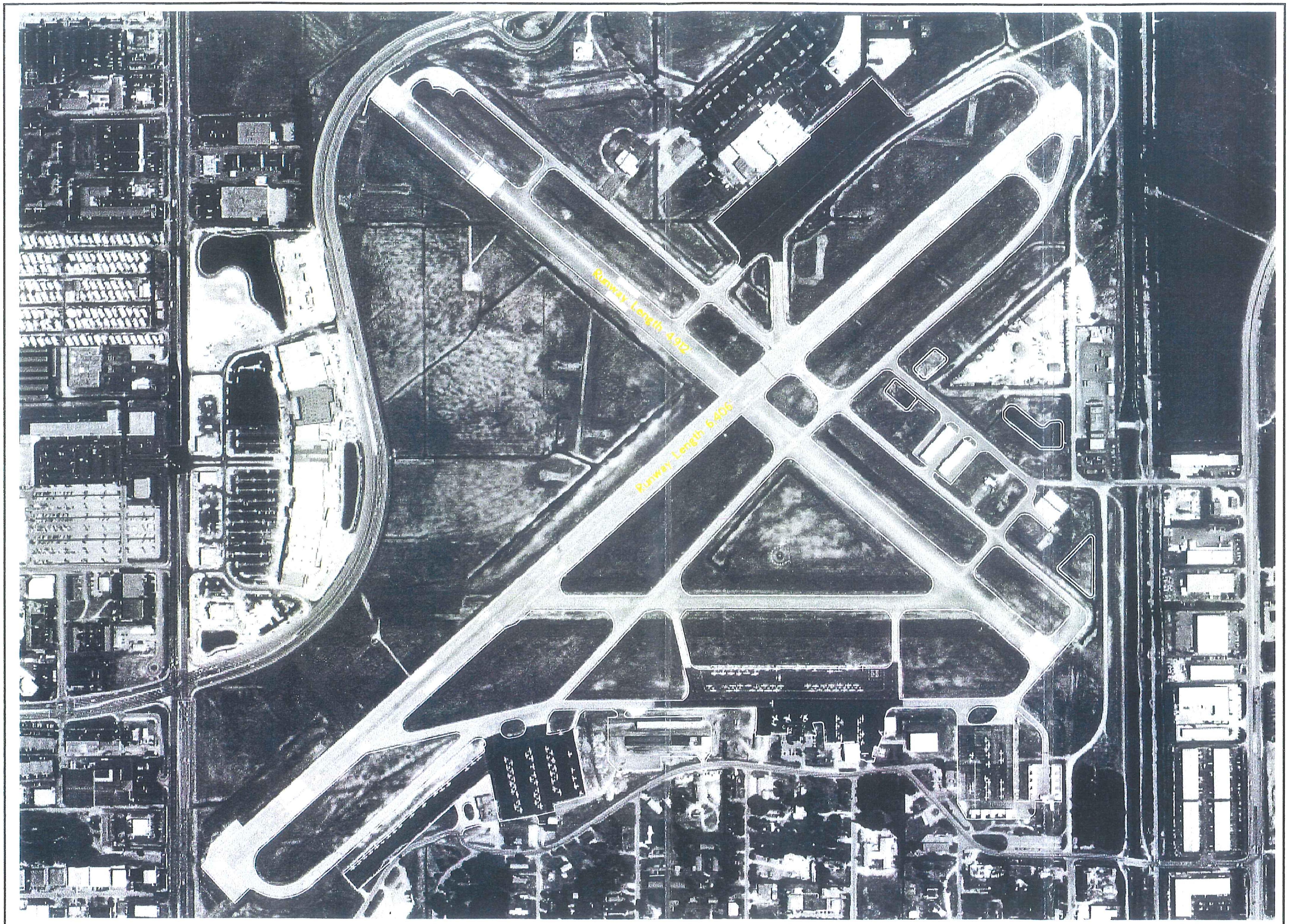
FAA regulations require airports to provide a safety area for every runway and taxiway. Runway safety areas (RSAs) reduce the hazard of structural damage to aircraft that deviate from runway surfaces. As aircraft have become larger and faster, dimensional standards for RSAs have increased in order to maintain an adequate level of safety. This text will identify the RSA requirements specific to each of the four runway ends and will identify which ends currently comply with RSA criteria and which do not. For those that do not comply with RSA criteria, a more detailed discussion will be provided relative to any existing waivers that may be in place and the extent to which the existing conditions do not comply. Where it has been determined that Page Field currently does not comply, alternatives will be identified and assessed to determine if there is a reasonable means of providing or improving compliance.

II. RSA INVENTORY, REQUIREMENTS & INITIAL DETERMINATION

Page Field General Aviation Airport is a two-runway general aviation "reliever" designated airport located 5 miles south of the City of Ft. Myers. It currently serves as the only reliever designated airport in southwest Florida. The Airport is bounded by Danley Drive to the south, the Ten Mile Canal and Seminole Gulf Railroad to the east, Airport Road to the north, and Fowler Street and U.S. 41 to the northwest and west. The Airport's two runways, 5-23 and 13-31, cross near their respective midpoints forming an "X" which separates the Airport into four quadrants (see **Exhibit 1**).

Runway 05-23, 6,406 feet in length, is the Airport's primary use runway with the majority of arrival and departure activity occurring on Runway 05 from the southwest to the northeast. The Runway 05 threshold is displaced by 459 feet, and the Runway 23 threshold is displaced by 399 feet. Runway 05 is equipped with both a localizer and glideslope and, although lacking an approach lighting system (ALS), provides the lowest approach minimums available at the Airport. This runway is classified as a Category C, Design Group III runway that accommodates aircraft with approach speeds up to 141 knots and wingspans up to but not including 118 feet. Runways serving airplanes of Category C, Design Group III, the design category and group of Runway 5-23, are required by the FAA to have a RSA 500 feet wide extending 1,000 feet in length beyond the runway end. Currently the runway does not comply with the regulation at either runway end and a waiver was issued by the FAA in 1989 relative to this (attachment RSA-1). Factors inhibiting compliance for the approach end of Runway 05 include a blast fence, 143 feet off the end of the runway, a six-lane highway 300 feet off of the Runway end along the extended runway centerline, and a commercial land site approximately 500 feet off the Runway end along the extended runway centerline. Factors restricting compliance for the approach end of Runway 23, include a canal approximately 435 feet off the Runway end along the extended runway centerline and railroad tracks approximately 620 feet from the end of the Runway along the extended runway centerline.

Runway 13-31, 4,912 feet in length, is the Airport's secondary runway, serving only smaller general aviation aircraft. Runway 13-31 was previously classified in the prior master plan as an Airport Design Group C-III as well, but was shortened due to the construction of the Fowler Street extension. In reviewing the available runway length and aircraft utilizing Runway 13-31 it was determined during the 2000 Master Plan Update that the runway was no longer sufficient to warrant a C-III classification. As such, this facility was downgraded to a Category B-II classification. The requirements for Runways 13-31 are less stringent as the aircraft operating on those runways are of a smaller category and group. Because of this, the RSAs are required to be 150 feet wide and extend 300 feet from the runway ends. The nearest obstacle off the end of Runway 31 is a blast fence located 710 feet from the Runway 13 threshold. The nearest obstacle for Runway 13 is the canal located 576 feet off the end of the runway. Therefore, no waivers are needed, nor are any changes required, for Runway 13-31 as each of the RSAs comply with current regulations.



Page Field
General Aviation Airport

Lee County Port Authority

Birk Hillman
Orlando - Miami - Atlanta
6751 Forum Drive, Ste. #240, Orlando, FL 32821

PAGE FIELD AIRPORT RSA
Fort Myers, Florida

EXISTING CONDITIONS

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C0460101
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT
1

Table 1 summarizes the RSA requirements and compliance of each runway end.

Table 1 – Existing RSA Requirements and Compliance

Runway End	Design Group	RSA Width Required	RSA Length Required (beyond runway end)	Does the existing RSA currently comply	Notes
Runway 5	C-III	500'	1,000'	No	1989 Waiver
Runway 23	C-III	500'	1,000'	No	1989 Waiver
Runway 13	B-II	150'	300'	Yes	
Runway 31	B-II	150'	300'	Yes	

The remaining sections of the report will review alternatives for the improved compliance of the Runway 05 and Runway 23 ends.

III. IDENTIFICATION OF ALTERNATIVES

Five alternatives were identified in addressing compliance with the RSA requirements for the Runway 05 and Runway 23 end. While some of the alternatives allow for full compliance, others provide a step improvement in an attempt to improve upon the existing conditions. By addressing a full range of options, the operational and economic feasibility of each can be better understood. The alternatives identified for further consideration as part of this analysis are as follows:

1. The relocation, shifting or realignment of the roadway, canal and railroad that currently constrain Runway 5-23.
2. The reduction of the runway length where the existing runway length exceeds that which is required for the most demanding of aircraft visiting Page Field regularly over the past five years.
3. The use of Declared Distances to shorten the runway length without physically removing pavement so that the RSA can comply with the requirements.
4. The use of the Engineered Materials Arresting Systems (EMAS) off the approach end of Runway 23 to gain the maximum RSA area possible.
5. The "Status Quo Approach" or do nothing alternative. As the impacts both economically and operationally are such that this alternative may be the only feasible option.

Each of these alternatives are further detailed as follows:

Alternative #1 – Relocate U.S. 41, Ten Mile Canal and Seminole Gulf Railroad

The first alternative considers the relocation, shifting or realignment of U.S. 41, the Ten Mile Canal and the Seminole Gulf Railroad in efforts to provide a standard RSA for each runway end while maximizing the ability to utilize the full 6,406' of the existing runway.

Runway 05 End

Exhibit 2 depicts the rerouting of approximately 2,750 lineal feet of the major six-lane arterial, US 41, to modify the Runway 05 RSA. It is estimated that this relocation would require acquisition of at least 22 acres of land. This land primarily functions as commercial use and is the site of approximately 25 commercial and 2 residential structures. To minimize the estimated cost of the relocation, this analysis assumes that the Fowler Street intersection would not require relocation/reconfiguration and that, to the south of the relocated section of roadway, the bridge over the canal would be maintained in its existing location. Further analysis may determine that this relocation is inadequate to provide for the speed and curve requirements for the given roadway section. This would likely result in additional land requirements thereby increasing the cost of this option.

This process could achieve the 1,000 feet of obstacle free clearance required of the RSA for the approach end of Runway 05.

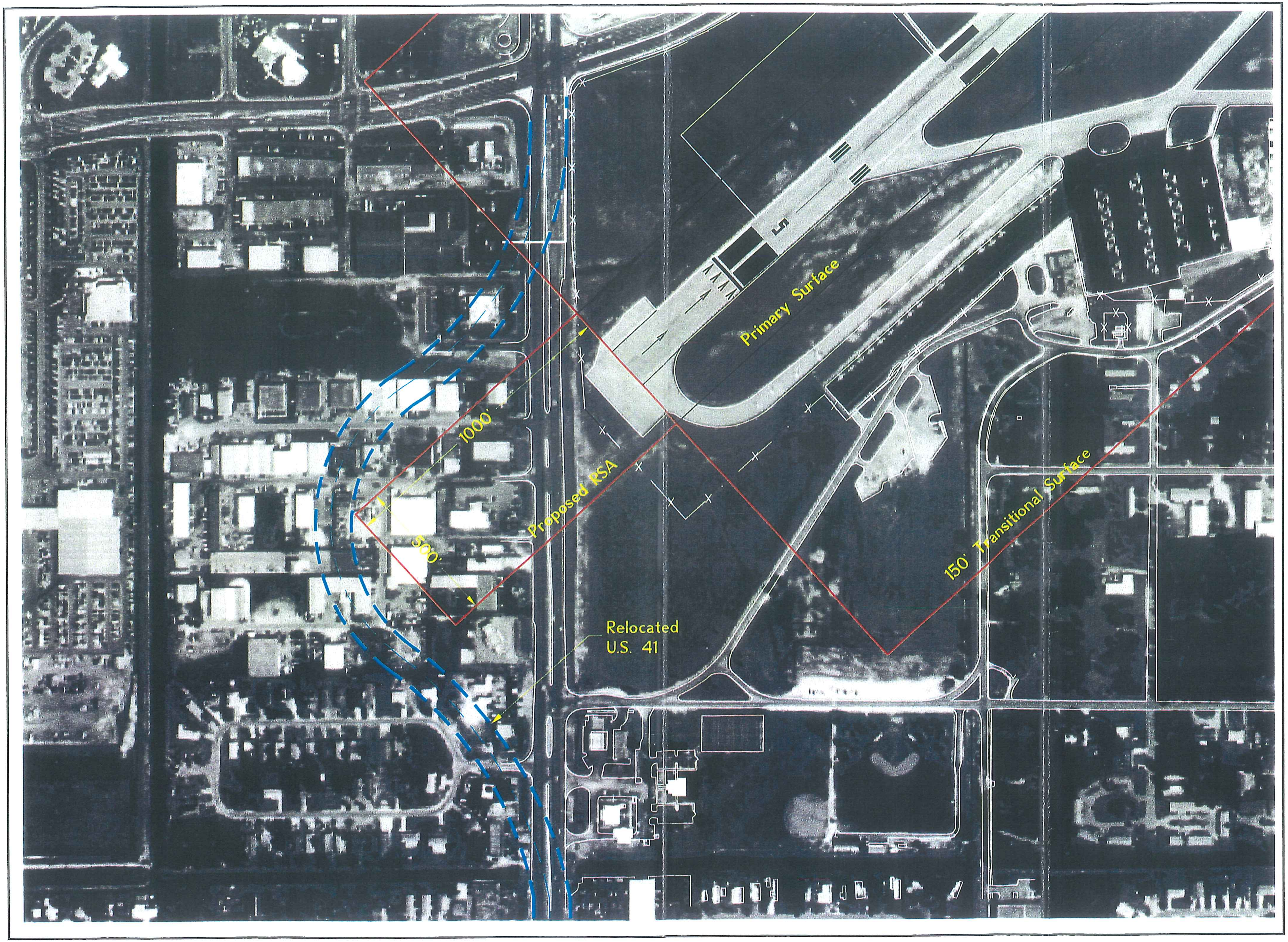
Runway 23 End

Exhibit 3 outlines potential modifications to the Runway 23 end. Shifting the location of the Ten Mile Canal can only be accomplished if the Seminole Gulf Railroad is realigned as the two parallel each other and are only separated by a distance of approximately 90 feet (varying). Relocation of both the Ten Mile Canal and Seminole Gulf Railroad would require land acquisition of approximately 50 acres of undeveloped commercial land for which development plans are pending. Another alternative to shifting the location of the canal is to culvert the canal in the section located within the RSA. This would entail placing drainage pipes in the canal and then provide fill over the pipes to make a level and reinforced surface capable of supporting an Aircraft Design Group C, Category III aircraft. By culverting alone, the Airport would achieve an incremental gain of 184 feet of RSA off the departure end of Runway 05, the most widely utilized runway at FMY.

Assuming that the Canal will be culverted or realigned, rerouting the railroad will still be required to provide a full RSA. This process would include the clearing of land needed for the new track, the laying of the new track and the demolition or removal of the unusable track segment. Once this process is complete, full compliance of the RSA 1,000 foot obstacle free clearance will be provided for the approach end of Runway 23.

Alternative #2 – Reduce Runway Length

This alternative considers the reduction in usable runway length as required to provide the minimum 1000'RSA replacement. It then considers various aircraft types currently operating or anticipated to operate at the airport and determines whether the reduction will result in a potential operational impact. Runway 5-23 is currently 6,406 feet long. To provide the 1,000' RSA areas would require a reduction in usable length by 1,787 feet or 1,005 feet from the approach end of Runway 05 and 782 feet from the approach end of Runway 23 (see **Exhibit 4**). The resulting 4,619 foot long runway then must be reviewed relative to the types of aircraft in the general aviation fleet.



Lee County Port Authority
Page Field
General Aviation Airport

Birk Hillman
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6751 Forum Drive, Ste. #240, Orlando, FL 32821

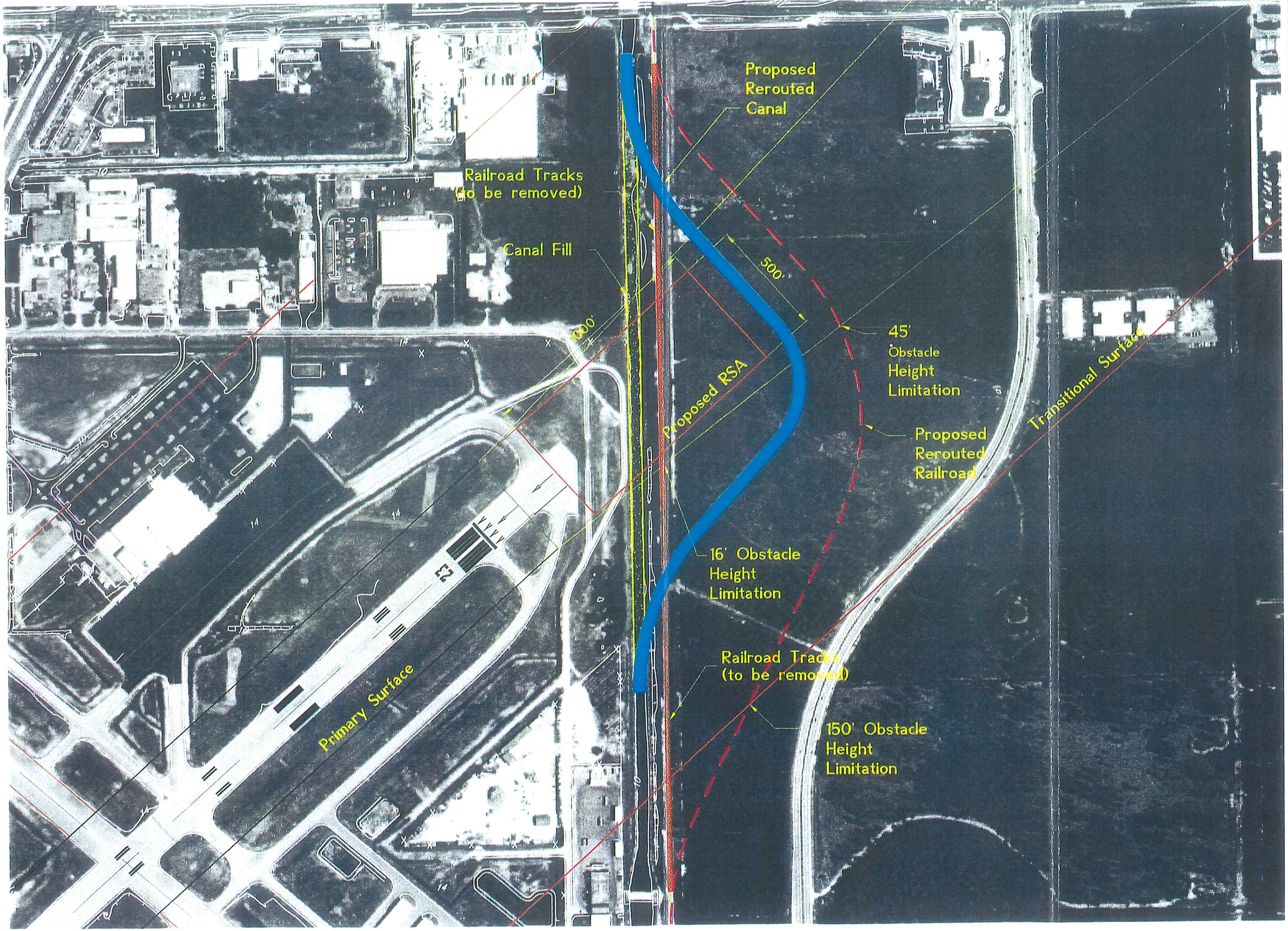
PAGE FIELD AIRPORT RSA
Fort Myers, Florida

ALT 1: U.S. 41 ROADWAY RELOCATION

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C046010
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT
2



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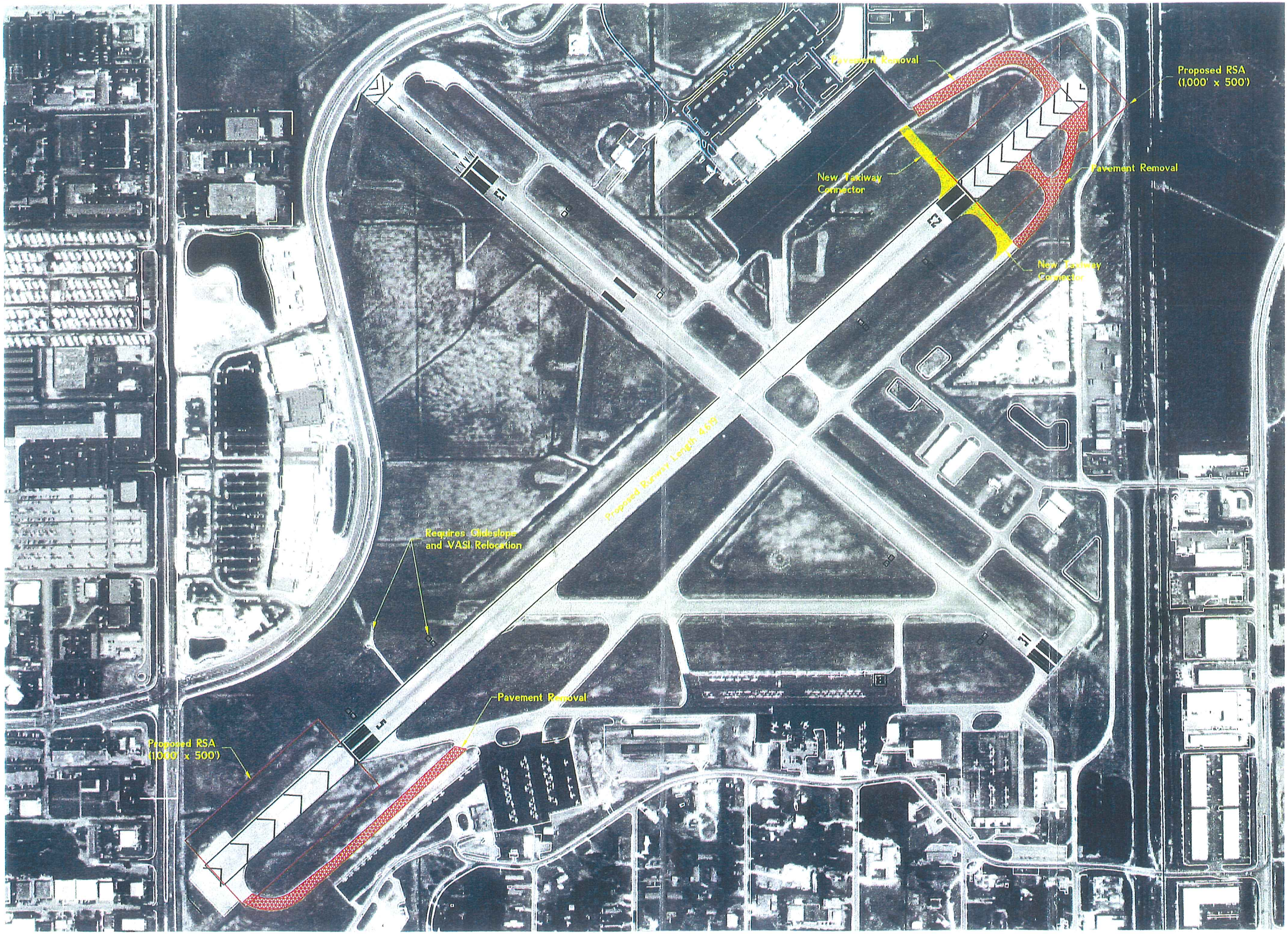
PAGE FIELD AIRPORT RSA
Fort Myers, Florida

ALT 1: CANAL AND RAILROAD RELOCATION

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C0460103
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT
3



Lee County Port Authority
Page Field
General Aviation Airport

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PAGE FIELD AIRPORT RSA
Fort Myers, Florida

ALT 2: REDUCE RUNWAY LENGTH

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C0460101
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT
4

Table 2 outlines some of the aircraft found in the fleet today or that have utilized Page Field over the past few years. The runway lengths are based on the performance characteristics specified by each aircraft manufacturer, and have been adjusted for various takeoff weights. The runway length analysis assumed a temperature of ISA plus 30 degrees Fahrenheit, and did not factor in runway slope or surface winds.

Table 2
Runway Length for Selected Aircraft
Page Field Airport

Aircraft & Engine Types		Takeoff Weight	Runway Length in Feet
Falcon 2000	CFE738-1-1B	35,800 lbs.	5,800
Falcon 2000	CFE738-1-1B	31,000 lbs.	4,700
Falcon 900	TFE731-3	45,500 lbs.	5,500
Falcon 900	TFE731-3	34,000 lbs.	3,200
GulfstreamIII	MK511-8	69,700 lbs.	5,600
GulfstreamIII	MK511-8	58,000 lbs.	4,100
GulfstreamIV	MK611-8	73,600 lbs.	7,100
GulfstreamIV	MK611-8	65,000 lbs.	5,200
GulfstreamIV	MK611-8	63,000 lbs.	4,900
GulfstreamV	BR710	86,000 lbs.	6,300
GulfstreamV	BR710	77,000 lbs.	4,700
Learjet 55	TFE731-3A-2B	21,500 lbs.	6,400
Learjet 55	TFE731-3A-2B	18,000 lbs.	4,000
Challenger 604	CF34-3B	47,600 lbs.	6,550
Challenger 604	CF34-3B	42,850 lbs.	5,800
Challenger 604	CF34-3B	41,000 lbs.	5,000
Sabreliner 80	CF700	24,000 lbs.	6,950
Sabreliner 80	CF700	20,000 lbs.	4,500
Sabreliner 65	TFE 731	20,000 lbs.	4,800

Analysis was based on 90° F, zero runway slope and zero wind

Table 2 confirms that business jets typical of the based and itinerant fleet using Page Field are faced with having to limit fuel and payloads in order to operate from the airport if a reduction in runway length is opted. Currently these aircraft do not operate under these restricted conditions and the reduction in runway length would likely impact local businesses and operators.

Alternative #3 – Declared Distances

This alternative considers the use of Declared Distances to provide RSA compliance while minimizing the actual loss of usable pavement. A compatible RSA can be established by adjusting the thresholds and distance calculations to provide the 1,000 feet clearance from the closest obstruction. This will also require that runways be re-stripped, that runway lighting be changed and that distance-to-go signs be changed. The ILS glideslope and VASIs would also need to be relocated based on the new operational areas. To comply with the RSA standards, the landing distance available (LDA) for both runway configurations would need to be reduced to 4,619 feet. The accelerate-stop distance available (ASDA) for Runway 5 would be 5,624 feet.

The ASDA for Runway 23 would be 5,401 feet. The takeoff distance available (TODA) and takeoff roll available (TORA) would be 6,406 feet for operations in both directions. **Exhibit 5** outlines the changes required to implement this alternative.

Alternative #4 – Engineered Materials Arrest System (EMAS)

A fairly recent concept that is helping airports address RSA problems is the use of an Engineered Materials Arresting System (EMAS). Engineered Materials are defined as high energy absorbing materials of selected strength, which will reliably and predictably crush under the weight of an aircraft. While EMAS does not replace having a standard RSA, it can be used as an effective strategy to improve safety over current conditions. Different EMAS are selected for runways serving different classes of aircraft. In other words, an EMAS for a runway serving Category D aircraft would be designed to crush under the weight of category D aircraft, where an EMAS for a runway with the critical aircraft being a Category C would be designed to crush under the weight of that design aircraft. Standards for planning, design, and installation of EMAS found in AC 150/5220-22 are included as an attachment to this report.

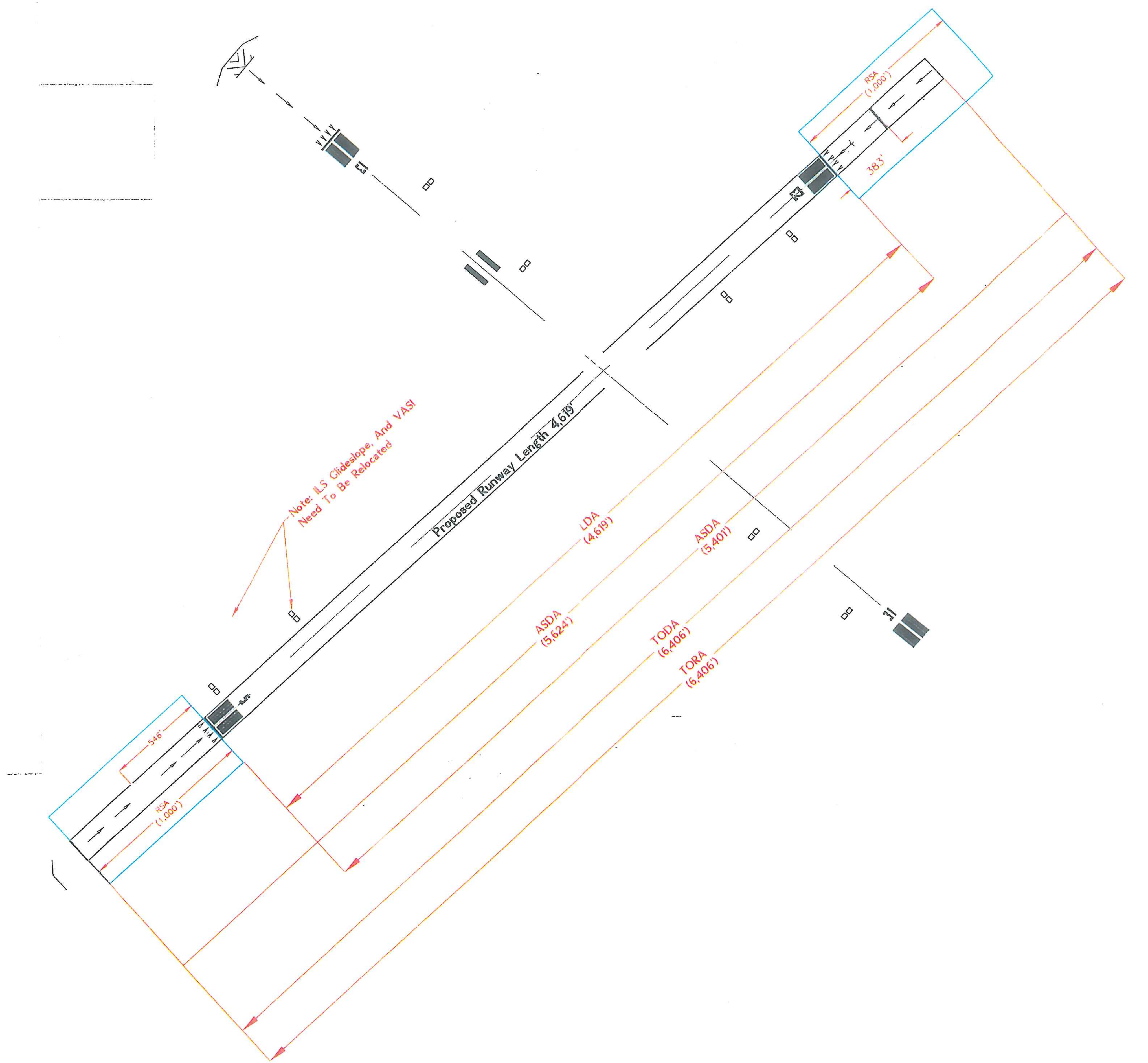
Safety of the runway ends with an installed EMAS can be enhanced. The calculated stopping distance of a McDonnell Douglas DC-9, a C-III design category aircraft, exiting a runway at 70 knots with the help of an EMAS is approximately 350 feet. All aircraft using Runway 05-23 are smaller based on design characteristics than a DC-9 and it is unlikely that an aircraft overshooting the runway would be at a speed faster than 70 knots. This demonstrates that a couple hundred feet of EMAS is an option for stopping aircraft that overshoot the runway. Please see **Figure A1-1**. (AC 150/5220-22 Appendix 1 Figure A1-1).

This alternative, outlined in **Exhibit 6,** can be combined with culverting the Ten Mile Canal to provide an additional improvement in safety relative to the Runway 23 end. The culverting of the canal would gain 163 feet in real safety area. The EMAS would be installed at the same width as the runway for a distance of 350 feet along the extended runway centerline. As indicated prior, although it does not meet the FAA's standards for RSA compliance, it does provide a step improvement in safety and an incremental gain in the total length of the RSA.

Alternative #5 – Status Quo Approach

The last approach is the "Status Quo" approach, as the operational and economic impacts of the previously mentioned alternatives may be such that this alternative may be the only reasonable option. The "status quo" option consists of maintaining the existing Runway 5-23 waiver, which allows for reduced compliance with current RSA requirements due to the type of aircraft, the level of activity by such aircraft and the critical nature of the existing configuration relative to the Airport's critical function in the region.

The attributes and drawbacks of each of the alternatives are further explored in the following section of the report.



Lee County Port Authority

Page Field General Aviation Airport

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PAGE FIELD AIRPORT RSA

Fort Myers, Florida

ALT 3: DECLARED DISTANCES

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C0460101
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT

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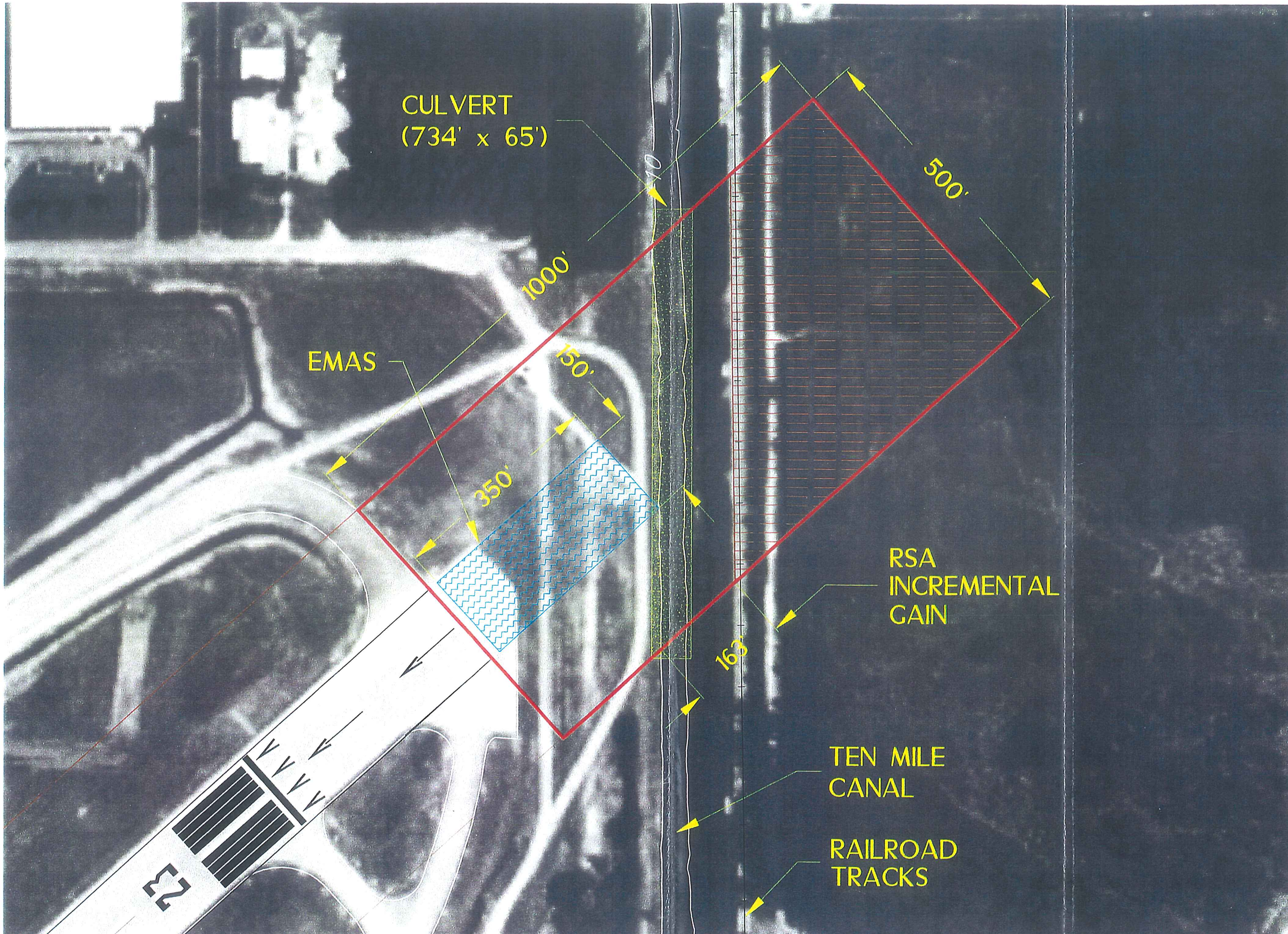

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PAGE FIELD AIRPORT RSA
Fort Myers, Florida

ALT 4: EMAS/CANAL CULVERT

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C0460103
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT
6

IV. ASSESSMENT OF THE ALTERNATIVES/BASIS OF DETERMINATION

Now that alternatives have been identified, it is necessary to evaluate the pros and cons, and rough order of magnitude (ROM) of each. This includes considering areas of concern such as operational, environmental or economic impacts of each alternative.

Assessment of Alternative #1 – Relocation of U.S. 41, Ten Mile Canal and Railroad

US 41 is one of the heaviest traveled sections of roadway in Lee County acting as a major north-south connector between the City of Ft. Myers and Naples. With the development of Page Field Commons and a major effort focussing on commercial redevelopment and improving the business climate in the immediate area, commercial land values along US 41 in the vicinity of Page Field have increased sharply in recent years.

Pros:
- Provides a fully compliant Runway Safety Area at each runway end.
- Would provide a portion of the land required for installation of an approach lighting system for Runway 5.
- Culverting the Ten Mile Canal and relocating the Seminole Gulf Railroad could be accomplished coincidentally.
- Provides best operational capabilities.

Cons:
- A minimum of roughly 2,750 lineal feet of major six lane arterial roadway and 3,850 lineal feet of railroad track would require relocation. Further relocation may be required to accommodate proper layout for road and railway design speeds.
- The Ten Mile Canal would need to be culverted or shifted.
- Shifting of the Ten Mile Canal and Seminole Gulf Railroad cannot be accomplished coincidentally, potentially increasing operational impacts during construction.
- Requires acquisition of at least 22 acres of developed commercial and residential land and approximately 50 acres of undeveloped commercial land for which plans are pending.
- The acquisition process for the land would likely require considerable time and the value of the land will likely continue to increase.
- Culverting of the Ten Mile Canal could have considerable operational impacts.
- The Runway 5 localizer would require relocation outside the RSA.
- This is the most expensive of any of the Alternatives.
- The curves of both the railroad and roadway are shown as best case scenarios. Actual radius of curves may have to be larger, and may require a reduction in rail and motor vehicle speeds.

Alternative 1 ROM Costing

	Cost Item	Units	Unit Price	Cost
Runway 05				
	Acquire Land	22 ac.	$500,000	$11,000,000
	Business Impact Relocation	410,000 ft²	$95	$39,000,000
	Building Demolition	200,000 ft²	$25	$5,000,000
	Relocate Utilities	2,750 lf	$90	$247,500
	Relocate Roadway	2,750 lf	$300	$825,000
	Roadway Demolition	2,000 lf	$40	$80,000
	Contingency		*15%*	$8,422,875
			Total	**$64,575,375**
Runway 23				
	Acquire Land	50 ac.	$74,052	$3,702,600
	Clearing / Grubbing	12 ac.	$3,000	$36,000
	Relocate Railroad	3,825 lf	$250	$956,250
	Relocate Canal	ls	$1,200,000	$1,200,000
	Fill Canal and Grade RSA	ls	$200,000	$200,000
	Relocate Localizer	ls	$500,000	$500,000
	Contingency		*15%*	$989,228
			Total	**$7,584,078**
			Total (both runway ends)	***$72,159,453***

Note: Culverting the canal rather than relocating it would have an estimated cost of $800,000.

In summary, Alternative #1 would fully satisfy FAA requirements regarding RSAs and provide the greatest operational benefit. However, this alternative would also have considerably greater cost, ranging from $65 to $71.5 million higher than any of the other alternatives. The unit prices used for the land acquisition for all of the alternatives and business impact relocation were obtained from a local property appraiser working for the Lee County Port Authority. All other costs are an engineering rough order of magnitude estimate.

Assessment of Alternative #2 – Reduction of Runway Length

The pros, cons and ROM costs for this alternative are as follows:

Pros:

- Provides full RSA compliance for both runway ends.
- Does not require any additional land purchase.
- Relocating threshold provides for less of an impact to existing approach surface penetrations.

Cons:

- Since departures would start farther down the runway, less runway length would be available if a problem were to occur. As such, this doesn't necessarily result in a safer operation.
- Considerable existing usable pavement is lost.
- The resulting length would restrict the ability of some aircraft that regularly use the airport from continuing to operate.
- Alternative still costs in excess of $1 million.

- Potential for substantial economic impacts to the airport as it will not be able to serve large segments of business jet aircraft.

Alternative 2 ROM Costing

Cost Item	Units	Unit Price	Cost
Runway Markings	ls	$70,000	$70,000
Reconfigure Runway Lighting	ls	$50,000	$50,000
New Connector Taxiways	2,750 yd²	$110	$302,500
Demo Taxiways	17,556 yd²	$15	$263,340
Relocate Glideslope	ls	$500,000	$500,000
Contingency		*15%*	$177,876
		Total	***$1,363,716***

In summary, reducing the runway length would bring Runway 5-23 into full compliance with RSA requirements. However, safety would not necessarily be enhanced if this alternative were applied as the safety of aircraft operations are enhanced by having the most available runway for every operation.

Assessment of Alternative #3 – Declared Distances

The pros, cons and ROM costs for this alternative are as follows:

Pros:
- A compatible RSA would be achieved by relocating the runway thresholds 1,000 feet from the nearest obstruction.
- Physically removing runway pavement is unnecessary under this alternative.
- Costs of this alternative are minimal compared to the other alternatives considered.

Cons:
- Operations may be hindered as the LDA, and ASDA would be decreased which would limit certain aircraft operations.
- The relocation of the threshold would result in a reduction in safety margin for the majority of aircraft utilizing the airport.
- Requires relocation of Glideslope and VASI's.
- Potential economic impact if the airport is not able to serve a segment of general aviation aircraft.

Alternative 3 ROM Costing

Cost Item	Units	Unit Price	Cost
Runway Markings	ls	$60,000	$60,000
Reconfigure Runway Lighting	900 lf	$10	$9,000
Relocate Glideslope	ls	$500,000	$500,000
Contingency		*15%*	$85,350
		Total	***$654,350***

In summary, application of declared distances would allow for FAA RSA compliance. However, this alternative would still impact the operation of certain aircraft. The time and costs of this alternative would be significantly less than most of the other alternatives discussed.

Assessment of Alternative #4 – Use of EMAS

The pros, cons and ROM costs for this alternative are as follows:

Pros:
- Provides a definite improvement in operational safety.
- Maintains the airport's existing operational capabilities.
- Culverting the canal provides for an incremental gain of 163 feet in the RSA length.

Cons:
- The implementation of EMAS doesn't substitute for the RSA requirements of obstacle clearance for at least 1,000 feet from the runway end. As such, this would require that the existing waivers be maintained.
- EMAS is a new concept and extensive research is unavailable, particularly for smaller aircraft.

Alternative 4 ROM Costing

Cost Item	Units	Unit Price	Cost
Install EMAS	53,000 ft²	$65	$3,445,000
Contingency		*15%*	$516,750
Total			**$3,961,750**
*Culvert Canal	ls	$2,000,00	$2,000,000
*Relocate Localizer	ls	$500,000	$500,000
Contingency		*15%*	$375,000
Total			**$2,875,000**
		Total	***$6,836,750***

* Indicates optional improvements with this alternative.

In summary, while EMAS would not create a compliant RSA, it would result in a low cost alternative for improving operational safety at the airport without sacrificing runway length. If the canal were culverted and the localizer relocated with this alternative, improvements in the available RSA can be achieved. However, the costs associated with this small improvement in RSA are considerable.

Assessment of Alternative #5 – Status Quo

The pros and cons for this alternative are as follows:

Pros:
- Lowest cost
- Second best operational capabilities.

Cons:
- Does not provide any safety improvement upon existing conditions.

There is no construction cost associated with this alternative.

In summary, this alternative maintains the existing operation with the waiver remaining in place. Although this may not represent an improvement, given the costs, operational impacts and importance of the airport in the region, it warrants full consideration.

V. RECOMMENDATIONS

A number of key considerations need to be factored into the identification of a recommended alternative. These include balancing the improvement in the level of safety, the cost of the improvement and the impact to the aviation operational capabilities of the region.

Key Factors

Key factors to be considered include:

Reliever Status
As mentioned prior, a key consideration in assessing any of the alternatives is Page Field's status as a reliever airport. As the only reliever airport in southwest Florida, Page Field provides an attractive alternative to commercial service airports such as Naples and Southwest Florida International. Recently passed legislation relative to Naples Airport which creates the potential for restrictions on jet business aircraft further emphasizes Page Field's importance in serving the needs of business aircraft in the region. Further, Page Field's proximity to downtown Ft Myers often makes it the airport of choice for medium sized, and occasional large, business aircraft, allowing them to get in and out during peak commercial service periods with relative ease.

Activity Levels/Fleet Mix
Page Field has experienced a trend of decreasing operational activity since commercial service activity was transferred to Southwest Florida International Airport in early 1983. In 1982, Page Field handled approximately 1.2 million total passengers and over 139,000 operations. These included nearly 20,000 commercial service operations by aircraft such as the Boeing 727 as well as nearly 15,000 air taxi operations. Runway 5-23 operated as the primary runway for this activity in its current configuration. By 1998, traffic levels had decreased considerably with the airport handling just over 81,000 total operations. Air taxi operations had also decreased considerably to just over 4,150.

Major efforts by the Lee County Port Authority (LCPA) beginning with new t-hangars in 1996 and eventual rehabilitation of all airport parking aprons by year end 1999, coupled with the takeover of the FBO operation by the LCPA in 1998, have reversed this trend. With almost 98,000 operations in

1999, operations are expected to increase to roughly 125,000 by 2020. Air taxi is expected to account for a little over 8,700 of this total.

From a fleet mix perspective Class C aircraft are estimated to currently account for 2 percent of the annual activity under VFR conditions increasing to 5 percent by 2020. During IFR conditions, these aircraft are currently estimated to account for 6 percent of activity, increasing to 15 percent by 2020.

Restriction on Commercial Service Activity

Since 1984, Lee County Ordinance 84-12 (later replaced by ordinance 94-09) has prohibited "scheduled passenger aircraft service of any sort" at Page Field. This applies "regardless of the type or size of the aircraft, and regardless of the type of license or certificate held by the operator."

1993 Master Plan Update - Public Hearing Synopsis

Any reduction in the operational capabilities of Runway 5-23 as a result of runway safety area (RSA) compliance, brings to light the following argumentative summary based on public hearings regarding the shortening of Runway 13-31 that occurred on August 4 and 18, 1993 for the Fowler Street extension. The information was included as a supplement to the 1993 Page Field Master Plan Update. The purpose of this summary is to address issues that may result in possible economic impacts on Page Field and Fort Myers if shortening Runway 5-23 at Page Field Airport were to proceed as the fix for the RSA compliance.

When the shortening of Runway 13-31 was proposed in 1993, there were general concerns and strong public opposition by the aviation community. These concerns were eventually countered by positive factual data supported by the LCPA indicating that the shortening would have no effect on the Airport's businesses. This was because Runway 5-23 would remain the same in length and it had the ILS, which was attractive and sufficient to accommodate all aircraft using Page Field for business and other uses. With the potential impacts to the operation of Runway 5-23, many of the core issues raised by the public hearing in 1993 now provide for a very strong argument against this as there would be no other runway with appropriate length to support many of the Airport's aircraft and businesses. Any option to shorten the length or operational capability of Runway 05-23 could be devastating to businesses such as Switlik Aviation, Tomlinson Avionics, SMS, the Page Field Aviation Center and even other potential future tenants. The airport has begun to change their image recently with many new projects and enhancements and the growth at the airport over the past two years has been phenomenal. Impacting the operational capabilities of Runway 05-23 even slightly could be detrimental to aviation support and growth at Page Field.

Some key points and concerns brought about by the hearings included the following:

- The runway shortening limits certain business jets and feeder cargo aircraft from using the field, thus hindering business.
- By limiting the runway length, safety is also decreased and certain aircraft/companies may select other airports to operate from. Hence, this would also limit business and revenue generation at Page Field.
- The Port Authority, city and county are not looking out for the best interests of the aviation community by shortening the runway at Page Field.

Importance of FMY

On December 19, 2000, the National Air Transportation Association (NATA) released its list of the country's 100 Most Needed Airports. Page Field General Aviation Airport was selected from over 3,500 public use airports, to be included in this prestigious list. Being identified in this manner highlights FMY's value to the United States and Southwest Florida. This list was intended to identify where resources are most needed to strengthen the most vulnerable parts of the national air transportation system. Airports included on this list were chosen based on six criteria; forecast airport growth, utilization, regional significance, insufficient capacity, arbitrary limitations, and hostile political circumstances. NATA explains their criteria in detail in an article released along with the list, titled "America's 100 Most Needed Airports." Below is their explanation of criteria and one can see why FMY made the list.

Forecast Airport Growth
The forecast airport growth is the expected demand for aviation services and the likely economic expectation of the area the airport serves. This includes demand for both commercial and non-commercial aviation services. .

Utilization
Utilization is the growing need for a wider variety of aircraft service and the impact a more capable airport would have on the region's future economic development.

Regional Significance
Regional significance is an airport's essential role in the transportation goals of a state or metropolitan area and identification as an important component of state aviation plan.

Insufficient Capacity
Insufficient Capacity is an inability to serve the range of airport users that would reasonably be expected in the future under likely load and weather conditions, runway width and length constraints, ramp and hangar space limitations, inadequate instrument approaches, inferior lighting and taxiways, and obstructions.

Arbitrary Limitations
Arbitrary limitations are existing or proposed curfews, noise restrictions, slot controls, weight limits, or other rules and regulations limiting access to the airport.

Hostile Political Circumstances
Hostile political circumstances are an organized public opposition to the airport, its continuing operation, or a necessary improvement that restricts present or future utilization of the airport and that is likely to reduce demand of aviation services.

This recognition again emphasizes the importance of protecting the operational capabilities of the airport. This must be considered in addressing any potential impact to the airport's current operation. With the deterioration of the quality of service in scheduled airlines, travelers have realized the value and flexibility that on-demand air charter and private aircraft provide. Because of this, general aviation aircraft have become the travel method of choice by many. The business travel mode of choice for the 21st Century will be air transportation. It is important to maintain, if not improve, the airside capabilities at FMY in order to meet the needs of a wide range of aircraft that will have significant impacts on the economic well-being of the Nation.

Recommendations

The key issues presented prior appear to reinforce the validity of the FAA's decision to issue a waiver for non-standard safety areas in 1989. With only two percent of the current activity at Page requiring the more stringent RSA areas, it becomes hard to justify the cost or operational impacts associated with full compliance (Alt. 1 – Relocate US 41, Ten Mile Canal and Railroad and Alt.2 – reduce runway length, respectively). This is particularly true in light of the fact that the airport has operated in the past in this same configuration with almost double the current activity levels including considerable commercial passenger traffic. Although it is important to protect the ability to serve the larger business type aircraft which are expected to grow to five percent of the fleet by 2020, altering the current operation to improve RSA compliance for these aircraft will effectively result in a reduction in the margin of safety for the other 95 percent of the aircraft utilizing the airport. In other words, further displacing the thresholds (Alt. 2 -Runway Reduction and Alt. 3 - Declared Distance) will result in less useful pavement for landing operations, reducing the overall safety margin for all aircraft types to provide for 2 to 5 percent of the fleet. While step improvements in safety are possible by employing EMAS, no real increase in the RSA is actually achieved unless the canal is culverted and the localizer relocated. Again, the costs associated with this are considerable while the RSA length is extended by only 163 feet over that currently available.

Based on the information outlined above and the analysis contained herein, it is recommended that the current waivers remain in effect (do nothing alternative) and that no changes be made to the operation of the airport at this time.

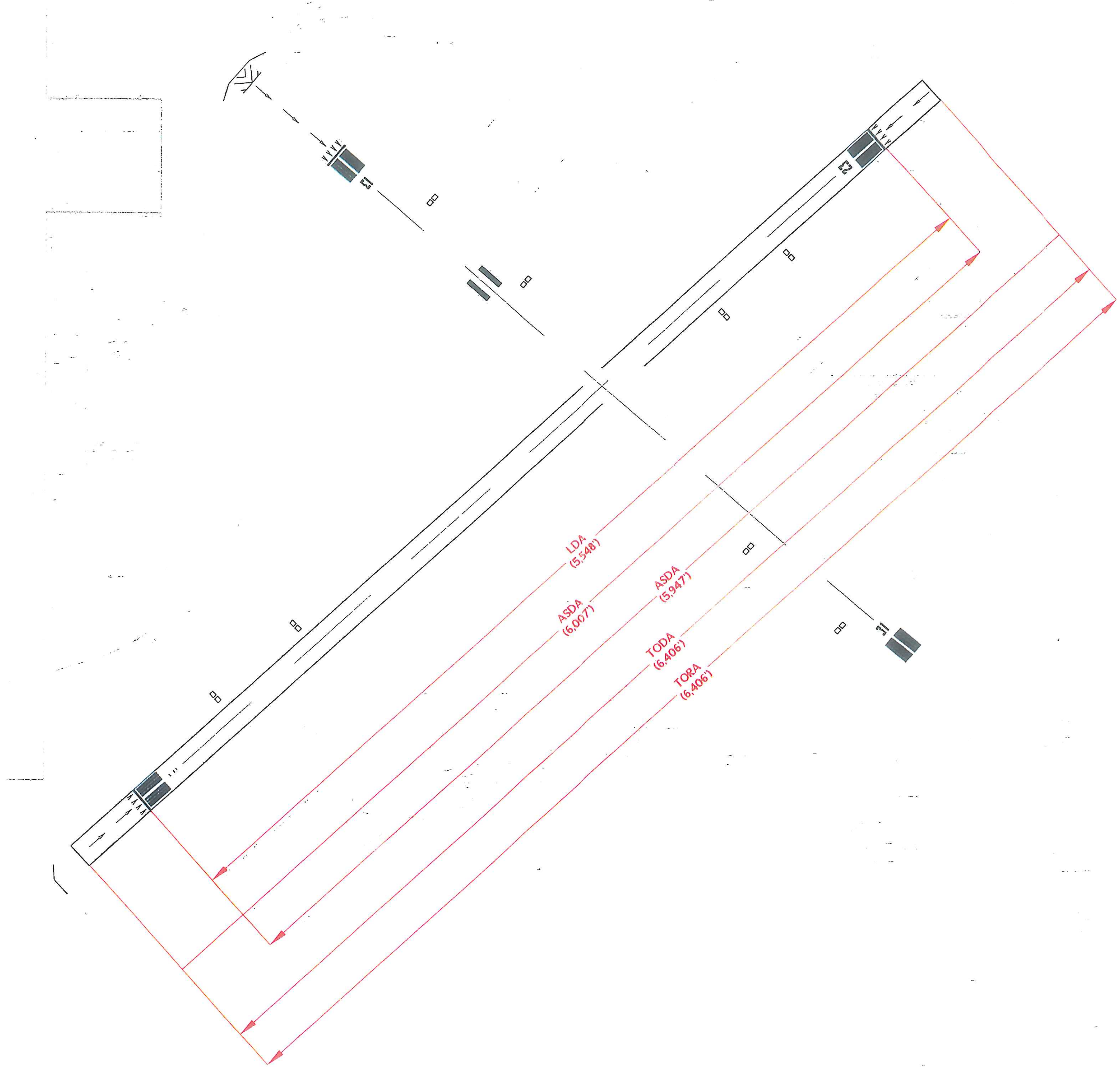
It is further recommend that the fleet be reviewed and this issue be revisited during the next update of the master plan or if any major changes in the fleet mix are experienced.

VI. FINAL DETERMINATION

The study outlined in the previous sections was submitted to the FAA for an extended review and comment period which continued from midsummer 2001 through January 2002. During this period, a site visit was conducted by Airports District Office staff and extensive discussions were held both internal to the FAA and with the Lee County Port Authority. Based on additional requests, detailed information and performance data outlining the current and projected mix of aircraft using the airport was also provided to the FAA. This intensive effort culminated in a final determination which does improve the level to which the airport complies with existing RSA requirements while recognizing the severe operational, safety and cost implications associated with any of the primary alternatives outlined in this report.

The final determination consists of the following:

> **Incorporation of the existing displaced thresholds to provide additional RSA clearance for modified ASDA and LDA calculations. Specifically the area prior to each threshold will not be available for ASDA and LDA calculations of aircraft using the opposite runway end for either departure or arrival operations. The new lengths to be reflected are as outlined in Table 3 and Exhibit 7. These revised lengths will be reflected on the airport layout plan prior to approval by the FAA.**



Lee County Port Authority

Page Field General Aviation Airport

Birk Hillman

Orlando - Miami - Atlanta

6751 Forum Drive, Ste. #240, Orlando, FL 32821

PAGE FIELD AIRPORT RSA

Fort Myers, Florida

FAA FINAL DETERMINATION

NO.	DATE	REVISION

DATE:	JUNE 2001
PROJECT NO.	C0460101
DESIGNED BY:	JH
DRAWN BY:	JH
CHECKED BY:	SR

EXHIBIT

7

Table 3 Final Determination Declared Distance Adjustments Page Field Airport				
	Runway 5		Runway 23	
	Original	Revised	Original	Revised
Takeoff Runway Available (TORA)	6,406'	6,406'	6,406'	6,406'
Takeoff Distance Available (TODA)	6,406'	6,406'	6,406'	6,406'
Accelerate Stop Distance Available (ASDA)	6,406'	6,007'	6,406'	5,947'
Landing Distance Available (LDA)	5,947'	5,548'	6,007	5,548

Finally, no facility modifications are either recommended or required to comply with this determination.

The net effect of the final determination results in a reduction in the ASDA of 399 feet and 459 feet for the Runway 5 and 23 ends, respectively. Similarly, this results in a reduction in the LDA of 399 feet and 459 feet for the Runway 5 and 23 ends, respectively.

U.S. Department
of Transportation
Federal Aviation Administration

ORLANDO AIRPORTS DISTRICT OFFICE
4100 Tradecenter Street
Orlando, Florida 32827-5096

RECEIVED AUG 0 7 1989 PJD
89 32I 2,306

Mr. Paul Doherty
Executive Director
Lee County Port Authority
16000 Chamberlin Parkway, Suite 8671
Ft. Myers, FL 33913-8899

Dear Mr. Doherty:

The final project documents for Planning Project AIP 3-12-0027-01, transmitted by your letter, have been reviewed. The Master Plan documents for the Page Field Airport are acceptable from a contractual standpoint with respect to the terms and conditions of the Grant Agreement. The contents of the report reflect the views of Peat, Marwick, Mitchell & Co., who is responsible for the facts and accuracy of the data presented. The contents do not necessarily reflect the official views or policy of the Federal Aviation Administration (FAA), and our determination of acceptability does not imply that the FAA agrees with the conclusions and recommendations therein.

The Airport Layout Plan (ALP) has been conditionally approved subject to compliance with the requirements of the National Environmental Policy Act of 1969 (P.L. 91-190).

The Master Plan Report and ALP drawing depicted deviations to the Runway Safety Area Standard for both runways. Per your request, an adaptation to the standard has been approved. The adaptation should be noted on all future ALP updates until such time as it is rescinded.

Approval of the ALP is based on the safety, utility, and efficiency of the airport and signifies only that FAA has no objections based on these considerations. Our approval of the ALP does not infer or imply that the land uses shown in the vicinity of the airport are considered to be compatible with airport operations. This approval does not represent a commitment to provide financial assistance to implement the proposed plan. FAA approval of assistance in any development will be determined at the time of request for same, based upon existing regulations, project justifications, and availability of funds.

This approval does not negate notification and review requirements imposed by Federal Aviation Regulation, Part 77 and Part 157, as they pertain to all construction and/or alteration, whether shown on this plan or not. Further, the FAA cannot prevent erection of any structure in the vicinity of airports. Airport environs can only be adequately protected through such means as state and local zoning ordinances, building regulations, etc.

FAA approval of the ALP is considered valid until such time as the magnitude, nature or character of the airport operations and role changes from that envisioned during the preparation of the plan.

To preclude conflicts with future development, we recommend that you utilize the ALP when preparing leases. FAA review of requests for Airport Improvement Program (AIP) projects can be facilitated if they are in concurrence with the approved plan.

We recommend that you provide copies of the plan to all local planning and zoning boards and appropriate county and city officials for adoption. Copies should also be distributed to FBO's, affected political jurisdictions and other airport users. They should also be made available for continuous public review at convenient locations such the county courthouse, City Hall, public school libraries, and other appropriate places.

Sincerely,

James E. Sheppard
Manager

Enclosure (ALP)

cc: FDOT (ALP and MP)

ADAPTATION TO STANDARDS

PAGE FIELD AIRPORT

FORT MYERS, FLORIDA

Background

The Page Field Airport Master Plan/Airport Layout Plan (ALP) update currently underway, has indicated that the existing runway safety areas associated with both runways do not meet current standards as shown on attachment number 1. The airport is land-locked and the runway safety areas are crossed by a chain link fence and a public road and by a drainage canal. The sponsor has requested that an adaptation to standards be approved.

Adaptation to Design Standards

The runway safety area standard applies to all runway and runway extensions that are constructed or upgraded after February 24, 1983. However, in accordance with both AC 150/5300-4B, Change 7, and AC 150/5300-12, paragraph 19, for existing runways constructed prior to the adoption of this standard, as is applicable in this case, the maximum feasible length of runway safety area should be provided without reducing the existing length of the runway. Comparable conditions apply with respect to the width of the runway safety area.

Therefore, rather than require the construction of a runway safety area to meet standards, the deviation to the standards shown as attachment number 1 is recognized and approved.

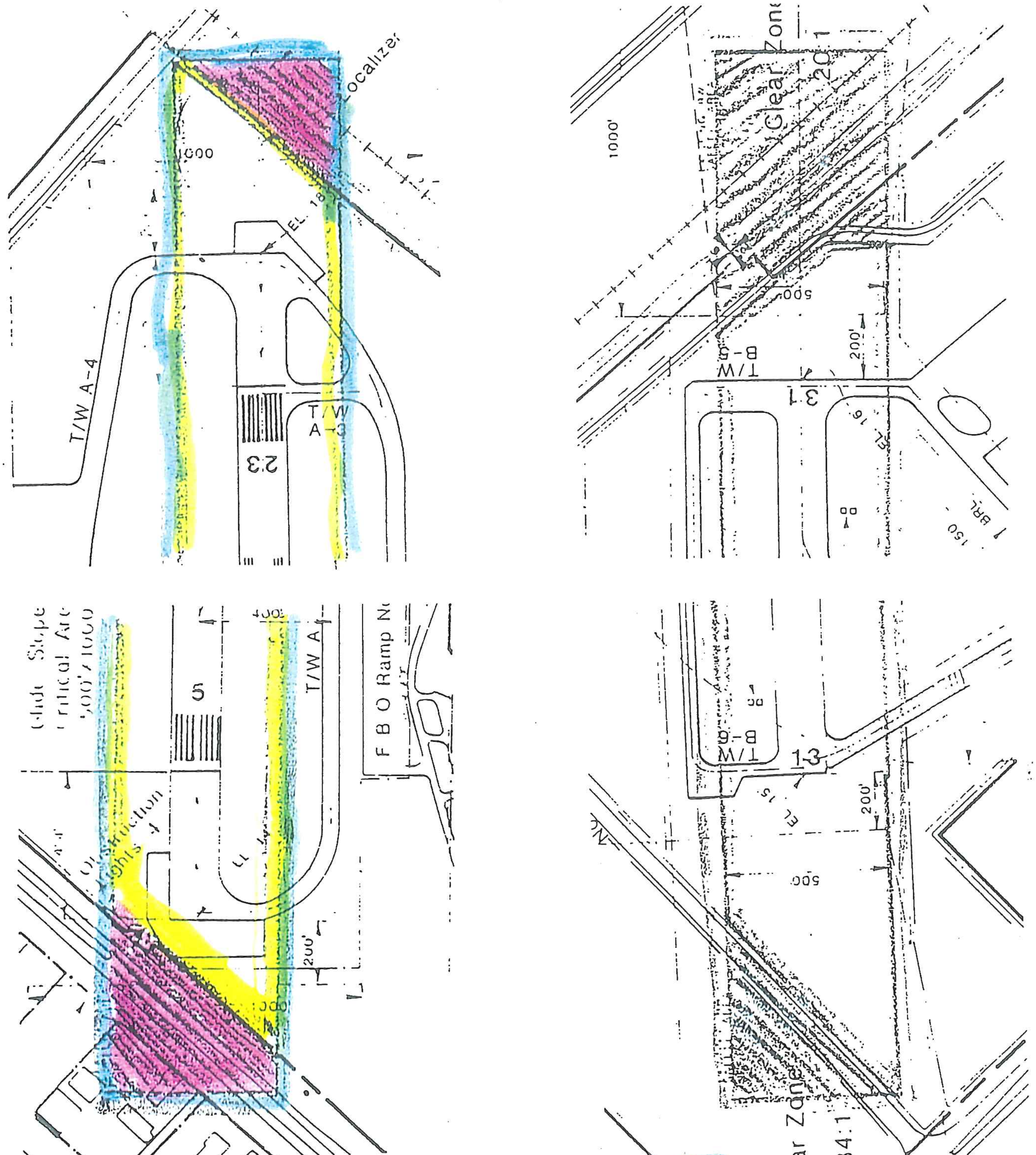
This adaptation should be noted on all future ALP updates until such time as it is rescinded.

APPROVED:

James E. Sheppard
Manager
Orlando Airports District Office

Date

ATTACHMENT NUMBER 1
ADAPTATION TO STANDARDS
PAGE FIELD AIRPORT
FORT MYERS, FLORIDA



Legend: Standard Runway Safety Area
Runway Safety Area Violation
Adapted Standard

Attachment RSA-2
Guidelines for the Planning and Design of an EMAS System
Taken directly from AC 150/5220-22

SYSTEM DESIGN REQUIREMENTS. *For purposes of design, the EMAS can be considered fixed by its function and frangible since it is designed to fail at a specified impact load. Therefore, an EMAS is not considered an obstruction under 14 CFR Part 77, Objects Affecting Navigable Airspace. The following system design requirements shall prevail for all EMAS installations.*

Concept. *An EMAS is designed to stop an overrunning aircraft by exerting predictable deceleration forces on its landing gear as the EMAS material crushes. It must be designed to minimize the potential for structural damage to aircraft, since such damage could result in injuries to passengers and/or affect the predictability of deceleration forces.*

Location. *An EMAS is located beyond the end of the runway, centered on the extended runway centerline. It will usually begin at some distance from the end of the runway to avoid damage due to jet blast and short landings (Figure 1). This distance will vary depending on the available area and the EMAS materials. Where the area available is longer than required for installation, the EMAS should be placed as far from the runway as practicable. Such placement decreases the possibility of damage to the system from short overruns or undershoots, and results in a more economical system by considering the deceleration capabilities of the existing runway safety area.*

Design Method. *An EMAS design shall be supported by a validated design method, which can predict the performance of the system. The design aircraft is defined as that aircraft using the associated runway that imposes the greatest demand upon the EMAS. To the extent practicable, however, the EMAS design should consider the range of aircraft expected to operate on the runway. In some instances, this may be preferable to optimizing the EMAS for the design aircraft. The design method shall be derived from field or laboratory test. Testing may be based on passage of either an actual aircraft or equivalent single wheel load through a test bed. The design must consider multiple aircraft parameters, including but not necessarily limited to allowable aircraft gear loads, gear configuration, tire contact pressure, aircraft center of gravity, and aircraft speed. The model must calculate imposed aircraft gear loads, g-forces on aircraft occupants, deceleration rates, and stopping distances within the arresting system. Any rebound of the crushed material that may serve to lessen its effectiveness must be considered.*

Operation. *The EMAS shall be a passive system.*

Width. *The minimum width of the EMAS shall be the width of the runway (plus any sloped area as necessary).*

Base. *The EMAS shall be constructed on a surface capable of supporting the occasional passage of the critical design aircraft using the runway and fully loaded Aircraft Rescue and Fire Fighting (ARFF) vehicles without deformation of the base surface or structural damage to the aircraft or vehicles. It shall be designed to perform satisfactorily under all local weather, temperature, and soil conditions. It shall provide sufficient support to facilitate removal of the aircraft from the EMAS. Full strength runway pavement is not required.*

Entrance Speed. *To the maximum extent possible within the available safety area, the EMAS shall be designed to decelerate all air carrier aircraft expected to use the runway at exit speeds of 70 knots or less without imposing loads that exceed the aircraft's design limits, causing major structural damage to the aircraft, or imposing excessive forces on its occupants. For design purposes, it shall be assumed that the aircraft has all of its landing gear in full contact with the runway and is traveling within the confines of the runway and parallel to the runway centerline.*

Aircraft Evacuation. *The EMAS shall be designed to enable safe ingress and egress as well as movement of ARFF equipment (not necessarily without damage to the EMAS) operating during an emergency. If the EMAS is to be built above* *existing grade, sloped areas sufficient to allow the entrance of ARFF vehicles from the front and sides must be provided. Provision for access from the back of the EMAS may be provided if desirable, but will result in a shorter effective length. Maximum slopes should be based on the EMAS material and performance characteristics of the airport's ARFF equipment.*

Maintenance Access. *The EMAS shall be capable of supporting regular pedestrian traffic for the purposes of maintenance of the arresting material and co-located navigation aids without surface damage. An EMAS is not intended to support vehicular traffic for maintenance purposes.*

Undershoots. *The EMAS shall be designed so as not to cause control problems for aircraft undershoots touching down in the arresting system. Fulfillment of this requirement may be based solely on flight simulator tests. Materials of density and strength greater than those shown by flight simulator test not to cause control problems for aircraft undershoots will be deemed acceptable.*

Navigation Aids. *The EMAS shall be constructed to accommodate approach lighting structures and other approved facilities within its boundaries. It shall not cause visual or electronic interference with any air navigation aids. All navigation aids within the EMAS must be frangible as required by 14 CFR Part 139, Certification and Operation: Land Airports Serving Certain Air Carriers. To meet the intent of this regulation, approach light standards must be designed to fail at two points. The first point of frangibility shall be zero to three inches above the expected residual depth of the RMAS after passage of the design aircraft.*

Drainage. *The EMAS shall be designed such that water will not accumulate on its surface or any portion of the runway or runway safety area.*

Jet Blast. *The EMAS shall be designed and constructed so that it will not be damaged by expected jet blast.*

Repair. *The EMAS must be designed to be repaired to a usable condition within 45 days of use by the design aircraft at the design entrance speed. It should be noted that this is a design requirement only – not an operation requirement.*

Material Qualification. *The material comprising the EMAS shall have the following requirements and characteristics:*

a. ***Material Strength and Deformation Requirements.*** *Materials must meet a force vs. deformation profile within limits having been shown to assure uniform crushing characteristics, and therefore, predictable response to an aircraft entering the arresting system.*
b. ***Material Characteristics.*** *The materials comprising the EMAS must:*
    1. *Be water-resistant to the extent that the presence of water does not affect system performance.*
    2. *Not attract vermin, birds, or other creatures.*
    3. *Be non-sparking.*
    4. *Be non-flammable.*
    5. *Not promote combustion.*
    6. *Not emit toxic fumes or malodorous fumes in a fire environment after installation.*
    7. *Not support unintended plant growth with proper treatment.*
    8. *Have constant strength and density characteristics during all climatic conditions within a temperature range appropriate for the locale as specified by the airport owner.*
    9. *Be resistant to deterioration due to:*
        a. *Salt*
        b. *Typical aircraft and runway deicing fluids.*
        c. *Aircraft fuels, hydraulic fluids, and lubricating oils.*
        d. *Sunlight.*
        e. *Water.*
        f. *Freeze/thaw, if installed where freezing is possible.*
        g. *Blowing sand.*

Birk Hillman Consultants, Inc.

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Orlando, Florida 32821
407-370-4660 • Fax 407-370-4652

LEE COUNTY PORT AUTHORITY
PAGE FIELD (FMY) COMPREHENSIVE PLAN AMENDMENT
SUFFICIENCY #1 CHECKLIST
(NOTE: FOR INTERNAL USE ONLY)

Comment #	Completed	Description
1	X	BOPC Endorsement Verification
2	X	Statement in policies re FMY's role as Reliever Airport
3	X	Amendment to Definitions to include FMY
	X	"Airport Layout Plan"
	X	"Non-aviation Related Uses"
4	X	Close-up maps
5	X	Table 5-type Table for FMY
6	X	Calc. of Max. Intensity (App. Sec. III E.)
7	X	Staff's critique of ref. to Ch. 34 Flight Obstruction Surfaces
8	X	Language re 2030 in Policy 1.91 (re Map 3G)
9	X	Language re following in Lee Plan policies
	X	a. Periodic update of the FMY AMP/ALP
	X	b. School Zone Map
	X	c. Airport Road extension to Metro Pkwy
	X	d. Amortizing existing uses/compatibility with FMY
	X	e. Specific ID of uses (aviation & non-aviation) (Table 5B)
	X	f. Fact that non-aviation development must pay impact fees
10	X	Objective 47.1 & Policy 47.1.1 to ref. Table 5B development parameters
11	X	Policies 47.2.5, 47.3.4 and Objective 151.4 to ref FMY
12	X	Close-up map showing existing FLU
13	X	Single S&D for the entire FMY boundary
14	X	Intensity by type of use for traffic analysis (B1)
15	X	Potable water data & analysis/service provider letter based on Table 5B
		Potable water data & analysis (HOLD FOR STAFF OK ON TABLE 5(b))
		Potable water service provider letter (DRAFTED)
16	X	Sanitary sewer data & analysis/service provider letter based on Table 5B
		Sanitary sewer data & analysis (HOLD FOR STAFF OK ON TABLE 5(b))
		Sanitary sewer service provider letter (DRAFTED)
17	X	Service provider letters for EMS, fire, solid waste, Lee Tran & School District
18	X	Statement re Lee Plan Table 1(b)
19	X	Impact on/coordination with adjacent local governments (City of Fort Myers)
20	X	Total acreage v. acreage in request (meeting with staff)
21	X	Response to staff's comment re collaboration

Waiting for staff's approval of Table 5(b)

NOTE: Internal notes for the reviewers are shown in **[bold and brackets]**

June 25, 2008

Mr. Matthew A. Noble, AICP
Principal Planner
Division of Planning
Lee County Department of Community Development
P.O. Box 398
Fort Myers, FL 33902-0398

Re: CPA2007-48 Page Field Airport Lee Plan Amendment

Dear Mr. Noble:

On behalf of the applicant, the Lee County Port Authority, we have prepared this response to your letter of insufficiency for the above-reference case, dated April 2, 2008. The narrative responses have been provided below, and the requested support documentation has been attached to this letter. Please note that we have incorporated into our narrative the relevant text from your letter (in **bold**) and have numbered your comments for reference purposes.

1. **Planning staff finds the above mentioned submittal is insufficient and further information is needed. Please provide evidence that the Board of Port Commissioners endorsed the proposed plan amendment application. This evidence should include minutes of the meeting from when this endorsement occurred.**

RESPONSE: The evidence requested by staff has been provided. The signed Green Sheet documenting the Board of Port Commissioners' endorsement of the Lee Plan amendment application package for Page Field General Aviation Airport has been attached to this cover letter.

2. **Staff understands the importance of Page Field as a "reliever" airport and that it is necessary to protect the capacity of RSW. Staff believes that this fact should be memorialized in the Lee Plan.**

RESPONSE: Proposed Objective 1.9 has been amended to include language demonstrating the importance of Page Field General Aviation Airport as a reliever airport facility to Southwest Florida International Airport. The proposed language is shown in red in the amended list of proposed text amendments, which has been attached to this cover letter.

3. **Staff finds that additional modifications, other than what has been proposed to date, are warranted to incorporate the Page Field Master Plan and Airport Layout Plan into the Lee Plan. For example, "Airport Layout Plan" is defined in the Lee Plan referring only to RSW. Similarly the "Non-Aviation Related Uses" refer to RSW, Map 3F, and Table 5. These definitions should be modified to include Page Field.**

RESPONSE: The applicant has amended the list of proposed text amendments to incorporate Page Field, Table 5(b) and Map 3G into definitions cited by staff. The applicant also has broadened the proposed text amendments to include changes to the Lee Plan Glossary section to further support the adoption of the Page Field General Aviation Airport Master Plan and Airport Layout Plan into the Lee Plan. The amended list of proposed text amendments has been attached to this cover letter.

4. **Staff is requesting better maps for the existing and proposed Lee Plan designations for the subject site. Please provide close-up views, not county-wide in size.**

RESPONSE: The applicant has amended the maps for the application package to be based on a larger-scale (close-up) map extent for the subject property's existing and proposed Lee Plan designations. The amended maps have been attached to this cover letter.

5. **Staff believes that a Table similar to Lee Plan Table 5 needs to be developed for Page Field and incorporated into the Lee Plan as part of this amendment.**

RESPONSE: The applicant has prepared the type of table requested by staff. To incorporate this table into the Lee Plan, the applicant has proposed renaming the table for Southwest Florida International Airport from Table 5 to Table 5(a) and adopting the companion table for Page Field General Aviation Airport as Table 5(b). The appropriate changes to the Lee Plan associated with these requests have been incorporated into the proposed text amendments, the amended version of which has been attached to this cover letter.

6. **Staff notes that the application does not contain the calculation of maximum allowable development under the proposed FLUM (Application Section III E.). This information must be provided for incorporation into the Lee Plan in a fashion similar to Table 5.**

RESPONSE: The applicant has amended the Application for Comprehensive Plan Amendment form for Page Field General Aviation Airport to include a calculation of the maximum allowable development under the existing and proposed FLUM, as required under Application Section III E. The calculation is based on the data presented in the proposed Table 5(b), which shows the existing and proposed intensity, aviation and non-aviation, at Page Field. The amended application form has been attached to this cover letter.

7. **Referring to the Flight obstruction surfaces section of Chapter 34, which is in the process of being rewritten, does not provide the required data.**

RESPONSE: The applicant acknowledges staff's comment and has amended the proposed text amendments to include Table 5(b) showing the existing and proposed development intensity for Page Field General Aviation Airport. Table 5(b) is being proposed in lieu of the applicant's reference to Sec. 34-1004 of the Lee County Land Development Code. The amended proposed text amendments have been attached to this cover letter.

8. **Policy 1.9.1. provides that Map 3G depicts the planned expansion of the Page Field General Aviation Airport through 2020. This is not consistent with the plan horizon year of 2030. Can the Port Authority staff provide policy language that will ensure that this discrepancy will be addressed in the near (next master plan update process) future?**

RESPONSE: The applicant has amended Policy 1.9.1 to document that the Page Field Airport Master Plan and Airport Layout Plan will be updated during the next Lee Plan amendment cycle following the Airport Master Plan update process in order to be consistent with the Lee Plan 2030 planning horizon. The proposed language is shown in red in the amended list of proposed text amendments, which has been attached to this cover letter.

9. **There are several additional issues that warrant inclusion in proposed Lee Plan policy language such as:**

   a. **Periodic update of the Page Field Master Plan/ALP** [Policy 47.2.5]
   b. **School Zone Map and its relevance to the facility** [Policy 1.9.3]
   c. **Airport Road extension to Metro** [Not Applicable]
   d. **Amortizing existing uses in and around the airport that are not compatible with airport function (or reduce capacity)** [Policy 1.9.1]
   e. **Specific identification of the uses to be located on Page Field, both aviation and non-aviation** [Table 5(b)]
   f. **Fact that non-aviation development must pay impact fees.** [Policy 1.9.1]

RESPONSE: The applicant has amended the above cited portions of the proposed text amendments to incorporate language addressing each of these issues. With regard to item "c" above, the Airport Road extension is not located on Airport property and therefore has not been included in this application. The amended proposed text amendments have been attached to this cover letter.

10. Objective 47.1 and Policy 47.1.1 should be modified to reference the development parameters table for Page Field that staff is requesting in accordance with the discussion above.

RESPONSE: The applicant has amended the proposed text amendments for Objective 47.1 and Policy 47.1.1 to reference the existing and proposed development intensity scheduled for Page Field General Aviation Airport through the 2020 planning horizon of the adopted Airport Master Plan and the 2025 planning horizon of the adopted Airport Layout Plan.

11. Policies similar to existing Policies 47.2.5, 47.3.4, and Objective 151.4 need to be developed and proposed to incorporate the layout plan and master plan for Page Field into the Lee Plan. These Policies could be amended or new ones created to address these issues.

RESPONSE: The applicant has included proposed text amendments for Policies 47.2.5, 47.3.4, and Objective 151.4 to incorporate the Page Field General Aviation Airport Master Plan and Airport Layout Plan into the Lee Plan. The amended proposed text amendments have been attached to this cover letter.

Comments relating to specific sections of the application are provided below:

Section IV

12. A2. The applicant has not submitted a map showing the existing future land use categories of the subject property. As stated above, staff is requesting better maps for the existing and proposed Lee Plan designations for the subject site. Please provide close-up views, not county-wide in size.

RESPONSE: The applicant has amended the maps for the application package to be based on a larger-scale (close-up) map extent for the subject property's existing and proposed Lee Plan designations. The amended maps have been attached to this cover letter.

13. A5. There are numerous legals for different parcels and most have a different point of commencement leading to the point of beginning. This opens the possibility for mapping errors due to inconsistent map references. For example, the less and except parcel in parcel 2 extends outside of the legal for parcel 2. It is also depicting a strip of land north of the less and except parcel that will be changed that may cause confusion in the future. Since the Future Land Use will include the ROW it is not necessary to exclude them from the descriptions. One description for the entire site could be created.

[The applicant should submit a legal description to include the actual boundary of the requested plan amendment consistent with the requirements of the Land Development Code Sections 34-202(a)(l)and (2), but Planning staff would like to discuss this further with Port Authority staff.]

RESPONSE: The applicant has prepared a single legal description and sketch to encompass the entire Page Field General Aviation Airport property. The updated legal description and sketch have been attached to this cover letter.

14. B1. Revise the analysis to provide the square footage of uses by type (office, retail, medical office, etc.) that were utilized in the employment for parcels identified on Attachment 4 of the traffic analysis.

RESPONSE: The applicant has amended the traffic analysis to show the intensity of uses by type of use. The amended traffic analysis has been attached to this cover letter.

15. B2. The applicant has not submitted the required data and analysis regarding the availability of potable water service. The applicant has not submitted a letter of availability of service from the potable water services provider. There is insufficient data and analysis regarding the level of service for potable water required by, or available to, the subject property. The data should include current and projected future potable water plant capacity. Please determine the availability of water supply to support the desired level of development within the franchise area using the current water use allocation (Consumptive Use Permit) based on the annual average daily withdrawal rate. Include the current demand and the projected demand under the existing designation, and the projected demand under the proposed designation. Include the availability of treatment facilities and transmission lines for reclaimed water for irrigation. Include any other water conservation measures that will be applied to the site (see Lee Plan Goal 54).

RESPONSE: XXXX. **[JEI staff is prepared to provide the required data and analysis. However, we are awaiting staff's approval of Table 5(b) before moving forward. Also, the service provider letters have been drafted, reviewed and approved by LCPA. We are awaiting staff's approval of Table 5(b) before distributing the letters for response.]**

16. The applicant has not submitted data and analysis regarding the availability of sanitary sewer service. The applicant has not submitted a letter of availability of service from the sanitary sewer services provider. There is insufficient data and analysis regarding the level of service for sanitary sewer required by, or available to, the subject property. The data should include current and projected future sanitary sewer plant capacity.

RESPONSE: XXXX. **[JEI staff is prepared to provide the required data and analysis. However, we are awaiting staff's approval of Table 5(b) before moving forward. Also, the service provider letters have been drafted, reviewed and approved by LCPA. We are awaiting staff's approval of Table 5(b) before distributing the letters for response.]**

17. B3. Please provide revised letters from the emergency medical service, fire protection, and the solid waste service provider for the subject property after informing these agencies of the potential development that could result from the proposed amendment. Please provide the required review from LeeTran and the School District of Lee County. The letter from the applicant asking for these reviews must contain the development parameters that may be developed once the amendment is approved.

RESPONSE: The applicant has amended the application package to include the updated service provider letters. The letters are based on the availability and capacity of public facilities and services to accommodate the level of intensity for Page Field depicted in Table 5(b). The updated service provider letters have been attached to this cover letter. **[Service provider letters have been drafted, reviewed and approved by LCPA. Awaiting staff's approval of Table 5(b) before distributing the letters for response.]**

18. El. The applicant has not supplied data and analysis to show how the proposed amendment will affect Table l(b) of the Lee Plan.

RESPONSE: The applicant has amended the proposed Policy 1.9.1 to state that non-aviation development at Page Field General Aviation Airport will comply with the intensity allocations depicted in Table 1(b) of the Lee Plan. The amended list of proposed text amendments has been attached to this cover letter.

19. E3. The applicant has not supplied data or analysis regarding the effect of the proposed amendment on adjacent local governments (i.e. Fort Myers) and their comprehensive plans.

RESPONSE: The applicant is coordinating with the City of Fort Myers, Department of Community Development, to address the impacts of the proposed amendment on the City and its comprehensive plan. The initial meeting with the City's Community Development Director was held on March 5, 2008. Follow-up meetings to determine any administrative or Council actions required on the City's part will be scheduled on an as-needed basis.

20. Upon receipt of these comments, Planning staff encourages the applicant to arrange a meeting so staff can provide additional comments concerning the Airport Layout Plan. At this meeting, staff would also like to discuss the total acreage of the property versus

the acreage included in the request, as well as the status of the"surp1us" properties. This discussion may result in a need to further modify the application.

RESPONSE: The applicant is prepared to meet and discuss this issue with staff.

21. Staff wants to work in a collaborative manner to achieve this amendment.

RESPONSE: The applicant concurs with staff's recommended collaborative approach and will strive to maintain this approach through the remainder of the Lee Plan amendment process.

We are confident that staff comments have been addressed thoroughly in this response package. However, we would be happy to provide additional information or respond to any remaining questions. Please contact me as needed. Thank you very much for your consideration and expeditious review of this sufficiency response package.

Sincerely,

JOHNSON ENGINEERING, INC.
Joseph W. Grubbs, Ph.D., AICP
Principal Planner

JWG/jrs:20033734-127

Attachments

cc: Emily M. Underhill, Lee County Port Authority
Ellen L. Lindblad, Lee County Port Authority
William B. Horner, Lee County Port Authority
William C. Sandifer, RS&H
John Palm, RS&H

SUMMARY OF REQUESTS

a. Proposed Map Amendments

a. Amend the Lee Plan Future Land Use Map (Map 1, Page 1) to change the Future Land Use designation of the Page Field General Aviation Airport from Public Facilities to Airport. (Exhibit II.A.2.)

b. Replace existing Lee Plan Map 3G, Page Field General Aviation Airport Airport Layout Plan, to reflect the most recently updated and adopted plan. (Exhibit IV.A.7.b.)

b. Proposed Text Amendments

a. Amend the Lee Plan to create Objective 1.9 and supporting policies to incorporate Page Field General Aviation Airport into the Future Land Use Element.

b. Amend Lee Plan Objective 47.1 and supporting Policy 47.1.1 to incorporate Page Field General Aviation Airport into the Transportation Element.

c. Amend Lee Plan Objective 151.4 and supporting policies to incorporate Page Field General Aviation Airport into the Intergovernmental Coordination Element.

d. Amend Lee Plan Table 5 and related Lee Plan provisions to change the table number to Table 5(a).

e. Amend the Lee Plan to incorporate Table 5(b) to document the existing and proposed development intensity at Page Field General Aviation Airport.

IV.A.1. Proposed Text Amendments

Note:

- **Text Amendments proposed under the Sept. 2007 application = Underlined or ~~Strikethrough~~ [Black]**
- **Text Amendments amended under the June 2008 sufficiency response = Underlined or ~~Strikethrough~~ [Red]**

a. **Amend the Lee Plan to create Objective 1.9 and supporting policies to incorporate Page Field General Aviation Airport into the Future Land Use Element.**

OBJECTIVE 1.9: PAGE FIELD GENERAL AVIATION AIRPORT. Designate on the Future Land Use Map adequate land in appropriate locations to accommodate the projected growth needs of the Page Field General Aviation Airport and the industrial, commercial and office uses related to it, as well as other non-aviation related development that is not necessarily related to the Airport, through the year 20~~30~~25. Page Field General Aviation Airport plays a vital role as a reliever airport facility to Southwest Florida International Airport. In its role as reliever airport, Page Field reduces general aviation traffic from the Southwest Florida International Airport, increasing the airport efficiency and capacity. Page Field also is vital to Lee County's economy as a general aviation facility and the site of important non-aviation development. The Lee County Port Authority desires to establish non-aviation related uses to provide a supplementary revenue source as well as providing an opportunity for businesses that desire a location on Airport property. Designate on the Airport Layout Plan suitable areas to accommodate these desired uses and provide general policy guidance as to how these uses will be developed.

POLICY 1.9.1: Airport lands include Page Field General Aviation Airport's existing facility and projected growth areas through the year 20~~30~~25, as shown on the adopted Airport Layout Plan. These areas will include airport and airport-related development as well as non-aviation land uses as proposed in the approved 2002 Airport Master Plan update and as depicted on the adopted Airport Layout Plan sheet (Map 3G). This mix of uses is intended to support the continued development of the Page Field General Aviation Airport. Future development at the Page Field General Aviation Airport will also include non-aviation related land uses such as retail, light industrial, and office development. Any future Airport expansion or development of aviation-related and non-aviation uses will offset environmental impacts through appropriate mitigation acceptable to the permitting agencies and to Lee County. Airport expansion beyond the present boundaries will be subject to necessary amendments to the Lee Plan. All development on Airport lands must be consistent with Map 3G. Map 3G depicts the planned expansion of the Page Field General Aviation Airport through 20~~20~~25. (The planning horizon for the Page Field Airport Master Plan and Airport Layout Plan will be extended in the next update cycle to be consistent with the Lee Plan horizon of 2030. A Lee Plan amendment will be submitted following the Airport Master Plan update to reflect this change.) The Lee County Port Authority will, as possible, eliminate or modify any existing uses on the Airport property determined to be incompatible with Airport functions, as established in the Airport Master Plan and Airport Layout Plan, or that reduce the capacity of the Airport. The Lee County Port Authority also will use its capacity as a reviewing agency to influence land-use decisions on property not within the Page Field inventory to promote land uses compatible with the Airport. If the airport master planning process precipitates a substantive change to the Airport Layout Plan (Map 3G), then the Port Authority must amend Map 3G prior to obtaining local development approval. The non-aviation related development areas have been depicted on the approved Airport Layout Plan sheet (Map 3G). These uses will be constructed upon Airport lands with long-term leases. All non-aviation land use development will meet the requirements set forth in the Lee County Land Development Code. Non-aviation development will comply with the intensity allocations depicted in Table 1(b) of the Lee Plan. Non-aviation development will be subject to all applicable Lee County impact fees.

POLICY 1.9.2: Future non-aviation areas depicted on the Airport Layout Plan (Map 3G) will be developed, to the greatest extent possible, within existing upland areas. Impacts to wetlands in the future non-aviation areas will be minimized by site design, whenever possible, in compliance with the Lee County Land Development Code.

POLICY 1.9.3: Future aviation and non-aviation development at Page Field General Aviation Airport will comply with the provisions of the School Zone Map, which is an element of the Lee County Airport Hazard District regulations, to be consistent with the Educational Restriction Zone provisions under Sec. 333.03(3), Florida Statutes, and with the governing regulations in the Lee County Land Development Code.

b. Amend Lee Plan Objective 47.1 and supporting Policy 47.1.1 to incorporate Page Field General Aviation Airport into the Transportation Element.

OBJECTIVE 47.1: ECONOMIC GROWTH. The capacity and long term development of the Southwest Florida International Airport will be expanded in compliance with Map 3F and Table 5(a), and for the Page Field General Aviation Airport the capacity and long term development will be in compliance with Map 3G and Table 5(b), to aid in the diversification of the county's economic growth. Specific project implementation and approval of the proposed development will be coordinated through the annual Capital Improvement Program process and be consistent with the Airport Layout Plan for Southwest Florida International Airport (Map 3F) and Page Field General Aviation Airport (Map 3G). These expansions will be funded through user fees, airline contributions, and other funding sources not involving general county tax dollars. The Port Authority will strive to minimize impacts to surrounding land uses while maintaining a safe and efficient facility for airport operations. (Amended by Ordinance No. 98-09, 99-15, 04-16)

POLICY 47.1.1: The Port Authority will coordinate the implementation of scheduled infrastructure and facility improvements for the Southwest Florida International Airport consistent with the approved Airport Layout Plan sheet (Map 3F) and the Southwest Florida International Airport Proposed Development Schedule (Table 5(a)), and for the Page Field General Aviation Airport consistent with the approved Airport Layout Plan sheet (Map 3G) and the Page Field General Aviation Airport Development Schedule (Table 5(b)). (Amended by Ordinance No. 98-09, 99-15, 04-16).

POLICY 47.2.5: The county will utilize the approved Airport Master Plan and FAR Part 150 Study, including updates, as a basis to amend the comprehensive land use plan and the land development code to prohibit development that is incompatible with the Southwest Florida International Airport and Page Field General Aviation Airport and to ensure future economic enhancement consistent with Objective 46.2. (The use of the FAR Part 150 Study applies only to Southwest Florida International Airport.) Future updates of the Southwest Florida International Airport Master Plan that precipitate substantive changes to the Airport Layout Plan (Map 3F) will require a Lee Plan Amendment prior to local permitting approval. Future updates of the Page Field General Aviation Airport Master Plan that precipitate substantive changes to the Airport Layout Plan (Map 3G) will require a Lee Plan Amendment prior to local permitting approval. In accordance with FAA requirements, the Southwest Florida International Airport Master Plan and corresponding Airport Layout Plan (Map 3F) will be comprehensively updated at least once every 5 to 8 years. (Amended by Ordinance No. 99-15, 04-16)

POLICY 47.3.4: The proposed development schedule for the Southwest Florida International Airport through the year 2020 is depicted in Table 5(a) of the Lee Plan. The proposed development schedule for the Page Field General Aviation Airport is depicted in Table 5(b) of the Lee Plan. ~~This Table~~ These Tables include~~s~~ both aviation and non-aviation related development. If the FAA/FDOT mandate navigational improvements (NAVAIDS) or require improvements related to Airport security or safety at Southwest Florida International Airport or Page Field General Aviation Airport, then the Port Authority may pursue installation of the