Southwest Florida International Airport

Final • Master Plan Update

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Lee County Port Authority

Southwest Florida International Airport

Master Plan Update

submitted to

Lee County Port Authority

Southwest Florida International Airport

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1 INTRODUCTION

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

The elements of this Master Plan Update provide a comprehensive analysis of current airport facilities and a determination of trends and activities affecting the Airport and its environment. The Master Plan Update includes updated aviation forecasts, facility requirements, demand/capacity analyses, airside and landside alternative analyses, a financial plan, an environmental overview, and an Airport Layout Plan set that meets the FAA and FDOT criteria to guide future development on and around the Airport. An Environmental Assessment (EA) is being prepared in conjunction with this Master Plan. All of the recommendations made in this document are focused on maintaining a modern, safe, efficient, and reliable facility to meet the air transportation needs of the flying public, national and international commerce, the State of Florida, and the local community.

1.1 Goals and Objectives

The primary Master Plan Update goals and objectives include the following:

- Create a twenty-year development program that will maintain a safe, efficient, economical, and environmentally compatible airport facility for the five-county area.
- Provide the short-term and long-term guidance to successfully satisfy the aviation demand in a financially feasible and responsible manner, while addressing the aviation, environmental, and socioeconomic issues of the community.

In achieving the above-mentioned goals, the following objectives will be attained:

- Identify airside, landside, and airspace improvements and recommend options to optimize the economic aspects of the Airport while enhancing the safety and operational capacity.
- Establish an implementation schedule for financially feasible short, intermediate, and long-term airport improvements.
- Identify short-term airport requirements and recommend actions to optimize short-term funding opportunities.
- Ensure short-term recommendation and actions do not preclude long-term planning options.
- Incorporate the interests of the public, airport users and government agencies.
- Be sensitive to the overall environmental characteristics and needs of the area surrounding the Airport.
- Reflect current comprehensive land use (on and off property) and make recommendations for compatible land uses, zoning and noise impacts.

- Enhance operational efficiency and safety of the Airport through the review of airport maintenance programs, operating procedures, and minimum operating standards.

1.2 Key Issues

The Southwest Florida International Airport Master Plan Update is a guide for the control, maintenance, preservation, and growth of commercial and general aviation at Southwest Florida International Airport (RSW) to support public access to national and international air transportation systems in Fort Myers, Lee County and Southwest Florida. Key issues and study areas in the development of this Master Plan Update include the following:

- Potential Reuse of the Existing Terminal Building, FIS facility, Air Freight, Terminal Parking and Catering facilities
- Land Use Strategy for the North Airfield
- Land Use Strategy for the South and East Quadrants of the Airport
- Surface Roadway and Interstate Access to the New Midfield Terminal
- Best Strategy for Rehabilitation of the Existing Runway
- Future Cargo Facility Options
- Reconfirm New Parallel Runway Configuration and Taxiway Alternatives
- Reconfirm ultimate Midfield Terminal Configuration

1.3 Previous Studies

The last Master Plan Update for Southwest Florida International Airport (RSW) was completed by Coffman Associates, Inc. in February 1992. As with the current study, the 1992 Master Plan Update provided a comprehensive analysis of the airport needs and alternatives with the purpose of providing a 20-year outlook for the future development of the airport. The 1992 Master Plan Update was an update to the previous Master Plan conducted in 1986. In addition, the following planning studies have been conducted for the Airport:

- Terminal Facilities Study, March 30, 1989, Thompson Consultants International.
- Airport Master Plan Update, February 1992, Coffman Associates, Inc.
- Environmental Assessment, May 1992, CH2Mhill: Runway 6-24 extension.
- Parallel Runway Length and Separation Refinement Study: Supplement to the 1992 Master Plan Update, August 1993, Coffman Associates, Inc.
- Environmental Assessment, February 1994, Coffman Associates.
- Vision 2010 Implementation Plan, April 1998, Greiner, Inc.
- Midfield Terminal Development Study, January 2001, DMJM Aviation.

Southwest Florida International Airport is included in Lee County's Comprehensive Plan (The Lee Plan). This plan, which was updated late in 1998, considers the comprehensive development of Lee County through the Year 2020. The Lee Plan addresses future land use, as well as transportation, community facilities and services, parks, recreation and open space, capital improvements, housing, conservation and coastal management among other development considerations within the County.

The airport has also been included in the Florida Aviation System Plan (FASP). The latest FASP, compiled in 1992, is currently in the process of being updated. This document provides a planning and administrative tool which is used as an outline and guide for administering and directing the Aviation System Plan for the State of Florida. This plan classifies Southwest Florida International Airport as only one of three commercial service airports in the Southwest Florida Planning Area. The other two commercial service airports are Naples and Sarasota-Bradenton.

2 INVENTORY

2.1 INTRODUCTION

The development of a Master Plan Update for Southwest Florida International Airport (RSW) necessitates the collection and evaluation of information relating to the Airport and the surrounding areas. The information evaluated in this report includes an inventory of the facilities, structures and services provided by the Airport. Historical background of Lee County aviation and development over the years will provide an insight into the Airport and its setting. Information obtained through on-site investigations and interviews with officials at the airport will allow an accurate and thorough inventory for the successful implementation of the new Airport Master Plan. Information is broken down into a number of major categories:

- Airport Setting
- Climate
- Airside Facilities
- Airspace Configuration / Approach Procedures
- Air Traffic Control Tower
- Passenger Terminal Area
- Landside Facilities
- Utilities
- Airport Imaginary Surfaces
- Airport Environment
- Airport Access

2.2 AIRPORT SETTING

Southwest Florida International Airport (RSW) is located in the southwestern portion of the State of Florida approximately ten miles southeast of downtown Fort Myers. The Airport's reference elevation according to the FDOT Florida Airport Directory is 31 feet above mean sea level (MSL.). The Airport's Reference Point (ARP) coordinates are located latitude 26°32'10.2"N and longitude 081°45'18.6"W and the magnetic variation at the Airport is two (2) degrees west according to Year 2000 measurements. **Exhibit 2-1**, a general location map of the Airport, depicts the relationship of RSW to other major cities in the State.

Every year, the United States Department of Transportation publishes the National Plan of Integrated Airport Systems (NPIAS). The NPIAS is submitted to Congress in accordance with Section 47103 of Title 49 of United States Code and is utilized to define those airports which warrant Federal investment. The 1998-2002 NPIAS identifies 3,344 airports, including RSW, that are significant to national air transportation and estimates that $35.1 billion in infrastructure development will be needed over the five-year planning period to meet the needs of all segments of civil aviation. It is important to note that the introduction of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR 21) will dramatically increase Federal

Exhibit 2-1

Exhibit 2-1
Location Map

investment in the nation's aviation system to more than $10 billion spread over the next three years. The local impact of this legislation will hopefully improve the potential for Federal financial support for RSW in the short-term planning period.

In the NPIAS, the role of each airport is identified as one of five basic service levels: Commercial Service – Primary; Commercial Service – Non Primary; Commercial Service – Reliever Airport (included with Commercial Service – Non Primary in statistical summaries); Reliever Airport; and, General Aviation Airport. These levels describe the type of service that the Airport is expected to provide the community at the end of the NPIAS five-year planning period. Southwest Florida International Airport is designated as a public use commercial service-primary airport according to the most recent NPIAS. Commercial service airports are defined as public airports receiving scheduled passenger service and having 2,500 or more enplaned passengers per year. There are 540 commercial service airports throughout the United States. Of these, 413 have more than 10,000 enplanements and are classified as primary airports. Primary airports such as RSW receive an annual apportionment of at least $500,000 in Airport Improvement Program (AIP) funds, with the total amount determined by the number of enplaned passengers.

2.2.1 Locale

All of the property comprising Southwest Florida International Airport is located within an unincorporated portion of Lee County. Currently, the Airport occupies approximately 6,498 acres of land and is located off Daniels Parkway, approximately three miles east of Interstate 75. The airport is owned by Lee County and operated by the Lee County Port Authority. Lee County includes some of the fastest growing cities in the region, including Fort Myers, Cape Coral, Bonita Springs, and Fort Myers Beach. Additionally, the popular tourist destinations of Sanibel and Captiva Island are located within the county (see **Exhibit 2-2**). Lee 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. In 1999, the Airport handled 4,897,253 total passengers. This number accounted for more than 75 percent of passenger enplanements in southwest Florida. In addition, Airport Council International-North America's (ACI-NA) preliminary rankings for the year 2000 indicated that Southwest Florida International Airport ranked 7th in the State of Florida and 63rd in the nation in terms of primary airport passenger enplanement activity.

2.2.2 Airport History

Air carrier service has been available in some form in the Fort Myers/Southwest Florida area since 1937. After World War II, the U.S. Army Air Corps' Fort Myers training base (named Page Field in commemoration of World War I hero Captain Channing Page) was decommissioned and turned over to Lee County. For more than 25 years, Page Field offered local area residents and visitors a full-service air transportation facility. However, it was also recognized during this time that Page Field possessed insufficient space to meet potential expansion requirements for commercial jet aircraft operations and significantly increased passenger volumes.

The 1972 State of Florida Aviation System Plan documented Page Field's limitations and recommended that a new air carrier facility be constructed. This Plan also stated that the new airport should be adequate to serve the Southwest Florida region encompassing Lee, Collier,

Exhibit 2-2

Exhibit 2-2
Vicinity Map

Charlotte, Glades and Hendry Countries. Shortly thereafter, a five-county advisory group was established to select a suitable site for the new aviation facility.

Planning for the new Southwest Florida Regional Airport (as Southwest Florida International Airport was originally named) began in 1973 when a five-county advisory group was established to select a suitable site for the new aviation facility. Lee County received a $195,000 Federal grant on November 4, 1974 to fund the site location process. The location of RSW is the result of a study that eventually considered 27 different sites, ultimately selecting the Daniels Road site on June 13, 1975.

Following a bid for routes stemming from new interest in serving the region, the Civil Aeronautics Board awarded Eastern Airlines routes into Fort Myers' Page Field Airport in 1975. Eastern Airlines was therefore included with National Airlines, who already served Page Field, in the decision-making process for the new airport. In addition to participating airlines, it was necessary to have the approval of the Federal Aviation Administration (FAA) and the Environmental Protection Agency (EPA). A study of the soil at the selected site by consulting engineers indicated it was satisfactory for construction. Safety, and road accessibility issues were approved and support from the environmental community was established. These factors, along with the combined support of the Lee County Board of Commissioners, the FAA, and the airlines, created the impetus to continue the project.

Throughout the late 1970's, while the Board of Commissioners and the FAA were moving ahead with airport development efforts, other positive factors were falling into place. Locally, essential airport access roads, including Daniels Road and I-75, were under construction. On the national scene, deregulation of the airline industry by the Civil Aeronatics Board (CAB) allowed airlines to select their own routes. Lee County, with its aggressive development and unlimited growth potential, was recognized as a profitable and desirable destination. Therefore, soon after deregulation, Delta, United and Northwest Orient joined Eastern and National Airlines in serving the Lee County area via Page Field.

Construction of the new regional airport was a complicated project. Funding was of prime concern and continual change to the development program resulted in an escalation of the initial project cost estimate of $31 million. By 1982, airport construction costs were estimated to be in excess of $93 million, or triple the original figure. This increase was primarily the result of three major changes during the development process. The terminal and the number of gates were expanded from the original design, aircraft-parking apron specifications were changed from asphalt to concrete by airline mandate, and finally, a Florida Power and Light right-of-way had to be relocated.

Despite numerous "start-up" obstacles, the Southwest Florida Regional Airport become a "trend setter" in the U.S. aviation industry and marketplace. Not only was it the nation's first full-scale new airport since the opening of the Dallas/Ft. Worth Regional Airport in 1974, it was the first airport to be built in compliance with National Environmental Protection Association (NEPA) regulations. These new regulations, an uncharted area for airport development, were also responsible for significant unanticipated research and construction costs.

The Airport was officially opened on Saturday, May 14, 1983 with the arrival of Delta Air Line's Flight 1677, the "Owly Bird, at 1:40 a.m. In 1984, Southwest Florida Regional Airport began serving Canadian charter flights. By 1992, the number of Canadian passengers served had increased from 8,000 to 88,000. In the early years, the Canadian visitors were pre-cleared

through Toronto. As the numbers foreign visitors soared, RSW officials petitioned the U. S. government to construct a Federal Inspections Station (FIS) at RSW to provide Customs, Immigration, Public Health and Agriculture services. Agreement was reached that the FIS would be a user-fee facility supported by the Airport Operations Revenue and on July 14, 1987, the RSW Federal Inspections Station opened.

Until 1983, Page Field had served as the only commercial service airport for Southwest Florida. With the opening of Southwest Florida International Airport, all air carrier and commercial operations were shifted to the new airport, relegating Page Field to a "reliever airport" role. A reliever airport is a FAA designated general aviation airport in the vicinity of a capacity impacted commercial service airport. The purpose of a reliever airport is to specifically serve general aviation traffic, thereby lessening the demand on the region's commercial service airports.

By 1990, the phenomenal growth of airport operations, the need for additional airport development, and the complexity of airport administrative requirements were overwhelming the Lee County Commission. To deal with this situation, on January 3, 1990, the Lee County Commission adopted Lee County Ordinance 90-02, which created the Lee County Port Authority, the Board of Port Commissioners of the Lee County Port Authority, and the Airports Special Management Committee. The Board of Port Commissioners is made up of County Commissioners but meets separately to deal with airport and aviation issues. The role of the Airports Special Advisory Committee is to provide general advisory responsibility to the Board of Port Commissioners. Each Commissioner appoints one member to the Airport Special Management Committee; plus one representative each is selected from Collier and Charlotte Counties. The Lee County Port Authority, the Board of Port Commissioners of the Lee County Port Authority, and the Airport Special Management Committee is the political structure that oversees the airport today.

While the Airport had served international passengers primarily traveling on Canadian charter flights since 1984, in the late 1980's the Lee County Port Authority initiated an expansion program to facilitate the airport accommodating direct-nonstop transcontinental as well as transatlantic international flights.

By 1992, two projects, crucial to the international air carrier traffic initiative, were underway. In the summer of 1992, work began to extend Runway 6-24 from 8,400 feet to 12,000 feet. This additional runway length allowed aircraft operating from RSW to increase fuel loads thereby increasing flight ranges to transcontinental and international-transatlantic distances. The $20 million runway project was completed in the fall of 1994. In November of 1992, construction began on a 48,211-square foot terminal addition that would house expanded FIS facilities and additional passenger ticketing and waiting areas. The new FIS facility design increased passenger-processing rates from 150 to 400 per hour and allowed the dual use of existing gates for both international and domestic flight operations. This expansion project reworked portions of the existing terminal while adding approximately 260 feet to its west end. This $6 million project also included terminal access roadway work. The expanded and improved facilities, together with the runway extension, proved to be the catalyst for RSW's entry, initially by charter operations, into new international passenger and cargo markets.

In 1993, the new name of Southwest Florida International Airport was selected to reflect RSW's emerging international status. This new name became official on May 14, 1993, which coincidently marked the ten-year anniversary of the official opening of the airport and the early morning arrival of Delta's "Owly Bird".

In the late 1990's, sustained passenger and aircraft operations increases at RSW necessitated further terminal expansion. This construction was completed in 1998 and included a Concourse B eastern wing that provided three new aircraft gates, passenger boarding bridges and additional office space. In that same year, construction of a commuter aircraft parking ramp was completed on the western side of Concourse B to facilitate commuter aircraft operations.

2.3 CLIMATE

Weather conditions play an important role in the planning and development of an airport. Temperature, along with aircraft other operating parameters, is an important factor in determining runway length. Wind direction and speed are essential in determining optimum runway orientation. The percent of time visible water vapor impairs or restricts visibility at an airport is a major factor in determining the need for aircraft navigational aids and runway lighting systems. Therefore, it is imperative that the meteorological conditions at RSW be analyzed.

Southwest Florida International Airport (RSW) is situated in the subtropical Southwest Florida climate. The airport is located approximately 13 miles from the Gulf of Mexico and the region is often influenced by the maritime air masses that move inland. Typical summertime weather conditions often include daily afternoon thunderstorms caused by rapid convective heating exacerbated by high temperatures and excessive humidity.

2.3.1 Temperature

Temperature is one of the most important factors affecting aircraft performance. High temperature conditions dramatically decrease aircraft performance. The direct impact of the high temperature is a marked increased in runway take-off distance requirements. Temperatures at RSW generally range from the low 60s (F) in winter to the low 90s (F) in summer. Winters are typically mild, with many bright, warm days and moderately cool nights. Occasional cold snaps bring temperatures in the 30s (F) but only rarely do temperatures drop into the 20s (F). However, occasional light frost and minor freeze conditions do occur in the rural-inland areas a few times each year. In the summer, temperatures have reached 100 degrees (F), but these occurrences are very rare. According to metrological data compiled by National Oceanic and Atmospheric Administration (NOAA) August is the hottest month of the year at RSW with an average maximum temperature of 91 degrees (F) and a mean temperature of 83 degrees (F). During the winter, RSW experiences the coldest average temperatures during the month of January, which has an average low temperature of 53 degrees Fahrenheit and a mean temperature of 64 degrees (F).

2.3.2 Precipitation

Precipitation in Southwest Florida occurs during all seasons, although rainfall is more abundant during the hotter summer months. The months of June, July, and August account for 11.30 inches of rainfall a month at RSW. The driest months are January, April, November, and December, accounting for an average of only 1.83 inches of rainfall during each of these months. The average annual rainfall for the RSW station is 57.86 inches.

The amount of precipitation experienced by any airport impacts aircraft operations because of reduced braking action on wet runways and limited ceiling and visibility during storm conditions. About two-thirds of the annual precipitation in Fort Myers occurs during June through September. There are frequent long periods during the winter when only very light, or no rain falls. Most of the summer rain occurs during late afternoon or early evening thunderstorms, which also bring welcome cooling. Although these showers seldom last long, they can yield large amounts of rain. During the late summer and early fall, tropical depressions, tropical storms or hurricanes may pass near the Fort Myers area. These storm tracks can result in heavy downpours that reach torrential proportions. Totals of 6 to over 10 inches of rainfall within a 24-hour period have been recorded. Thunderstorms can occur at any time of the year, but are typically infrequent from November to April. However, between June through September, thunderstorms occur every 2 out of 3 days on average. Heavy fog is rather infrequent and mainly confined to winter mornings. There is seldom a day without sunshine at some point during the day.

2.3.3 Wind

Wind is a primary factor that influences the runway orientation and can subsequently affect the capacity of the airside facilities. Under ideal conditions, aircraft takeoffs and landings are determined by the prevailing winds and conducted in the runway that provides the most head wind to operating aircraft. The FAA recommends that the runway orientation provided achieve 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 (or 90 degrees left or right) of the heading 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 and ideally ten be used for determining runway wind coverage.

Wind data from the RSW weather station was not available for a ten-year data period. Due to the airport's close proximity to FMY, the weather station at Page Field was used to analyze historic wind data. Using this data provided by the National Climatic Data Center, wind conditions were analyzed for a 10-year period from 1991-2000. The existing wind distribution and associated velocities under all weather conditions are provided in **Table 2-1** and are assumed to remain consistent through the Year 2020, the period of this study. The primary runway orientation, Runway 6-24, provides 98.06 percent coverage at 13-knots under all weather conditions and 97.21 percent under Instrument Flight Rules (IFR) conditions. For comparison purposes, more typical of air carrier airports, a crosswind component of 16-knots was analyzed and resulted in coverage of 99.65 percent for all weather conditions and 99.29 percent for IFR conditions.

Exhibit 2-3 graphically displays the All Weather Wind Rose for the 13-knot crosswind component based upon ideal Visual Flight Rule (VFR) conditions. 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. **Exhibit 2-4** graphically displays the IFR Weather Wind Rose for the 13-knot crosswind component based upon instrument meteorological weather conditions.

TABLE 2-1
WIND VELOCITIES AND DIRECTION AS A % OF TIME

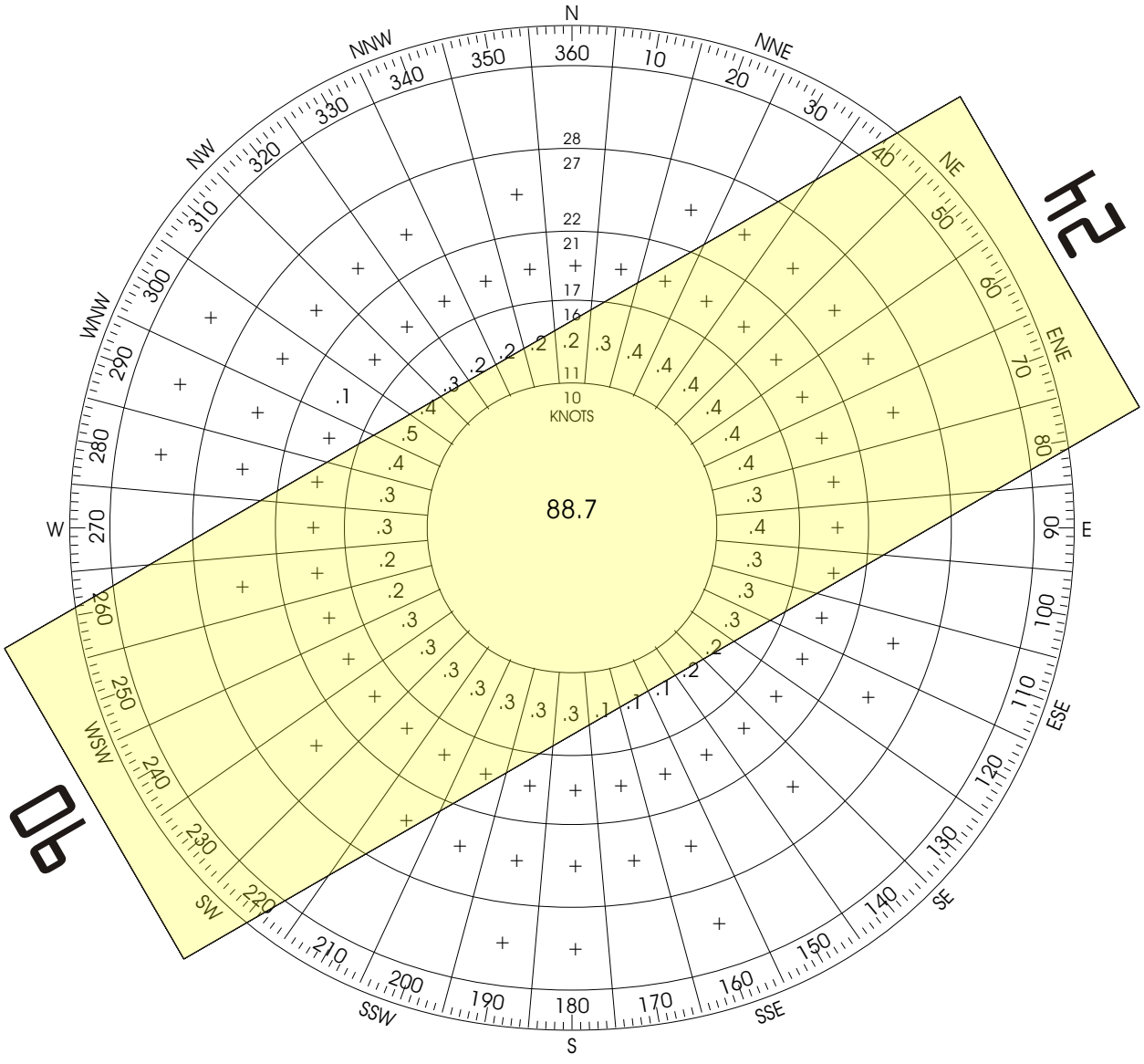
Average Wind Velocity (Kts.)										
Wind Direction	**0-3**	**4-6**	**7-10**	**11-16**	**17-21**	**22-27**	**28-33**	**38-40**	**41 Over**	**Total**
1	29	521	617	203	10	0	0	0	1	1381
2	43	744	939	296	10	1	0	0	0	2033
3	79	998	921	312	14	8	0	0	0	2332
4	99	1647	1171	320	16	1	0	0	0	3254
5	133	1977	1215	306	25	1	0	0	0	3657
6	179	2264	1319	319	17	1	0	0	0	4099
7	184	2332	1260	354	19	1	0	0	1	4151
8	200	1825	1023	265	13	0	0	0	0	3326
9	239	1779	964	283	4	0	0	0	1	3270
10	197	1494	844	245	6	0	0	0	2	2788
11	240	1414	866	212	7	1	0	0	0	2740
12	195	1404	820	206	10	2	0	0	1	2638
13	189	1057	649	168	3	0	0	0	0	2066
14	166	937	503	137	3	1	0	0	4	1751
15	109	776	390	102	3	0	0	0	2	1382
16	93	544	400	82	1	1	1	0	0	1122
17	83	548	301	104	3	1	0	0	1	1041
18	80	542	443	207	15	1	1	0	1	1290
19	44	407	393	204	7	1	1	0	0	1057
20	50	315	428	252	17	2	0	0	1	1065
21	31	315	529	267	15	1	0	0	0	1158
22	47	331	601	261	16	0	0	0	0	1256
23	45	366	626	274	7	1	0	0	1	1320
24	54	425	670	238	3	0	0	0	0	1390
25	26	362	552	144	8	0	0	0	0	1092
26	25	309	533	171	5	1	0	0	0	1044
27	21	317	611	250	8	0	0	0	0	1207
28	23	307	579	278	14	4	3	0	1	1209
29	28	395	639	352	35	12	1	1	1	1464
30	30	532	752	394	46	10	2	0	0	1766
31	29	588	722	358	35	5	0	0	0	1737
32	34	480	547	242	24	4	0	0	0	1331
33	31	501	511	163	16	3	0	0	0	1225
34	36	482	468	152	7	0	0	0	0	1145
35	34	442	489	160	7	1	0	0	0	1133
36	45	540	633	184	7	0	0	0	0	1409
Variable	12437	0	0	0	0	0	0	0	0	12437
TOTAL	15607	30217	24928	8465	456	65	9	1	18	79766

Reference: National Climatic Date Center (NCDC), 2001

Review of **Table 2-1** and the wind rose graphics determines that the existing Runway 6-24 at Southwest Florida International Airport provides wind coverage that exceeds the FAA's 95 percent guidance. Based on this, wind conditions at RSW do not appear to warrant a crosswind runway and any proposed runways should be oriented parallel to Runway 6-24.

Exhibit 2-3

Exhibit 2-3
All Weather Windrose

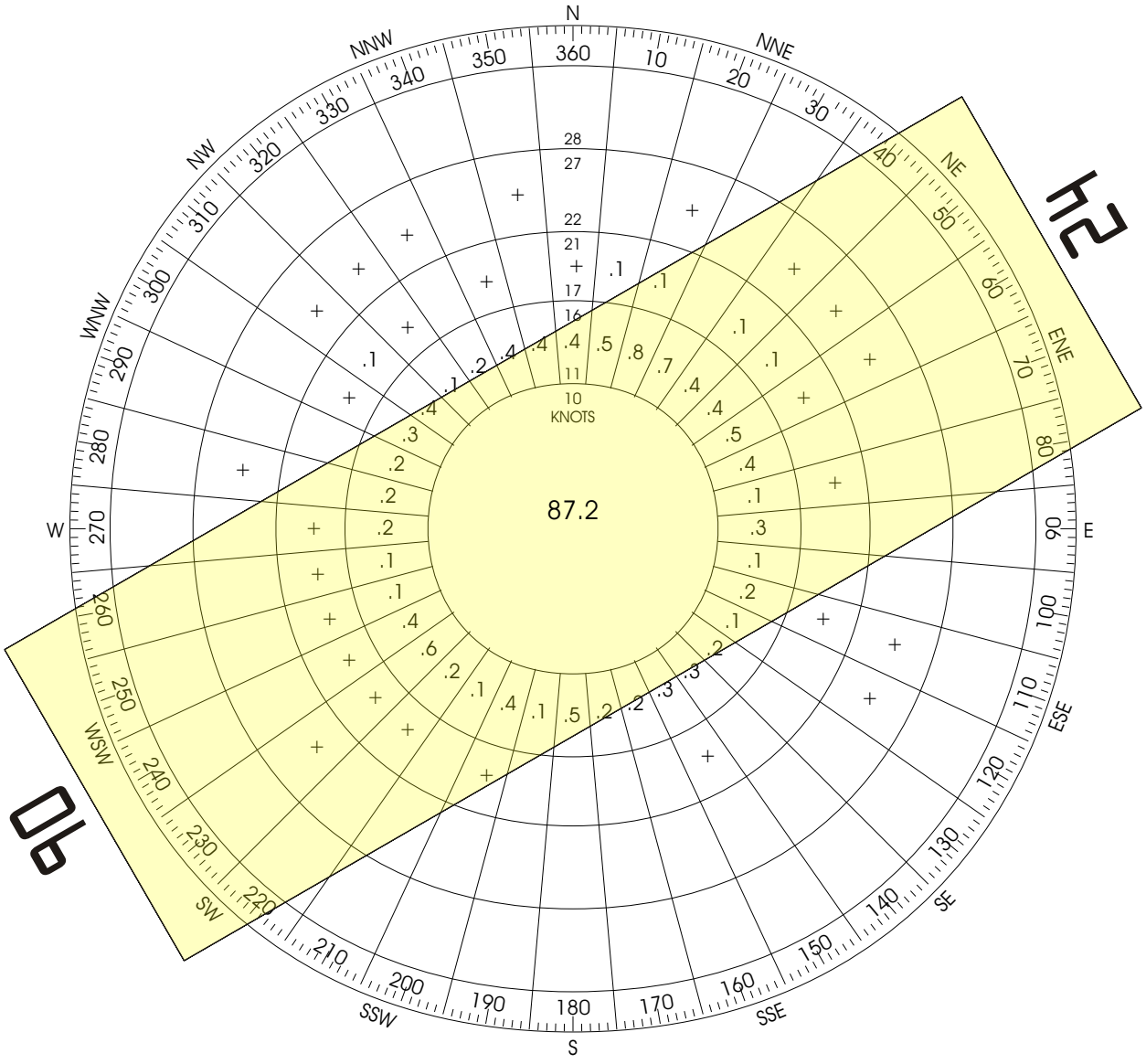


RUNWAY	**COVERAGE**
06/24	98.06 %
CROSSWIND COMPONENT:	13 KTS.
OBSERVATION PERIOD:	1991-2000
TOTAL OBSERVATIONS:	79,766
STATION:	Fort Myers (FMY)

Source: National Climatic Data Center, Asheville, N.C.

Exhibit 2-4

Exhibit 2-4
IFR Windrose



RUNWAY	COVERAGE
06/24	97.21%
CROSSWIND COMPONENT:	13 KTS.
OBSERVATION PERIOD:	1991-2000
TOTAL OBSERVATIONS:	79,586
STATION:	Fort Myers (FMY)

Source: National Climatic Data Center, Asheville, N.C.

2.4 AIRSIDE FACILITIES

This section presents a description of the existing airside facilities at Southwest Florida International Airport (RSW) and includes recent and currently on-going improvement projects. The description of the following facilities provides the basis for the airfield demand/capacity analysis and the determination of facility requirements to be presented in subsequent chapters.

The airside area of the Airport, also referred to as the "airport operating area" (AOA), is the area in which aircraft, support vehicles and equipment, and other aviation-specific operational activities take place (see **Exhibit 2-5**). The following facilities, equipment and procedures will be discussed in this section:

- Runways
- Apron Areas
- Taxiways / Taxilanes
- Airfield Lighting, Signage and Marking
- Navigational Aids (Navaids)
- Published Instrument Approach Procedures
- Standard Instrument Departures (SID)
- Standard Terminal Arrival Routes (STAR)

2.4.1 Runways

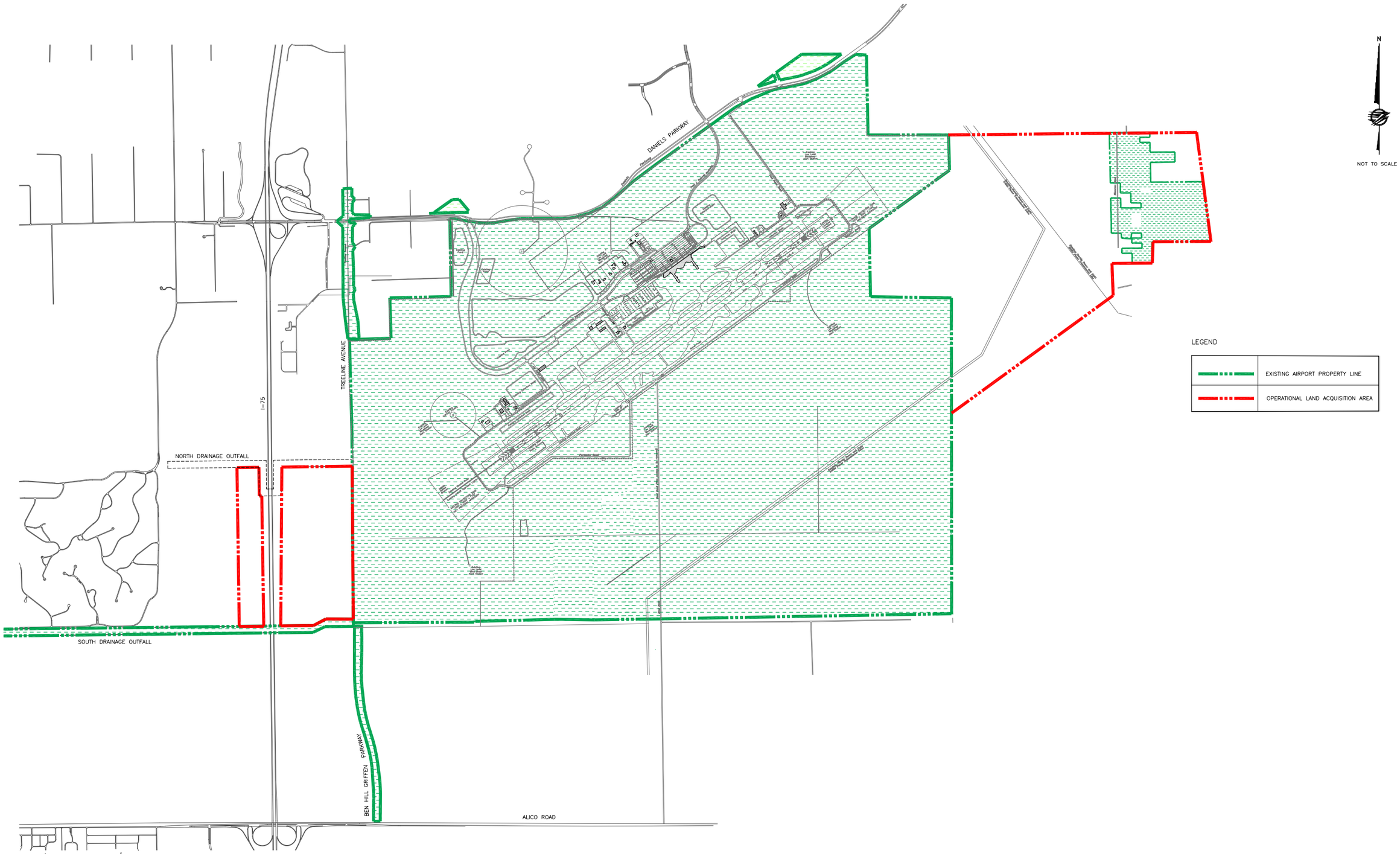
Currently, there is only one runway at Southwest Florida International Airport (RSW). Runway 6-24 is 12,000 feet long and 150 feet wide, constructed of asphalt concrete, and is grooved to help prevent aircraft hydroplaning when the runway is wet. In 1994, the runway was extended from 8,400 to 12,000 feet to accommodate the demand for larger, long-range aircraft associated with inter-continental and international-transatlantic flights. This 3,600-foot runway extension permits aircraft originating at RSW to operate non-stop flights from Fort Myers, Florida to many destinations in Europe and Canada. Runway 6-24 is considered to be in good to fair condition overall, although the need for a near-term rehabilitation is recognized. The estimated gross pavement weight bearing strength for Runway 6-24 is shown below:

Undercarriage Type	Weight (lbs.)
Single Wheel	30,000
Double Wheel	190,000
Double Tandem	430,000
Dual Double Tandem	840,000

Source: Airport Facilities Directory

The PCI index for Runway 6-24 at RSW varies at various points along its length. Both runway ends are rated by the Florida Department of Transportation (FDOT) at a PCI Index of 100 percent, indicating an excellent condition. However, the areas in between and towards the middle of the runway have PCI indexes ranging from 20 to 75, thus indicating fair to very poor pavement conditions. Plans have been made to rehabilitate and recondition the runway.

Exhibit 2-5



Lee County Port Authority

Birk Hillman
Orlando · Miami · Atlanta

DMJM Aviation

RS&H

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA

MASTER PLAN UPDATE

EXISTING OPERATIONAL AIRPORT PROPERTY PLAN

DATE:	MARCH 2004
PROJECT NO:	C06901
FILE NAME:	Exhibit 2-5
DESIGNED BY:	S.R
DRAWN BY:	K.P
CHECKED BY:	S.R

EXHIBIT

2-5

The Runway 6 approach end coordinates are latitude 26°31'35"N and longitude 81°46'12"W. Runway 6 is marked as a precision instrument runway and is served by an Instrument Landing System (ILS) with a Category I approach. Runway Visual Range (RVR) equipment is installed and is located at the touchdown zone of Runway 6. A visual glide path angle of 2.5° is provided by a 4-box Visual Approach Slope Indicator (VASI) located to the north of the runway edge at the approach end. The Runway 6 end is at an elevation of 26.5 feet mean sea level (MSL) and the threshold crossing height for the runway is 55 feet above ground level (AGL). The touchdown zone elevation is approximately 27.0 feet MSL.

Runway 24 is also marked as a precision instrument runway. The Runway 24 approach end coordinates are latitude 26°32'45"N and longitude 81°44'25"W. Runway 24 is served only by a non-precision approach procedure, which is defined as a standard instrument approach procedure with no electronic glide slope or vertical guidance to the runway. A 6-box VASI system with two visual glide path angles is installed at the approach end of the runway. The upper glide path angle (used for large aircraft with cockpits that sit high above the ground like the Boeing 747 and the MD-11) is set at 3.25°. The lower glide path angle used by the smaller aircraft is set at 3.0°. The Runway 24 approach end elevation is approximately 29.7 feet MSL and the lower and upper threshold crossing heights for the runway are 85 feet AGL and 52 feet AGL respectively. The touchdown point elevation for the Runway 24 is 30 feet MSL. All Runway 6 – 24 markings and striping are considered to be in good condition.

2.4.2 Apron Areas

Southwest Florida International Airport (RSW) has three designated aircraft parking aprons: the Passenger Terminal Apron, the General Aviation Apron, and the Cargo Apron. All parking aprons are located on the north side of the runway.

Passenger Terminal Apron

The Passenger Terminal Apron at Southwest Florida International Airport is located parallel to and northwest of Runway 6-24. It is the largest of the three aircraft parking aprons and is located closest to the approach end of Runway 24. Access to and from the terminal apron is provided by three connector taxiways, A-6, A-7 and A-8, which provide direct access between to the parallel taxiway, Taxiway "A", and the apron edge taxilane, Taxilane B. The apron taxiways and aircraft movement areas providing access to the aircraft gate positions were all designed to accommodate an aircraft the size of Boeing 747, which is designated as Aircraft Design Group (ADG) IV according to the Federal Aviation Administration (FAA). The apron is approximately 165,000 square yards (including Taxilane "B") in area and only serves the air carrier and charter airlines utilizing the terminal. The apron accommodates 17 gate positions served by passenger boarding bridges. Additional apron space is available to park up to two commuter aircraft adjacent to Concourse B and two commuter aircraft adjacent to Gate A1A depending on their size. The apron was generally noted to be in good condition.

General Aviation Apron

The General Aviation Apron is located west of the Passenger Terminal Apron and has a total area of approximately 26,000 square yards. This apron serves the FBO facility, and the associated general aviation maintenance hangar and provides approximately 25 to 30 tie-down spaces for

small single engine and multi engine prop aircraft. Additional space is designated for itinerant jet aircraft parking and aircraft movement and circulation. The pavement was noted to be in good condition and access to the apron is provided by Taxiway A-5 which connects directly to Taxiway A.

Cargo Area Apron

The Cargo Apron at RSW is located southwest of the Passenger Terminal and the general aviation facility, closer to the approach end of Runway 6. The Cargo Apron totals approximately 69,000 square yards and is capable of accommodating between 6-7 aircraft depending on their size. Aircraft serving the cargo facilities and utilizing the apron typically include the MD-80, Boeing 757 and Boeing 727. The Cargo Apron is served by two taxiway connectors, Taxiway A-3 and Taxiway A-4. Both taxiway connectors provide direct access to the parallel taxiway and are capable of handling Aircraft Design Group IV (ADG IV) aircraft.

2.4.3 Taxiways / Taxilanes

Taxiway A

As mentioned above, RSW has one full-length parallel taxiway, Taxiway "A", located on the north side of Runway 6-24. Taxiway A is 12,000 feet long and 75 feet wide and is in relatively good condition. The taxiway centerline to runway centerline separation distance is 400 feet, which complies with the FAA standards for an ADG V. There are a total of nine taxiway connectors, all of which provide access between the taxiway and the runway. Five of these taxiways, Taxiways A-4 through A-8, are high-speed exit taxiways. These taxiways are constructed at forty-five degree angles to the runway which allow aircraft to safely exit the runway at higher than normal speeds therefore decreasing runway occupancy times. The other four runway exits are the traditional ninety degree or perpendicular taxiway connectors.

The Passenger Terminal Apron is accessible by three connector taxiways A-6, A-7, and A-8, all of which connect to Taxiway A. Taxiway A-8 was observed to have severe cracking and a sealant has been applied as a temporary solution until the area can be resurfaced. Taxiway A-5 provides access to the general aviation ramp from Taxiway A, and Taxiway A-3 and A-4 provides access to the cargo apron area. All taxiways are designed for ADG V aircraft with the exception of Taxiway A-5, which was designed to accommodate ADG III aircraft or smaller.

Taxilane B

Taxilane B is the 1,580 foot long taxilane that runs both parallel to and adjacent to the Passenger Terminal apron. This taxilane serves as the terminal apron area for aircraft transitioning to and from the gate positions and to and from taxiways A-6, A-7, and A-8. The distance between the Taxilane B and Taxiway A centerlines is 435.5 feet. This separation distance exceeds the FAA minimum of 267 feet for ADG V type aircraft. Taxilane B is part of the aircraft movement area and an ATC clearance is required before aircraft can move onto the taxilane.

2.4.4 Airfield Lighting and Signage

Proper airfield lighting is required at all airports that are utilized for nighttime operations. As required per AC 150/5S40-24 Chg. 1 "Runway and Taxiway Edge Lighting System", edge and centerline lights are used to outline usable operational areas of airports during periods of darkness and low visibility weather conditions. The Southwest Florida International Airport is capable of accommodating night aircraft operations because appropriate airfield lighting has been installed on the airfield.

Runway Lighting

Runway edge lights define the lateral and longitudinal limits of the usable landing area. Runway 6-24 is equipped with white High Intensity Runway Lights (HIRL), which define the runway edges. The runway has no centerline lights or touchdown zone lights.

Taxiway Lighting

Taxiway lighting, similar to runway lighting but blue in color, is essential to safe operations during low visibility conditions and nighttime operations at an airport. Taxiway lights allow pilots to maneuver to and from the active runways, terminals and hangars. Taxiway edge lights also provide surface guidance to other ground vehicles on the airport.

Taxiway A, the five high-speed exit taxiways (A-4 through A-8) and Taxiways A-1, A-2, A-9 and A-10 have semi-flush mounted green taxiway centerline lights. The use of taxiway centerline lights has historically demonstrated that guidance from these types of lights is superior to that of taxiway edge lights, especially in low visibility conditions. Taxiway centerline lights are steady burning green lights inserted into the pavement along the taxiway centerline to provide visual guidance to aircraft and ground vehicle traffic.

Currently, the only taxiway edge lighting installed at RSW extends from the Terminal Apron and General Aviation Apron to Taxiway A. Other taxiways not supplied with edge lights are equipped with blue barrel, taxiway edge reflectors. Additionally, Taxilane B has blue taxiway edge lights installed on the southeast side of the taxilane to visually assist pilots transiting through the terminal area.

Pavement Markings

As stated above, both Runway 6 and Runway 24 are marked as precision instrument runways. Precision runway markings include number designation markers, a centerline stripe, runway side stripes, threshold markers, aiming point markers and touchdown zone markings. All of the runway striping was noted to be in good condition.

At RSW, all of the taxiways are properly marked with a yellow taxiway centerline stripe and taxiway edge stripes. Hold short markings are properly located at all taxiways/runway intersection. Additionally, all taxiway hold short markings are believed to be properly located at all taxiway/taxiway intersections but a hold bar upgrade project is currently ongoing in order to ensure compliance with the new FAA Advisory Circular, AC150/5340-1H Change 1.

On the terminal ramp, gate positions are marked with lead in lines and stop bars for the various aircraft serving that gate. A vehicle service road is properly marked on the terminal apron which promotes a safe operation for ground service equipment and other vehicles to maneuver around the aircraft parking positions. Additionally, ground service equipment restraint lines are marked at every gate, which denote equipment staging areas. An aircraft-parking envelope is also marked at each gate and represents equipment exclusion areas.

Signage

Currently, there are approximately eighty-two lighted signs on the taxiways and runway at RSW to safely guide aircraft and ground vehicles. These signs include mandatory instruction signs (such as holding positions for taxiway/runway intersections), location signs (for the runway and taxiways which identify the taxiway or runway upon which the aircraft is located), direction signs (which indicate directions of other taxiways leading out of an intersection), runway exit signs (directing where the aircraft is to exit the runway), and destination signs (such as outbound and inbound guidance to the terminal area). Additionally, the runway contains lighted distance remaining designators that depict the distance remaining to the end of the runway.

2.4.5 Navigational Aids (Navaids) – Electronic

For the purpose of this assessment, the term NAVAIDs (navigational aids) refers to any item intended to provide either visual or electronic guidance for pilots and their aircraft in the airport environment (excluding runway and taxiway lighting). These aids can have varied owners and operators, including but not limited to the Federal Aviation Administration (FAA), the military, private organizations, individual states and foreign governments. The FAA has the statutory authority to establish, operate, and maintain air navigation facilities and to prescribe standards for the operation of any of these aids that are used for instrument flight in United States government controlled airspace. These aids are tabulated in the Airport/Facility Directory, and the assessment of Southwest Florida International Airport's NAVAIDs includes the following.

- VORTAC/DME
- ILS
- NDB
- GPS
- ASR
- Visual Navaids (Airport Rotating Beacon, VASI, ALS, and Segmented Circle)

VHF Omnidirectional Range/Tactical Air Navigation Facility (VORTAC/DME)

A VHF Omni-Directional Range/Tactical Air Navigation (VORTAC) facility is one of the most fundamental electronic navaids serving the National Airspace System (NAS). A VORTAC collocates the equipment of a VOR and TACAN navigational facilities. The Fort Myers area is served by a VORTAC that is located on coordinates latitude 26°31'47"N and longitude 81°46'32"W, just northwest of Runway 6. This facility is identified as the Lee County VORTAC and operates on a frequency 111.80. 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. It also broadcasts a Hazardous In-

flight Weather Advisory (HIWAS) to aircraft in the vicinity of the Airport during periods of hazardous weather alerts.

The VOR is a ground-based facility that transmits a very high frequency (VHF) signal, oriented from magnetic north, on a 360-degree azimuth. The VOR signal provides accurate course alignment, which allows an aircraft in-flight to determine its bearing relative to the VOR station. This navaid is utilized to guide aircraft, under both instrument flight and visual flight conditions, into and out of an airport area. A system of high-altitude VOR facilities is used for enroute air navigational purposes and establishes the network of airways and jet routes throughout the world.

A Tactical Air Navigation (TACAN) station provides the same function as a VOR but combines azimuth and distance measuring equipment (DME) into one unit instead of two separate units. The DME provides compatible receivers with very reliable and accurate distance equipment up to 199 nautical miles away. The major difference between a VOR and TACAN is that VOR signals are in the Very High Frequency (VHF) range and TACAN's operate in the Ultra High Frequency (UHF) range that is used primarily by the United States military aircraft.

Since RSW has full TACAN station, that includes azimuth and distance measuring equipment, together with a collocated VOR, the station is considered a VORTAC. The FAA maintained equipment is in good condition and was transferred from Page Field Airport when RSW was opened. The housing for this facility was constructed in 1991 and was also noted to be in relatively good condition.

Instrument Landing System (ILS)

The standard Instrument Landing System (ILS) is composed of a runway approach lighting system, a localizer antenna array and glideslope transmitters to provide horizontal and vertical guidance information for a safe landing on the runway during times of adverse weather conditions or instrument meteorological conditions (IMC). Electronic beacons, known as outer markers and middle markers, provide information regarding the position of the aircraft during key portions of an ILS approach. Distance Measuring Equipment (DME) is also used at these markers to indicate the distance to or from the Airport.

At Southwest Florida International Airport, Runway 6 is the only runway equipped with an ILS Category I approach. The purpose of an ILS is to provide a method of precision instrument navigation, by means of horizontal and vertical guidance, to a point just beyond the approach end of the runway. Since the system provides both course and glideslope information, much lower weather minimums are possible than those provided for by a non-precision instrument approach.

Localizer

The localizer indicates whether the approaching aircraft is left or right of the correct alignment for approach to the runway. This component of an ILS approach only provides horizontal guidance to the runway. The localizer antenna is located approximately 1,050 feet from the approach end of Runway 24. The antenna coordinates are latitude 26°32'51"N and longitude 81°44'15"W. The antennas transmit between 108 and 118 MHz and the localizer frequency for the ILS Runway 6 is 111.5 MHz. The localizer antenna has a course width of 3.07°.

Glide Slope

The glide slope indicates vertical guidance or the correct angle of descent to the runway. At RSW the glide slope is located 1,050 feet from the approach end of Runway 6 and 140 feet west of the runway centerline. The glide slope is positioned at a latitude of 26°31'38"N and a longitude of 81°46'00"W. It is at a field elevation of 26.5 feet MSL and has a standard 3.00° glide slope angle. The glide slope antennas are positioned in close proximity of the intended touchdown point on the runway. The transmitting antennas transmit in the UHF band around 300 MHz. The glide slope will have to be relocated as part of the new Midfield Terminal project and will be discussed further in the Facility Requirements chapter of this report.

Outer Marker Beacon & Compass Locator (LOM)

The Outer Marker (LOM) is located at latitude 26°29'03"N and longitude 81°50'04"W, approximately 4.3 nautical miles (26,098 feet) from the approach end of Runway 6 and is identified by the name MUFFE. In addition, it is identified with a modulation of 336 kHz and a blue light which illuminates in the cockpit of an aircraft flying the ILS approach when over or in close proximity of the LOM. This marker is used to indicate that an aircraft should intercept the glide path when over the transmitter. The Outer Marker beacons are low-power VHF transmitters operating at 75 MHz.

Middle Marker (MM)

The Middle Marker (MM) at RSW is located at latitude 26°31'31"N and longitude 81°46'17"W and lies 0.4 nautical miles (2,600 feet) from the approach end of Runway 6. The MM is used to indicate that the aircraft is at the Decision Height (DH) for the approach to Runway 6. This is the altitude at which the pilot should visually see the runway. If the runway is not yet visible, the approach must be abandoned and a missed approach must be executed.

Non Directional Beacon (NDB)

A Non Directional Beacon (NDB) is a low or medium frequency radio beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with airport direction finding (ADF) equipment can determine the bearing to or from the radio beacon and "home" in or track to or from the station. All radio beacons except the compass locators transmit a continuous three-letter identification in Morse code except during voice transmissions.

NDB's normally operate within the 190 to 535 kHz frequency band, and transmit a continuous carrier. Those NDB's that are not used as Compass Locators are frequently used for NDB approaches, and for homing purposes to help aircraft locate airports that have no published instrument approaches.

Currently, there is an NDB approach available for Runway 6 at RSW. This is a non-precision instrument approach and will likely be replaced or removed in the near future with the implementation of global positioning system (GPS) procedures.

Global Positioning System (GPS)

The Global Positioning System (GPS) is a satellite based radio positioning and navigation system designed to provide accurate position and velocity information on a continuous global basis. This system represents the future of air navigation. It is anticipated that NDB equipment and much of the VOR equipment currently in use will eventually be replaced by GPS. In addition, GPS based navigation, including precision approaches, is expected to become the standard in the future with the introduction of the Wide Area Augmentation System (WAAS) and the Local Area Augmentation System (LAAS).

The GPS operational policies that became effective in July 1998 state that pilots may substitute IFR certified GPS receivers for DME and ADF avionics for all operations except NDB approaches without GPS overlay. GPS can be used in lieu of DME and ADF on all localizer-type approaches as well as VOR/DME approaches, including when charted NDB or DME transmitters are temporarily out of service. These procedures and standards are described in detail in the Aeronautical Information Manual (AIM) and AC-90-94 entitled, "Guidelines for using global positioning system equipment for IFR en route and terminal operations and for non-precision instrument approaches in the U.S. National Airspace System."

GPS procedures have been implemented at Southwest Florida International Airport (RSW) for approaches to Runway 6 and Runway 24. Additional information concerning these approaches is included in Section 2.5.2, Published Instrument Approach Procedures Section.

Airport Surveillance Radar (ASR)

An ASR assists air traffic controllers by detecting and displaying an overall picture of what is going on within the airspace surrounding the terminal. The ASR rotates through 360 degrees and depending on local conditions, the typical coverage area for an ASR can extend out to 60 miles. Because ASR provides the position of aircraft in the vicinity of the airport the information is primarily utilized by air traffic controllers to facilitate the sequencing of both arriving and departing traffic. While the ASR does not provide vertical guidance to the pilot it is used for two published non-precision approaches for both Runway 6 and Runway 24 at RSW.

The ASR at RSW is located on airport property approximately 1.5 miles north-northwest of the airport reference point (ARP). The ASR is a FAA designated Series-8 radar facility and encompasses approximately 40,000 square feet of land. The FAA is proposing to install an ASR Series-11 at RSW at a location approximately 200 feet east-southeast of the existing ASR-8 facility. The new digital ASR-11 system will provide enhanced radar coverage and improved surveillance products for use by controllers. The new site will also require the same equipment installation area and identical external obstacle-free critical areas/zones.

2.4.6 Navaids – Visual/Supplemental

The following section addresses the visual and supplemental navigational aids that are provided at Southwest Florida International Airport.

Airport Rotating Beacon

An airport rotating beacon is a visual navigational aid that displays alternating flashes of high intensity white and green light to indicate the location of an airport. The flashes are sequenced 180 degrees apart as required by the FAA. At RSW the rotating beacon is located approximately 6,000 feet from the end of Runway 6 and 150 feet southeast of the runway centerline. The beacon is elevated to a height of 83 feet AGL, making it easier for pilots to see. The beacon, which is lighted daily from sunset to sunrise and during periods of Instrument Flight Rule (IFR) weather conditions, was noted to be in good condition.

Visual Approach Slope Indicators (VASI)

As noted previously, Runway 6 and Runway 24 at RSW both provide ground based visual aids known as Visual Approach Slope Indicators (VASI). Runway 6 provides a 4-box VASI configuration located on the left side of the Runway and Runway 24 utilizes a 6-box system of lights also located on the left side of the Runway. VASI lighting is provided to give visual descent guidance information during the final approach to a runway. These visual aids can only be used when the visibility is reasonably good. The visual glide path of the VASI provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and up to 4 NM from the runway threshold. Both sets of VASIs were noted to be in fair to good condition.

Medium Intensity Approach Lighting System (MALSR)

As part of the runway lighting system, the identification of the runway end, or threshold, is of critical importance to a pilot during landings and particularly during periods of reduced visibility and ceiling height. Therefore, runway ends and thresholds are equipped with special lighting to aid in the approach to or identification of the approach end of the runway. At RSW, the approach to Runway 6 has the most significant approach lighting that complements the ILS in providing a precision instrument approach system. The approach end of Runway 6 is equipped with a Medium Intensity Approach Lighting System (MALS) with Runway Alignment Indicator Lights (RAIL).

A MALSR is a MALS approved for ILS Category I precision approaches with decision heights as low as 200 feet. The MALS portion of the MALSR extends 1,400 feet from the end of the runway. The Runway Alignment Indicator Light (RAIL) portion of the system extends outward an additional 1,000 feet when the glide slope angle is 2.75 degrees or higher. This is the case at RSW since the precision instrument approach has a 3.0 degree glide slope. The purpose of the MALSR is to aid the pilot in identifying the runway environment and to facilitate a safe transition from the instrument flight phase to the visual phase of the landing. This system, referred to as "the rabbit" because of the sequenced strobe effect that "runs" toward the runway, provides pilots with early runway lineup, lead-in guidance, and runway end identification during landings and is extremely helpful during some periods of restricted visibility. The system at RSW is maintained by the FAA and is in good condition.

Runway End Identifier Lights (REIL)

Runway End Identification Lights (REIL) provides pilots with a rapid and positive visual identification of the approach end of the runway during night, instrument, and marginal weather

conditions. REILs also aid in identification of the runway end in areas having featureless terrain. The REIL system consists of a pair of synchronized white flashing lights facing the approaching aircraft, which are situated on each side and abeam of the runway end/threshold lights. The beam axis is orientated 15 degrees outward from a line parallel to the runway edge and inclined at an angle of 10 degrees upward. The REILs emit a white strobe light simultaneously at a rate of one per second. Runway 24 has a LCPA maintained REIL system that appears to be in good condition.

Automated Surface Observation System (ASOS)

The Automated Surface Observing System (ASOS) is the latest automated weather observation system sponsored by the Federal Aviation Administration (FAA). ASOS automatically provides temperature, dew point, wind, altimeter setting, visibility, sky condition, and precipitation information updated to the minute. A primary advantage of the ASOS system is that critical aviation weather parameters are measured in the vicinity of the runway touchdown zone. The ASOS program is a joint effort of the FAA, National Weather Service (NWS), and the Department of Defense (DOD). A similar system to the ASOS is the Automated Weather Observing System (AWOS). All automated observing systems are designed to provide the pilot, and other users, with daily minute-by-minute airport weather observations 24 hours a day. By providing near-real time information on atmosphere conditions at an increased number of reporting locations, automated systems improve the safety and efficiency of aviation operations as well as act as a key factor in designing better forecasting and warning systems.

The Automated Surface Observation System (ASOS) at RSW is an FAA designated Class II system. The system consists of a combined sensor group located on the airfield. The sensor group is located 1,102 feet northeast of the approach end of Runway 6 and 414 feet southeast of the Runway 6-24 centerline. The sensor group includes a wind sensor tower with a total obstruction height of 30 feet above ground level. An acquisition control unit (ACU) is located on the first floor of the air traffic control tower base building in the equipment room. The ACU collects the data from the sensor group. The communications link from the sensor group to the ACU (Acquisition Control Unit) is by UHF radio frequency 410.075 Mhz. The FAA provides power for the sensor group and the ACU.

RSW also provides ASOS weather information to pilots through a dial-in telephone. The telephone number for the RSW ASOS is 941-561-0966. Additionally, the Page Field (FMY) ASOS information is available by dialing 941-936-2318.

Runway Visual Range (RVR)

Runway Visual Range is defined as the visibility range measured on the runway. It is the distance over which pilots can see the high intensity runway edge lights. At RSW runway visibility is expressed in terms of RVR and miles as it relates to landing and takeoff visibility minimums for only Runway 6. The RVR is measured by transmissometers located along the side of the runway near the threshold. A light beam of a specific intensity is shot from a projector and measured by a receiver approximately 250 feet away. Any obscuring matter such as rain, snow, fog, smoke, haze, etc. reduces the intensity at the receiver and the measurement of the light intensity is converted to an RVR value. This information is displayed to the air traffic facility and updated approximately once every minute for controllers to relay to pilots operating at the airport.

Low Level Wind Shear Alert System (LLWAS)

The low-level wind shear alert system (LLWAS) is used to detect the presence of hazardous wind shear and microbursts in the vicinity of the airport. Six pole-mounted wind sensors are strategically located adjacent to the runway centerline, and on both sides of the approach end of Runway 6 and Runway 24. RSW is one of only thirty-nine airports throughout the United States to have this type of system. The LLWAS is controlled and maintained by the FAA and was noted to be in good condition. The new Midfield Terminal will require two or three of the LLWAS sensors to be relocated. Additional discussions of their exact location will be addressed in the Facility Requirements chapter of this report.

Segmented Circle and Windsocks

Southwest Florida International Airport has two lighted windsocks and a segmented circle. One windsock is located directly across from Taxiway A-8 on the south side of Runway 6-24. The primary windsock and segmented circle are located approximately 4,500 feet from the approach end of Runway 6, approximately 200 feet south of runway centerline. The standard aircraft traffic pattern at the Airport is a left pattern.

2.5 AIRSPACE CONFIGURATION / APPROACH PROCEDURES

2.5.1 Airspace Classifications

The FAA has six classifications of airspace under the National Airspace System (NAS). 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 of activity 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 designated as uncontrolled airspace.

Because Southwest Florida International Airport has an active FAA air traffic control tower (ATCT), is serviced by a radar approach control facility, and has a significant number of instrument flight rules (IFR) operations, the RSW airspace has been designated Class C. In Class C airspace, 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 that automatically imprints aircraft altitude information on air traffic control radars. In Class C airspace, aircraft operating under Visual Flight Rules (VFR) are typically separated from the IFR aircraft and VFR aircraft must still see and avoid other VFR aircraft.

Although Class C airspace can be tailored to meet individual airport needs, the airspace usually consists of two columns of airspace. The Class C airspace at Southwest Florida International contains no modifications to the standard airspace configuration. 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 imagine a two-layer wedding cake turned upside down and centered on the airport.

RSW is in close proximity to the Class D airspace which surrounds Page Field Airport (FMY). The Class D airspace at Page Field encompasses a single column of airspace, 5 nautical miles in radius from the surface up to 1,200 feet above the airport elevation. Class D airspace requires each pilot to establish two-way radio communication with the ATCT prior to entering the airspace and to maintain this communication while in the airspace. Although considered 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, or uncontrolled airspace.

The Page Field Airport (FMY) also has a small portion of Class E designated airspace. Typically, this classification of airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace and is used to provide additional safety to aircraft transiting to and from the airport. The small portion of Class E airspace at Page Field provides additional controlled airspace for precision and non-precision instrument approaches to Runway 5 and the non-precision instrument approach to Runway 13. These approaches are controlled by the FAA facilities at RSW. The Page Field Class E 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 RSW Class C airspace.

Exhibit 2-6 has been taken from the Miami Sectional Aeronautical Chart to illustrate the airspace relationships in the Fort Myers area. The two large magenta circles represent the inner and outer columns of Class C airspace for RSW. Page Field falls between these two circles. This is why the ceiling for Page Field's Class D airspace is limited to 1,200 feet. At 1,200 feet, the Class D meets the overlaying RSW Class C airspace that is more restrictive. Although difficult to see, 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 is depicted by a wide magenta line from the outside towards the airport it serves. The small portion of Class E is located on the northwest side of the Page Field Airport and is shown by a truncated arc intersecting the outer column of Class C airspace.

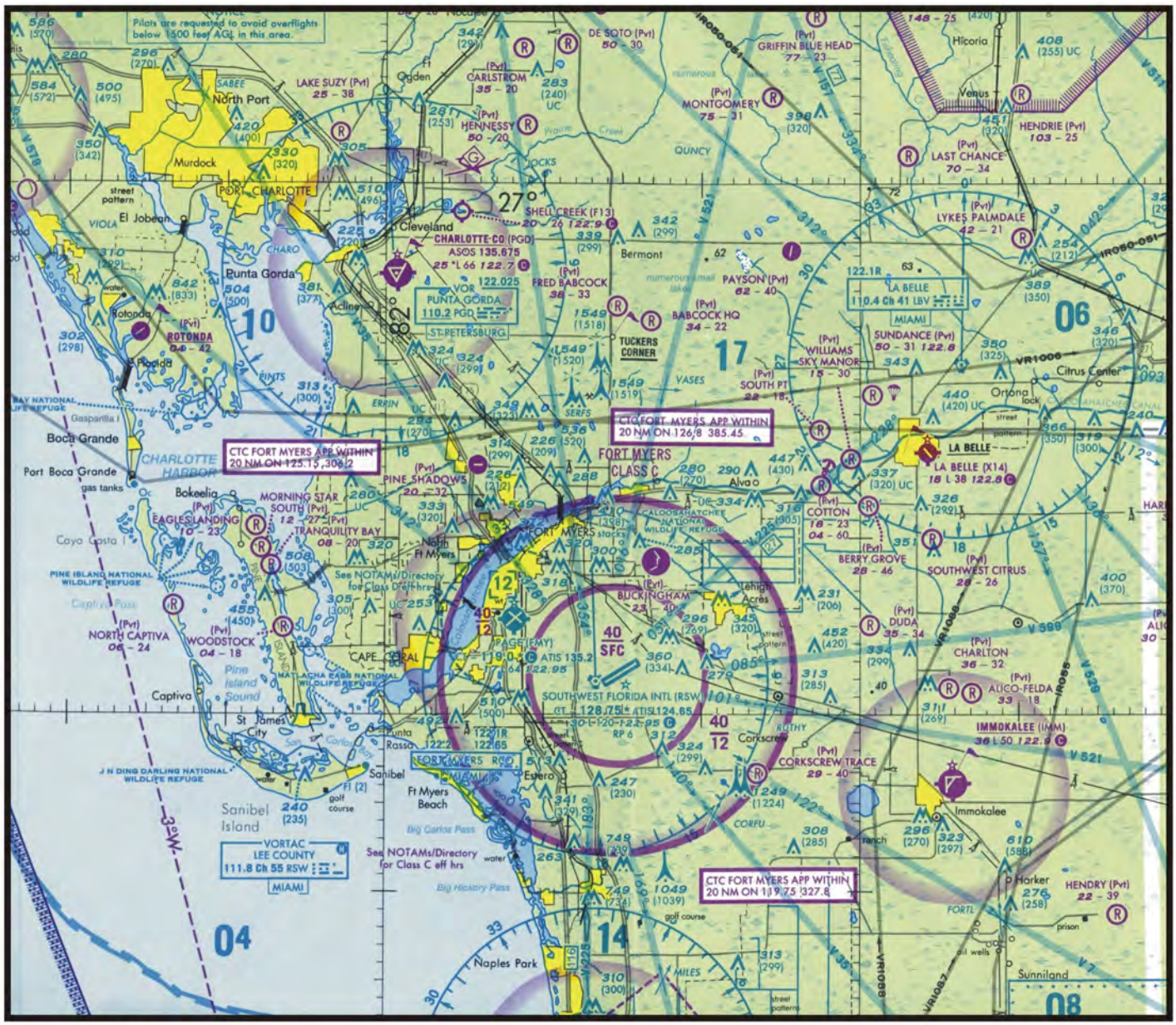
2.5.2 Published Instrument Approach Procedures

There are seven published instrument approach procedures at Southwest Florida International Airport. Although pilots 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 glide slope or glide path information for vertical guidance. It is important to note that the minimum approach descent altitudes expressed in the following paragraphs are for Category C aircraft (those aircraft with approach speeds near 140 knots) as these are the most common aircraft utilizing Southwest Florida International Airport.

At RSW, the Category I ILS system for Runway 6 is one of three classifications of ILS approach systems in use at airports today. The following delineates the typical approach minimums associated with the category of ILS approaches. These minimums may be adjusted higher based on specific circumstances at each individual airport.

Exhibit 2-6

Exhibit 2-6
Aeronautical Sectional Chart



** Not to be used for navigational purposes.*

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

The Runway 6 Category I ILS provides instrument rated pilots with a decision height of 229 feet MSL and visibility minimums of ½ mile (RVR 2,400). The approach also provides a straight-in non-precision approach utilizing the localizer only with a minimum descent altitude (similar to the precision approach decision height) of 380 feet MSL and visibility minimums of ½ mile. There is also a circle to land approach (visual approach) that provides a decision height of 500 feet MSL and visibility minimums of 1 ½ miles for aircraft with approach speeds up to 140 knots. **Exhibit 2-7** provides additional details about these approaches.

A VOR straight-in instrument approach is available to Runway 6. This approach is created by the Lee County VORTAC and requires Automatic Direction Finding (ADF) or DME equipment. This straight-in approach provides pilots with a minimum descent altitude of 360 feet MSL and visibility minimums of 1 mile. The approach also provides a circle to land approach with a 500 feet minimum descent altitude and 1½ miles minimum visibility. If the DME equipment is used, the minimum descent altitudes for both the straight-in and visual approach decreases to 330 feet and 450 feet MSL respectively. **Exhibit 2-8** provides additional details about this approach.

An NDB non-precision straight-in instrument approach is available to Runway 6. This straight-in approach provides pilots with a minimum descent altitude of 440 feet MSL and visibility minimums of ¾ mile if the RVR is 4,000 feet or more. The approach also provides a circle to land approach with a 500 feet MSL minimum descent altitude and 1½ miles visibility minimums. **Exhibit 2-9** provides additional details about this approach.

Both Runway 6 and Runway 24 have non-precision global positioning system (GPS) approaches. These approaches have a minimum descent altitude of between 380 feet MSL to 400 feet MSL for Runways 6 and 24 respectively. Runway 6 has ¾ mile visibility minimum and a 2,400 Runway Visual Range, while Runway 24 measures visibility in miles because RVR measurements are not available for this runway. Therefore the visibility minimums for Runway 24 is 1 mile for aircraft categories A, B, and C. Category D aircraft require a visibility minimum of 1¼ miles. Both approaches have a circle-to-land approach with a minimum descent altitude of 500 feet MSL with a minimum visibility requirement of 1½ miles. The GPS approaches are depicted in **Exhibits 2-10** and **2-11**.

Airport Surveillance Radar (ASR) approaches are available for both Runways 6 and Runways 24. The minimum descent altitude of 380 feet MSL and visibility requirements of ½ mile with an RVR of 2,400 feet are the same for both runways. Circle to land approaches for both runways have a minimum descent altitude of 500 feet MSL with 1½ mile visibility. The ASR approaches are depicted in **Exhibit 2-12**.

Exhibit 2-7

Exhibit 2-7

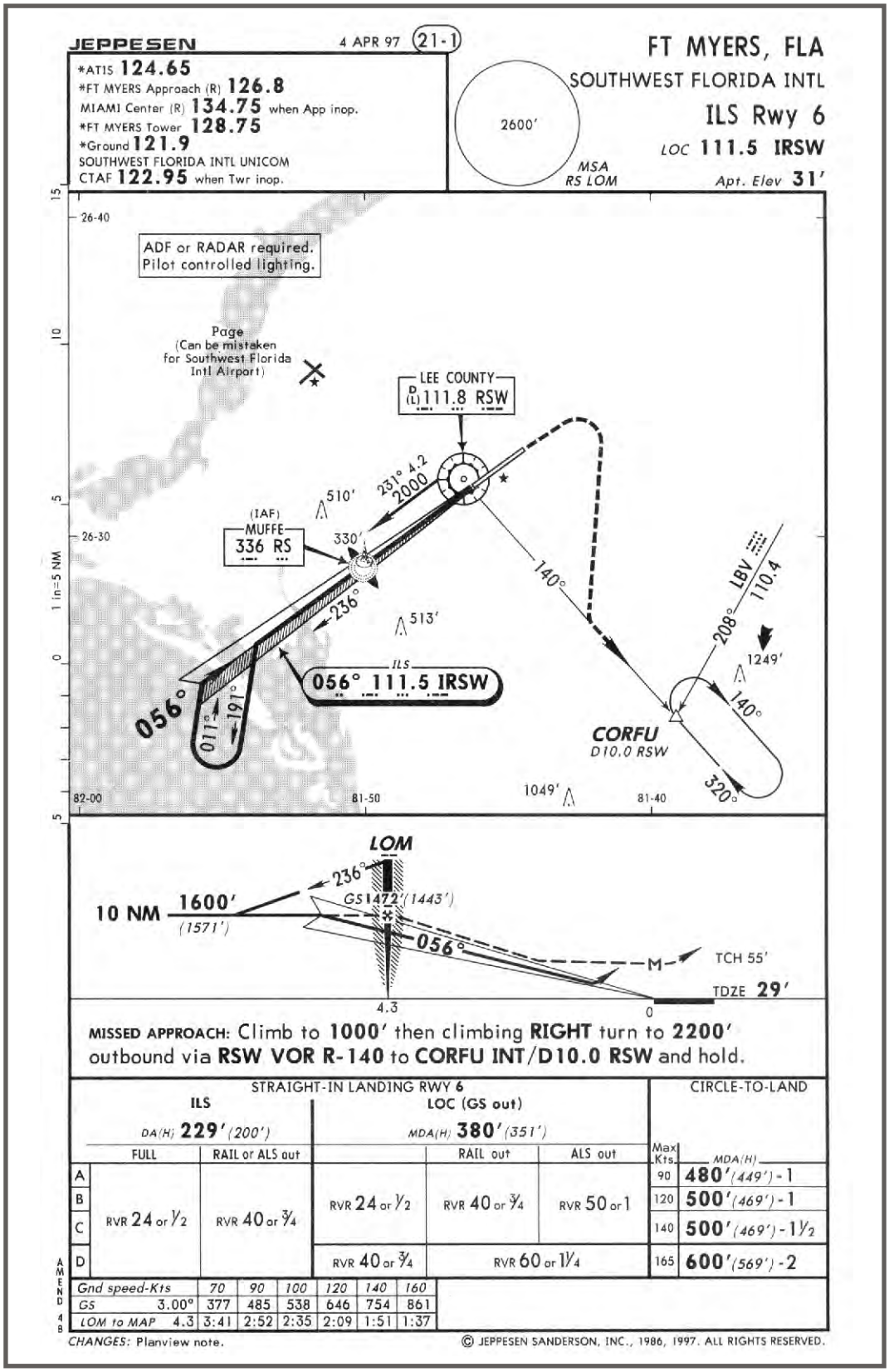

JEPPESEN
4 APR 97
21-1
FT MYERS, FLA
SOUTHWEST FLORIDA INTL
ILS Rwy 6
LOC 111.5 IRSW
Apt. Elev 31'
*ATIS 124.65
*FT MYERS Approach (R) 126.8
MIAMI Center (R) 134.75 when App inop.
*FT MYERS Tower 128.75
*Ground 121.9
SOUTHWEST FLORIDA INTL UNICOM
CTAF 122.95 when Twr inop.
2600'
MSA
RS LOM
ADF or RADAR required.
Pilot controlled lighting.
Page
(Can be mistaken for Southwest Florida Intl Airport)
LEE COUNTY
D (L) 111.8 RSW
231° 4.2
2000
510'
(IAF)
MUFFE
336 RS
330'
236°
513'
140°
LBV
110.4
208°
1249'
ILS
056° 111.5 IRSW
056°
011°
191°
CORFU
D10.0 RSW
140°
320°
1049'
26-40
26-30
82-00
81-50
81-40
1 in=5 NM
LOM
236°
10 NM
1600'
(1571')
GS 1472' (1443')
056°
M
TCH 55'
TDZE 29'
4.3
0
MISSED APPROACH: Climb to 1000' then climbing RIGHT turn to 2200' outbound via RSW VOR R-140 to CORFU INT/D10.0 RSW and hold.
STRAIGHT-IN LANDING RWY 6
ILS
DA(H) 229' (200')
FULL
RAIL or ALS out
LOC (GS out)
MDA(H) 380' (351')
RAIL out
ALS out
CIRCLE-TO-LAND
Max Kts
MDA(H)
A
B
C
D
RVR 24 or 1/2
RVR 40 or 3/4
RVR 24 or 1/2
RVR 40 or 3/4
RVR 50 or 1
RVR 40 or 3/4
RVR 60 or 1 1/4
90 480' (449') - 1
120 500' (469') - 1
140 500' (469') - 1 1/2
165 600' (569') - 2
Gnd speed-Kts 70 90 100 120 140 160
GS 3.00° 377 485 538 646 754 861
LOM to MAP 4.3 3:41 2:52 2:35 2:09 1:51 1:37
AMEND 4B
CHANGES: Planview note.
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Exhibit 2-8

Exhibit 2-8

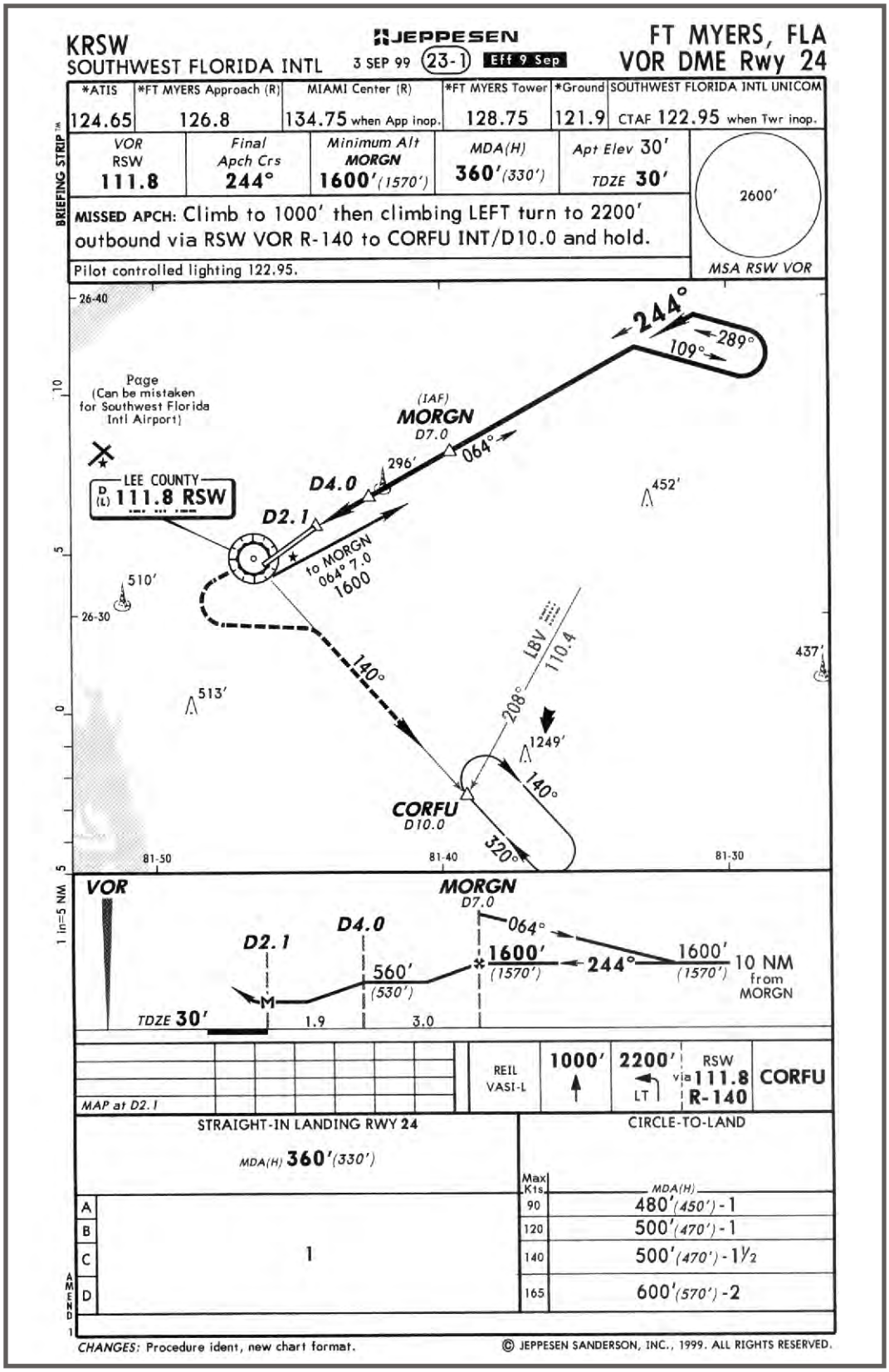
KRSW
SOUTHWEST FLORIDA INTL
JEPPESEN
3 SEP 99 (23-1) Eff 9 Sep
FT MYERS, FLA
VOR DME Rwy 24
*ATIS 124.65
*FT MYERS Approach (R) 126.8
MIAMI Center (R) 134.75 when App inop.
*FT MYERS Tower 128.75
*Ground 121.9
SOUTHWEST FLORIDA INTL UNICOM CTAF 122.95 when Twr inop.
VOR RSW 111.8
Final Apch Crs 244°
Minimum Alt MORGN 1600' (1570')
MDA(H) 360' (330')
Apt Elev 30'
TDZE 30'
2600'
MSA RSW VOR
MISSED APCH: Climb to 1000' then climbing LEFT turn to 2200' outbound via RSW VOR R-140 to CORFU INT/D10.0 and hold.
Pilot controlled lighting 122.95.
BRIEFING STRIP™
Page (Can be mistaken for Southwest Florida Intl Airport)
LEE COUNTY
(L) 111.8 RSW
(IAF)
MORGN
D7.0
D4.0
D2.1
244°
289°
109°
064°
296'
to MORGN 064° 7.0 1600
140°
LBV 110.4
208°
CORFU
D10.0
320°
140°
1249'
452'
437'
513'
510'
26-40
26-30
81-50
81-40
81-30
1 in=5 NM
VOR
MORGN
D7.0
D2.1
D4.0
064°
1600'
(1570')
244°
1600'
(1570')
10 NM from MORGN
560'
(530')
TDZE 30'
1.9
3.0
MAP at D2.1
REIL
VASI-L
1000'
2200'
LT
via RSW 111.8 R-140
CORFU
STRAIGHT-IN LANDING RWY 24
MDA(H) 360' (330')
CIRCLE-TO-LAND
Max Kts
MDA(H)
A 90 480' (450') - 1
B 120 500' (470') - 1
C 140 500' (470') - 1½
D 165 600' (570') - 2
1
AMEND 1
CHANGES: Procedure ident, new chart format.
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Exhibit 2-9

Exhibit 2-9

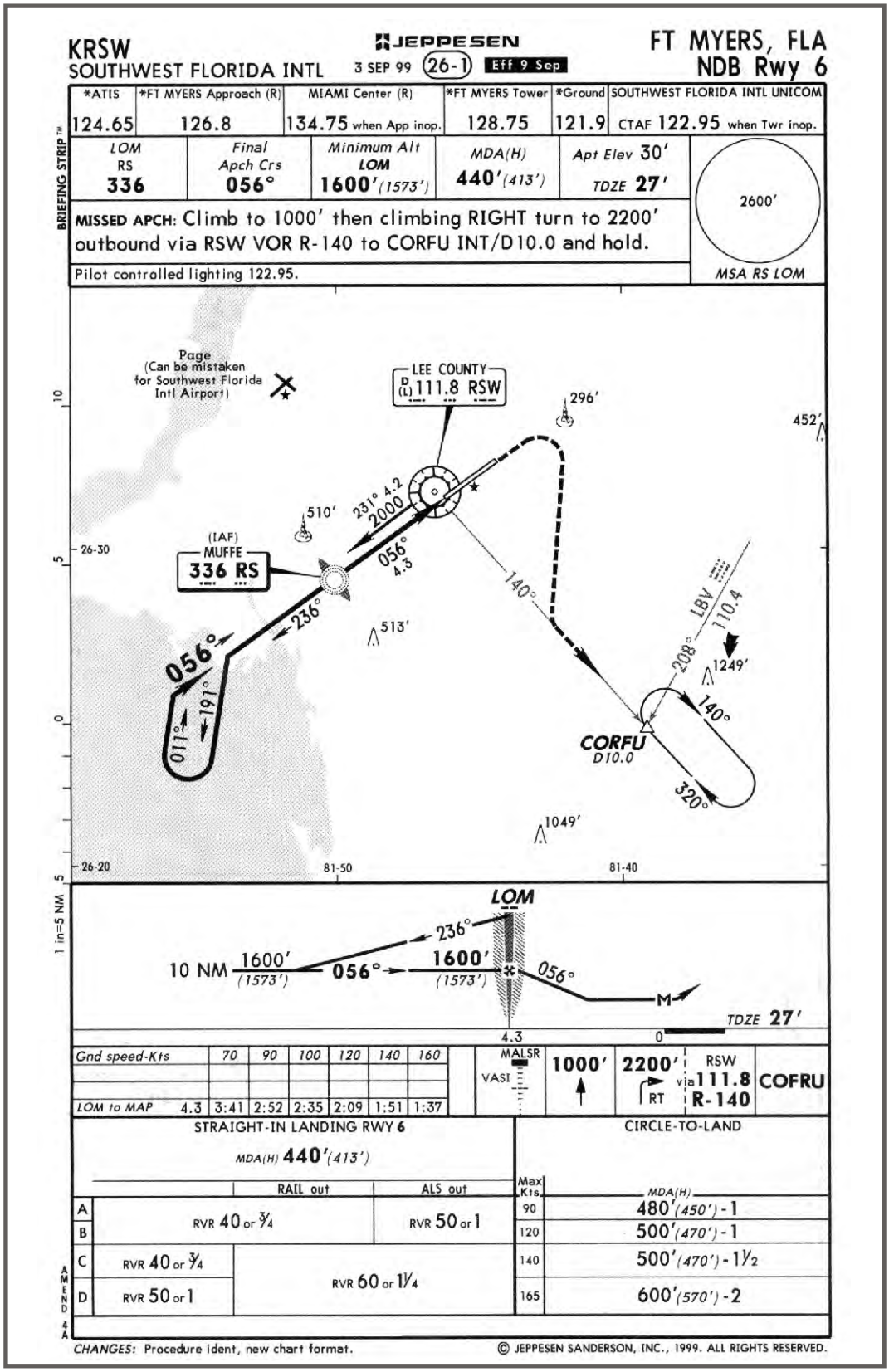
KRSW
SOUTHWEST FLORIDA INTL
JEPPESEN
3 SEP 99 (26-1) Eff 9 Sep
FT MYERS, FLA
NDB Rwy 6
*ATIS 124.65
*FT MYERS Approach (R) 126.8
MIAMI Center (R) 134.75 when App inop.
*FT MYERS Tower 128.75
*Ground 121.9
SOUTHWEST FLORIDA INTL UNICOM CTAF 122.95 when Twr inop.
LOM RS 336
Final Apch Crs 056°
Minimum Alt LOM 1600′(1573′)
MDA(H) 440′(413′)
Apt Elev 30′
TDZE 27′
2600′
MSA RS LOM
MISSED APCH: Climb to 1000′ then climbing RIGHT turn to 2200′ outbound via RSW VOR R-140 to CORFU INT/D10.0 and hold.
Pilot controlled lighting 122.95.
BRIEFING STRIP™
Page (Can be mistaken for Southwest Florida Intl Airport)
LEE COUNTY D (L) 111.8 RSW
296′
452′
510′
231° 4.2
2000
(IAF) MUFFE 336 RS
056° 4.3
236°
056°
011°
191°
140°
513′
LBV 110.4
208°
1249′
140°
CORFU D10.0
320°
1049′
26-30
26-20
81-50
81-40
1 in=5 NM
LOM
10 NM 1600′ (1573′) 056° 1600′ (1573′) 056°
236°
M
TDZE 27′
4.3
0
Gnd speed-Kts 70 90 100 120 140 160
LOM to MAP 4.3 3:41 2:52 2:35 2:09 1:51 1:37
MALSR
VASI
1000′
2200′ RSW
RT via 111.8 R-140
COFRU
STRAIGHT-IN LANDING RWY 6
MDA(H) 440′(413′)
RAIL out
ALS out
A RVR 40 or ¾
B RVR 40 or ¾
C RVR 40 or ¾
D RVR 50 or 1
RVR 50 or 1
RVR 60 or 1¼
CIRCLE-TO-LAND
Max Kts
MDA(H)
90 480′(450′)-1
120 500′(470′)-1
140 500′(470′)-1½
165 600′(570′)-2
AMEND 4A
CHANGES: Procedure ident, new chart format.
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Exhibit 2-10

Exhibit 2-10

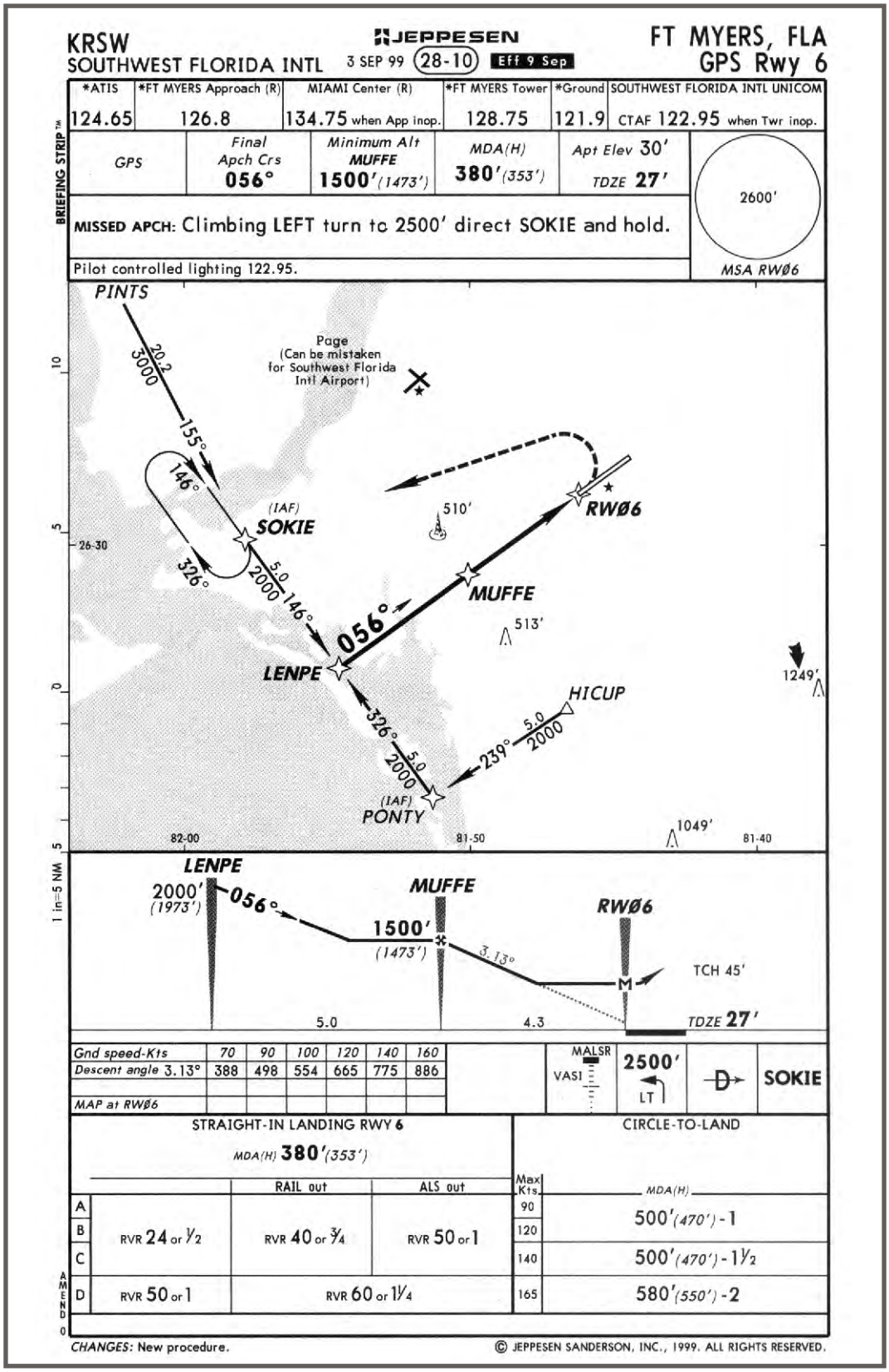
KRSW
SOUTHWEST FLORIDA INTL
JEPPESEN
3 SEP 99 (28-10) Eff 9 Sep
FT MYERS, FLA
GPS Rwy 6
*ATIS 124.65
*FT MYERS Approach (R) 126.8
MIAMI Center (R) 134.75 when App inop.
*FT MYERS Tower 128.75
*Ground 121.9
SOUTHWEST FLORIDA INTL UNICOM CTAF 122.95 when Twr inop.
GPS
Final Apch Crs 056°
Minimum Alt MUFFE 1500′(1473′)
MDA(H) 380′(353′)
Apt Elev 30′
TDZE 27′
2600′
MSA RWØ6
MISSED APCH: Climbing LEFT turn to 2500′ direct SOKIE and hold.
Pilot controlled lighting 122.95.
BRIEFING STRIP™
PINTS
20.2
3000
155°
146°
Page
(Can be mistaken for Southwest Florida Intl Airport)
(IAF)
SOKIE
510′
RWØ6
26-30
326°
5.0
2000
146°
056°
MUFFE
513′
LENPE
1249′
HICUP
326°
5.0
2000
239°
5.0
2000
(IAF)
PONTY
1049′
82-00
81-50
81-40
1 in=5 NM
LENPE
2000′
(1973′)
056°
MUFFE
1500′
(1473′)
3.13°
RWØ6
TCH 45′
5.0
4.3
TDZE 27′
Gnd speed-Kts 70 90 100 120 140 160
Descent angle 3.13° 388 498 554 665 775 886
MAP at RWØ6
MALSR
VASI
2500′
LT
SOKIE
STRAIGHT-IN LANDING RWY 6
MDA(H) 380′(353′)
RAIL out
ALS out
A
B
C
D
RVR 24 or 1/2
RVR 40 or 3/4
RVR 50 or 1
RVR 50 or 1
RVR 60 or 1 1/4
CIRCLE-TO-LAND
Max Kts
MDA(H)
90
120
140
165
500′(470′)-1
500′(470′)-1 1/2
580′(550′)-2
AMENDED 0
CHANGES: New procedure.
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Exhibit 2-11

Exhibit 2-11

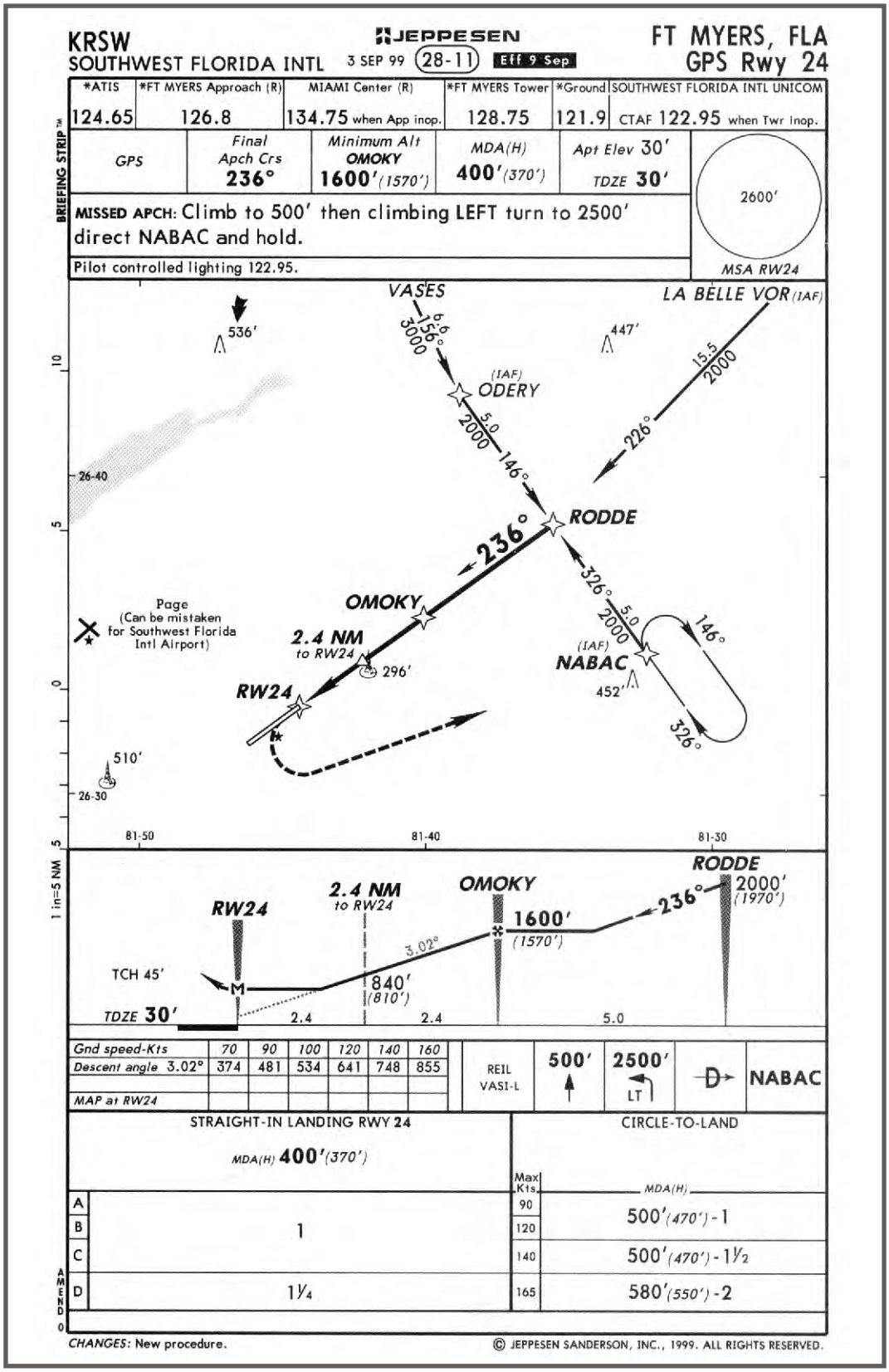
KRSW
SOUTHWEST FLORIDA INTL
JEPPESEN
3 SEP 99 (28-11) Eff 9 Sep
FT MYERS, FLA
GPS Rwy 24
*ATIS 124.65
*FT MYERS Approach (R) 126.8
MIAMI Center (R) 134.75 when App inop.
*FT MYERS Tower 128.75
*Ground 121.9
SOUTHWEST FLORIDA INTL UNICOM CTAF 122.95 when Twr inop.
BRIEFING STRIP™
GPS
Final Apch Crs 236°
Minimum Alt OMOKY 1600′(1570′)
MDA(H) 400′(370′)
Apt Elev 30′ TDZE 30′
2600′
MSA RW24
MISSED APCH: Climb to 500′ then climbing LEFT turn to 2500′ direct NABAC and hold.
Pilot controlled lighting 122.95.
VASES
LA BELLE VOR (IAF)
ODERY (IAF)
RODDE
OMOKY
NABAC (IAF)
RW24
2.4 NM to RW24
Page (Can be mistaken for Southwest Florida Intl Airport)
536′
447′
296′
452′
510′
26-40
26-30
81-50
81-40
81-30
1 in=5 NM
TCH 45′
TDZE 30′
3.02°
840′ (810′)
1600′ (1570′)
2000′ (1970′)
2.4
2.4
5.0
Gnd speed-Kts 70 90 100 120 140 160
Descent angle 3.02° 374 481 534 641 748 855
MAP at RW24
REIL
VASI-L
500′
2500′ LT
NABAC
STRAIGHT-IN LANDING RWY 24
MDA(H) 400′(370′)
CIRCLE-TO-LAND
Max Kts
MDA(H)
A
B
C
D
1
1¼
90
120
140
165
500′(470′)-1
500′(470′)-1½
580′(550′)-2
CHANGES: New procedure.
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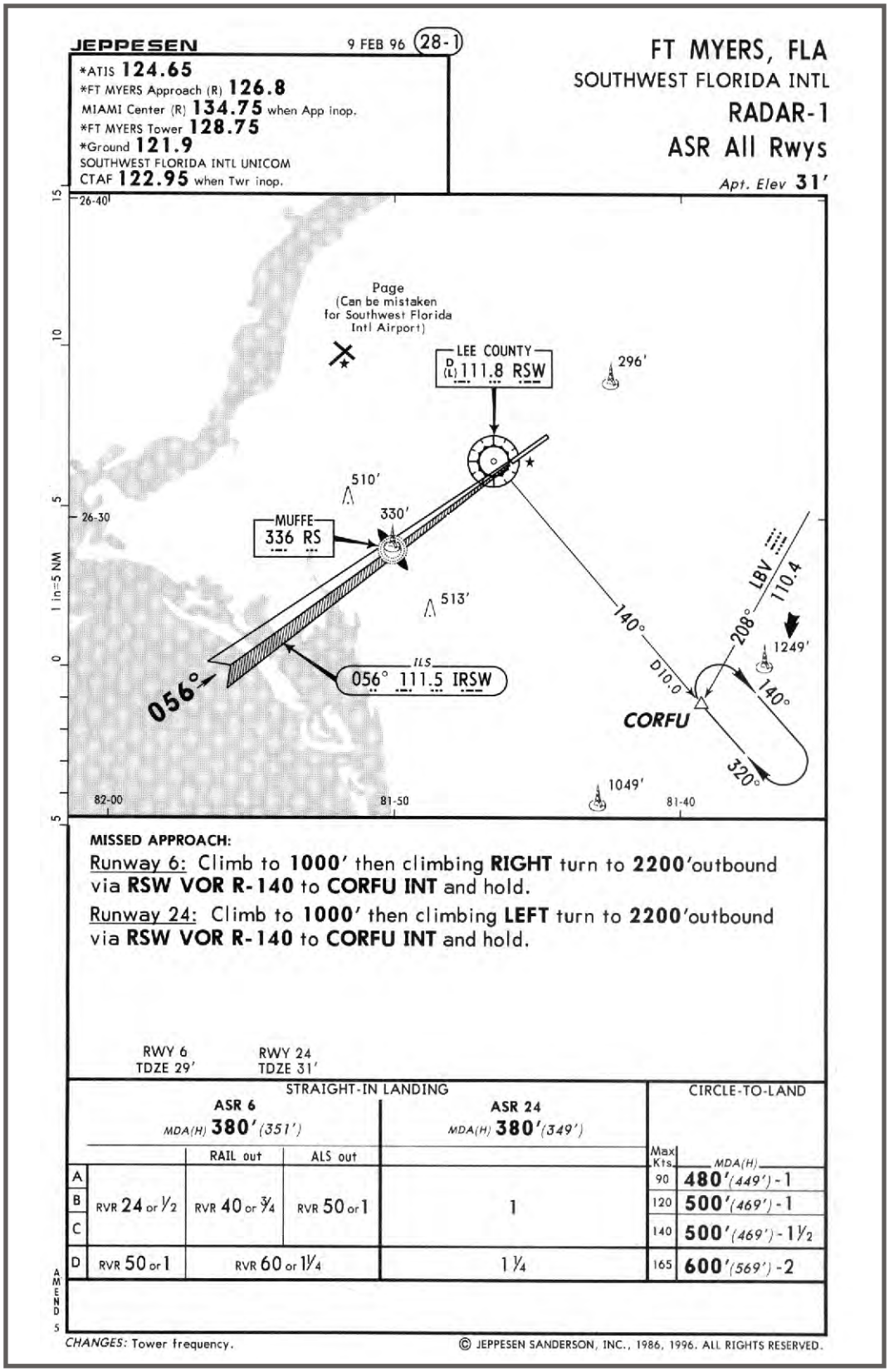
Exhibit 2-12

Exhibit 2-12


JEPPESEN
9 FEB 96 (28-1)
*ATIS 124.65
*FT MYERS Approach (R) 126.8
MIAMI Center (R) 134.75 when App inop.
*FT MYERS Tower 128.75
*Ground 121.9
SOUTHWEST FLORIDA INTL UNICOM
CTAF 122.95 when Twr inop.
FT MYERS, FLA
SOUTHWEST FLORIDA INTL
RADAR-1
ASR All Rwys
Apt. Elev 31'
Page
(Can be mistaken for Southwest Florida Intl Airport)
LEE COUNTY
D (L) 111.8 RSW
296'
510'
330'
MUFFE
336 RS
513'
056°
ILS
056° 111.5 IRSW
140°
D10.0
LBV
110.4
208°
1249'
140°
320°
CORFU
1049'
26-40
26-30
82-00
81-50
81-40
1 in=5 NM
MISSED APPROACH:
Runway 6: Climb to 1000' then climbing RIGHT turn to 2200'outbound via RSW VOR R-140 to CORFU INT and hold.
Runway 24: Climb to 1000' then climbing LEFT turn to 2200'outbound via RSW VOR R-140 to CORFU INT and hold.
RWY 6 TDZE 29'
RWY 24 TDZE 31'
STRAIGHT-IN LANDING
ASR 6
MDA(H) 380' (351')
RAIL out
ALS out
ASR 24
MDA(H) 380' (349')
CIRCLE-TO-LAND
Max Kts.
MDA(H)
A
B
C
D
RVR 24 or 1/2
RVR 40 or 3/4
RVR 50 or 1
1
90
120
140
480' (449') - 1
500' (469') - 1
500' (469') - 1 1/2
RVR 50 or 1
RVR 60 or 1 1/4
1 1/4
165
600' (569') - 2
AMEND 5
CHANGES: Tower frequency.
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2.5.3 Standard Instrument Departures (SID)

A Standard Instrument Departure (SID) is an ATC coded departure procedure that has been established at certain airports to simplify clearance delivery procedures. SIDs are carried out by the pilot without vectors from ATC and are also established to assist pilots conducting IFR flight in avoiding obstacles during climb out to Minimum Enroute Altitudes (MEA). There are two SIDs at the RSW. The ALICO TWO DEPARTURE (designated (ALICO2.ALICO) and the SCUBY TWO DEPARTURE (designated SCUBY2.SCUBY) are depicted in **Exhibit 2-13** and **2-14** respectively.

2.5.4 Standard Terminal Arrival (STAR) Procedures

A Standard Terminal Arrival (STAR) is an ATC coded IFR arrival route established for application to arriving IFR aircraft destined for certain airports. The purpose of a STAR is to simplify clearance delivery and facilitate transition between enroute and instrument approach procedures. The one STAR available for use at RSW is identified as the SARASOTA THREE ARRIVAL (SRQ.SRQ3) and is shown in **Exhibit 2-15**.

2.6 AIR TRAFFIC CONTROL TOWER (ATCT)

The Air Traffic Control Tower (ATCT) at RSW and its related facilities are located approximately 2,500 feet southwest of the terminal building next to the ARFF facilities. The tower and the administration building encompass approximately 8,600 square feet. This includes 3,000 square feet of office space added on in 1998. The tower is a FAA facility with a cab floor height of 76.91 feet AGL. The RSW ATCT provides the following primary aircraft control functions for the Airport: local control, approach and departure control, and ground control operations. These services are handled through separate frequencies as shown in **Table 2-2.** In addition, the FAA facilities at RSW provide approach and departure control for Page Field, Naples, Punta Gorda, Charlotte County, Marco Island, and Immokalee airport.

TABLE 2-2
ATCT FREQUENCIES

Control Area	Frequency (MHz)
Automated Terminal Information System (ATIS)	124.65
Fort Myers Approach/Departure	126.80
Fort Myers Tower	128.75
Ground Control	121.90
Miami Center (When RSW tower is closed)	134.75
CTAF (Common Traffic Advisory Frequency)	122.95

Source: Airport Facility Directory

The tower is FAA staffed with a total of 36 air traffic controllers and 11 technicians, with two administrative personnel positions. The tower is attended by FAA personnel from 0600 hrs. to 0000 hrs. After closing hours, Miami Center provides radar coverage for IFR flight up to 3,000 feet.

Exhibit 2-13

Exhibit 2-13

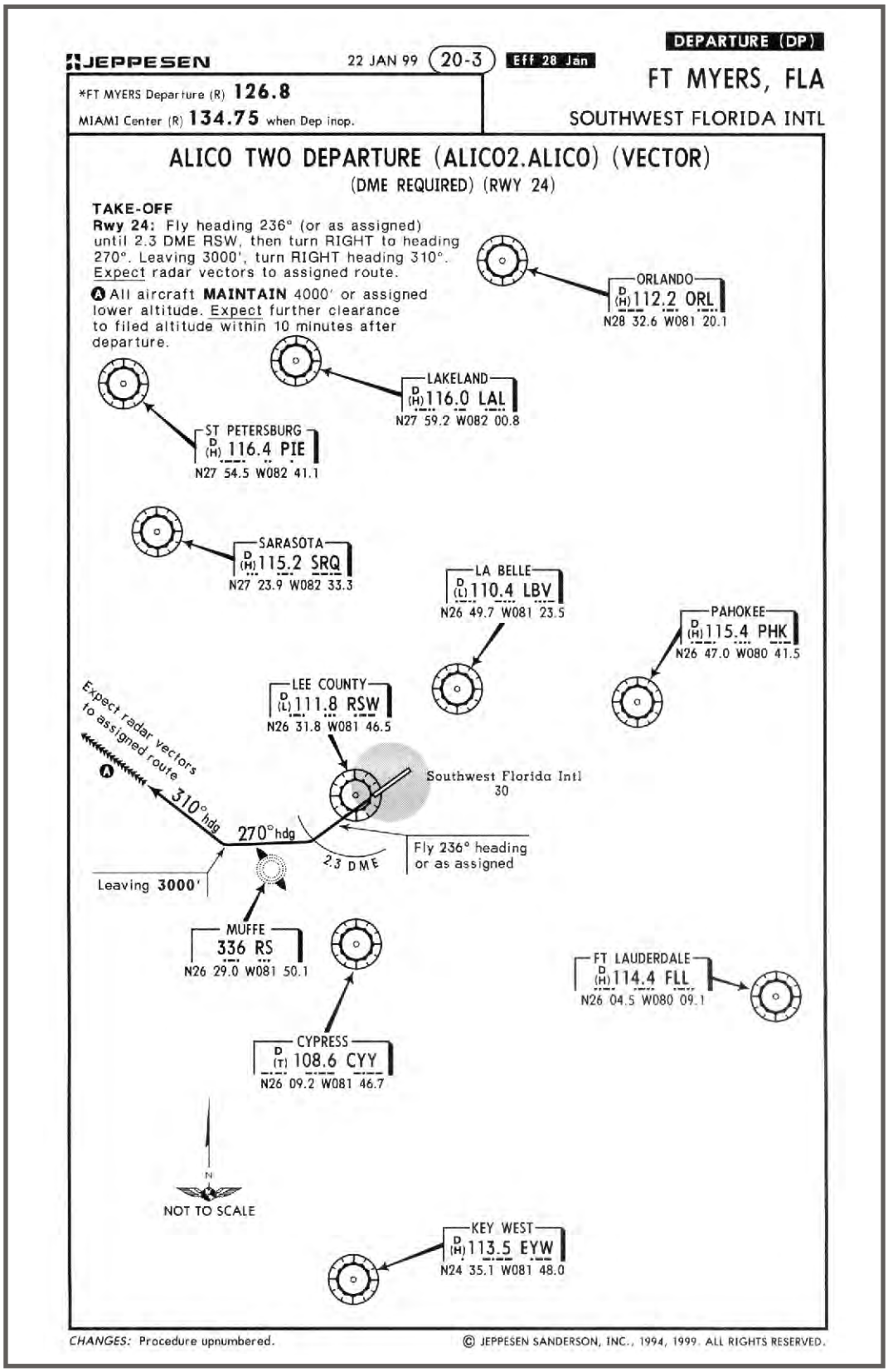
JEPPESEN
22 JAN 99
20-3
Eff 28 Jan
DEPARTURE (DP)
FT MYERS, FLA
SOUTHWEST FLORIDA INTL
*FT MYERS Departure (R) 126.8
MIAMI Center (R) 134.75 when Dep inop.
ALICO TWO DEPARTURE (ALICO2.ALICO) (VECTOR)
(DME REQUIRED) (RWY 24)
TAKE-OFF
Rwy 24: Fly heading 236° (or as assigned) until 2.3 DME RSW, then turn RIGHT to heading 270°. Leaving 3000', turn RIGHT heading 310°. Expect radar vectors to assigned route.
A All aircraft MAINTAIN 4000' or assigned lower altitude. Expect further clearance to filed altitude within 10 minutes after departure.
ORLANDO
D (H) 112.2 ORL
N28 32.6 W081 20.1
LAKELAND
D (H) 116.0 LAL
N27 59.2 W082 00.8
ST PETERSBURG
D (H) 116.4 PIE
N27 54.5 W082 41.1
SARASOTA
D (H) 115.2 SRQ
N27 23.9 W082 33.3
LA BELLE
D (L) 110.4 LBV
N26 49.7 W081 23.5
PAHOKEE
D (H) 115.4 PHK
N26 47.0 W080 41.5
LEE COUNTY
D (L) 111.8 RSW
N26 31.8 W081 46.5
Expect radar vectors to assigned route
A
310° hdg
270° hdg
2.3 DME
Southwest Florida Intl
30
Fly 236° heading or as assigned
Leaving 3000'
MUFFE
336 RS
N26 29.0 W081 50.1
FT LAUDERDALE
D (H) 114.4 FLL
N26 04.5 W080 09.1
CYPRESS
D (T) 108.6 CYY
N26 09.2 W081 46.7
N
NOT TO SCALE
KEY WEST
D (H) 113.5 EYW
N24 35.1 W081 48.0
CHANGES: Procedure upnumbered.
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Exhibit 2-14

Exhibit 2-14

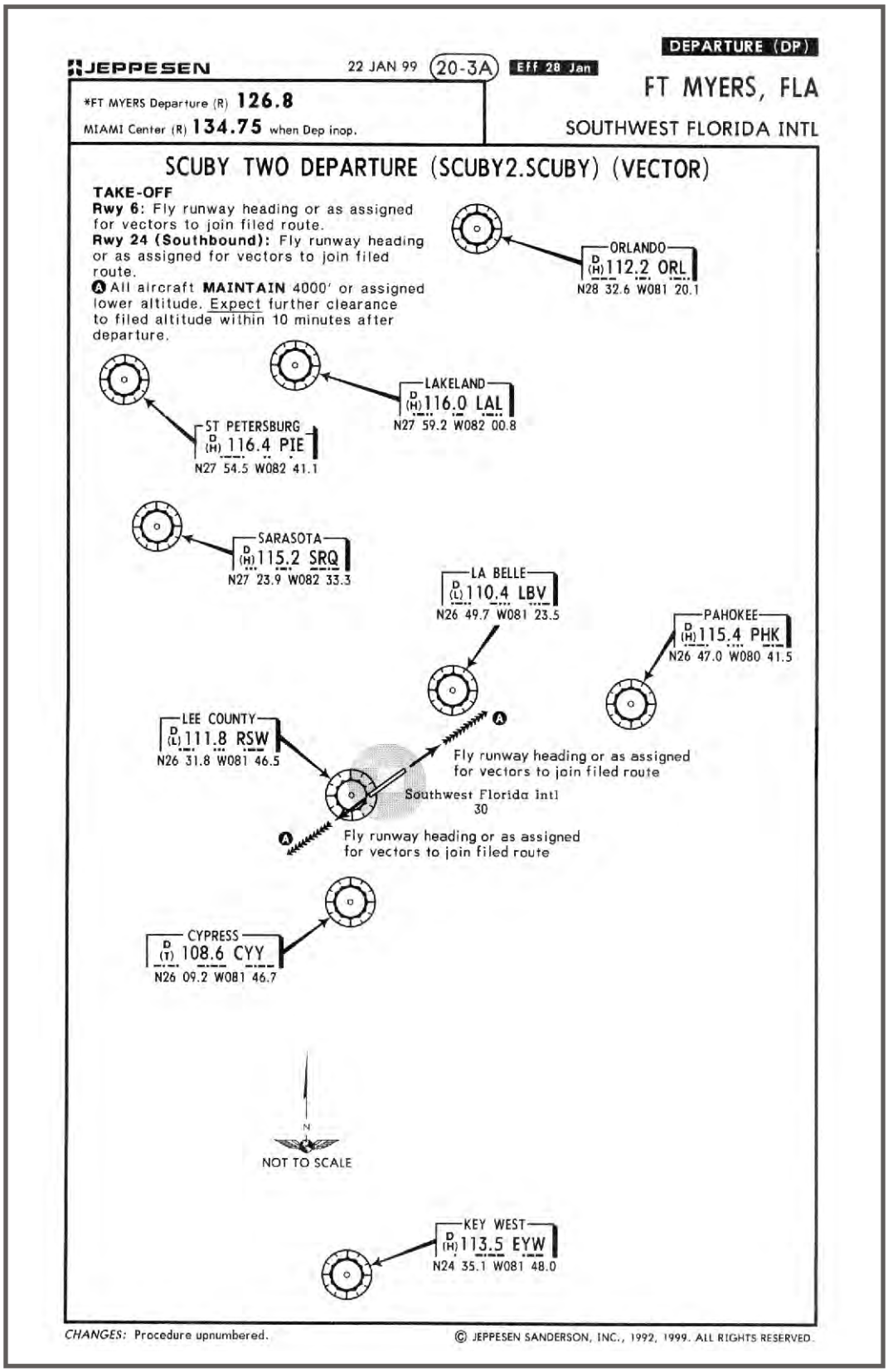
JEPPESEN
22 JAN 99
20-3A
Eff 28 Jan
DEPARTURE (DP)
FT MYERS, FLA
SOUTHWEST FLORIDA INTL
*FT MYERS Departure (R) 126.8
MIAMI Center (R) 134.75 when Dep inop.
SCUBY TWO DEPARTURE (SCUBY2.SCUBY) (VECTOR)
TAKE-OFF
Rwy 6: Fly runway heading or as assigned for vectors to join filed route.
Rwy 24 (Southbound): Fly runway heading or as assigned for vectors to join filed route.
A All aircraft MAINTAIN 4000' or assigned lower altitude. Expect further clearance to filed altitude within 10 minutes after departure.
ORLANDO
D (H) 112.2 ORL
N28 32.6 W081 20.1
LAKELAND
D (H) 116.0 LAL
N27 59.2 W082 00.8
ST PETERSBURG
D (H) 116.4 PIE
N27 54.5 W082 41.1
SARASOTA
D (H) 115.2 SRQ
N27 23.9 W082 33.3
LA BELLE
D (L) 110.4 LBV
N26 49.7 W081 23.5
PAHOKEE
D (H) 115.4 PHK
N26 47.0 W080 41.5
LEE COUNTY
D (L) 111.8 RSW
N26 31.8 W081 46.5
Fly runway heading or as assigned for vectors to join filed route
Southwest Florida Intl
30
Fly runway heading or as assigned for vectors to join filed route
CYPRESS
D (T) 108.6 CYY
N26 09.2 W081 46.7
N
NOT TO SCALE
KEY WEST
D (H) 113.5 EYW
N24 35.1 W081 48.0
CHANGES: Procedure upnumbered.
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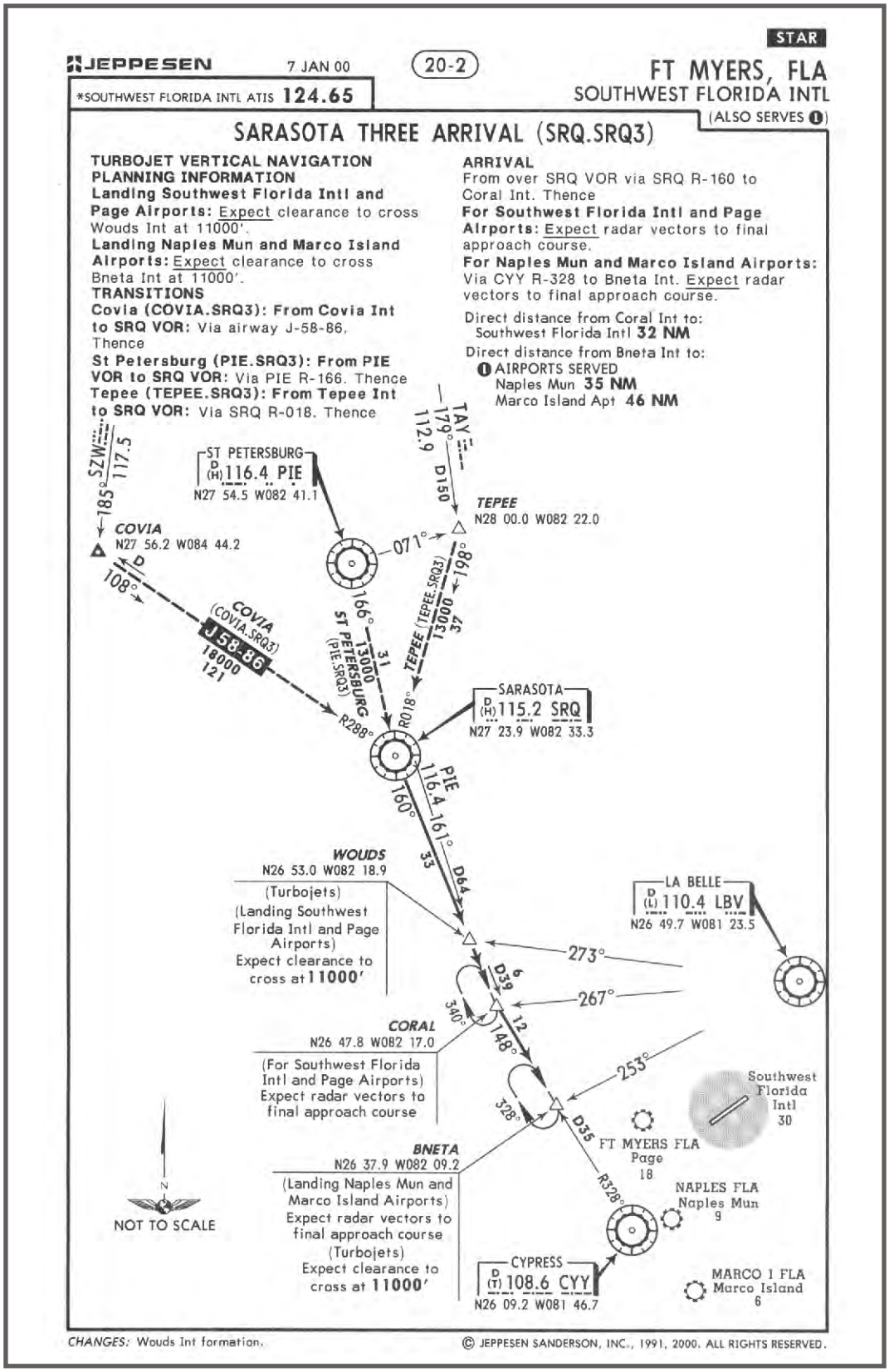
Exhibit 2-15

Exhibit 2-15


STAR
JEPPESEN
7 JAN 00
20-2
FT MYERS, FLA
SOUTHWEST FLORIDA INTL
*SOUTHWEST FLORIDA INTL ATIS 124.65
(ALSO SERVES 1)
SARASOTA THREE ARRIVAL (SRQ.SRQ3)
TURBOJET VERTICAL NAVIGATION PLANNING INFORMATION
Landing Southwest Florida Intl and Page Airports: Expect clearance to cross Wouds Int at 11000'.
Landing Naples Mun and Marco Island Airports: Expect clearance to cross Bneta Int at 11000'.
TRANSITIONS
Covia (COVIA.SRQ3): From Covia Int to SRQ VOR: Via airway J-58-86. Thence
St Petersburg (PIE.SRQ3): From PIE VOR to SRQ VOR: Via PIE R-166. Thence
Tepee (TEPEE.SRQ3): From Tepee Int to SRQ VOR: Via SRQ R-018. Thence
ARRIVAL
From over SRQ VOR via SRQ R-160 to Coral Int. Thence
For Southwest Florida Intl and Page Airports: Expect radar vectors to final approach course.
For Naples Mun and Marco Island Airports: Via CYY R-328 to Bneta Int. Expect radar vectors to final approach course.
Direct distance from Coral Int to:
Southwest Florida Intl 32 NM
Direct distance from Bneta Int to:
1 AIRPORTS SERVED
Naples Mun 35 NM
Marco Island Apt 46 NM
TAY
179°
112.9
D150
TEPEE
N28 00.0 W082 22.0
SZW
185°
117.5
ST PETERSBURG
D (H) 116.4 PIE
N27 54.5 W082 41.1
COVIA
N27 56.2 W084 44.2
D
108°
COVIA (COVIA.SRQ3)
J58-86
18000
121
071°
166°
31
13000
ST PETERSBURG (PIE.SRQ3)
R288°
R018°
TEPEE (TEPEE.SRQ3)
13000
37
198°
SARASOTA
D (H) 115.2 SRQ
N27 23.9 W082 33.3
PIE
116.4
160°
161°
33
D64
WOUDS
N26 53.0 W082 18.9
(Turbojets)
(Landing Southwest Florida Intl and Page Airports)
Expect clearance to cross at 11000'
LA BELLE
D (L) 110.4 LBV
N26 49.7 W081 23.5
273°
267°
D39
6
340°
12
148°
CORAL
N26 47.8 W082 17.0
(For Southwest Florida Intl and Page Airports)
Expect radar vectors to final approach course
253°
328°
D35
Southwest Florida Intl
30
FT MYERS FLA
Page
18
BNETA
N26 37.9 W082 09.2
(Landing Naples Mun and Marco Island Airports)
Expect radar vectors to final approach course
(Turbojets)
Expect clearance to cross at 11000'
R328°
NAPLES FLA
Naples Mun
9
N
NOT TO SCALE
CYPRESS
D (T) 108.6 CYY
N26 09.2 W081 46.7
MARCO 1 FLA
Marco Island
6
CHANGES: Wouds Int formation.
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2.6.1 Local Control

The local controller of the RSW ATCT is primarily responsible for the separation of aircraft operating within the airport traffic area and the clearance for those aircraft landing and departing on any of the active runways. This occurs on the "Fort Myers Tower" frequency.

2.6.2 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. "Fort Myers" Ground Control is responsible for coordination of traffic in all designated aircraft movement areas.

2.6.3 Approach and Departure Control (ARTCC)

Approach/Departure Control at RSW controls all arriving and departing IFR aircraft traffic. This IFR traffic control is retained until the aircraft either departs the Class C airspace, is handed over to the local controller for landing, or reports the airport in sight and the pilot cancels the IFR clearance and lands visually. On departure, (under IFR conditions with the tower operating), an aircraft may obtain IFR clearance from the RSW ARTCC after becoming airborne. The center retains control of all arriving and departing IFR traffic within its jurisdiction.

2.6.4 Automatic Terminal Information Service

Automatic Terminal Information Service (ATIS) is available to pilots operating into or out of RSW. 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 (124.65 MHz). The use of ATIS information greatly reduces the workload and radio time required by the air traffic and ground controllers at the airport.

2.6.5 Non-Movement Areas

The only non-movement areas at RSW are the Terminal Apron, the GA Apron, and the Cargo Apron. Taxilane B is considered part of the aircraft movement area and is not part of the terminal apron.

2.6.6 Remote Communications Outlet Transmitter

There are five (5) FAA Remote Communications Outlets (RCO) for other Southwest Florida area airports serviced by the RSW ARTCC and radar facility. These facilities help extend the

communication range of the Miami Flight Service Station to better serve the Southwest Florida area. The remote transmitters for the RCOs are located next to the RSW ARFF and Police Training Facility.

2.7 PASSENGER TERMINAL AREA

The passenger terminal facilities at Southwest Florida International Airport are located on the northwest side of the runway. Included in the terminal area are the passenger terminal building, aircraft parking apron, automobile parking facilities, and airport support areas. The following paragraphs describe these facilities in more detail.

2.7.1 Passenger Terminal

Pursuant to the Participating Airline Use Agreement, upon completion of the Midfield Terminal Complex, the current passenger terminal facilities discussed in this section will cease to be used for passenger service.

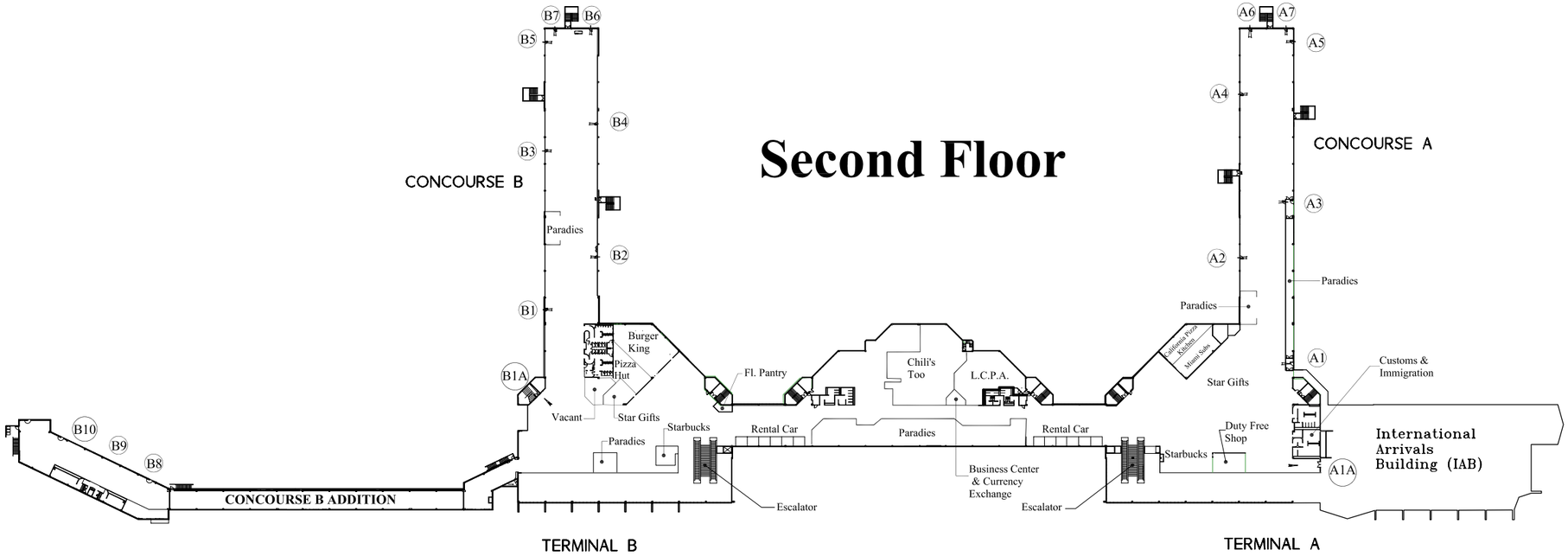
The existing passenger terminal building has a total footprint of approximately 380,915 square feet. Since the opening of the Airport in 1983, two main areas were added to the terminal. These areas include the 48,211 square foot International Arrivals Building (IAB) completed in 1993 and a 31,314 square foot Concourse B three-gate addition completed in March 1999.

The passenger terminal is a two-story structure with two main concourses extending south and perpendicular to the main terminal. The first floor of the terminal primarily consists of airline ticketing counters, the baggage claim area, and access to ground transportation. In addition, the first floor houses airline administrative offices and Lee County Port Authority offices in the Concourse B extension. The second floor contains the rental car check-in counters, concessions, public business centers, restaurants, passenger lounges and waiting areas for the 17 existing gates. Additionally, the main LCPA executive director's offices and administrative offices are located on the second floor.

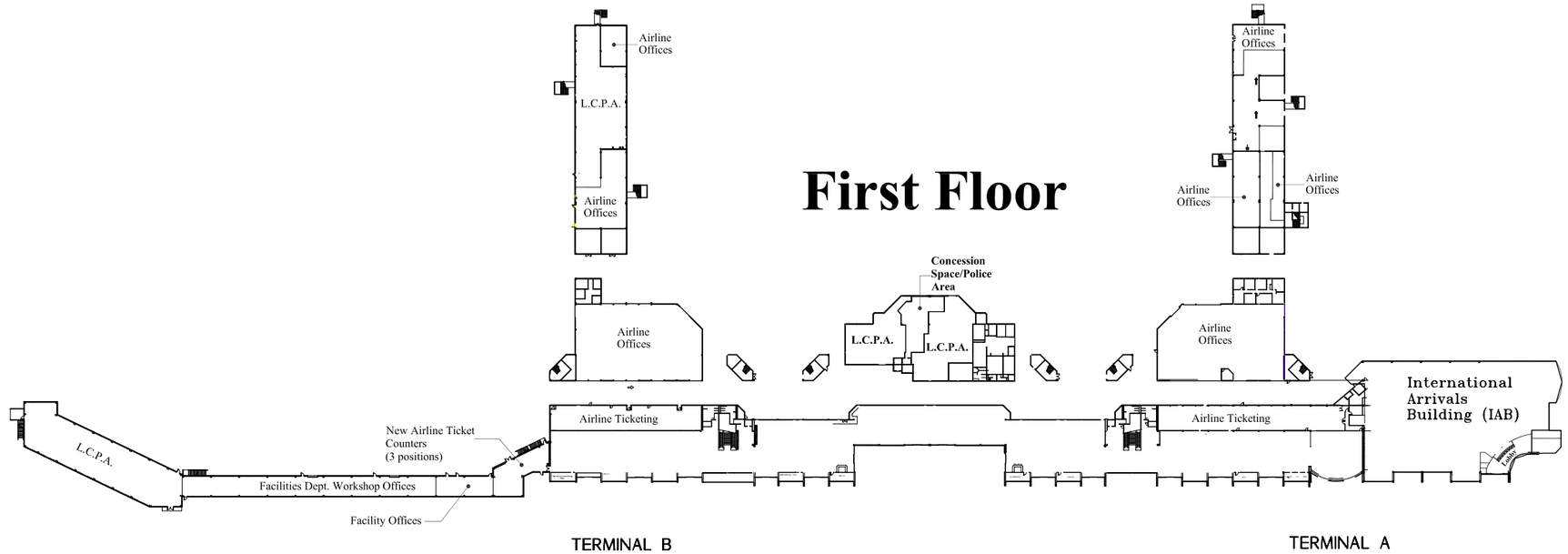
The two concourse extensions are designated Concourse A and Concourse B. Concourse A is located on the western side of the terminal and extends perpendicularly from the terminal in a southerly direction for approximately 290 feet. Concourse A includes gates A-1 through A-7 in addition to Gate A1A which accommodates commuter aircraft. Concourse B is located on the eastern side of the terminal and also extends perpendicularly for approximately 290 feet. Concourse B has gates B-1 through B-10 with Gate B1A accommodating commuter aircraft. Gates B-8 through B-10 constitute the new eastern wing of the terminal building. The terminal's basic two-floor layout and related concourses are illustrated in **Exhibit 2-16**.

Exhibit 2-16

Second Floor



First Floor



NOT TO SCALE

Lee County Port Authority

Birk Hillman
Orlando · Miami · Atlanta

DMJM Aviation

RS&H

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA

MASTER PLAN UPDATE

TERMINAL FLOOR PLAN

DATE:	MARCH 2004
PROJECT NO:	C06901
FILE NAME:	ALP/6901A-FL01
DESIGNED BY:	S.R
DRAWN BY:	K.P
CHECKED BY:	S.R

EXHIBIT

2-16

For a rough representation of terminal space usage, the total terminal area was categorized into the following functional areas:

- Airline Space
- Public Space
- Concessions
- Management/Administration
- Utilities
- Additional Areas (Commuter Terminal and FIS)

The square footage amounts for each of the items above are depicted in **Table 2-3**.

TABLE 2-3
BREAKDOWN OF TERMINAL SPACE USAGE

Use	Area (s.f.)	Percentage of Total
Airline Space	102,045	27%
Public Space	113,130	30%
Concessions	28,405	8%
Management/Administration	21,705	5%
Utilities	36,105	10%
Additional Areas	79,525	20%
TOTAL	**380,915**	**100%**

Source: LCPA

Each of the space classifications mentioned above is further detailed in the following sections.

Airline Space

The majority of the airlines currently serving the airport are domestic airlines, however, several international flights operate out of RSW weekly. **Table 2-4** outlines the domestic and international airlines serving RSW.

Airline space includes those areas devoted to the day-to-day operations of these airlines. At the current terminal facility, there are 102,045 square feet (or 27 percent) of airline space, which includes the ticket counter area; airline ticket and administrative offices; the baggage area including outbound, inbound, claim, and baggage service offices; gate hold-rooms; operations space; and, club rooms or customer service rooms.

TABLE 2-4
AIRLINES SERVING SOUTHWEST FLORIDA INTERNATIONAL AIRPORT

Airline	Type of Service	Terminal
Air Canada	International	A
Air Tran	Domestic	A
Air Transat	International	A
America West	Domestic	A
America West Express	Domestic	A
American Airlines/American Eagle	Domestic	A
America Trans Air (ATA)	Domestic	A

Balair/CTA	International	A
Canada 3000	International	A
Cape Air c/o Delta Air Lines	Domestic	B
Comair	Domestic	B
Condor	International	A
Continental Airlines	Domestic	B
Continental Express	Domestic	B
Delta Air Lines	Domestic	B
Florida Air	Domestic	A
JetBlue	Domestic	A
LTU International Airways	International	A
Lynx Air International	Domestic	A
Metro Jet	Domestic	A
Midwest Express	Domestic	B
Northwest Airlines	Domestic	B
Spirit Airlines	Domestic	A
Sun Country	Domestic	A
TWA	Domestic	B
United Airlines	Domestic	A
US Airways	Domestic	A

Source: LCPA, 2001

Public Space

Public space includes those areas that do not contribute to the overall revenue of the airport and are available for use by the general public. These areas include public seating, waiting areas, ticket counter queuing areas for airline and rental car ticketing, secure circulation areas (including security screening areas), general circulation areas, and restrooms. The total area occupied by public space at RSW encompasses approximately 113,130 square feet or 30 percent of the total terminal space.

Concessions

Concession space includes all revenue producing areas other than airline space. Concession areas are located throughout the terminal primarily on the second floor. Existing concession space at RSW encompasses approximately 28,405 square feet or 8 percent of the total terminal space. General concessions include items such as candy/gift shops, automatic teller machines, currency exchange, newsstands, apparel shops, baggage carts, advertising, telephone areas, and ground transportation. In terms of food and beverage, concession items may include dining rooms, coffee shops, snack bars, cocktail lounges, and restaurants.

Management/Administration

Space for management and administration includes all areas devoted to day-to-day management, operations, and administration of the Airport. This area encompasses a total of 19,410 square feet, or five (5) percent of the total area, and applies to functions such as building maintenance, management/administration offices, employee facilities, security and police facilities, and general management services (i.e. lost and found, infirmary, information, chapel, etc.).

Utilities

Utility space at the RSW passenger terminal is comprised of mechanical and electrical equipment, and space for tug and service drives. The mechanical and electric equipment space is required to distribute utilities throughout the building. The tug and services drives are used for the delivery of baggage to the baggage input belts, as well as areas for service delivery. These areas encompass a total area of 36,105 square feet or 10 percent of the total area.

Additional Areas

The additional areas in the terminal include those areas recently added to the facility to accommodate increased airport operations and the need to efficiently process international passenger flights. The two additional areas at Southwest Florida International Airport include the International Arrivals Building (IAB), which houses the Federal Inspection Service (FIS), and the eastern Concourse B extension. The IAB encompasses 48,211 square feet and the Concourse B addition encompasses 31,314 square feet. Combined, these areas encompass 79,525 square feet encompassing 20 percent of the total terminal area. The Concourse B addition houses three gates and associated holding room areas on the second floor. The first floor is used by the Facilities Department for workshops. In addition, LCPA offices are also located on the first floor, under the concourse's public waiting areas. The IAB includes all the equipment and facilities for the FIS facility. The facility also includes a commuter terminal addition.

2.7.2 Terminal Curb

The terminal curb at RSW has two full length individual curb areas each of which serves both terminal facilities. The inner curb is 5 lanes, approximately 1,000 lineal feet in length, and located immediately adjacent to the terminal entrances. This inner curb functions as both an arrivals curb and departures curb serving all private automobile traffic. The outer curb is approximately 600 feet in length, centered outside the baggage claim area. The outer curb has 2 vehicle traffic lanes and is used solely by commercial vehicles dropping off and picking up passengers at the airport. Only in the event of inclement weather conditions the taxis, shuttles and buses may use the inner curb for passenger pick up and drop off.

The inner curb serves both arriving and departing passengers and is broken into multiple sections relative to such. The departure curb area is approximately 420 lineal feet split between two separate locations. The first is located at the beginning of the inner terminal curb and the second at the far end of the inner terminal curb. This is mainly due to the location of Concourse A and Concourse B. The departure curb for each is located directly in front of the airline ticket counters that serve each of the concourses for the convenience of the traveling public. Between the two departure curbs is the single arrivals curb, approximately 300 lineal feet and is located immediately outside of the baggage claim area. Again, the location is based upon passenger convenience so checked baggage can be picked up and the passenger can walk out the doors and get into a car, taxi, shuttle, or bus and be transported to their final destination. Additionally, the inner curb has approximately 280 linear feet of curb front dedicated for the FIS facility and the international passengers.
In front of the terminal where the inner and outer curbs are located a 6 foot wide median segregates the two curb areas. Both of these curb fronts have one way circulation of traffic in a

counter clockwise direction which begins well before entering the terminal area. The terminal area is clearly marked with numerous signs.

2.7.3 Terminal Automobile Parking

Parking for both passengers and employees is provided in the terminal area. The main passenger parking lot is located directly north of the terminal building. This lot is divided into both a short-term and a long-term parking lot. The short-term parking area contains approximately 735 paved parking spaces. The long-term parking area contains a total of 1,621 paved parking spaces. There is also an economy parking lot located directly west of the terminal. This lot is reserved for longer (overnight) parking times at lesser parking rates. This lot provides for an additional 1,935 parking spaces. Additional space, approximately 86 parking spaces are reserved specifically for taxis.

The employee parking spaces are located in several areas around the terminal parking lot. The total number of spaces available for employee parking is 614 spaces. During peak times around the Thanksgiving and Christmas holidays, the employee lot becomes part of the passenger parking lot and overflow public parking is provided during peak at the Lee County Sports Complex off of 6-Mile Cypress Parkway. This facility provides for approximately 2,400 parking spaces. The employee parking lot shifts to areas further removed from the terminal. **Table 2-5** provides a breakdown of the abovementioned parking areas.

TABLE 2-5
TERMINAL AUTOMOBILE PARKING

Facility	Total Spaces
Short-term parking	735
Long-term parking	1,621
Economy parking	1,935
Employee parking	614
Total	**4,905**

Source: LCPA

Additional parking will be provided upon completion of the "East/West Parking Area Expansion Project". This project will provide additional parking areas on the eastern and western sides of the existing main public parking lot at RSW. The new parking areas, and modifications to the existing parking lot provide approximately 817 additional parking spaces. This includes an additional 403 short term parking positions, 358 long term parking positions and 56 additional employee parking positions. Other project improvements consist of one (1) additional toll plaza land and booth; two (2) additional pass-thru gates and circulation improvements from the short-term parking area; two (2) bus shelters serving the western most long-term and employee parking areas; and, barrier fencing for the expanded parking areas.

2.7.4 Terminal Access

The terminal access road system at RSW is a one-way "return loop" type system and runs in a counter-clockwise direction. The entrance to the main terminal access road at RSW is located northwest of the terminal facility and extends south from Daniels Parkway. This road is named

Chamberlin Parkway. Chamberlin Parkway has two separate roadways, one for inbound vehicular traffic and one for outbound vehicular traffic. The inbound roadway runs from west to east and provides access to the terminal curbs. The road expands to four eastbound lanes in the terminal area. The roadway then loops back in an east to west direction around the terminal parking areas and south of the rental car facilities, and then exits back into Daniels Parkway.

In addition to the main Chamberlin Parkway loop roadway, there is another entry/exit road that extends from the northeast corner of the loop roadway to Daniels Parkway. This road is named the Paul J. Doherty Parkway. This road provides access to the terminal from the northeast quadrant of the Airport and provides access to future land development areas.

2.8 LANDSIDE/SUPPORT FACILITES

The existing landside facilities at Southwest Florida International Airport are listed below and depicted in **Exhibit 2-17.**

- General Aviation/Fixed Base Operator (FBO)
- Air Traffic Control
- Rental Car Facilities
- Cargo Facilities
- Fuel Facilities
- Airport Rescue and Fire-fighting
- Maintenance Facilities
- Other Facilities

2.8.1 General Aviation/Fixed Base Operator (FBO)

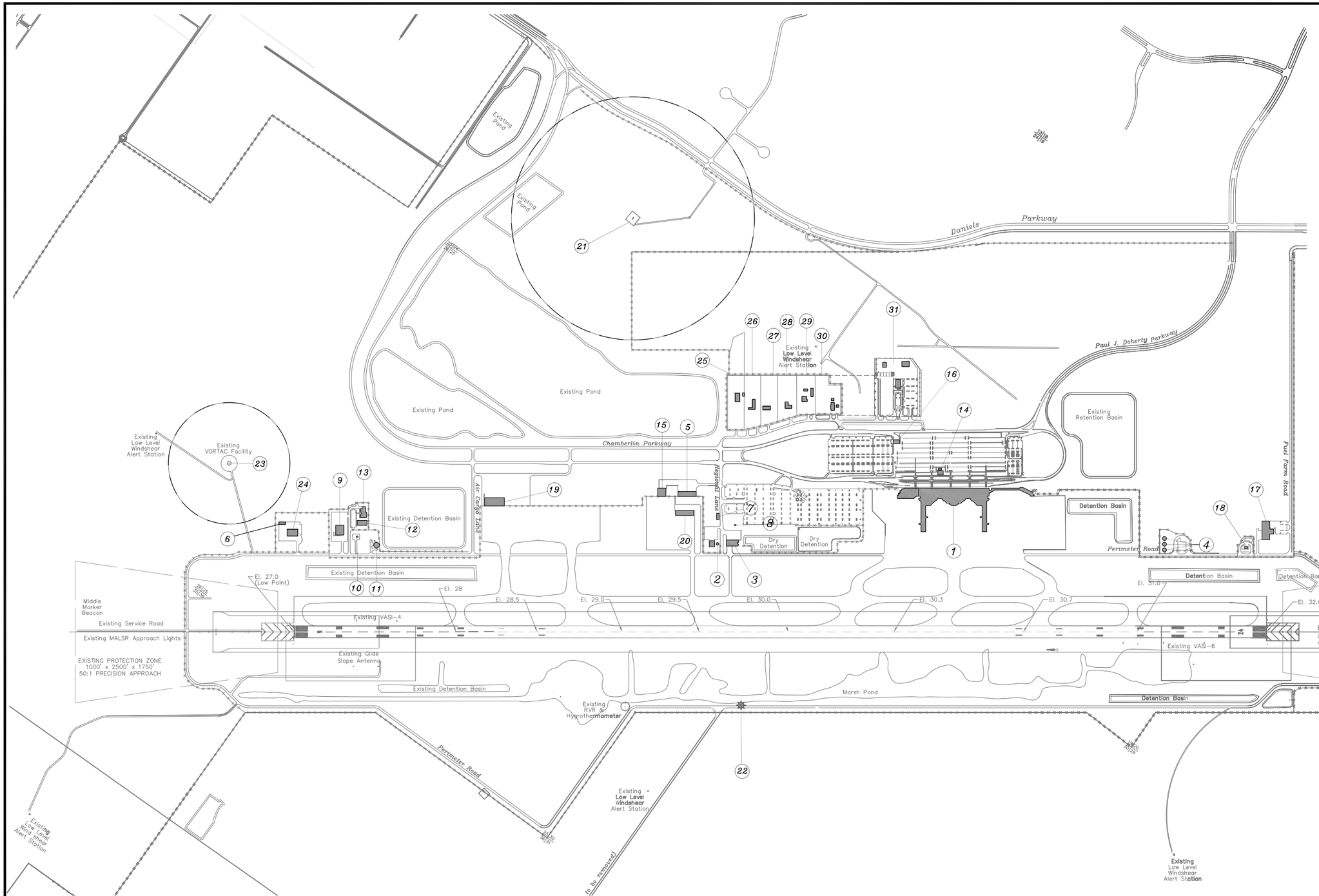
The General Aviation/Fixed Base Operator (FBO) at RSW is located on the north side of the Airport approximately 3,500 feet west of the passenger terminal. The facility is a full-service FBO providing hangar space; maintenance service for fixed-wing and helicopter aircraft; Jet A and Avgas fuel; on-call customs service; 24-hour security; pilot briefing, planning and conference rooms; and pilot supplies.

The two-story 8,000 square foot FBO building has pilot facilities and a service desk all located on the first floor and administration offices located on the second floor. The facility also includes a general aviation ramp encompassing approximately 26,000 square yards. The apron provides three sets of cable row tie-down lanes that can host a total of 25 to 30 general aviation light aircraft. Jet aircraft are usually parked in front of the FBO building and this area can accommodate up to ten jet aircraft of various sizes. Additional aircraft parking can be accommodated depending on the aircraft mix at a given time.

Initial planning is underway for the construction of a new general aviation facility some 800 feet west of the existing FBO. This new facility will include a modern terminal building and expande parking apron and hangar facilities to service corporate business jets and the general aviation aircraft community.

The existing 26,180 square foot FBO hangar was built in 1996. It is partitioned into two halves and can accommodate various types of general aviation aircraft. The hangar's primary purpose is to provide aircraft storage and support for aircraft maintenance operations.

Exhibit 2-17



LEGEND

EXISTING BUILDINGS/FACILITIES	
ID	DESCRIPTION
1	TERMINAL BUILDING/ADMINISTRATION
2	AIR TRAFFIC CONTROL TOWER (ATCT)
3	AIRPORT RESCUE and FIRE FIGHTING (ARFF)
4	FUEL FARM
5	AIRLINE FREIGHT BUILDING
6	MAINTENANCE STORAGE
7	EMERGENCY GENERATOR
8	COMMUNICATION TOWER
9	AIRPORT MAINTENANCE BUILDING 1
10	REMOTE TRANSMITTER
11	EXISTING WWTP / ULTIMATE PUMP STATION
12	PISTOL RANGE
13	POLICE TRAINING FACILITY
14	COOLING TOWER
15	FBO/GENERAL AVIATION TERMNAL
16	PARKING TOLL BOOTH
17	IN-FLIGHT KITCHEN
18	GENERAL AVIATION FUEL FARM
19	CARGO BUILDING
20	GENERAL AVIATION HANGAR
21	AIRPORT SURVEILLANCE RADAR
22	AIRPORT ROTATING BEACON
23	AIRPORT VORTAC
24	AIRPORT MAINTENANCE BUILDING 2
25	HERTZ RENTAL CAR SERVICE AREA
26	NATIONAL RENTAL CAR SERVICE AREA
27	DOLLAR RENTAL CAR SERVICE AREA
28	VALUE RENTAL CAR SERVICE AREA
29	AVIS RENTAL CAR SERVICE AREA
30	BUDGET RENTAL CAR SERVICE AREA
31	ALAMO SITE

Lee County Port Authority

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DMJM Aviation

RS&H

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA

MASTER PLAN UPDATE

EXISTING FACILITIES

DATE:	MARCH 2004
PROJECT NO:	C06901
FILE NAME:	ALP/6901N-AL01
DESIGNED BY:	F.B
DRAWN BY:	K.P
CHECKED BY:	S.R

EXHIBIT

2-17

The existing 26,180 square foot FBO hangar was built in 1996. It is partitioned into two halves and can accommodate various types of general aviation aircraft. The hangar's primary purpose is to provide aircraft storage and support for aircraft maintenance operations.

The General Aviation aircraft fuel supply comes from the FBO's fuel farm. The fuel farm is owned and operated by the FBO and is discussed in detail in the **Fueling Facilities** section.

2.8.2 Fueling Facilities

There are two fuel farms located at the Airport. Most of the commercial service airlines receive their fuel from the fueling storage and hydrant-fueling facility owned by the Lee County Port Authority and leased to a consortium of passenger airlines known as "The Fueling Airlines". The Fueling Airlines have contracted with Swissport Fueling, Inc. to operate the fuel farm and related facilities and equipment. The storage facilities are located approximately 1,000 feet east of the terminal apron's eastern edge. As of January 2001, Swissport Fueling, Inc. employed 14 personnel and operates from a 2,150 square foot (approximation) fuel farm building. The company owns three (3) 420,000 gallon Jet A fuel tanks, with additional expansion space to construct another 420,000 gallon tank. In addition, the company owns and operates three (3) fuel trucks with the following capacities:

- (2) 5,000 gallon trucks
- (1) 2,500 gallon truck
- (6) hydrant fueling carts

It should be noted that the vast majority of aircraft fueling at RSW is accomplished by use of the Swissport operated hydrant fueling system. Swissport's six (6) hydrant carts are used to deliver fuel from in-ramp parking gate hydrant fueling stations into parked aircraft. Additionally, 70,105 gallons of fuel are in the line fill.

The other fuel owner and operator is the FBO. The general aviation fuel farm is located north of the parallel taxiway on the northeast portion of the Airport approximately 3,000 feet east of the existing Airline Passenger Terminal. The FBO owns and operates four (4) 15,000 gallon Jet A fuel tanks and one (1) 12,000 gallon AvGas 100LL fuel tank. This fuel is dispensed by six (6) FBO operated fuel trucks which include:

- (1) 2,200 gallon AvGas Truck
- (1) 2,000 gallon Jet A Truck
- (1) 10,000 gallon Jet A Truck
- (1) 8,000 gallon Jet A Truck
- (2) 5,000 gallon Jet A Trucks

2.8.3 Airport Rescue and Fire-fighting (ARFF)

Facility

The Aircraft Rescue and Fire Fighting (ARFF) facility at RSW is located approximately 2,500 feet west of the passenger terminal and is located next to the air traffic control tower facility.

Southwest Florida International Airport's ARFF facilities meet a FAA ARFF Index "D" rating and have the potential to achieve an Index "E" rating as may be required by future airport expansion and air carrier utilization of increasingly larger aircraft. The RSW ARFF station is designated as "Station II", with "Station I" being located at Page Field (FMY). Station II is a 12,500 SF structure with an additional 590 SF expansion under construction at this time. There are eight (8) equipment/apparatus parking bays with four (4) having landside access and four (4) having airside access. On the west and east sides of the bays are gear lockers, storage, and work areas, and a 400 square foot mezzanine is used for storage. The living area encompasses approximately 6,700 square feet and includes offices, a locker room, employee and public restroom facilities, training room, A/V room, kitchen, bunkroom, dining and dayroom areas. The overall building condition is fair to poor and may require near future remodeling.

Parking Areas

ARFF employee and public automobile parking is located in a 10,388 square foot paved area on the north side of the building. This area provides 32 total parking spaces including two (2) handicapped spaces. The facility's total paved parking area, including ARFF vehicle landside parking in front of the apparatus/equipment bays is 4,410 square feet. On the south (airside) side of the building is an additional 4,914 square foot of paved ramp that will accommodate 12 passenger type vehicles.

Personnel

The ARFF department at RSW has both 40-hour and 56-hour/week of shift personnel. The 40-hour personnel includes the Fire Chief, the Fire Safety Enforcement Officer/Captain and one secretary. The 56-hour personnel work three (3) alternating shifts of 24-hour work days and average 56-hours per week. The 56-hour personnel are comprised of one (1) Battalion Chief, one (1) Captain and nine (9) fire fighting personnel, two (2) of which are based at Station I, Page Field Airport. Approximately 80% of the ARFF personnel are Florida State Certified EMTs (Emergency Medical Technician) with SAED (semi-automatic external defibrillators) and combi-tube qualification training endorsements.

Equipment

This section describes the equipment utilized by the ARFF department at RSW. The largest items on the equipment list consist of the ARFF vehicles. The total vehicle water storage capacity of these vehicles is 8,240 gallons. Additionally, the total fire fighting - foam storage capacity is 825 gallons and the total Halotron storage capacity is 1,000 pounds. The following is a list of ARFF vehicles utilized at Station II. Each vehicle is coded as per the ARFF station's vehicle inventory list.

Response and Firefighting Vehicles:

- CFR 220 is a 2000 General Safety Structural Pumper apparatus with a pumping capacity of 1500 gallons a minute, the water tank contains 750 gallons of water.
- CFR 221 is a rebuilt 1982 E-One Structural Pumper apparatus with a pumping capacity of 1500 gallons a minute, the water tank contains 750 gallons of water.

- CFR 400 is a 1989 Ford F-800 four wheel drive wild-land firefighting attack vehicle. It has a capacity of 740 gallons of water and 10 gallons of Class-A foam.
- CFR 901 is a 1998 Oshkosh T-1500 Rapid Intervention first out Aircraft Rescue and Firefighting emergency vehicle, which carries 1500 gallons of water 205 gallons of AFFF 3% foam and 500 pounds of Halontron chemical.
- CFR 903 is an Oshkosh T-1500 first out Aircraft Rescue and Firefighting emergency vehicle, which carries 1500 gallons of water, 205 gallons of AFFF 3% foam and 500 pounds of Halontron chemical.
- CFR 908 is an Oshkosh T-3000 first out Aircraft Rescue and Firefighting emergency vehicle, which carries 3000 gallons of water and 405 gallons of AFFF 3% foam.

Other ARFF Vehicles:

- CFR 500 is a Ford Crown Victoria used exclusively by the department Fire Chief. CFR 505 is a 2000 4 X 4 Ford Explorer used primarily by the Safety Enforcement Officer/Captain for responding to emergencies as well as general purpose use.
- CFR 520 is a 2000 4 X 4 Ford Explorer used primarily by the Station II shift Battalion Chief as a incident command vehicle, see the attached list for additional equipment.
- CFR 521 is a 1994 4 X 4 GMC Custom utility body used primary by the shift Captain, as a first in command response vehicle.
- CFR 522 is a 4 X 4 Dodge pickup truck used as a utility vehicle, not as a first in emergency response unit.

Additional ARFF equipment other than vehicles include the following:

- Wells Fargo Trailer - used for transporting large qualities of Hazardous Materials cleanup and spill containment supplies.
- Wells Fargo Trailer – used for transporting large quantities of Mass Casualty supplies and equipment.
- Utility Trailer - with an Ansul Fire Fighting Unit.

2.8.4 Air Cargo Facilities

RSW handled a total of approximately 35 million pounds of air cargo in the Year 2000. The cargo-only aircraft operated by Federal Express, United Parcel Service, and Airborne Express are handled by the Main Air Cargo Facility. Airline transported belly-haul cargo is processed through the Freight Forwarding Facility. Both these facilities are located on the north side of the Airport. The total area of air cargo processing facilities at RSW is currently 39,500 square feet and the two separate facilities are described below.

Main Air Cargo Facility

The 24,000 square foot Main Air Cargo Facility was built in 1992 and is designed for expandability to 50,000 square feet. This facility houses cargo make-up and processing areas, along with offices for Federal Express, United Parcel Service, and Airborne Express. The building has 10 cargo docks for truck supported pick-up and delivery operations. In addition,

security-cleared large trucks are allowed to enter the aircraft parking apron to facilitate cargo on-load and off-load operations.

The 69,000 square yard cargo aircraft apron has parking space for up to six (6) large cargo aircraft. The current cargo aircraft profile at RSW includes the following:

- Boeing 727 - Federal Express
- Douglas DC-9 - Airborne Express
- Boeing 757 – United Parcel Service.

The cargo apron has two connector taxiway entrances, located 800 feet apart, connecting the apron to the Runway 6-24 parallel taxiway, Taxiway A.

Passenger Airline Freight Forwarding Facility

The Freight Forwarding Facility at RSW is located just north of the FBO general aviation hangar and approximately 4,000 feet southwest of the Passenger Terminal. This 15,500 square foot structure is a common use belly-haul cargo processing facility for all the airlines. The structure is owned by the Lee County Port Authority and is leased out to tenants that include Delta Air Lines, Continental Airlines, Northwest Airlines, US Airways, TWA, United Airlines, and Aviation Ground Services, Inc. The landside portion facility includes five (5) inclined-recessed loading docks for large trucks and five (5) ground level loading docks. The southern side of the building contains eight (8) ground-level docks to support airside cargo operations. All loading docks have associated cargo bays. The following summarizes cargo dock utilization at this time:

- Delta Air Lines: One ground level dock, one recessed dock.
- Continental Airlines: One ground level dock, one recessed dock.
- Northwest Airlines: One ground level dock, one recessed dock.
- US Airways: One ground level dock.
- TWA: One ground level dock.
- United Airlines: One recessed dock.
- Aviation Ground Services: One recessed dock.

Currently, one recessed loading dock and one ground level loading dock are unassigned. This vacant cargo operating space is being temporarily utilized by Airport Terminal Services (ATS). The facility has 21 automobile parking spaces for employees and customers.

Since the new Midfield Terminal Complex project includes a Passenger Airline Freight Facility, the long-term use for the existing Freight Forwarding Facility building will probably change.

2.8.5 On-Airport Rental Car Facilities

The RSW rental car operating facilities are located approximately 200 feet north of the Passenger Terminal automobile parking area adjacent to Chamberlin Parkway, the main airport access road. Currently, there are currently six (6) car rental companies affiliated with Southwest Florida International Airport. All six companies have counters on the second floor of the Passenger Terminal building, between Concourse A and B. A list of currently affiliated on-airport rental car companies located at RSW include:

- Alamo
- Avis
- Budget
- Dollar
- Hertz
- National

The original rental car office and service facilities encompassed approximately 18 acres with each company leasing approximately three (3) acres from the Lee County Port Authority. The total area of the six rental car company office and administration buildings is 23,100 square feet.

Alamo, Budget, and Hertz have leased additional land for expansion of their facilities. In May 2001, Alamo opened a new facility on 11.9 acres of land that included 15,884 SF of administration and operations support/maintenance building space. Budget has leased five (5) acres east and immediately adjacent to it existing facilities for future expansion and Hertz has leased approximately three (3) additional acres to the rear and west of its existing facility for future expansion. As of May 2001, neither company has begun construction on these sites. During peak periods, rental car companies may, with the consent of the Authority, utilize other undeveloped areas on airport property to temporarily store vehicles on a month to month basis. With the aforementioned additions, the total car rental area encompasses approximately 38 acres and 38,984 SF of building space.

Rental car customer transportation to and from the Passenger Terminal is the responsibility of the individual rental car companies and typically involves the use of shuttle buses. As of Year 2000, the peak-season car rental fleet totaled 17,400 vehicles.

2.8.6 Other Ground Transportation

In addition to on-airport rental car companies, other ground transportation options that are available at RSW include off-airport rental car companies, taxis, hotel courtesy buses, limos, and the LeeTran bus system. Bus-type vehicles and taxis use the commercial curb in front of the terminal building for passenger pick-up and drop-off. The number and frequencies of operations by these entities varies by traffic demand and are authorized through the use of trip permits and other contracts.

2.8.7 Facilities Department

The Southwest Florida International Airport Facilities Department mission is to provide maintenance support to all LCPA owned and operated Airport facilities. The main Department administrative offices and warehouse are located on the western portion of the airfield 1.1 miles from the Passenger Terminal. The existing Facilities Department structure was constructed in 2001 and provides 11,000 SF administrative building space and 4,800 SF of covered storage area.

The Facilities Department is divided into five (5) sections with the following employment profiles:

- Terminal Section - eighteen (18) employees.
- Grounds Section – nine (9) employees.
- Airfield Section - eight (8) employees.
- Contracts Section - one (1) employee.
- Resources Section - seven (7) employees.

Terminal Section

The Terminal facility Section is responsible for maintaining the Airport's two 600-ton chillers, 26 air handlers, emergency electric generator; lighting systems; energy management systems, and all other terminal related subsystems. Terminal Section maintenance responsibilities require a 24-hour/day - 7 days/week personnel manning and response capability.

Airfield Section

The Airfield Section is responsible for maintaining the High Intensity Runway Lighting (HIRL) system, taxiway in-pavement centerline and edge lighting, airfield advisory signs, aircraft parking apron lighting, airport roadway lighting, and 1,900,000 square feet of automobile parking lot lighting.

Resource Section

The Resource Section manages the Department warehouse that is collocated with the Facilities Department Administrative offices. This effort includes the management of 2,134 line items to support 134 vehicles and specialized equipment. An Automated Maintenance Management System (AMMS) is used for work order control and time management/productivity control and monitoring.

Grounds Section

The Grounds Section is responsible for the upkeep and maintenance of 13,900 acres of Airport property, of which 6,500 acres are on-site and 6,986 acres are off-site mitigation areas. These grounds include 290 acres of lakes and waterways, 1,200 acres of turf with six irrigation systems, and 650 palm and ornamental trees. In addition, this section is also responsible for the eradication and control of exotic vegetation, mosquito control, perimeter security fence maintenance, vegetation control, and the fuel management system.

Contracts Section

The Contracts Section monitors and administers 11 separate contracts that utilize 103 personnel. This includes contracts for janitorial service, passenger boarding bridges and baggage belt maintenance, interior and exterior landscaping maintenance, parking lot management, public address system maintenance, chiller plant preventative maintenance, and pest control operations.

Of the terminal's 17 passenger boarding bridges, 10 are maintained by the Facilities Department and seven (7) are maintained by the contracting airlines.

2.8.8 Aircraft Maintenance Facilities

The Authority has entered into two agreements for aircraft maintenance facilities at the Airport. Each lease provides that the lessee construct certain facilities.

Large Aircraft Maintenance

The Authority has leased a seven (7) acre parcel to and east of the passenger aircraft parking apron. This site will be used for the eventual construction of a maintenance facility for large aircraft that will support Boeing 747 or equivalent sized aircraft. When completed, the project will include at least 20,000 square feet of office space and 75,000 square feet of hangar space. Parking areas and other permit required ancillary facilities will also be constructed.

General Aviation Jet Maintenance

As previously discussed in the section entitled **General Aviation/Fixed Base Operations (FBO)**, part of the anticipated FBO future construction includes hangar, ramp and other items required for expanded maintenance and support operations for general aviation jet aircraft. Some maintenance is already performed on the existing FBO leasehold.

2.8.9 Other Airport Facilities

Waste Water Treatment Plant

The Wastewater Treatment Facility is located on the west side of the Airport to the east of the Facilities Department buildings. The 10,000 square foot facility includes one tank that can treat 0.15 million gallons/day. The plant is owned and operated by Lee County. The plant will be converted to a pump station by 2002 and off-site treatment will be provided at a Lee County Treatment Facility. A new pump station will be built and sized to accept the increased flow associated with the new Midfield Terminal complex.

Airline Catering Facilities

There are two catering companies that service the Airport's airlines. LSG/Sky Chefs ~25,000 square foot facility is located on Airport property approximately 3,500 feet east of the Passenger Terminal. The site can be accessed by the northeast access road from Chamberlin Parkway. The other catering facility, Gate Gourmet, is located off Airport property near North Treeline Avenue.

Airport Police Department Pistol Range

The ~16,000 square foot pistol range is located across from the ARFF and Police Training Auditorium approximately one mile west from the Passenger Terminal. And is used primarily by the Airport's Security Department.

Police/ARFF Training Auditorium

The auditorium is located approximately one mile west of the Passenger Terminal and next to the pistol range. The facility encompasses approximately 8,500 SF and used for training purposes for the ARFF and police departments.

2.9 AIRPORT ACCESS

The main interstate in Southwest Florida is I-75, which runs north south through the Fort Myers area. This highway extends northward into Georgia along the western half of the Florida peninsula and southward to Naples before turning east and continuing to its terminus near Miami. According to the Florida Department of Transportation (FDOT), the section of I-75 between Alico Road and Daniels Parkway in Fort Myers is the most heavily traveled section of I-75 in Southwest Florida. RSW is located almost equidistant between these two interstate exits.

Daniels Parkway located north of the airport runs east west and intersects Chamberlin Parkway, which is currently the main access into the airport. Daniels Parkway is a six-lane divided arterial roadway with direct northbound and southbound I-75 access. In Year 2000, Daniels Parkway was extended to State Road 82 (Immokalee Road) northeast of RSW.

Treeline Avenue runs in a north-south direction parallel to I-75 and the Airport's western border. Treeline Avenue will be extended to connect Daniels Parkway to Alico Road, and expanded into a four- lane divided roadway, as part of the new Midfield Terminal development project. Alico Road runs east west and is located south of RSW and will be widened to six lanes in the future. Alico Road extends all the way to U.S. 41 (Cleveland Avenue) to the west. Additionally, it intersects I-75 and has multiple interchanges for both north and southbound interstate access.

2.10 UTILITIES

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

2.10.1 Electrical Power

Electrical power at RSW is provided by Florida Power and Light (FPL). The main line runs parallel to Daniels Parkway and into the Airport property in a southern direction. Four lines run south from the main Daniels Parkway line. The first three lines provide power for future facilities, and the ASR facility. The fourth line is a continuation of the main power line that runs along Daniels Parkway. It makes a 90-degree turn in a southern direction before the Paul J. Doherty Parkway exit. It then splits in eastern and western directions to provide power to all Airport facilities including the existing passenger terminal. The terminal has two electrical vaults located at the northern ends of the two concourses. A large, diesel-powered electrical power generator provides emergency power at the existing terminal. The emergency generator vault is located 350 feet north of the Passenger Terminal. In addition, several major FPL power lines that provide power to southern Lee and Collier Counties were routed around the existing runway complex during airport construction.

2.10.2 Water

Potable water lines run into the Airport from Lee County's Corkscrew Water Treatment Facility located at the corner of Alico Road and Corkscrew Road south of the Airport. The lines extend

east along Chamberlin Road and provide water to the Airport's existing terminal and eastern facilities. The line running into the Wastewater Treatment Facility and Facilities Department area continues west and turns 90 degrees south around the approach end of Runway 6 and extends further southeast. In the fiscal year of 1999/2000, the Airport consumed 22,923,002 gallons of water. An existing 30-inch waterline that crosses Airport property from south to north will be relocated as part of the Midfield Terminal project.

2.10.3 Sanitary Sewer

Sanitary sewer service exists at the Airport through the Wastewater Treatment Facility located one mile west of the terminal. The sewer line runs east to provide service to all Airport facilities, except the catering, fuel, and cargo facilities. The Wastewater Treatment Facility is scheduled to become a pump station and tied into a Lee County Wastewater Treatment Facility in Year 2002.

2.11 AIRPORT IMAGINARY SURFACES

All U.S. airports have a three-dimensional imaginary surfaces plan that identifies each airport's navigable airspace requirements as dictated by Federal Aviation Regulation (FAR) Title 14, Part 77. Part 77 establishes standards for determining obstructions and publishes the design criteria for use in constructing the imaginary surfaces profile for each specific airport. These criteria are designed to preserve safety for aircraft flight operations. The surfaces represent an imaginary "bowl" of airspace centered on the airport with long approach surfaces extending up and outward from the runway ends. The imaginary surfaces surrounding the airport are also used to analyze all existing, future or proposed tall structure construction as to their potential for creating a hazard for aircraft operating at the airport. If a structure such as a natural object (i.e. a tree) penetrates these surfaces, then it must be removed or modified. If the structure or obstacle intruding into the imaginary airspace defined by Part 77 criteria cannot be easily removed, the FAA may extend a waiver and the structure will need to be identified by either painting, installing an approved obstruction light, or both. A FAR Part 77 Imaginary Surfaces Plan is included as part of the RSW Airport Plan Set. The Lee County Port Authority has a local agreement with Lee County to help control obstacle penetrations into these surfaces. The two agencies work together to protect the airspace environment around the airport. (also see "Airport Hazard District").

2.12 AIRPORT ENVIRONMENT

Information pertaining to the airport environment of Southwest Florida International Airport is provided in the following sections. This information has been divided into the three categories, Airport Property Boundary, Land Use, and Environmental Data. Later chapters of this Master Plan Update will incorporate greater detail pertaining to these elements of RSW, including an updated Airport Property Map, Land Use Plan, and an Environmental Overview chapter.

2.12.1 Airport Property Boundary

Airport property encompasses approximately 6,498 acres within an unincorporated portion of Lee County. (See **Exhibit 2-5** for a depiction of the current and future Airport property boundary)

The Airport is located on Chamberlin Parkway, south of Daniels Parkway, approximately three miles east of Interstate 75. The northern boundary of the Airport runs along Daniels Parkway. The western boundaries run parallel to I-75 east of Treeline Avenue. The eastern and southern boundaries have no significant existing landmarks. Instead, these boundaries of the Airport property were formed by the necessary acquisition of land areas to accommodate future airport development.

2.12.2 Land Use

Lee County has assigned land use and zoning designations to property within its respective jurisdiction, including Airport lands. Existing and future land uses on and off airport property are important considerations with respect to the 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 Update. 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 RSW.

On Airport

There are currently eight (8) different land use categories for the 6,498 acres that make up Southwest Florida International Airport. These include:

- Airfield Operations (AO)
- Airline Terminal (AT)
- Air Cargo (AC)
- General Aviation (GA)
- Aviation Related Industry (ARI)
- Airport Support (AS)
- Undeveloped Area (UA)
- Environmental/Compatible Land Use Buffer (E/CLU)

The most prominent land uses for the airport are Airfield Operations (AO), Airport Support (AS), Undeveloped Area (UA), and Environmental/Compatible Land Use Buffer (E/CLU). The AO category of land use covers the area around the existing and known future runway footprints within the building restriction line (BRL) and the runway visibility zone (RVZ). The various BRLs for RSW are reflected on the Airport Layout Plan. Airfield Operations (AO) land is located in the center of the Airport's property and runs parallel along the runway from southwest to northwest. The majority of Airport Support (AS) areas are located to the northwest of the existing Passenger Terminal and to the southwest of Runway 6-24. The areas designated as Undeveloped Area (UA) are located on the southern portions of Airport property. The majority of UA is located southwest of the Runway and may be used for any further airport development.

Environmental/Compatible Land Use Buffer (E/CLU) areas are utilized for surface water and wetlands management. These lands have been designated accordingly and provide a buffer compatible with aircraft operations, including noise, which could adversely impact areas around the airport such as wildlife, wetlands, and other non-compatible lands. At RSW, these areas exist in three primary locations. The largest area is located on the western portion of the Airport. The second largest is located on the northeastern boundary of the Airport. The smallest designated buffer is a pond located to the south of the Airport.

Foreign Trade Zones have emerged as an important economic development tool used by many localities to attract and retain new business and industry. Both Southwest Florida International Airport and Page Field have been included in the Fort 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 Foreign Trade Zone without formal customs entry, 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 Foreign Trade Zone.

Storage, testing, re-labeling, repackaging, repairing, assembling, and manufacturing are just a few of a number of processes that merchandise entering a trade zone may undergo. When a final product is imported into the United States from a Foreign Trade Zone, customs duties and excise taxes are only due at the time of transfer from the zone and formal entry in the United States. Zones therefore give users opportunities to realize reduced customs duties while benefiting from flexible methods of handling merchandise.

Off Airport

The designations for lands surrounding RSW that are identified in the Lee County Comprehensive Plan 2000 include:

- General Commercial (GC)
- Mixed Use (MU)
- New Community (NC)
- Airport Commerce (AC)
- Density Reduction/Groundwater Resource (DR/GR)
- Wetlands (W)
- Wetland Conservation Lands (WCL)

With the exception of relatively small Industrial Areas (IA), the land to the southwest of the airport is slated for Mixed Use (MU) planned development. Typically, Mixed Use (MU) areas adjacent to the airport have high intensity commercial and residential development. The areas directly east and south of the Airport remain undeveloped, designated as Wetlands (W), Wetland Conservation Lands (WCL) and Density Reduction/Groundwater Resource (DR/GR). These groupings of undeveloped land combine to make up the largest segment of land adjacent to the airport.

The New Community (NC) area is the second largest area surrounding the Airport and is located along Gateway Blvd. to the north of the Airport property and bordered by Immokalee Road (SR 82) to the north. The property is approximately the same size as that of the Airport.

Two of the five Industrial Areas (IA) are located approximately three miles northwest of the Airport and border I-75 to the west. Another Industrial Area (IA) is located on the northwest border of the Airport along Treeline Avenue. The remaining areas are located three and six miles southeast of the Airport along Alico Road.

There is one General Commercial area located north of the Airport. The site is very large, borders the Airport property boundary to the north and is located in the Gateway development. It extends all the way to SR 82 to the north and extends to Six Mile Cypress Parkway to the west.

2.12.3 Airport Hazard District

Southwest Florida International Airport falls under the Airport Hazard District Ordinance stipulated in Subdivision III of the Lee County Land Development Code. This Airport Hazard District was created to provide a level of protection for the airspace and zoning regulations involved with Southwest Florida International Airport, Page Field 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 Section 34-1006, 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.

2.12.4 Airport Noise Zones

A deciding factor in selecting the site for the Airport was that it had little noise impacts on existing development. During the late 1980's the Lee County Port Authority (LCPA) sponsored a Federal Aviation Administration FAR Part 150 Noise Compatibility Study in an effort to minimize the future impacts of aircraft noise at the facility and adjacent lands. After the approval of the Noise Compatibility Study in 1990, land use control measures, including Airport Noise Zones, were developed and adopted into the Lee County Comprehensive Plan and the Land Development Code.

The 1991 Master Plan Update initiated long term planning interest for the addition of a new parallel runway at RSW as well as a Midfield Terminal complex. An additional noise study was warranted after the completion of the Master Plan. A FAR Part 150 Noise Compatibility Study Update was completed and resulted in identifying an expanded zone to maintain off-airport land

use compatibility with the operation of this future runway. On February 1, 1995, the FAR Part 150 Update was adopted by the Board of County Commissioners and approved on November 28, 1995 by the Federal Aviation Administration.

The establishment of Airport Noise Zones for RSW were a result of FAR Part 150 studies initiated by the Airport. These zones were developed around the airport to promote land use compatibility based on aircraft noise and are maintained through the establishment of noise contours. The zones are No Noise Related Restrictions (Zone 1), No Mobile Homes (Zone 2), No Noise Sensitive Uses (Zone 3), and Airport Use Only (Zone 4). All four zones make up the Airport Noise Zone special zoning district and collectively are included as part of the local zoning ordinance.

2.12.5 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. Coordination with the appropriate agencies for permitting requirements will be made as projects are funded. RSW falls under the jurisdiction of the South Florida Water Management District, Florida Department of Environmental Protection, Lee County and the U.S. Army Corps of Engineers. These agencies 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.

3 AVIATION ACTIVITY FORECASTS

3.1 INTRODUCTION

Projections of aviation activity are an important element of the Master Plan Update, as they provide the basis for Southwest Florida International Airport (the Airport). These projections are essential for:

- Determining the future role of the Airport in both the type of aircraft to be accommodated and the type of aviation demand to be served in the future.
- Evaluating the capacity of existing Airport facilities and their ability to absorb projected aviation demand.
- Estimating the extent to which airside and landside facilities should be provided at the Airport in the future.

Forecasting future activity remains both an analytical and subjective process. As such, many of the factors influencing aviation demand cannot be readily quantified. Consequently, actual activity levels realized in future years may differ from this forecast due to unforeseen events or changes in the operational characteristics of the Airport. For these reasons, the forecast presented in this section should be viewed as an estimate of future aviation activity at the Airport.

This chapter outlines socioeconomic conditions in the Airport's market area; discusses assumptions and historical data underlying these demand forecasts; and presents projections of aviation activity for a twenty year planning period through the year 2020. The remainder of this chapter is presented in the following sections:

- Economic Base for Air Transportation
- Historical Activity
- Projection of Passenger Enplanements
- Projection of Airline Operations and Fleet Mix
- Projection of General Aviation Activity
- Projection of Air Cargo Activity
- Projection of Military Activity
- Summary of Projected Airport Operations
- Design Level Projections

3.2 ECONOMIC BASE FOR AIR TRANSPORTATION

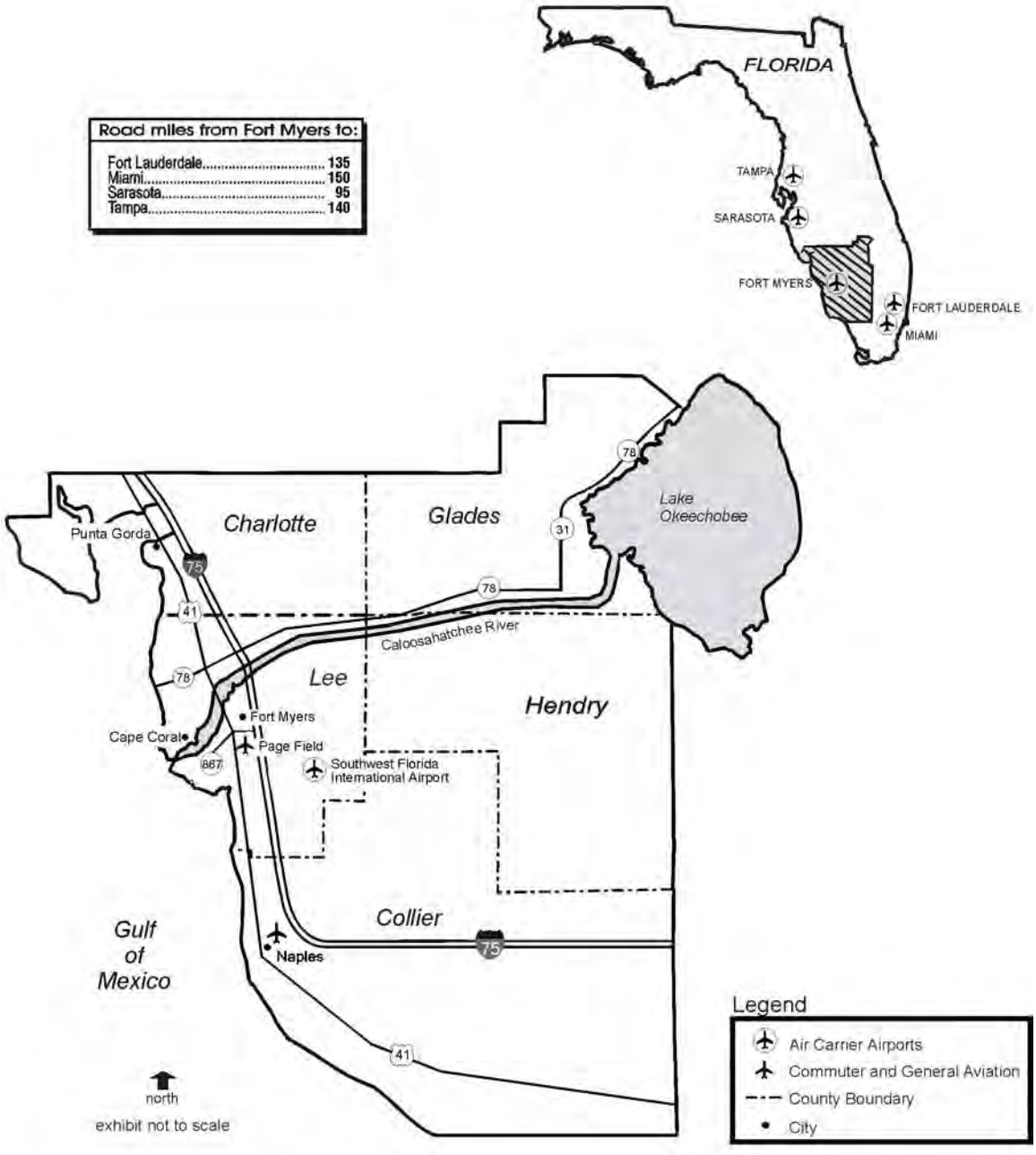
The Airport opened in 1983, replacing Page Field as the air carrier airport serving Fort Myers and the surrounding region. Today, the Airport provides both scheduled domestic and international

airline service and unscheduled charter service, in addition to serving the needs of corporate and leisure general aviation activity.

As shown in **Figure 3-1**, the geographical area served by the Airport primarily encompasses the five Florida counties of Charlotte, Collier, Glades, Hendry and Lee (the county in which the Airport is located). It is recognized that the Airport's total air trade area extends beyond this five-county area, but it is the economic strength of this area that provides the primary base for supporting air transportation at the Airport. Therefore, for these analyses, the primary air trade area (the "Air Trade Area") for the Airport is considered to be the five counties.

The Airport is relatively isolated from alternative commercial air service facilities, with minimal diversion of air traffic from its Air Trade Area. The air carrier airports in certain Florida cities are Fort Lauderdale (135 road miles), Miami (150 road miles), Tampa (140 road miles) and Sarasota (95 road miles). The mileage that separates the Airport from these various alternative facilities indicates that each facility serves a separate, distinct market and with few exceptions, each facility derives passengers primarily from its respective market area. The Naples Municipal Airport (36 road miles) is the only other airport providing commercial air service in the Air Trade Area and is served by three regional air carriers. Figure 3-1 also depicts the alternative general aviation airports in the Air Trade Area, including La Bell Municipal, Immokalee, and Charlotte County airports.

Figure 3-1
Air Trade Area



Prepared By: Ricondo & Associates, Inc., January 2000.

3.2.1 Population

Table 3-1 presents the historical and projected population for the Air Trade Area, the State of Florida, and the United States. As the table presents, the Air Trade Area's population increased at an annual compounded growth rate of 5.4 between 1980 and 1990. This growth in the Air Trade Area's population from 1980 to 1990, is nearly twice as high as the 2.9 percent growth in population for the State of Florida and five times as high as the 0.9 percent growth for the nation, during this same period.

Between 1990 and 2000, population growth in the Air Trade Area was 3.4 percent annually, which was lower than the growth experienced between 1980 and 1990 for the Air Trade Area, yet still higher than the growth experienced for the State of Florida and the nation during this same time period. Population growth in the State of Florida and the United States between 1990 and 2000 was 2.1 percent and 1.2 percent, respectively.

Also presented in Table 3-1 are projections of population for the year 2005, 2010, 2015, and 2020 for the Air Trade Area, the State of Florida, and the United States. As shown, projected population growth from 2000 to 2020 for the Air Trade Area is projected to increase from 880,700 in 2000 to approximately 1,233,800 in 2020, representing an annual compounded growth rate of 1.7 percent for the Air Trade Area. This exceeds the population growth projected for both the State of Florida and the U.S. of 1.3 percent and 0.7 percent, respectively, during this same time period.

These population projections for the Air Trade Area do not include the seasonal and transient population (winter residents, visitors in occupied housing units, hotel / motel occupants, and migrant / seasonal workers). According to the Southwest Florida Regional Planning Council, the peak population in the region could be as much as 20 percent to 25 percent higher than the resident population during the peak season.

3.2.2 Income

One measure of the relative income of an area is its Per Capita Income (PCI). PCI is a composite measurement of market potential and indicates the general ability to purchase an available product or service. **Table 3-2** presents PCI for the Air Trade Area, the State of Florida, and the United States between 1990 and 2000, as well as projected PCI through 2020. As presented, annual growth in PCI in the Air Trade Area between 1990 and 2000 was higher than the growth experienced in the State of Florida and the United States (2.4, 1.9 and 2.1 percent growth, respectively) during this same time period. PCI in 2000 for the Air Trade Area of $31,948 was higher than for both the State of Florida, $28,017 and for the U.S., $28,087, for that same year.

Projected PCI was obtained from the National Planning Association (NPA) Data Services. As shown in Table 3-2, according to NPA Data Services, projections of PCI through 2020 indicate annual growth in the Air Trade Area between 1999 and 2020 is expected to be 2.0 percent. By comparison, projected annual growth in PCI for both the State of Florida and the United States is expected to be 1.9 percent, during this same time period.

Table 3-1

TABLE 3-1
HISTORICAL AND PROJECTED RESIDENT POPULATION

	Historical			Projected				Annual Compounded Growth Rate			
AREA	1980	1990	2000	2005	2010	2015	2020	1980-1990	1990-2000	2000-2005	2000-2020
Charlotte County	58,460	110,975	141,627	159,513	170,400	186,150	201,900	6.6%	2.5%	2.4%	1.8%
Collier County	85,971	152,099	251,377	252,519	297,800	335,150	372,500	5.9%	5.2%	0.1%	2.0%
Glades County	5,992	7,591	10,576	10,943	11,800	12,600	13,400	2.4%	3.4%	0.7%	1.2%
Hendry County	18,599	25,773	36,210	34,802	35,600	37,850	40,100	3.3%	3.5%	-0.8%	0.5%
Lee County	205,266	335,113	440,888	465,346	514,500	560,200	605,900	5.0%	2.8%	1.1%	1.6%
Total Air Trade Area	374,288	631,551	880,678	923,123	1,030,100	1,131,950	1,233,800	5.4%	3.4%	0.9%	1.7%
State of Florida	9,746,959	12,937,926	15,982,378	16,651,000	17,927,835	19,326,418	20,725,000	2.9%	2.1%	0.8%	1.3%
United States	227,225,000	248,718,000	281,421,906	287,716,000	299,862,000	312,268,000	324,927,000	0.9%	1.2%	0.4%	0.7%

Sources: University of Florida, Bureau of Economic and Business Research
U.S Department of Commerce, Bureau of the Census
Compiled by Ricondo & Associates, Inc.

Table 3-2

TABLE 3-2
PER CAPITA INCOME

Year	Air Trade Area	State of Florida	United States
Historical			
1990	$25,317	$23,186	$22,873
1991	24,707	22,707	22,597
1992	25,313	22,556	23,013
1993	25,665	23,086	23,156
1994	26,388	23,357	23,599
1995	27,081	24,025	24,071
1996	27,663	24,619	24,654
1997	28,971	25,158	25,425
1998	29,745	26,016	26,420
1999	30,923	27,134	27,290
2000	31,948	28,017	28,087
Projected			
2005	$37,151	$32,527	$32,499
2010	41,094	35,843	35,818
2015	44,128	38,586	38,561
2020	47,042	41,141	41,128
Annual Compounded Growth Rate			
1990 - 2000	2.4%	1.9%	2.1%
2000 - 2005	3.1%	3.0%	3.0%
2005 - 2010	2.0%	2.0%	2.0%
2010 - 2015	1.4%	1.5%	1.5%
2015 - 2020	1.3%	1.3%	1.3%
2000 - 2020	2.0%	1.9%	1.9%

Sources: NPA Data Services
Compiled by Ricondo & Associates, Inc.

3.2.3 Employment

Table 3-3 presents the civilian labor force for the Air Trade Area, State of Florida, and the United States between 1990 and 2000. As the table presents, the civilian labor force in the Air Trade Area increased from 285,000 workers in 1990 to 351,000 workers in 2000, an increase of approximately 2.1 percent annually during this time period. This rate of growth was higher than the growth experienced both for the State of Florida (1.6 percent) and the United States (1.1 percent) for this same time period. Furthermore, the Florida Department of Labor and Employment Security is projecting that employment growth will continue through 2006 at an annual growth rate of 2.8 percent for the Air Trade Area which would result in approximately 414,000 workers in 2006.

Average annual unemployment rates between 1990 and 2000 are also presented in Table 3-3. As presented, unemployment rates for the Air Trade Area, the State of Florida, and the U.S. increased from 1990 to 1992 and then declined in each subsequent year. From 1992 to 1995, unemployment rates decreased by comparable percentages in each year, in the Air Trade Area, the State of Florida and in the nation. Over the last five years, however, the Air Trade Area experienced lower unemployment as compared to both the State of Florida and the U.S. Unemployment rates for the Air Trade Area continued to decrease from 5.6 percent in 1995 to 3.5 percent in 2000.

3.2.4 Tourism

Tourism represents a significant share of the economic activity in the Air Trade Area. In 1999, tourists spent nearly $1.0 billion in Lee County, and approximately $1.1 billion in visitor spending is expected in 2000. The winter season (i.e., January through April) represents the peak season for visitors to Lee County, accounting for 53.8 percent of the total visitors in 1999. In recent years, however, the spring/summer season (i.e., May through August) has experienced an increase in visitors, particularly with European travelers. In 1999, the spring/summer season accounted for 26.1 percent of the visitors to Lee County, while the fall season accounted for the remaining 20.1 percent of visitors.

Table 3-4 presents the number of visitors to Lee County by origin from 1989 to 1999. As shown, the majority of the visitors originate from the U.S. (81.8 percent), while Europe and Canada are also major originating markets for visitors to Lee County (12.1 percent and 2.4 percent, respectively). Overall, visitors to Lee County have increased from 1,501,554 in 1989 to 1,866,123 in 1999, representing an annual compounded growth rate of 2.2 percent. The European market in particular, has more than doubled since 1989, increasing from 105,177 visitors in 1989 to 226,084 in 1999, representing an annual compounded growth rate of 8.0 percent. This growth in the European market is reflected in the Authority's development of air service to and from Europe by LTU International Airways, Condor, and Balair.

One measure of the growth of tourism is in the performance of retail sales, which consists of all net sales (gross sales minus refunds and allowances for returns). As presented in **Table 3-5**, retail sales per household increased at an annual compounded growth rate of 5.2 percent in the Air Trade Area between 1995 and 1999, compared to increases of 4.4 percent, and 3.4 percent, for the State of Florida, and the U.S., respectively, during this same period. According to Sales and

Table 3-3

TABLE 3-3
CIVILIAN LABOR FORCE AND UNEMPLOYMENT RATES

Year	Civilian Labor Force (000) Air Trade Area	State of Florida	United States
1990	285	6,468	125,840
1991	290	6,489	126,346
1992	297	6,559	128,105
1993	303	6,661	129,200
1994	312	6,811	131,056
1995	314	6,851	132,304
1996	318	6,956	133,943
1997	325	7,119	136,297
1998	331	7,230	137,673
1999	340	7,364	139,368
2000	351	7,593	140,863
Annual Compounded Growth Rate 1990 - 2000	2.1%	1.6%	1.1%

Year	Unemployment Rates Air Trade Area	State of Florida	United States
1990	4.8%	6.0%	5.6%
1991	6.9%	7.4%	6.8%
1992	8.4%	8.3%	7.5%
1993	7.1%	7.0%	6.9%
1994	6.5%	6.6%	6.1%
1995	5.6%	5.5%	5.6%
1996	4.9%	5.1%	5.4%
1997	4.5%	4.8%	4.9%
1998	3.9%	4.3%	4.5%
1999	3.5%	3.9%	4.2%
2000	3.5%	3.7%	4.0%

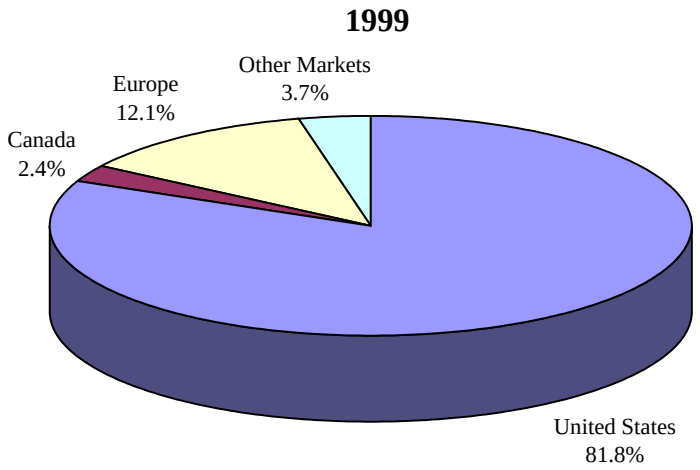
Sources: US. Department of Labor, Bureau of Labor Statistics
Compiled by Ricondo & Associates, Inc.

Table 3-4

TABLE 3-4
ORIGIN OF VISITORS TO LEE COUNTY

Year	United States		Canada		Europe		Other Markets		Total	
	Visitors	Growth	Visitors	Growth	Visitors	Growth	Visitors	Growth	Visitors	Growth
1989	1,229,084	-0.4%	86,528	9.0%	105,177	37.1%	80,765	-3.4%	1,501,554	1.9%
1990	1,240,720	0.9%	95,688	10.6%	140,814	33.9%	69,837	-13.5%	1,547,059	3.0%
1991	1,169,389	-5.7%	107,864	12.7%	157,820	12.1%	84,953	21.6%	1,520,026	-1.7%
1992	1,130,292	-3.3%	105,824	-1.9%	214,537	35.9%	82,426	-3.0%	1,533,079	0.9%
1993	1,198,956	6.1%	95,789	-9.5%	222,387	3.7%	81,893	-0.6%	1,599,025	4.3%
1994	1,318,990	10.0%	70,777	-26.1%	152,328	-31.5%	80,031	-2.3%	1,622,126	1.4%
1995	1,344,010	1.9%	57,188	-19.2%	188,568	23.8%	81,709	2.1%	1,671,475	3.0%
1996	1,372,780	2.1%	53,853	-5.8%	214,263	13.6%	74,194	-9.2%	1,715,090	2.6%
1997	1,434,121	4.5%	56,762	5.4%	211,774	-1.2%	79,565	7.2%	1,782,222	3.9%
1998	1,458,291	1.7%	54,503	-4.0%	215,473	1.7%	74,305	-6.6%	1,802,572	1.1%
1999	1,526,278	4.7%	44,859	-17.7%	226,084	4.9%	68,902	-7.3%	1,866,123	3.5%
Annual Compounded Growth Rate										
1989-1999		2.2%		-6.4%		8.0%		-1.6%		2.2%

PERCENT OF 1999 LEE COUNTY VISTORS BY ORIGIN



Sources: Annual Visitor Profile-Lee County, annual editions for 1990 through 1999
Compiled by Ricondo & Associates, Inc.

Table 3-5

TABLE 3-5
RETAIL SALES PER HOUSEHOLD

Year	Air Trade Area [1]	State of Florida	United States
Historical			
1995	$25,816	$24,703	$23,209
1996	$26,828	$25,688	$24,120
1997	$29,627	$27,505	$24,992
1998	$30,392	$28,015	$25,437
1999	$31,587	$29,313	$26,544
Projected			
2003	$38,746	$35,143	$31,301
Annual Compounded Growth Rate			
1995 - 1999	5.2%	4.4%	3.4%
1999 - 2003	5.2%	4.6%	4.2%

[1] Air Trade Area for this table only includes Charlotte, Collier, and Lee Counties due to unavailability of projected data for Glades and Hendry Counties.

Sources: Sales & Marketing Magazine, Survey of Buying Power, 1995-1999
Compiled by Ricondo & Associates, Inc.

Marketing Management, retail sales per household in the Air Trade Area for 1999 through 2003 are projected to continue to increase at an annual compounded growth rate of 5.2 percent, which is higher than the projected growth rate for both the State of Florida and the United States (4.6 and 4.2 percent, respectively).

3.3 HISTORICAL ACTIVITY

This section presents historical aviation activity at the Airport, and discusses key factors affecting these activity levels.

3.3.1 Airlines Serving the Airport

As of December 2000, the Airport had scheduled passenger service provided by 14 domestic air carrier airlines, five regionals/commuters, and six international charter air carriers.[1] In addition to these airlines, a number of other domestic charter airlines also operate at the Airport during the peak winter months. Three all-cargo carriers also provide scheduled cargo service at the Airport. **Table 3-6** lists the airlines serving the Airport as of December 2000.

Table 3-7 illustrates the historical airline base at the Airport since 1990. As shown, the Airport's scheduled commercial airline base has increased from 17 scheduled commercial airlines in 1990 to 26 in 2000. Specific points concerning the Airport's historical commercial airline base are presented below:

- Of the 14 domestic air carriers currently serving the Airport, nine (American, American Trans Air, Continental, Delta, Northwest, Sun Country, Trans World, United, and US Airways) have served the Airport during each of the years shown. In addition, five other domestic air carriers have initiated service at the Airport since 1990, including Midwest Express in 1992, Spirit Airlines in 1993, Valujet (now operating as AirTran) in 1994, America West in 1996, and JetBlue in 2000.

- After initiating service at the Airport in 1994, Valujet ceased operations entirely in June 1996 due to an operational mandate of the FAA. Valujet re-initiated service to the Airport in October 1996, and subsequently merged with AirTran, which continues to operate at the Airport today.

- Of the five regionals/commuters currently serving the Airport, one (American Eagle) has served the Airport during each of years depicted. In addition, in recent years, four other regionals/commuters have initiated service at the Airport since 1990, including Continental Express and Comair in 1993, Cape Air in 1996, and America West Express in 2000.

[1] As defined by the FAA, regionals/commuters are those airlines providing regularly scheduled passenger service and whose fleets are composed predominately of aircraft of 60 seats or less.

Table 3-6

TABLE 3-6
AIRLINES SERVING THE AIRPORT [1]

Domestic Air Carriers	International Charter Air Carriers
AirTran	Air Canada
American Airlines	Air Transat
American Trans Air	Balair/CTA [3]
America West	Canada 3000
Continental Airlines	LTU Int'l Airways
Delta Air Lines [2]	Condor
JetBlue	
Lynx Air International	
Metro Jet	
Midwest Express	
Northwest Airlines	
Spirit Airlines	
Sun Country	
Trans World Airlines	
United Airlines	
US Airways [4]	All Cargo Carriers
Regionals/Commuters	Airborne Express
	FedEx
American Eagle	United Parcel Service
America West Express	
Cape Air	
Comair	
Continental Express	

[1] As of December 2000. During the peak winter months, a number of other domestic and international charter

[2] Also operates Delta Express at the Airport.

[3] Provides summer seasonal service. (In 2000, not in 2001)

[4] Also operates Metrojet at the Airport.

Sources: Lee County Port Authority
Compiled by Ricondo & Associates, Inc.

Table 3-7

TABLE 3-7
HISTORICAL SCHEDULED COMMERCIAL AIRLINE BASE

Airline	YEAR										[1]
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
American Airlines	●	●	●	●	●	●	●	●	●	●	●
American Eagle	●	●	●	●	●	●	●	●	●	●	●
American Trans Air	●	●	●	●	●	●	●	●	●	●	●
Continental Airlines	●	●	●	●	●	●	●	●	●	●	●
Delta Air Lines	●	●	●	●	●	●	●	●	●	●	●
Northwest Airlines	●	●	●	●	●	●	●	●	●	●	●
Trans World Airlines	●	●	●	●	●	●	●	●	●	●	●
United Airlines	●	●	●	●	●	●	●	●	●	●	●
US Airways	●	●	●	●	●	●	●	●	●	●	●
Sun Country	●	●	●	●	●	●	●	●	●	●	●
Air Canada	●	●	●	●	●	●		●	●	●	●
Canada 3000	●	●	●	●	●	●	●	●	●	●	●
Midwest Express			●	●	●	●	●	●	●	●	●
Comair				●	●	●	●	●	●	●	●
Continental Express				●	●	●	●	●	●	●	●
Spirit Airlines				●	●	●	●	●	●	●	●
AirTran [2]					●	●	●	●	●	●	●
LTU International Airways					●	●	●	●	●	●	●
America West							●	●		●	●
Cape Air							●	●	●	●	●
Royal Air							●	●	●	●	●
Air Transat									●	●	●
Balair/CTA									●	●	●
America West Express											●
JetBlue											●
Condor											●
AIRLINES NO LONGER SERVING											
Eastern Airlines	●	●									
Eastern Express	●	●									
PanAm Express/TWA Express	●	●									
Midway Airlines	●	●	●			●	●				
Canadian Airlines Int'l	●	●	●	●	●	●	●	●	●		
Carnival Air\PanAm						●	●	●	●		
US Airways Express		●	●	●	●	●	●	●	●	●	
United Express				●	●			●	●	●	●

[1] As of December 2000.

[2] Operated as Valujet Airlines prior to FY 1997.

Sources: Lee County Port Authority
Compiled by Ricondo & Associates, Inc.

- Two international carriers (Air Canada and Canada 3000) have served the Airport during each of the years shown. In addition, in recent years, the Airport has been successful in attracting other international airlines to the Airport, including LTU International Airways, Air Transat, Balair/CTA, and Condor.

- Three air carrier airlines discontinued service at the Airport during the years depicted. These airlines were Eastern Airlines in FY 1991, Midway Airlines in FY 1995, and Canadian Airlines International. Midway served the Airport for only one winter season. Also, five regional/commuters airlines discontinued service at the Airport including; Eastern Express in FY 1991, PanAm Express/TWA Express in FY 1991, Carnival Air/Pan Am Express in FY 1998, US Airways Express in FY 1999, and United Express in FY 2000.

3.3.2 Enplaned Passengers

Table 3-8 presents historical data on enplaned passengers at the Airport and the nation between 1990 and 2000. As shown, enplanements at the Airport increased from 1,873,178 in 1990 to 2,632,088 in 2000. This increase represents an annual compounded growth rate of 3.5 percent during this period, compared to 3.4 percent growth experienced nationwide. Following a decrease in enplanements from 1,873,178 in 1990 to 1,738,338 in 1991, the Airport's annual enplanements increased each year to 2,632,088 in 2000, representing an annual compounded growth rate of 4.7 percent from 1991 to 2000. Overall, the Airport's share of total U.S. enplanements has remained relatively constant, increasing slightly from 0.410 percent of the nation's enplanements in 1990 to 0.412 percent in 2000.

Details concerning the Airport's historical growth in enplaned passengers are presented below:

- 1990 - 1991 – Enplanements at the Airport decreased in 1991, primarily due to the nationwide recession and the Persian Gulf War during this period. In addition, Eastern Airlines eliminated service at the Airport, as well as the rest of the U.S, in 1991.

- 1991 – 2000 – As mentioned previously, enplanements at the Airport have increased consistently since 1991, from 1,738,338 enplanements in 1991 to 2,632,088 enplanements in 2000. This enplanement growth is a result of the continued increases in visitor and tourist activity, as well as population growth in the Air Trade Area. Passenger traffic has also been stimulated by the increased availability of low-fare service by Spirit in FY 1993, AirTran in 1994, Delta Express in 1996, and Jet Blue in 2000.

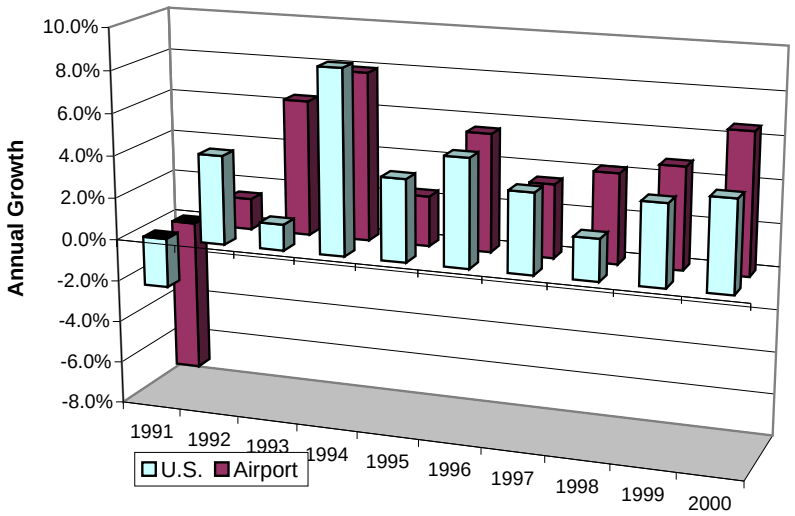
Figure 3-2 depicts the Airport's historical enplanements by carrier classification. Typically, air carrier airlines operate jet aircraft in the higher density and/or longer haul markets, while the regional/commuter airlines operate smaller aircraft in shorter haul markets. As shown in Figure 3-2, the domestic air carrier airlines comprise the majority of the Airport's activity, accounting for 91.2 percent of the Airport's enplanements in 2000, while the regional/commuter airlines accounted for 6.0 percent of the Airport's enplanements in 2000. The regional/commuter airlines' share of Airport enplanements has increased in recent years, from 2.3 percent in 2000 to 6.0 percent in 2000, while the domestic air carrier market share decreased by 4.3 percent. This

Table 3-8

TABLE 3-8
HISTORICAL PASSENGER ENPLANEMENTS

Year	Airport Enplanements	Airport Annual Growth	United States [1] Enplanements	United States [1] Annual Growth	Airport Market Share
1990	1,873,178	--	456,600,000	--	0.410%
1991	1,738,338	-7.2%	445,900,000	-2.3%	0.390%
1992	1,763,810	1.5%	464,700,000	4.2%	0.380%
1993	1,876,588	6.4%	470,400,000	1.2%	0.399%
1994	2,025,531	7.9%	511,300,000	8.7%	0.396%
1995	2,073,381	2.4%	531,100,000	3.9%	0.390%
1996	2,188,127	5.5%	558,100,000	5.1%	0.392%
1997	2,263,334	3.4%	579,100,000	3.8%	0.391%
1998	2,358,258	4.2%	590,400,000	2.0%	0.399%
1999	2,470,114	4.7%	612,900,000	3.8%	0.403%
2000	2,632,088	6.6%	639,100,000	4.3%	0.412%
Annual Compounded Growth Rate 1990-2000		3.5%		3.4%	

Historical Growth Trends



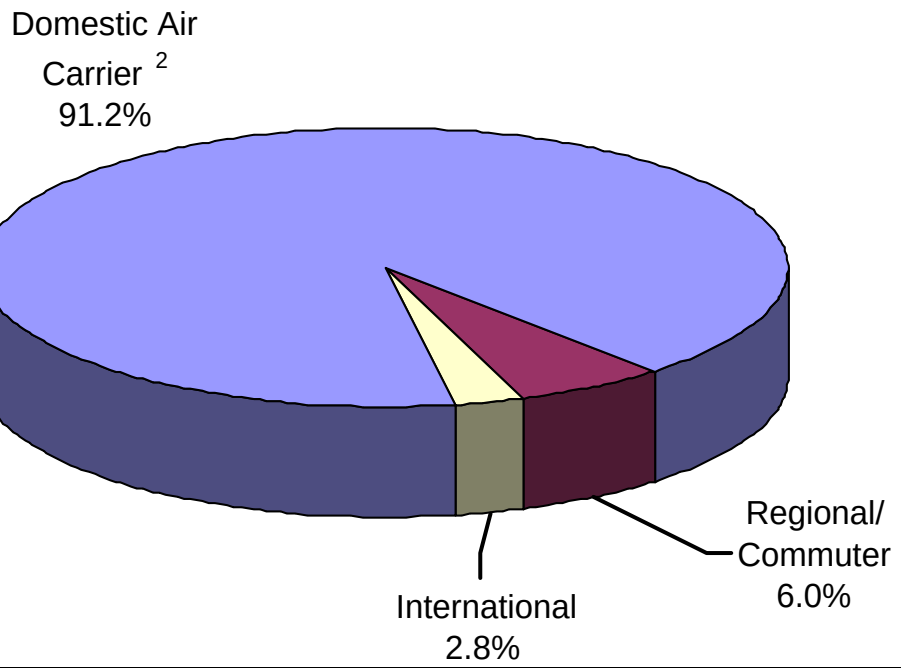
[1] U.S. enplanements for 2000 are estimated.

Sources: Lee County Port Authority
FAA Aerospace Forecasts, FY 2001 - 2012
Compiled by Ricondo & Associates, Inc.

Figure 3-2

Figure 3-2

Percentage of Enplanments by Carrier Classification [1]



[1] As of Decemember 2000.

[2] Consists of charter airlines, airlines with less than 20,000 enplanements, and International airlines.

Sources: Lee County Port Authority
Prepared by Ricondo & Associates, Inc.

shifting of enplanements from the air carriers to the regionals/commuters is attributable to the nationwide trend of regionals/commuters initiating service in shorter-haul, lower-density markets abandoned by the air carrier airlines. As also shown, the international airlines account for approximately 2.8 percent of the Airport's enplanements in 2000, and has remained relatively constant since 1990, increasing slightly from a 2.2 percent share in 1990.

3.3.3 Air Service

An airport's air service can be measured through the distribution of its O&D markets, which is a function of air travel demands and the airport's available nonstop service. **Table 3-9** presents historical data on the Airport's top 30 O&D markets for the years ended in 3rd quarter of 1995 and 2000, the most recent calendar year available. As shown, the Airport's top 30 markets represent approximately 74.1 percent of the total domestic O&D traffic at the Airport in the 3rd quarter of 2000.

The Airport is served by airlines providing service to primarily short- to medium-haul markets (less than 1,800 miles), with an average stage length of 1,104 and 1,100 miles for 1995 and 2000, respectively. The Airport's average stage lengths during these periods reflect the Airport's geographical location and strong local demand for major east coast (i.e., Boston, New York, and Philadelphia) and midwestern (i.e., Detroit, Chicago, and Indianapolis) markets in the U.S. As also shown in Table 3-9, while many of the Airport's top O&D markets experienced increases from 1995 to 2000, the Detroit market experienced significant increases in O&D passenger traffic. O&D passenger traffic to and from Detroit increased by nearly 40 percent from 1995 to 2000, which can be attributed to new service and lower fares by Northwest and Spirit airlines.

Nonstop scheduled air service available from the Airport is presented in **Table 3-10** for February 2001 based on Official Airline Guide (OAG) data. As shown, 31 airports are served with a total of 703 weekly nonstop flights. Of the Airport's top 30 O&D markets, 22 were provided with nonstop service, including the Airport's top 13 O&D markets, in February 2001. As mentioned previously, new international air service has been initiated at the Airport in recent years. As of February 2001, the Airport was provided a total of 20 weekly nonstop international flights to Dusseldorf, Frankfort, and Toronto.

3.3.4 Aircraft Operations

Historical aircraft operations, which are defined as the arrival or departure of an aircraft, are presented in **Table 3-11**. Total operations at the Airport increased between 1995 and 2000, largely due to increased general aviation activity at the Airport. Overall, total operations increased from 69,621 in 1995 to 77,042 in 2000, representing an annual compounded growth rate of 2.0 percent.

Table 3-9

TABLE 3-9
PRIMARY DOMESTIC O&D PASSENGER MARKETS

Year Ended 3rd Quarter 1995						Year Ended 3rd Quarter 2000					
Rank	Market	Nonstop Service	Nonstop Miles	Total O&D Passengers	Percent of Total	Rank	Market	Nonstop Service	Nonstop Miles	Total O&D Passengers	Percent of Total
1	Boston	●	1,249	255,200	7.0%	1	Detroit	●	1,085	309,150	6.8%
2	New York, (Newark)	●	1,068	238,600	6.5%	2	Boston	●	1,249	278,670	6.1%
3	Detroit	●	1,085	224,580	6.1%	3	New York (Newark)	●	1,068	252,470	5.6%
4	Indianapolis	●	946	168,080	4.6%	4	Chicago (O'Hare)	●	1,120	207,180	4.6%
5	Chicago, (Midway)		1,105	163,540	4.5%	5	Atlanta	●	515	182,990	4.0%
6	New York, (La Guardia)	●	1,080	162,280	4.4%	6	Chicago (Midway)	●	1,105	177,760	3.9%
7	Chicago, (O'Hare)	●	1,120	156,480	4.3%	7	Indianapolis	●	946	165,360	3.6%
8	Philadelphia	●	992	129,240	3.5%	8	New York (LaGuardia)	●	1,080	155,530	3.4%
9	Milwaukee	●	1,183	123,660	3.4%	9	Minneapolis	●	1,416	153,590	3.4%
10	Atlanta	●	515	120,800	3.3%	10	Philadelphia	●	992	144,010	3.2%
11	Cleveland	●	1,025	103,680	2.8%	11	Cleveland	●	1,025	128,150	2.8%
12	St. Louis	●	979	99,060	2.7%	12	Milwaukee	●	1,183	100,060	2.2%
13	Minneapolis	●	1,416	97,460	2.7%	13	Pittsburgh	●	966	91,210	2.0%
14	Pittsburgh	●	966	83,220	2.3%	14	Hartford		1,180	89,680	2.0%
15	Hartford		1,180	76,380	2.1%	15	Atlantic City	●	982	88,110	1.9%
16	Columbus		930	63,360	1.7%	16	Columbus	●	930	87,210	1.9%
17	Baltimore	●	919	60,060	1.6%	17	Long Island		1,101	86,440	1.9%
18	Cincinnati	●	879	58,720	1.6%	18	St. Louis	●	979	82,830	1.8%
19	Washington D.C. (National)	●	892	52,440	1.4%	19	Cincinnati	●	879	73,040	1.6%
20	Providence		1,201	43,600	1.2%	20	Dallas/Ft. Worth	●	1,017	53,770	1.2%
21	Dallas/Ft. Worth	●	1,017	34,660	0.9%	21	Washington, D.C. (National)	●	892	52,430	1.2%
22	Buffalo		1,144	32,940	0.9%	22	Providence		1,201	52,410	1.2%
23	Louisville		835	32,060	0.9%	23	Denver		1,606	50,450	1.1%
24	Kansas City		1,156	31,900	0.9%	24	Washington, D.C. (Dulles)	●	890	49,760	1.1%
25	Denver		1,606	31,740	0.9%	25	Buffalo		1,144	47,570	1.0%
26	Syracuse		1,186	27,380	0.7%	26	Kansas City		1,156	47,540	1.0%
27	Albany		1,204	26,820	0.7%	27	Baltimore	●	919	43,160	1.0%
28	Rochester		1,166	26,780	0.7%	28	Dayton		932	42,940	0.9%
29	Grand Rapids		1,147	25,720	0.7%	29	Louisville		835	37,420	0.8%
30	Nashville		722	25,540	0.7%	30	Charlotte	●	600	33,570	0.7%
Total - Top 30 Markets				2,775,980	75.6%	Total - Top 30 Markets				3,364,460	74.1%
Total - All Other Markets				894,660	24.4%	Total - All Other Markets				1,175,290	25.9%
Total - All Markets				3,670,640	100.0%	Total - All Markets				4,539,750	100.0%

Average Stage Length [1]		Average Stage Length [1]	
Airport	1,104 miles	Airport	1,100 miles
United States	940 miles	United States	990 miles

[1] Average passenger trip distance for all of the Airport's O&D markets.

Sources: USDOT Origin & Destination Survey of Airline Passenger Traffic
Compiled by Ricondo & Associates, Inc.

Table 3-10

TABLE 3-10
NONSTOP MARKETS [1]

Market	Weekly Nonstop Departures	Airline
Atlanta	99	Delta Air Lines
	21	Airtran Airways
Atlantic City	7	Spirit Airlines
Baltimore	7	US Airways
Boston	21	Delta Express
Charlotte	42	US Airways
Chicago - Midway	13	American Trans Air
Chicago - O'Hare	22	United Airlines
	14	Spirit Airlines
Cincinnati	28	Delta Air Lines
Cleveland	20	Continental Airlines
Columbus	7	America West Airlines
	1	American West Express/Mesa
Dallas\Ft. Worth	8	American Airlines
Detroit	21	Spirit Airlines
	35	Northwest Airlines
Dusseldorf (Germany)	2	LTU International Airways
Frankfurt (Germany)	2	Condor
Houston	10	Continental Airlines
Indianapolis	7	American Trans Air
Key West	28	Cape Air
Miami	7	Continental Express/Gulfstream
	49	American Eagle
	7	American Airlines
Milwaukee	3	Sun Country Airlines
	8	Midwest Express Airlines
Minneapolis\St. Paul	22	Northwest Airlines
	1	Sun Country Airlines
New York - Kennedy	7	JetBlue Airways
New York - LaGuardia	14	US Airways
	7	Spirit Airlines
New York - Newark	25	Continental Airlines
	6	Delta Express
Orlando	34	Comair
Philadelphia	22	US Airways
Pittsburgh	14	US Airways
St. Louis	21	Trans World Airlines
Tampa	22	Continental Express/Gulfstream
Toronto (Canada)	6	Air Canada
	7	Canada 3000
	3	Air Transat
Washington - Dulles	1	United Airlines
Washington - National	2	US Airways
TOTAL WEEKLY NONSTOP DEPARTURES	703	

[1] For the week of February 11 through February 17, 2001.

Sources: Official Airline Guide (OAG)
Compiled by Ricondo & Associates, Inc.

Table 3-11

TABLE 3-11
HISTORICAL AIRCRAFT OPERATIONS

Year	Domestic Air Carriers [1]	International Air Carriers	Regionals/ Commuters	General Aviation [2]	All-Cargo	Military	Airport Total
1995	37,210	826	17,004	12,261	1,622	698	69,621
1996	36,694	872	16,528	12,250	1,608	1,152	69,104
1997	36,476	774	11,956	13,714	1,632	1,442	65,994
1998	35,674	1,016	15,454	14,075	1,568	1,943	69,730
1999	35,556	842	15,954	18,664	1,620	1,866	74,502
2000	38,240	976	14,450	20,035	1,604	1,737	77,042
Annual Compounded Growth Rate							
1995 - 2000	0.5%	3.4%	-3.2%	10.3%	-0.2%	20.0%	2.0%

[1] Includes domestic scheduled and chartered activity.

[2] Also includes activity by miscellaneous air taxis.

Sources: Lee County Port Authority
Compiled by Ricondo & Associates, Inc.

- Domestic Air Carriers - Overall, domestic air carrier operations remained relatively constant since 1995, increasing only slightly from 37,210 in 1995 to 38,240 in 2000. This increase represents an annual compounded rate of negative 0.5 percent during this period, compared to the annual compounded growth rate of 2.1 percent experienced nationwide. As shown, air carrier operations decreased consistently from 1995 to 1999, primarily due to a shift to larger aircraft (i.e., from the B-727 to the B-757 and B-767 aircraft, and from the B-737-200 to the MD-80 aircraft) and decreased operations by American, Delta, TWA, and US Airways. The decrease in operations, however, was offset somewhat by an increase in operations by American Trans Air, Continental, and Northwest during this same timeframe. In 2000, air carrier operations once again increased, which indicates an end to the air carrier airline's shift toward larger aircraft in the market.

- International Air Carriers – Overall, operations by international air carrier airlines have remained relatively constant since 1995, increasing slightly from 826 annual operations to 976 operations in 2000.

- Regionals/Commuters – Overall, operations by regionals/commuters decreased from 17,004 in 1995 to 14,450 in 2000, representing an annual compounded decrease of –3.2 percent. Nationwide, activity by regionals/commuters increased at an annual compounded growth rate of 1.0 percent during this same period. The decrease in regional/commuter activity in 1997 was primarily due to discontinued service by Continental Express, as well as reduced service by Comair and US Airways Express. Since FY 1997, however, regional/commuter operations have increased, primarily as a result of new service by Comair with the Canadair Regional Jet, and by American Eagle with the ATR-72. Gulfstream International also began service at the Airport in 1998 with nonstop service to Tampa and Miami.

- General Aviation - General aviation activity (which also consists of takeoffs and landings by miscellaneous air taxi operators) have increased consistently at the Airport, from 12,261 in 1995 to 20,035 in 2000, representing an annual compounded growth rate of 10.3 percent. By comparison, general aviation operations nationwide have increased by an annual compounded growth rate of 2.1 percent since 1995.

- All-Cargo - Two of the Airport's three all-cargo carriers (i.e., FedEx and United Parcel Service) have operated at the Airport since 1989, while Airborne Express began serving the Airport in 1999. As shown in Table 3-11, operations by all-cargo carriers have remained relatively constant, averaging approximately 1,600 annual operations since 1995.

- Military – As shown in Table 3-11, military operations at the Airport increased from 698 in 1995 to 1,737 in 2000.

3.4 PROJECTION OF PASSENGER ENPLANEMENTS

This section presents projections of passenger enplanements for the Airport. Projections of passenger enplanements were prepared on the basis of local socioeconomic and demographic factors, the Airport's historical share of U.S. enplanements, and anticipated trends in activity at

the Airport. This section discusses the factors and assumptions made in projecting passenger enplanements at the Airport, and is organized as follows:

- Market Share Analysis
- Regression Analyses
- Enplanement Projection Scenarios
- Comparison of Enplanement Projections

3.4.1 Market Share Analysis

The market share methodology examines the Airport's historical and projected share of total U.S. enplanement activity and uses historical relationships between the Airport's enplanement traffic and total U.S. enplanements in order to derive projections of future enplanement levels at the Airport. The U.S. forecast provides a base, reflecting how industry traffic in general is anticipated to grow in the future. The U.S. forecast considers factors such as the nation's economic health, aviation industry trends, and airline fuel and fare pricing trends. The FAA's activity projections contained in FAA Aerospace Forecasts, Fiscal Years 2001-2012, were used as a basis for the market share analysis.

In the absence of significant local influences, activity at an airport would be expected to increase at a rate comparable to the national rate. The market share methodology allows local factors to be reflected in the forecast by showing an increase or decrease in the airport's share of the total U.S. market. This type of forecasting approach is common to most master plans and facility planning studies undertaken at commercial service airports.

- Domestic Air Carrier Enplanements - **Table 3-12** presents historical and projected domestic air carrier enplanements (including domestic charter enplanements) at the Airport using the market share approach. As shown, the Airport's share of total U.S. domestic air carrier enplanements decreased from 1990 to 1995, from 0.427 percent in 1990 to 0.397 percent in 1995. Since 1995, however, the Airport's share of total U.S. domestic air carrier enplanements has increased steadily to 0.429 percent in 2000. This increased growth relative to the U.S. for domestic air carrier enplanements is indicative of the economic and tourism growth in the Airport's Air Trade Area as discussed earlier.

Table 3-12 also presents expected domestic air carrier market shares for the Airport and the resulting domestic air carrier enplanements. As shown, the Airport's share of total U.S domestic enplanements is projected to continue to increase through 2010, and then remain relatively constant thereafter. Based on these assumptions, domestic air carrier enplanements are projected to increase from 2,400,345 in 2000 to approximately 5,089,300 in 2020. This projected increase represents an annual compounded growth rate of 3.8 percent during this period, compared to 3.4 percent projected for the nation by the FAA.

Table 3-12

TABLE 3-12
DOMESTIC AIR CARRIER ENPLANEMENT PROJECTION
MARKET SHARE METHODOLOGY

	Airport		United States		
Year	Enplanements	Annual Growth	Enplanements	Annual Growth	Market Share
Historical					
1990	1,789,652	--	419,400,000	--	0.427%
1991	1,646,924	-8.0%	406,600,000	-3.1%	0.405%
1992	1,653,057	0.4%	420,100,000	3.3%	0.393%
1993	1,760,409	6.5%	421,200,000	0.3%	0.418%
1994	1,864,370	5.9%	456,000,000	8.3%	0.409%
1995	1,886,675	1.2%	475,300,000	4.2%	0.397%
1996	1,997,588	5.9%	498,100,000	4.8%	0.401%
1997	2,100,532	5.2%	516,700,000	3.7%	0.407%
1998	2,131,747	1.5%	524,700,000	1.5%	0.406%
1999	2,234,330	4.8%	538,600,000	2.6%	0.415%
2000	2,400,345	7.4%	559,400,000	3.9%	0.429%
Projected					
2005	3,015,700		645,100,000		0.467%
2010	3,623,500		771,000,000		0.470%
2015	4,333,700		922,100,000		0.470%
2020	5,089,300		1,087,500,000		0.468%
Annual Compounded Growth Rate					
1990- 2000	3.0%		2.9%		
2000 - 2005	4.7%		2.9%		
2005 - 2010	3.7%		3.6%		
2010 - 2015	3.6%		3.6%		
2015 - 2020	3.3%		3.4%		
2000 - 2020	3.8%		3.4%		

Sources: Lee County Port Authority
Ricondo & Associates, Inc.
FAA Aerospace Forecasts, Fiscal Years 2001 - 2012

- International Air Carrier Enplanements - **Table 3-13** presents historical shares of U.S. international air carrier enplanements for the Airport between 1990 and 2000. As shown, these shares decreased from 0.100 percent in 1990 to 0.086 percent in 1994, and have increased thereafter to 0.133 percent in 2000. Overall, international air carrier enplanements at the Airport have increased at an annual compounded growth rate of 5.9 percent from 1990 to 2000. However, since a low of 39,843 enplanements in 1994, international air carrier enplanements have increased by an annual compounded growth rate of 10.6 percent through 2000.

As presented in Table 3-13, the Airport's share of total U.S. international air carrier enplanements is assumed to continue to increase throughout the projection period to approximately 0.141 percent by 2020. Based on this assumption, international air carrier enplanements for the Airport are projected to increase from 72,854 in 2000 to approximately 225,500 in 2020, representing an annual compounded growth rate of 5.8 percent. By comparison, total international air carrier enplanements for the U.S. are projected to increase at an annual compounded growth rate of 5.5 percent by the FAA during this same time period.

- Regional/Commuter Enplanements – **Table 3-14** presents historical and projected shares for regional/commuter enplanements at the Airport. As shown, from 1990 to 1995, the Airport's share of U.S. regional/commuter enplanements increased from 0.120 percent to a high of 0.249 percent. Since 1995, however, this share has decreased to 0.200 percent in 2000. Overall, regional/commuter enplanements at the Airport have increased from 42,429 in 1990 to 158,889 in 2000, representing an annual compounded growth rate of 14.1 percent. A majority of this growth occurred from 1993 to 1994 when Continental Express initiated service at the Airport, and a number of other airlines also expanded service at the Airport. Since 1995, the Airport's regional/commuter enplanements have increased by an annual compounded growth rate of 2.7 percent, as compared to 7.4 percent for the U.S. during the same period. To date, the current Comair pilots strike, which began in March 2001, has not significantly impacted the Airport's overall enplanement levels. These passengers have been largely accommodated on Delta Airlines and the other carriers serving the Airport. Comair provided 34 weekly flights to Orlando.

As presented in Table 3-14, the Airport's share of total U.S. regional/commuter enplanements is assumed to continue to decrease throughout the projection period to approximately 0.142 percent by 2020. Based on this assumption, regional/commuter enplanements for the Airport are projected to increase from 158,889 in 2000 to approximately 312,300 in 2020, representing an annual compounded growth rate of 3.4 percent. By comparison, total regional/commuter enplanements for the U.S. are projected to increase at an annual compounded growth rate of 5.2 percent by the FAA during this same time period.

Table 3-15 presents a summary of the total Airport enplanements resulting from the Market Share Methodology, combining the results of the domestic and international air carrier and regional/commuter enplanement projections presented above. As shown, total Airport enplanements are projected to increase from 2,632,088 in 2000, to approximately 5,627,100 in 2020, representing an annual compounded growth rate of 3.9 percent.

Table 3-13

TABLE 3-13
INTERNATIONAL AIR CARRIER ENPLANEMENT PROJECTION
MARKET SHARE METHODOLOGY

Year	Airport Enplanements	Airport Annual Growth	United States Enplanements	United States Annual Growth	Market Share
Historical					
1990	41,097	--	41,300,000	--	0.100%
1991	44,184	7.5%	39,700,000	-3.9%	0.111%
1992	46,195	4.6%	42,600,000	7.3%	0.108%
1993	40,043	-13.3%	45,200,000	6.1%	0.089%
1994	39,843	-0.5%	46,300,000	2.4%	0.086%
1995	47,826	20.0%	48,600,000	5.0%	0.098%
1996	58,253	21.8%	50,000,000	2.9%	0.117%
1997	61,499	5.6%	52,300,000	4.6%	0.118%
1998	74,065	20.4%	53,100,000	1.5%	0.139%
1999	63,952	-13.7%	53,300,000	0.4%	0.120%
2000	72,854	13.9%	54,600,000	2.4%	0.133%
Projected					
2005	100,100		73,900,000		0.135%
2010	134,000		97,500,000		0.137%
2015	175,800		126,078,950		0.139%
2020	225,500		159,422,969		0.141%
Annual Compounded Growth Rate					
1990 - 2000	5.9%		2.8%		
2000 - 2005	6.6%		6.2%		
2005 - 2010	6.0%		5.7%		
2010 - 2015	5.6%		5.3%		
2015 - 2020	5.1%		4.8%		
2000 - 2020	5.8%		5.5%		

Sources: Lee County Port Authority
Ricondo & Associates, Inc.
FAA Aerospace Forecasts, Fiscal Years 2001 - 2012

Table 3-14

TABLE 3-14
DOMESTIC REGIONAL/COMMUTER ENPLANEMENT PROJECTION
MARKET SHARE METHODOLOGY

	Airport		United States		
Year	Enplanements	Annual Growth	Enplanements	Annual Growth	Market Share
Historical					
1990	42,429	--	35,500,000	--	0.120%
1991	47,230	11.3%	38,700,000	9.0%	0.122%
1992	64,558	36.7%	44,700,000	15.5%	0.144%
1993	76,136	17.9%	49,200,000	10.1%	0.155%
1994	121,318	59.3%	55,300,000	12.4%	0.219%
1995	138,880	14.5%	55,800,000	0.9%	0.249%
1996	132,286	-4.7%	60,000,000	7.5%	0.220%
1997	101,303	-23.4%	62,300,000	3.8%	0.163%
1998	152,446	50.5%	65,900,000	5.8%	0.231%
1999	171,832	12.7%	74,300,000	12.7%	0.231%
2000	158,889	-7.5%	79,600,000	7.1%	0.200%
Projected					
2005	178,200		107,200,000		0.166%
2010	221,300		139,800,000		0.158%
2015	266,300		177,200,000		0.150%
2020	312,300		219,500,000		0.142%
Annual Compounded Growth Rate					
1990 - 2000	14.1%		8.4%		
1995 - 2000	2.7%		7.4%		
2000 - 2005	2.3%		6.1%		
2005 - 2010	4.4%		5.5%		
2010 - 2015	3.8%		4.9%		
2015 - 2020	3.2%		4.4%		
2000 - 2020	3.4%		5.2%		

Sources: Lee County Port Authority
Ricondo & Associates, Inc.
FAA Aerospace Forecasts, Fiscal Years 2001 - 2012

Table 3-15

TABLE 3-15
SUMMARY OF ENPLANEMENT PROJECTIONS
MARKET SHARE METHODOLOGY

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total
Historical				
1990	1,789,652	41,097	42,429	1,873,178
1991	1,646,924	44,184	47,230	1,738,338
1992	1,653,057	46,195	64,558	1,763,810
1993	1,760,409	40,043	76,136	1,876,588
1994	1,864,370	39,843	121,318	2,025,531
1995	1,886,675	47,826	138,880	2,073,381
1996	1,997,588	58,253	132,286	2,188,127
1997	2,100,532	61,499	101,303	2,263,334
1998	2,131,747	74,065	152,446	2,358,258
1999	2,234,330	63,952	171,832	2,470,114
2000	2,400,345	72,854	158,889	2,632,088
Projected				
2005	3,015,700	100,100	178,200	3,294,000
2010	3,623,500	134,000	221,300	3,978,800
2015	4,333,700	175,800	266,300	4,775,800
2020	5,089,300	225,500	312,300	5,627,100
Annual Compounded Growth Rate				
1990 - 2000	3.0%	5.9%	14.1%	3.5%
2000 - 2005	4.7%	6.6%	2.3%	4.6%
2005 - 2010	3.7%	6.0%	4.4%	8.6%
2010 - 2015	3.6%	5.6%	3.8%	3.7%
2015 - 2020	3.3%	5.1%	3.2%	3.3%
2000 - 2020	3.8%	5.8%	3.4%	3.9%

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

3.4.2 Regression Analyses

A regression analysis compares proven relationships between various socioeconomic variables for the Airport's market area to aviation activity. A mathematical regression analysis model was developed to correlate the past relationship of these variables to the Airport's enplanements and then to project this relationship using the independent forecasts of these economic/demographic variables. Independent variable inputs were tested, and a simple trend line was determined to test the resulting projections.

Four steps were required in the regression analysis:

- Selecting the dependent variable (i.e., enplanements);
- Selecting the independent variable;
- Developing the regression projections; and
- Testing the adequacy of the regression projections.

The Airport's demand for air service is generally driven by factors directly related to the Air Trade Area's demographic and economic characteristics. As such, three socioeconomic variables were used as the independent variables for the regression analysis:

- Population – The number of persons residing in the region, based on data reported by the U.S. Census Bureau. For this analysis, historical and projected population data for the Air Trade Area was obtained from University of Florida, Bureau of Business Research.

- Employment – Number of persons employed in the region, based on nonagricultural employment data collected by the U.S. Department of Labor, Bureau of Labor Statistics. Historical and projected data for the independent variables listed above associated with the Airport's market area were obtained from National Planning Association (NPA) Data Services, Inc. Because NPA projections are done on a national basis, they provide an independent evaluation of the population and economic growth for the region.

- Per Capita Income (PCI) – PCI indicates a relationship between the wealth of the citizens of the Air Trade Area with the population level for the region. Residents with higher relative income levels are more likely to travel by air. PCI data is based on regional statistics collected by the U.S. Department of Labor, Bureau of Labor Statistics.

In addition to the socioeconomic regression analyses, a linear trend analysis was also undertaken. The linear trend analysis examines the historical growth in enplanements and then produces a linear formula which best describes the Airport's historical activity by a straight line. The resulting straight line represents the "best fit," in which an equal number of historical data observations are both above and below that line. This line is then extended outward to provide enplanement projections.

The results of the various regression analyses are described below.

- Population Regression – **Table 3-16** depicts the results of the population regression analysis. As shown, Air Trade Area population is projected to increase at an annual compounded growth rate of 1.7 percent between 2000 and 2020. Using population as the basis for the regression analysis, total Airport enplanements are projected to increase from 2,632,088 in 2000 to approximately 4,415,800 in 2020, resulting in an annual compounded growth rate of 2.6 percent.

- Employment Regression – **Table 3-17** depicts the results of the employment regression analysis. As shown, Air Trade Area employment is projected to increase at an annual compounded growth rate of 2.9 percent between 2000 and 2020. Using employment as the basis for the regression analysis, total Airport enplanements are projected to increase from 2,632,088 in 2000 to approximately 4,749,600 in 2020, resulting in an annual compounded growth rate of 3.0 percent.

- PCI Regression – **Table 3-18** depicts the results of the PCI regression analysis. As shown, Air Trade Area PCI is projected to increase at an annual compounded growth rate of 2.0 percent between 2000 and 2020. Using PCI as the basis for the regression analysis, total Airport enplanements are projected to increase from 2,632,088 in 2000 to approximately 4,414,100 in 2020, resulting in an annual compounded growth rate of 2.6 percent.

- Linear Trend Analysis – **Table 3-19** presents the results of the projections produced using the linear trend analysis. As shown, total Airport enplanements are projected to increase from 2,632,088 in 2000 to approximately 4,260,000 in 2020, representing an annual compounded growth rate of 2.4 percent.

Overall, the regression methodology resulted in very good correlations between the independent socioeconomic variables and the dependent enplanements. **Table 3-20** depicts the adequacy of each of the tested socioeconomic variables. The correlation coefficient (r^2) is a statistical measure showing the relationship between changes in the values of the independent variables with the changes in the values of the dependent variables. A perfect correlation of 1.0 would mean that each change in the value of the independent variable would translate into a change of equal magnitude in the dependent variable. In the case of an r^2 value of 1.0, movement in the independent variable would be an excellent predictor of what would happen to the dependent variable. In statistical analysis, the closer the r^2 value is to 1.0, the higher the confidence that movements in independent variables will produce the predicted movement in the dependent variable. The standard error of estimate (S_y) measures the similarity between the historical levels of the dependent variable and the estimates of the dependent variable. The closer the S_y value is to zero, the higher the r^2 value is to 1.0, and the higher the correlation.

As shown in Table 3-20, all of the regression analyses, resulted in correlation coefficients of greater than 0.90. The employment and PCI regression models resulted in the highest correlation, with an r^2 value of 0.97442 and 0.97358, respectively. The population regression model produced the lowest correlation, with an r^2 value of 0.91762. As presented above, the regression analyses resulted in very similar enplanement projections ranging from 4.2 million to 4.7 million in 2020. This close fit of all of the regression forecasts is typical given the fact that each of the demographic variables used for the regressions are inter-related, and are influenced by many of the same underlying economic factors.

Table 3-16

TABLE 3-16
ENPLANEMENT PROJECTIONS
POPULATION REGRESSION METHODOLOGY

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total	Annual Growth	Market Area Population	Annual Growth
Historical							
1990	1,789,652	41,097	42,429	1,873,178	--	631,600	--
1991	1,646,924	44,184	47,230	1,738,338	-7.2%	659,500	4.4%
1992	1,653,057	46,195	64,558	1,763,810	1.5%	672,800	2.0%
1993	1,760,409	40,043	76,136	1,876,588	6.4%	687,500	2.2%
1994	1,864,370	39,843	121,318	2,025,531	7.9%	705,600	2.6%
1995	1,886,675	47,826	138,880	2,073,381	2.4%	720,300	2.1%
1996	1,997,588	58,253	132,286	2,188,127	5.5%	732,900	1.7%
1997	2,100,532	61,499	101,303	2,263,334	3.4%	748,600	2.1%
1998	2,131,747	74,065	152,446	2,358,258	4.2%	765,400	2.2%
1999	2,234,330	63,952	171,832	2,470,114	4.7%	810,700	5.9%
2000	2,400,345	72,854	158,889	2,632,088	6.6%	880,700	8.6%
Projected							
2005	2,730,700	99,500	183,900	3,014,100		923,100	
2010	3,150,500	128,500	217,700	3,496,700		1,030,100	
2015	3,544,800	160,200	251,200	3,956,200		1,131,950	
2020	3,930,100	198,700	287,000	4,415,800		1,233,800	
Annual Compounded Growth Rate							
1990 - 2000	3.0%	5.9%	14.1%	3.5%		3.4%	
2000 - 2005	2.6%	6.4%	3.0%	2.7%		0.9%	
2005 - 2010	2.9%	5.2%	3.4%	3.0%		2.2%	
2010 - 2015	2.4%	4.5%	2.9%	2.5%		1.9%	
2015 - 2020	2.1%	4.4%	2.7%	2.2%		1.7%	
2000 - 2020	2.5%	5.1%	3.0%	2.6%		1.7%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.
University of Florida, Bureau and Business Research

Table 3-17

TABLE 3-17
ENPLANEMENT PROJECTION
EMPLOYMENT REGRESSION METHODOLOGY

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total	Annual Growth	Market Area Employment	Annual Growth
Historical							
1990	1,789,652	41,097	42,429	1,873,178	--	311,600	--
1991	1,646,924	44,184	47,230	1,738,338	-7.2%	314,800	1.0%
1992	1,653,057	46,195	64,558	1,763,810	1.5%	318,800	1.3%
1993	1,760,409	40,043	76,136	1,876,588	6.4%	333,600	4.6%
1994	1,864,370	39,843	121,318	2,025,531	7.9%	348,300	4.4%
1995	1,886,675	47,826	138,880	2,073,381	2.4%	360,700	3.6%
1996	1,997,588	58,253	132,286	2,188,127	5.5%	375,300	4.0%
1997	2,100,532	61,499	101,303	2,263,334	3.4%	387,200	3.2%
1998	2,131,747	74,065	152,446	2,358,258	4.2%	407,300	5.2%
1999	2,234,330	63,952	171,832	2,470,114	4.7%	422,700	3.8%
2000	2,400,345	72,854	158,889	2,632,088	6.6%	440,200	4.1%
Projected							
2005	2,861,700	104,200	192,700	3,158,600		526,700	
2006	2,965,700	110,600	200,700	3,277,000		545,000	
2007	3,066,000	117,000	208,600	3,391,600		562,700	
2008	3,163,100	123,500	216,300	3,502,900		579,900	
2009	3,260,500	130,100	224,100	3,614,700		597,200	
2010	3,358,400	137,000	232,000	3,727,400		614,600	
2015	3,807,000	172,100	269,800	4,248,900		695,200	
2020	4,227,200	213,700	308,700	4,749,600		772,600	
Annual Compounded Growth Rate							
1990 - 2000	3.0%	5.9%	14.1%	3.5%		3.5%	
2000 - 2005	3.6%	7.4%	3.9%	3.7%		3.7%	
2005 - 2010	3.3%	5.6%	3.8%	3.4%		3.1%	
2010 - 2015	2.5%	4.7%	3.1%	2.7%		2.5%	
2015 - 2020	2.1%	4.4%	2.7%	2.3%		2.1%	
2000 - 2020	2.9%	5.5%	3.4%	3.0%		2.9%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.
NPA Data Services

Table 3-18

TABLE 3-18
ENPLANEMENT PROJECTIONS
PER CAPITA INCOME REGRESSION METHODOLOGY

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total	Annual Growth	Per Capita Income	Annual Growth
Historical							
1990	1,789,652	41,097	42,429	1,873,178	--	$25,317	--
1991	1,646,924	44,184	47,230	1,738,338	-7.2%	$24,707	-2.4%
1992	1,653,057	46,195	64,558	1,763,810	1.5%	$25,313	2.5%
1993	1,760,409	40,043	76,136	1,876,588	6.4%	$25,665	1.4%
1994	1,864,370	39,843	121,318	2,025,531	7.9%	$26,388	2.8%
1995	1,886,675	47,826	138,880	2,073,381	2.4%	$27,081	2.6%
1996	1,997,588	58,253	132,286	2,188,127	5.5%	$27,663	2.1%
1997	2,100,532	61,499	101,303	2,263,334	3.4%	$28,971	4.7%
1998	2,131,747	74,065	152,446	2,358,258	4.2%	$29,745	2.7%
1999	2,234,330	63,952	171,832	2,470,114	4.7%	$30,923	4.0%
2000	2,400,345	72,854	158,889	2,632,088	6.6%	$31,948	3.3%
Projected							
2005	2,940,400	107,100	198,000	3,245,500		$37,151	
2010	3,331,400	135,900	230,200	3,697,500		$40,976	
2015	3,646,600	164,800	258,400	4,069,800		$44,128	
2020	3,928,600	198,600	286,900	4,414,100		$47,042	
Annual Compounded Growth Rate							
1990 - 2000	3.0%	5.9%	14.1%	3.5%		2.4%	
2000 - 2005	4.1%	8.0%	4.5%	4.3%		3.1%	
2005 - 2010	2.5%	4.9%	3.1%	2.6%		2.0%	
2010 - 2015	1.8%	3.9%	2.3%	1.9%		1.5%	
2015 - 2020	1.5%	3.8%	2.1%	1.6%		1.3%	
2000 - 2020	2.5%	5.1%	3.0%	2.6%		2.0%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.
NPA Data Services

Table 3-19

TABLE 3-19
ENPLANEMENT PROJECTIONS
TREND ANALYSIS REGRESSION METHODOLOGY

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total	Annual Growth
Historical					
1990	1,789,652	41,097	42,429	1,873,178	--
1991	1,646,924	44,184	47,230	1,738,338	-7.2%
1992	1,653,057	46,195	64,558	1,763,810	1.5%
1993	1,760,409	40,043	76,136	1,876,588	6.4%
1994	1,864,370	39,843	121,318	2,025,531	7.9%
1995	1,886,675	47,826	138,880	2,073,381	2.4%
1996	1,997,588	58,253	132,286	2,188,127	5.5%
1997	2,100,532	61,499	101,303	2,263,334	3.4%
1998	2,131,747	74,065	152,446	2,358,258	4.2%
1999	2,234,330	63,952	171,832	2,470,114	4.7%
2000	2,400,345	72,854	158,889	2,632,088	6.6%
Projected					
2005	2,695,300	98,200	181,500	2,975,000	
2010	3,066,300	125,100	211,800	3,403,200	
2015	3,433,100	155,200	243,300	3,831,600	
2020	3,791,400	191,700	276,900	4,260,000	
Annual Compounded Growth Rate					
1990 - 2000	3.0%	5.9%	14.1%	3.5%	
2000 - 2005	2.3%	6.2%	2.7%	2.5%	
2005 - 2010	2.6%	5.0%	3.1%	2.7%	
2010 - 2015	2.3%	4.4%	2.8%	2.4%	
2015 - 2020	2.0%	4.3%	2.6%	2.1%	
2000 - 2020	2.3%	5.0%	2.8%	2.4%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

Table 3-20

TABLE 3-20
ADEQUANCY OF TESTED REGRESSION MODELS

Regression Models	Regression Statistics: Correlation Coefficient (r^2)	Regression Statistics: Standard Error of Estimate (S_y)
Population	0.91762	89,287
Employment	0.97442	49,613
Per Capita Income (PCI)	0.97358	50,561
Trend Analysis	0.92707	87,177

Source: Ricondo & Associates, Inc.

3.4.3 Enplanement Projection Scenarios

In addition to the traditional enplanement projections that are examined in a master plan forecast, two additional enplanement projection scenarios were also examined for the Airport. This section provides descriptions and key assumptions related to various alternative scenarios of demand at the Airport beyond the traditional projections presented earlier. These scenarios include:

- New Low-Fare Entrant
- Economic Downturn

Each of these enplanement projection scenarios, and their resulting enplanement levels, are described in the following sections.

New Low-Fare Entrant

The Airport is currently provided with low-fare service by Spirit and Jet Blue airlines to a number of domestic markets. As presented in **Table 3-21**, this scenario assumes that a n additional entrant low-fare carrier will initiate a significant level of new service at the Airport to a number of new markets within five years. As a result, a certain amount of stimulation would occur at the Airport from additional new low-fare entrants. As has been demonstrated in other markets throughout the U.S., the entrance of additional new low-fare airlines can have dramatic effects on not only the Airport as a whole, but also each of the other individual airlines currently serving the market. Low fare-entrants serve to stimulate passenger traffic in the market by attracting passengers to the airport that might otherwise travel via automobile or fly out of another nearby competing airport.

For comparison purposes, historical activity at three other Florida airports (Ft. Lauderdale International, Jacksonville International, and Tampa International) was reviewed to identify the impact that a new low-fare carrier had on overall passenger enplanements at those airports. Based on this review, enplanements at each airport was found to have increased between 15 and 17 percent during the first full year of service by the new low-fare carrier, and between six and eight percent during the second year of service. Beyond the second year, passenger enplanements basically returned to more normal growth patterns for each of the airports.

Based on the findings of the review of historical enplanements at Ft. Lauderdale International, Jacksonville International, and Tampa International, passenger enplanements were assumed to increase by an additional 16 percent the first year (assumed to be 2005 for these analyses), and an additional 8 percent in the second year following the initiation of service by a low-fare carrier. Beyond the second year of service, the Airport's enplanements were projected to increase at the same rate as that projected by the FAA for the entire U.S. Based on these assumptions, total Airport enplanements are projected to increase from 2,632,088 in 2000, to approximately 6,733,000 in 2020, representing an annual compounded growth rate of 4.8 percent.

Table 3-21

TABLE 3-21
PASSENGER ENPLANEMENT SCENARIO 1
NEW LOW FARE CARRIER SERVICE

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total
Historical				
1990	1,789,652	41,097	42,429	1,873,178
1991	1,646,924	44,184	47,230	1,738,338
1992	1,653,057	46,195	64,558	1,763,810
1993	1,760,409	40,043	76,136	1,876,588
1994	1,864,370	39,843	121,318	2,025,531
1995	1,886,675	47,826	138,880	2,073,381
1996	1,997,588	58,253	132,286	2,188,127
1997	2,100,532	61,499	101,303	2,263,334
1998	2,131,747	74,065	152,446	2,358,258
1999	2,234,330	63,952	171,832	2,470,114
2000	2,400,345	72,854	158,889	2,632,088
Projected				
2005	3,458,000	99,000	185,000	3,742,000
2010	4,401,000	132,000	233,000	4,766,000
2015	5,264,000	173,000	280,000	5,717,000
2020	6,182,000	221,000	330,000	6,733,000
Annual Compounded Growth Rate				
1990 - 2000	3.0%	5.9%	14.1%	3.5%
2000 - 2005	7.6%	6.3%	3.1%	7.3%
2005 - 2010	4.9%	5.9%	4.7%	12.6%
2010 - 2015	3.6%	5.6%	3.7%	3.7%
2015 - 2020	3.3%	5.0%	3.3%	3.3%
2000 - 2020	4.8%	5.7%	3.7%	4.8%

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

Economic Downturn

In any given year, there are likely to be variations in the economic activity of the U.S. This scenario, however, examines the potential impact to future activity at the Airport that might result from a sustained slowdown in the economic growth of the Airport's Air Trade Area due to an economic downturn or nationwide recession.

Recent economic forecasts prepared by the Executive Office of the President and the Office of Management and Budget (OMB) projected continued growth for the U.S. economy, however at lower rates in the near-term than the growth which has been experienced in recent years. The OMB economic forecasts anticipate moderate growth throughout the forecast period. In the short-term, U.S. real Gross Domestic Product (GDP) is projected to increase by 2.7 percent in 2001, then increase to average growth of 3.2 percent over the next 5 years. GDP is forecast to increase at an average annual growth rate of 3.1 percent over the entire 12-year forecast period. The consumer price index is projected to remain in the moderate range throughout the 12-year forecast period, increasing at an average annual rate of 2.5 percent. The recently prepared FAA Aerospace Forecasts, Fiscal Years 2001-2012 account for these projected growth rates in the U.S. economy.

Due to the Air Trade Area's reliance of the tourism and trade industries, the region, and in turn the Airport, are particularly susceptible to nationwide economic downturns. As a result, this enplanement scenario assumes that the Airport's Air Trade Area will experience a leveling, or even decrease, in enplanements in the near-term due to the recent economic slowdown. As presented in **Table 3-22**, under this enplanement scenario, the Airport's enplanements are projected to remain relatively constant through 2005, increasing by an annual compounded growth rate of only 0.6 percent. Beyond 2005, the Airport's enplanements are projected to return to more normal growth, however, at somewhat lower growth rates than experienced historically. From 2005 to 2020, the Airport's enplanements are projected to increase at an annual compounded growth rate of 2.6 percent. Based on these assumptions, total Airport enplanements are projected to increase from 2,632,088 in 2000, to approximately 4,076,000 in 2020, representing an annual compounded growth rate of 2.2 percent.

3.4.4 Comparison of Enplanement Projections

Based on the passenger enplanement forecasts presented in the previous sections, the following summarizes the key findings of the enplanement projections for the Airport. Enplanement forecasts prepared using each of the methodologies discussed earlier are presented in **Table 3-23**. In addition, for comparison purposes, enplanement projections from the Airport's 1991 Master Plan and the FAA's most recent Terminal Area Forecasts (TAF) are presented in **Table 3-23**. **Figure 3-3** presents a graphical comparison of the enplanement projections prepared as part of this analysis.

Table 3-22

TABLE 3-22
PASSENGER ENPLANEMENT SCENARIO 2
NATIONWIDE ECONOMIC DOWNTURN

Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	Airport Total
Historical				
1990	1,789,652	41,097	42,429	1,873,178
1991	1,646,924	44,184	47,230	1,738,338
1992	1,653,057	46,195	64,558	1,763,810
1993	1,760,409	40,043	76,136	1,876,588
1994	1,864,370	39,843	121,318	2,025,531
1995	1,886,675	47,826	138,880	2,073,381
1996	1,997,588	58,253	132,286	2,188,127
1997	2,100,532	61,499	101,303	2,263,334
1998	2,131,747	74,065	152,446	2,358,258
1999	2,234,330	63,952	171,832	2,470,114
2000	2,400,345	72,854	158,889	2,632,088
Projected				
2005	2,476,000	75,000	164,000	2,715,000
2010	2,906,000	100,000	199,000	3,205,000
2015	3,294,000	125,000	231,000	3,650,000
2020	3,657,000	155,000	264,000	4,076,000
Annual Compounded Growth Rate				
1990 - 2000	3.0%	5.9%	14.1%	3.5%
2000 - 2005	0.6%	0.6%	0.6%	0.6%
2005 - 2010	3.3%	5.9%	3.9%	4.0%
2010 - 2015	2.5%	4.6%	3.0%	2.6%
2015 - 2020	2.1%	4.4%	2.7%	2.2%
2000 - 2020	2.1%	3.8%	2.6%	2.2%

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

Table 3-23

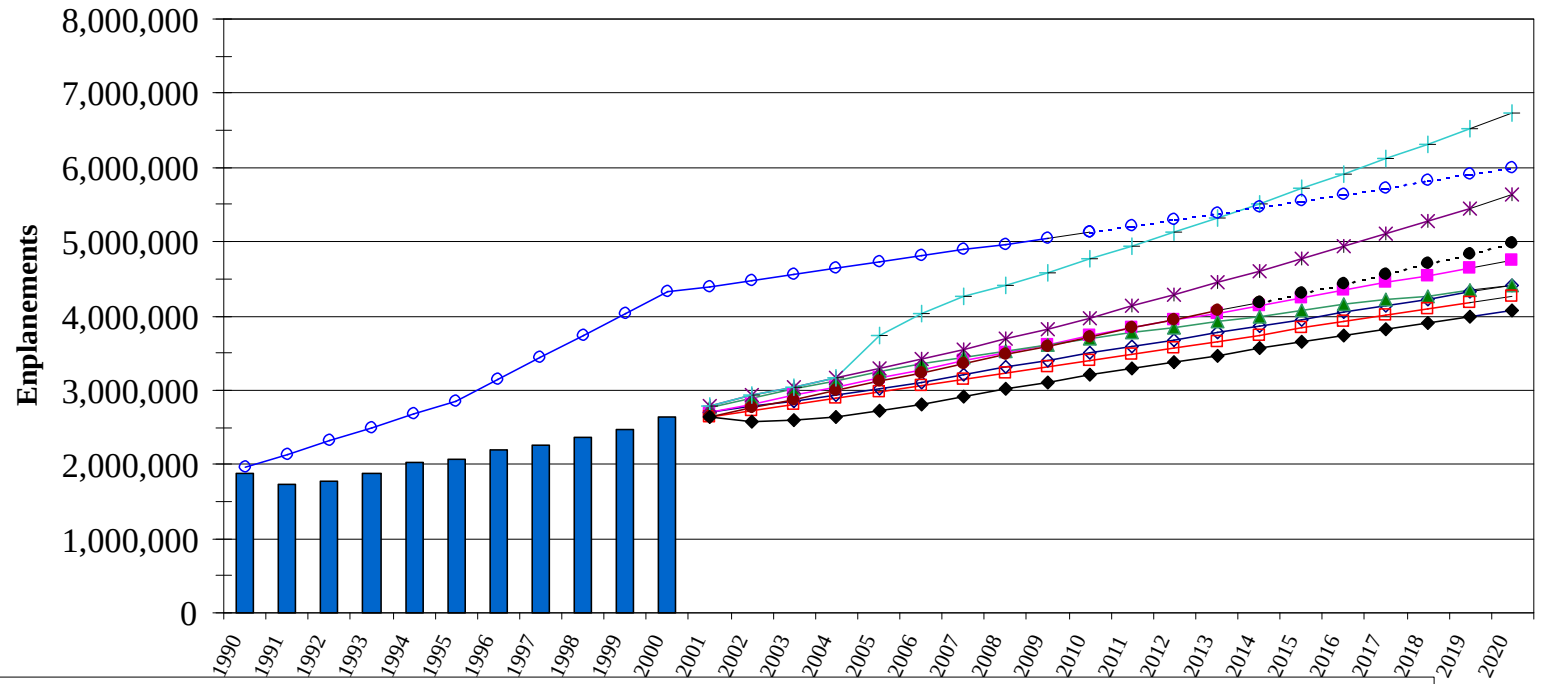
TABLE 3-23
COMPARISON OF ENPLANEMENT PROJECTIONS

		Regression Analyses				Enplanement Scenarios			
Year	Market Share	Population Regression	Employment Regression	PCI Regression	Trend Analysis Regression	New Low Fare Entrant	Economic Downturn	1991 Master Plan	FAA Terminal Area Forecast
Historical									
1990	1,873,178	1,873,178	1,873,178	1,873,178	1,873,178	1,873,178	1,873,178	1,959,000	1,780,766
1991	1,738,338	1,738,338	1,738,338	1,738,338	1,738,338	1,738,338	1,738,338	2,137,000	1,696,072
1992	1,763,810	1,763,810	1,763,810	1,763,810	1,763,810	1,763,810	1,763,810	2,315,000	1,680,259
1993	1,876,588	1,876,588	1,876,588	1,876,588	1,876,588	1,876,588	1,876,588	2,493,000	1,765,797
1994	2,025,531	2,025,531	2,025,531	2,025,531	2,025,531	2,025,531	2,025,531	2,671,000	1,938,706
1995	2,073,381	2,073,381	2,073,381	2,073,381	2,073,381	2,073,381	2,073,381	2,849,000	1,989,677
1996	2,188,127	2,188,127	2,188,127	2,188,127	2,188,127	2,188,127	2,188,127	3,143,000	2,104,260
1997	2,263,334	2,263,334	2,263,334	2,263,334	2,263,334	2,263,334	2,263,334	3,437,000	2,179,338
1998	2,358,258	2,358,258	2,358,258	2,358,258	2,358,258	2,358,258	2,358,258	3,731,000	2,252,107
1999	2,470,114	2,470,114	2,470,114	2,470,114	2,470,114	2,470,114	2,470,114	4,025,000	2,403,891
2000	2,632,088	2,632,088	2,632,088	2,632,088	2,632,088	2,632,088	2,632,088	4,319,000	2,522,921
Projected									
2005	3,294,000	3,014,100	3,158,600	3,245,500	2,975,000	3,742,000	2,715,000	4,724,500	3,118,077
2010	3,978,800	3,496,700	3,727,400	3,697,500	3,403,200	4,766,000	3,205,000	5,130,000	3,713,233
2015	4,775,800	3,956,200	4,248,900	4,069,800	3,831,600	5,717,000	3,650,000	--	4,308,391
2020	5,627,100	4,415,800	4,749,600	4,414,100	4,260,000	6,733,000	4,076,000	--	--
Annual Compounded Growth Rate									
1990 - 2000	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	8.2%	3.5%
2000 - 2005	4.6%	2.7%	3.7%	4.3%	2.5%	7.3%	0.6%	1.8%	4.3%
2005 - 2010	3.8%	3.0%	3.4%	2.6%	2.7%	5.0%	3.4%	1.7%	3.6%
2010 - 2015	3.7%	2.5%	2.7%	1.9%	2.4%	3.7%	2.6%	--	3.0%
2015 - 2020	3.3%	2.2%	2.3%	1.6%	2.1%	3.3%	2.2%	--	--
2000 - 2020	3.9%	2.6%	3.0%	2.6%	2.4%	4.8%	2.2%	--	--

Sources: Lee County Port Authority
FAA Terminal Forecast, February 2001
1991 Master Plan by Coffman Associates, Inc.
Ricondo & Associates, Inc.

Figure 3-3

Figure 3-3
Comparison of Enplanement Projections



The following summarizes key points of the various enplanement projections for the Airport:

- As shown, the new low-fare carrier scenario results in the highest enplanement forecast, and projects enplanements to reach 6.7 million enplanements by 2020, while the economic downturn scenario resulted in the lowest enplanement projection for the Airport of just over 4.0 million enplanements in 2020.

- Each of the regression forecasts (i.e., population, employment, PCI, and trend analysis) resulted in very similar enplanement projections, ranging from a low of 4.3 million to 4.7 million enplanements by 2020.

- The Market Share/Growth Rate forecast, which accounts for both local and nationwide trends in economic and aviation activity, projects Airport enplanements to reach approximately 5.6 million by 2020.

- The most recent FAA TAF prepared for the Airport projects Airport enplanements to increase to approximately 4.3 million in 2015. Extrapolating the FAA TAF out to the year 2020, yields an estimated enplanement level of approximately 5.0 million.

For the purposes of this study, the enplanement projections resulting from the market share methodology were chosen as the preferred enplanement forecast for the Airport. While these projections are somewhat higher than those resulting from the socioeconomic regression analyses and the FAA's TAF, the market share enplanement projections are preferred for the following reasons:

- Historically between 1990 and 2000, the Airport's enplanements have outpaced enplanement growth for the nation (i.e., 3.5 percent versus 3.4 percent annually between 1990 and 2000). This is particularly true in recent years, where the Airport's enplanement growth since 1997 has increased at an annual compounded growth rate of 5.2 percent versus the 3.3 percent growth for the U.S. during this same period. This trend is expected to continue in the future given the strong growth in economic activity and population projected for the Air Trade Area presented earlier. Through 2012, the FAA projects total U.S. enplanements to increase by an annual compounded growth rate of approximately 3.8 percent. By comparison, under the Market Share/Growth Rate forecast, the Airport's enplanements are projected to increase by an annual compounded growth rate of 4.1 percent through 2015, and 3.9 percent through 2020.

- Although the regression analyses resulted in very high correlation factors when compared to historical enplanement growth at the Airport, these forecasts resulted in low annual compounded growth rates ranging from 2.4 to 3.0 percent. As such, these enplanement projections are considered to be too conservative as compared to the Airport's historical enplanement growth of 3.5 percent from 1990 to 2000.

- When compared to the FAA's TAF for the Airport, the Market Share/Growth Rate forecast is approximately 10 percent higher in 2015, the last year in which the FAA TAF forecasts enplanements.

Based on the preferred enplanement forecasts produced by the Market Share/Growth Rate

forecast, the following sections of this report present the forecast of aircraft operations and the associated peak demand activity levels for the Airport.

3.5 PROJECTION OF AIRLINE OPERATIONS AND FLEET MIX

This section presents operations and fleet mix projections for the air carriers and regional/commuters serving the Airport. Operations and fleet mix projections were developed separately for domestic air carrier, international air carrier, and regional/commuter carriers serving the Airport due to the inherent operational differences between each group. Projections of airline operations were developed using the enplaned passenger projections presented earlier, in conjunction with historical and expected trends in load factors and average aircraft seats per departure.

3.5.1 Domestic Air Carrier Operations

Projections of operations by domestic air carrier airlines are presented in **Table 3-24**. The following points highlight the key assumptions that were used to derive domestic air carrier operations projections for the Airport:

- As mentioned previously, in recent years, the domestic air carrier airlines have shifted operations to larger aircraft, while maintaining the number of aircraft operations. Delta in particular shifted its operations from the B-727 and MD-80 aircraft to the B-767 in 1999. Similarly, Northwest and United have transitioned from the B-727 to the larger B-757 aircraft. Average seats for the domestic air carrier airlines has increased from 135.3 seats in 1995 to a high of 154.4 seats in 2000. This increasing trend, however, is considered to be nearing an end as can be seen through an examination of the increased number of domestic air carrier operations in 2000 and the relatively small increase in the number of average seats per aircraft from 1999 to 2000 (i.e., 153.5 seats versus 154.4 seats). By comparison, average domestic air carrier seats for the nation have decreased from an average of 149.7 seats in 1995 to 139.3 seats in 2000.

  Current fleet plans for domestic air carrier airlines show that the average seat size is anticipated to increase nationwide. As such, for projection purposes, average seats per departure for the Airport are projected to continue to increase, yet at slower rates than has been experienced recently. Overall, average domestic air carrier aircraft seats are projected to increase by approximately 0.5 seats per year.

- Historically, load factors for the Airport's domestic air carrier airlines have been high, increasing from 75.0 percent in 1995 to a high of 81.3 percent in 2000, as compared to 70.9 percent for the nation in 2000. For projection purposes, average domestic air carrier load factors at the Airport are anticipated to remain constant at 81.3 percent through 2020.

Table 3-24

TABLE 3-24
DOMESTIC AIR CARRIER OPERATIONS PROJECTION

Year	Domestic Air Carrier Enplanements	Total Passengers Departing	Average Seats	Load Factor	Departures	Operations	Annual Growth
Historical							
1995	1,886,675	1,886,675	135.3	75.0%	18,605	37,210	--
1996	1,997,588	1,997,588	142.5	76.4%	18,347	36,694	-1.4%
1997	2,100,532	2,100,532	144.2	79.9%	18,238	36,476	-0.6%
1998	2,131,747	2,131,747	149.0	80.2%	17,837	35,674	-2.2%
1999	2,234,330	2,234,330	153.5	81.9%	17,778	35,556	-0.3%
2000	2,400,345	2,400,345	154.4	81.3%	19,120	38,240	7.5%
Projected							
2005	3,015,700	3,015,700	156.9	81.3%	23,600	47,200	
2010	3,623,500	3,623,500	159.4	81.3%	28,000	56,000	
2015	4,333,700	4,333,700	161.9	81.3%	32,900	65,800	
2020	5,089,300	5,089,300	164.4	81.3%	38,100	76,200	
Annual Compounded Growth Rate							
1995 - 2000	4.9%					0.5%	
2000 - 2005	4.7%					4.3%	
2005 - 2010	3.7%					3.5%	
2010 - 2015	3.6%					3.3%	
2015 - 2020	3.3%					3.0%	
2000 - 2020	3.8%					3.5%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

As shown in Table 3-24, total domestic air carrier operations are expected to increase from 38,240 in 2000 to approximately 76,200 in 2020. This increase represents an annual compounded growth rate of 3.5 percent during this period, compared to 3.1 percent projection by the FAA for air carriers nationwide. This higher than nationwide growth is primarily due to a combination of factors, including the lower growth in average aircraft seat size and constant aircraft load factors assumed throughout the planning period.

Aircraft fleet mix projections for the domestic air carrier airlines are presented in **Table 3-25**. This table ties in the assumptions of growth in average seats per departure for the domestic air carrier airlines presented in Table 3-24. As shown, the domestic air carrier fleet mix is expected to consist primarily of B-737, B-757, and B-767 aircraft, with these aircraft accounting for approximately 75 percent of the domestic air carrier fleet mix.

3.5.2 International Air Carrier Operations

Projections of operations by international air carrier airlines are presented in **Table 3-26**. The following points highlight the key assumptions that were used to derive international air carrier operations projections for the Airport:

- Similar to the domestic air carrier airlines, the international air carrier airlines have shifted operations to larger aircraft, while maintaining the number of aircraft operations. In recent years, a number of international airlines such as LTU International Airway, Air Transat, and Condor have initiated service with larger aircraft including the B-757, B-767, and A-330 aircraft. As such, average seats for the international air carrier airlines has increased from 186.1 seats in 1995 to a high of 226.3 seats in 2000. By comparison, average international air carrier seats for the nation have decreased from an average of 247.6 seats in 1995 to 234.1 seats in 2000.

  Nationwide, the average aircraft size for international air carriers is projected to increase by approximately 1.2 seats per year. For projection purposes, average seats per departure for the Airport are projected to continue to increase, yet at slower rates than has been experienced recently. Overall, average domestic air carrier aircraft seats are projected to increase by approximately 0.5 seats per year.

- Historically, load factors for the Airport's international air carrier airlines have remained relatively constant, ranging from a low of 62.2 percent in 1995 to a high of 72.5 percent in 1996, as compared to 76.0 percent for the nation in 2000. For projection purposes, average international air carrier load factors at the Airport are anticipated to increase to approximately 70.0 percent by 2020.

As shown in Table 3-26, total international air carrier operations are expected to increase from 976 in 2000 to approximately 2,800 in 2020. This increase represents an annual compounded growth rate of 5.4 percent during this period.

Table 3-25

TABLE 3-25
PROJECTED DOMESTIC AIR CARRIER AIRCRAFT FLEET MIX

		ACTUAL		PROJECTED							
	Average	2000		2005		2010		2015		2020	
Aircraft Type	Seats	Departures	%	Departures	%	Departures	%	Departures	%	Departures	%
Airbus A319	120.6	945	4.9%	1,170	5.0%	1,392	5.0%	1,640	5.0%	1,905	5.0%
Airbus A320	150.0	312	1.6%	525	2.2%	789	2.8%	1,121	3.4%	1,524	4.0%
Boeing 717	117.0	117	0.6%	403	1.7%	785	2.8%	1,284	3.9%	1,905	5.0%
Boeing 727-200	160.0	1,449	7.6%	1,341	5.7%	1,061	3.8%	623	1.9%	0	0.0%
Boeing 737-200	115.0	1,390	7.3%	1,287	5.5%	1,018	3.6%	598	1.8%	0	0.0%
Boeing 737-300	127.0	1,580	8.3%	1,757	7.4%	1,857	6.6%	1,913	5.8%	1,905	5.0%
Boeing 737-400	144.0	1,559	8.2%	2,151	9.1%	2,821	10.1%	3,631	11.0%	4,572	12.0%
Boeing 737-500	106.0	281	1.5%	496	2.1%	766	2.7%	1,108	3.4%	1,524	4.0%
Boeing 737-700	124.0	32	0.2%	265	1.1%	583	2.1%	1,001	3.0%	1,524	4.0%
Boeing 737-800	155.0	217	1.1%	909	3.9%	1,839	6.6%	3,054	9.3%	4,572	12.0%
Boeing 757	188.0	3,576	18.7%	4,490	19.0%	5,418	19.4%	6,473	19.7%	7,620	20.0%
Boeing 767-200	204.0	592	3.1%	1,020	4.3%	1,554	5.5%	2,229	6.8%	3,048	8.0%
Boeing 767-300	227.0	1,202	6.3%	1,703	7.2%	2,280	8.1%	2,985	9.1%	3,810	10.0%
Fokker 100	97.0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Lockheed L1011	362.0	87	0.5%	140	0.6%	204	0.7%	284	0.9%	381	1.0%
Mcdonnell Douglas DC9	105.0	1,152	6.0%	1,067	4.5%	844	3.0%	496	1.5%	0	0.0%
Mcdonnell Douglas DC10	360.0	2	0.0%	2	0.0%	1	0.0%	1	0.0%	0	0.0%
Mcdonnell Douglas MD-80	149.0	4,549	23.8%	4,801	20.3%	4,731	16.9%	4,424	13.4%	3,810	10.0%
Mcdonnell Douglas MD-87	133.0	69	0.4%	64	0.3%	50	0.2%	30	0.1%	0	0.0%
Mcdonnell Douglas MD-90	152.0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total Operations		19,120	100.0%	23,600	100.0%	28,000	100.0%	32,900	100.0%	38,100	100.0%

Sources: Official Airline Guide (OAG)
Ricondo & Associates, Inc.

Table 3-26

TABLE 3-26
INTERNATIONAL OPERATIONS PROJECTION

Year	International Enplanements	Passengers Departing	Average Seats	Load Factor	Departures	Operations	Annual Growth
Historical							
1995	47,826	47,826	186.1	62.2%	413	826	--
1996	58,253	58,253	184.3	72.5%	436	872	5.6%
1997	61,499	61,499	235.6	67.4%	387	774	-11.2%
1998	74,065	74,065	211.3	69.0%	508	1,016	31.3%
1999	63,952	63,952	214.1	70.9%	421	842	-17.1%
2000	72,854	72,854	226.3	66.0%	488	976	15.9%
Projected							
2005	100,100	100,100	228.8	67.0%	700	1,400	
2010	134,000	134,000	231.3	68.0%	900	1,800	
2015	175,800	175,800	233.8	69.0%	1,100	2,200	
2020	225,500	225,500	236.3	70.0%	1,400	2,800	
Annual Compounded Growth Rate							
1995 - 2000	8.8%				3.4%	3.4%	
2000 - 2005	6.6%				7.5%	7.5%	
2005 - 2010	6.0%				5.2%	5.2%	
2010 - 2015	5.6%				4.1%	4.1%	
2015 - 2020	5.1%				4.9%	4.9%	
2000 - 2020	5.8%				5.4%	5.4%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

Aircraft fleet mix projections for the international air carrier airlines are presented in **Table 3-27**. This table ties in the assumptions of growth in average seats per departure for the international air carrier airlines presented in Table 3-26. As shown, the international air carrier fleet mix is expected to consist primarily of A-320 and A-330 aircraft, which account for approximately 60 percent of the international air carrier fleet mix. The B-757 and B-767 aircraft are projected to account for another 25 percent of the international air carrier fleet mix at the Airport by 2020.

3.5.3 Regional/Commuter Operations

Projections of operations by regional/commuter airlines at the Airport are presented in **Table 3-28**. These projections were also developed based on historical enplaned passengers, load factors, and average seating capacities of aircraft utilized at the Airport.

- As shown in Table 3-28, average seats per departure have increased since 1995, from 28.9 seats to 33.5 seats in 2000. This increased regional/commuter aircraft size is due primarily to the shift of the regional/commuters to regional jet aircraft by Comair, United Express, and Mesa Airlines, as well as an increased utilization of the ATR-72 by American Eagle. By comparison, the average aircraft seat size for regional/commuters nationwide has increased from 30.3 seats in 1995 to 37.5 seats in 2000.

For projection purposes, the average regional/commuter aircraft seat size is projected to continue to increase by approximately 0.4 seats per year through the year 2020. Nationwide, the FAA projects regional/commuter aircraft seats to increase by approximately 0.7 seats per year.

- Historically, load factors for the Airport's regional/commuter airlines have generally increased, ranging from 56.6 percent in 1995 to 65.7 percent in 2000. By comparison, the average regional/commuter load factor for the nation was 55.2 percent in 2000. For projection purposes, average regional/commuter load factors at the Airport are anticipated to increase slightly to approximately 69.7 percent by 2020.

Aircraft fleet mix projections for regional/commuter aircraft at the Airport are presented in **Table 3-29**. This table ties in the assumptions of growth in average seats per departure for carriers presented in Table 3-28; and reflects current aircraft fleet mixes for this group, as well as assumed trends in future regional/commuter aircraft utilized nationwide. As shown in Table 3-29, a shifting to larger aircraft is expected to continue to occur during the projection period, with the 4-14 seat and 15-19 seat aircraft categories decreasing from approximately 42 percent in 2000 to approximately 25 percent in 2020; and the 20-40 seat and 41-60 seat aircraft categories increasing from 49 percent in 2000 to 60 percent in 2020. The 41-60 seat aircraft category includes regional jets such as the RJ Canadair.

Table 3-27

TABLE 3-27
PROJECTED INTERNATIONAL AIRCRAFT FLEET MIX

Aircraft Type	Average Seats	ACTUAL 2000 Departures	%	PROJECTED 2005 Departures	%	2010 Departures	%	2015 Departures	%	2020 Departures	%
Airbus A319	112.0	50	10.2%	67	9.6%	82	9.1%	94	8.5%	112	8.0%
Airbus A320	167.0	171	35.1%	240	34.3%	302	33.5%	360	32.8%	448	32.0%
Airbus A330	344.0	138	28.2%	197	28.2%	253	28.1%	309	28.1%	392	28.0%
Boeing 737-200	170.0	43	8.7%	46	6.5%	39	4.4%	24	2.2%	0	0.0%
Boeing 737 Variant	160.0	0	0.0%	9	1.3%	23	2.5%	41	3.8%	70	5.0%
Boeing 747	380.0	0	0.0%	4	0.5%	9	1.0%	17	1.5%	28	2.0%
Boeing 757-200	228.0	42	8.5%	66	9.4%	92	10.3%	122	11.1%	168	12.0%
Boeing 767-200	269.0	45	9.1%	71	10.1%	100	11.1%	132	12.0%	182	13.0%
Lockheed L1011	280.0	1	0.2%	1	0.2%	1	0.1%	1	0.1%	0	0.0%
Total Operations		488	100.0%	700	100.0%	900	100.0%	1,100	100.0%	1,400	100.0%

Sources: Official Airline Guide (OAG)
Ricondo & Associates, Inc.

Table 3-28

TABLE 3-28
REGIONAL/COMMUTER OPERATIONS PROJECTION

Year	Regional Commuter Enplanements	Average Seats	Load Factor	Departures	Operations	Annual Growth
Historical						
1995	138,880	28.9	56.6%	8,502	17,004	--
1996	132,286	27.3	58.7%	8,264	16,528	-2.8%
1997	101,303	27.7	61.3%	5,978	11,956	-27.7%
1998	152,446	29.1	67.9%	7,727	15,454	29.3%
1999	171,832	31.6	68.1%	7,977	15,954	3.2%
2000	158,889	33.5	65.7%	7,225	14,450	-9.4%
Projected						
2005	178,200	35.2	66.7%	7,600	15,200	
2010	221,300	37.0	67.7%	8,800	17,600	
2015	266,300	38.7	68.7%	10,000	20,000	
2020	312,300	40.5	69.7%	11,100	22,200	
Annual Compounded Growth Rate						
1995 - 2000	2.7%			-3.2%	-3.2%	
1997 - 2000	16.2%			6.5%	6.5%	
2000 - 2005	2.3%			1.0%	1.0%	
2005 - 2010	4.4%			3.0%	3.0%	
2010 - 2015	3.8%			2.6%	2.6%	
2015 - 2020	3.2%			2.1%	2.1%	
2000 - 2020	3.4%			2.2%	2.2%	

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

Table 3-29

TABLE 3-29
PROJECTED REGIONAL/COMMUTER AIRCRAFT FLEET MIX

		ACTUAL		PROJECTED							
	Average	2000		2005		2010		2015		2020	
Aircraft Type	Seats	Departures	%	Departures	%	Departures	%	Departures	%	Departures	%
4-14 Seats [1]	9.0	1,063	14.7%	952	12.5%	911	10.4%	818	8.2%	666	6.0%
15-19 Seats [2]	19.0	1,948	27.0%	1,898	25.0%	2,022	23.0%	2,099	21.0%	2,109	19.0%
20-40 Seats [3]	32.0	1,241	17.2%	1,359	17.9%	1,636	18.6%	1,930	19.3%	2,220	20.0%
41-60 Seats [4]	48.0	2,276	31.5%	2,555	33.6%	3,146	35.7%	3,787	37.9%	4,440	40.0%
61 + Seats [5]	72.0	697	9.6%	835	11.0%	1,085	12.3%	1,366	13.7%	1,665	15.0%
Total Operations		7,225	100.0%	7,600	100.0%	8,800	100.0%	10,000	100.0%	11,100	100.0%

[1] Similar aircraft include the Cessna (All Series).

[2] Similar aircraft include the Beechcraft 1900 and Swearingen Metroliner.

[3] Similar aircraft include the Embaer Brasilia EMB-120, SAAB 340, ERJ-135, 328Jet, and 428Jet.

[4] Similar aircraft include the ATR-42, ERJ-145, and Canadair RJ.

[5] Similar aircraft include the ATR72, ERJ-170, and 728Jet.

Sources: Official Airline Guide (OAG)
Ricondo & Associates, Inc.

3.6 PROJECTION OF GENERAL AVIATION ACTIVITY

The FAA 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 provides on the spot efficient and direct aviation services that commercial aviation cannot or will not provide. General aviation 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."

3.6.1 General Aviation Trends

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 the Airport. 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.

While these facts might suggest a continued decline in the general aviation sector, the FAA has identified a number of positive influences on the general aviation industry, including:

- Repeal of the luxury tax on general aviation aircraft
- Streamlining the certification process for new entry-level aircraft
- Strong demand in the used piston aircraft market
- Steady growth in amateur built aircraft

Another primary reason for general aviation's optimistic outlook in 1994 was the passage of the General Aviation Revitalization Act (GARA), which limited the liability of general aviation aircraft manufacturers. The Act has also created other financial incentives to spur production of aircraft. Since the passage of the GARA, general aviation activity, the active fleet, and the shipments and billings of fixed-wing general aviation aircraft have all increased. According to statistics by the General Aviation Manufacturers Association, general aviation shipments have increased from roughly 1,100 units in 1996 to 2,500 units in 1999. Similarly, annual billings of

new U.S. manufactured general aviation aircraft have increased from approximately $3.1 billion in 1996 to almost $8.0 billion in 1999.

3.6.2 Based Aircraft Projections

Typically, the number of based aircraft is dependent on the local demand for aircraft storage facilities, the amenities provided by the airport, and the capacity of other airports in the vicinity with comparable facilities. Currently, most general aviation activity in the region is centered at the Lee County Port Authority's other airport, Page Field, as well as Charlotte County and Naples Municipal airports. In 2000, each of these three general aviation airports had 256, 284, and 347 based aircraft respectively.

Table 3-30 presents historical and projected based aircraft at the Airport. As shown, between 1995 and 2000, the number of based aircraft at the Airport has generally increased slightly from 2 to 8 based aircraft. Currently, the Airport only has one fixed base operator (FBO) serving the Airport, PrivateSky Aviation Services, Inc. Within the next two years, however, a second FBO is anticipated to be operational at the Airport, which will also be owned by PrivateSky Aviation Services Inc. Conversations with PrivateSky indicate that it is anticipated that this new FBO will serve a large number of business jet aircraft, as well as other general aviation aircraft.

For projection purposes, it was assumed that based general aviation aircraft at the Airport would increase by approximately one based aircraft per year. As such, based aircraft are projected to increase from 8 in 2000 to 28 in 2020. While the Airport's share of based general aviation aircraft may increase in the future, it is expected that the region's general aviation airports will continue to accommodate the majority of the general aviation aircraft based in the region.

3.6.3 General Aviation Operations Projections

Historical and projected general aviation operations at the Airport are presented in **Table 3-31**. As shown, total annual general aviation operations have increased steadily from 12,261 in 1995 to an 20,035 in 2000, representing an annual compounded growth of approximately 10.3 percent. In addition, since 1995, the Airport's share of total U.S. general aviation operations has increased steadily from 0.034 percent to 0.049 percent in 2000. In general this trend is expected to continue in the future.

For the purposes of these analyses, general aviation operations were projected to increase at rates slightly higher than those projected for general aviation activity nationwide by the FAA. This assumption is based on the Airport's historic trends, as well as the development of a second FBO at the Airport as discussed above. As shown in Table 3-31, general aviation activity is projected to increase from 20,035 annual operations in 2000, to 34,400 in 2020. This increase represents an annual compounded growth rate of 2.7 percent, compared to 1.6 percent projected for the nation by the FAA.

Table 3-30

TABLE 3-30
BASED AIRCRAFT PROJECTIONS

Calendar Year	Based Aircraft	Annual Growth	Total U.S. Active GA Aircraft	Annual Growth	Market Share
Historical					
1995	2		188,089	8.8%	0.00001
1996	1	-50.0%	191,129	1.6%	0.00001
1997	5	400.0%	192,414	0.7%	0.00003
1998	5	0.0%	204,710	6.4%	0.00002
1999	7	40.0%	206,530	0.9%	0.00003
2000	8	14.3%	208,655	1.0%	0.00004
Projected					
2005	13		219,415		0.00006
2010	18		229,070		0.00008
2015	23		238,476		0.00010
2020	28		246,940		0.00011
Annual Compounded Growth Rate					
1995 - 2000	32.0%		2.1%		
2000 - 2005	10.2%		1.0%		
2005 - 2010	6.7%		0.9%		
2010 - 2015	5.0%		0.8%		
2015 - 2020	4.0%		0.7%		
2000 - 2020	5.8%		0.8%		

Sources: Lee County Port Authority
FAA Aerospace Forecasts, Fiscal Years 2001 - 2012
Ricondo & Associates, Inc.

Table 3-31

TABLE 3-31
GENERAL AVIATION\AIR TAXI OPERATIONS PROJECTIONS

Year	Itinerant GA Operations		Local GA Operations		Total General Aviation Operations	Annual Growth	U.S. General Aviation		Share of U.S. Operations
	Itinerant	Share	Local	Share			Operations	Growth	
Historical									
1995	11,296	92.1%	965	7.9%	12,261	--	35,926,600	--	0.0341%
1996	11,368	92.8%	882	7.2%	12,250	-0.1%	35,298,300	-1.7%	0.0347%
1997	12,461	90.9%	1,253	9.1%	13,714	12.0%	36,833,300	4.3%	0.0372%
1998	12,418	88.2%	1,657	11.8%	14,075	2.6%	38,046,100	3.3%	0.0370%
1999	15,687	84.0%	2,977	16.0%	18,664	32.6%	40,042,500	5.2%	0.0466%
2000	16,816	83.9%	3,219	16.1%	20,035	7.3%	40,688,400	1.6%	0.0492%
Projected									
2005	19,327	82.9%	3,973	17.1%	23,300	3.1%	44,600,900		0.0522%
2010	21,803	82.0%	4,797	18.0%	26,600	1.9%	48,208,000		0.0552%
2015	24,619	81.0%	5,781	19.0%	30,400	2.4%	52,212,612		0.0582%
2020	27,520	80.0%	6,880	20.0%	34,400	2.4%	56,247,812		0.0612%
Annual Compounded Growth Rate									
1995 - 2000	8.3%		27.2%		10.3%		2.5%		
2000 - 2005	2.8%		4.3%		3.1%		1.9%		
2005 - 2010	2.4%		3.8%		2.7%		1.6%		
2010 - 2015	2.5%		3.8%		2.7%		1.6%		
2015 - 2020	2.3%		3.5%		2.5%		1.5%		
2000 - 2020	2.5%		3.9%		2.7%		1.6%		

Sources: Lee County Port Authority
FAA Aerospace Forecasts, Fiscal Years 2001 - 2012
Ricondo & Associates, Inc.

As also shown in Table 3-31, general aviation operations are further broken out into itinerant and local operations. As defined by the FAA, local operations are performed by aircraft that:

- Operate in the local traffic pattern or within sight of an airport
- Are known to be departing for, or arriving from, flight in local practice areas located within a 30-mile radius of the airport
- Are executing simulated precision, nonprecision, and visual approaches or low passes at an airport (includes touch-and-go operations)
- Itinerant or transient operations constitute all other airport general aviation operations.

Itinerant operations account for the majority of the Airport's general aviation operations, accounting for approximately 84 percent of general aviation operations in 2000. Since 1995, however, the percentage of local general aviation operations to total general aviation operations has increased steadily from 7.9 percent in 1995 to 16.1 percent in 2000. This trend was assumed to continue throughout the projection period. By 2020, local operations are projected to be approximately 6,880 (20 percent), while the remaining 27,520 (80 percent) are projected to be itinerant general aviation operations.

3.6.4 General Aviation Fleet Mix

Data related to the Airport's historical general aviation fleet mix were gathered and are presented in **Table 3-32**. In 2000, single-engine aircraft accounted for 9.5 percent of the Airport's general aviation operations; multiengine piston and turboprop aircraft accounted for 61.4 percent; and jet aircraft accounted for the remaining 29.0 percent of the Airport's general aviation aircraft operations. In particular, as shown on Table 3-32, the percentage of business jet aircraft has increased dramatically from 17.1 percent in 1998 to 29.0 percent in 2000, while the percentage of multiengine turboprop aircraft has decreased from 54 percent in 1998 to 37 percent in 2000. This is largely due to an increase of business jet aircraft operations in recent years. Similarly, the share of single-engine aircraft operations at the Airport has also increased in recent years from 6.1 percent in 1998 to 9.5 percent in 2000.

The Airport's general aviation operational fleet mix was projected by examining historical trends, as well as using national data for general aviation operations. As shown in Table 3-32, the predominate growth in general aviation operations at the Airport is expected to occur in jet aircraft operations. Single engine aircraft operations are also projected to increase, while the share of multiengine aircraft operations at the Airport are projected to decrease. These trends are consistent with nationwide forecasts contained in the FAA's Aerospace Forecasts, Fiscal Years 2001-2012.

Table 3-32

TABLE 3-32
GENERAL AVIATION / AIR TAXI FLEET MIX PROJECTIONS

Year	Single Engine Piston/Turboprop Annual Operations	%	Multiengine Piston Annual Operations	%	Multiengine Turboprop Annual Operations	%	Jet Annual Operations	%	Total Annual Operations	%
Historical										
1998	863	6.1%	3,224	22.9%	7,582	53.9%	2,406	17.1%	14,075	100.0%
1999	1,512	8.1%	3,586	19.2%	8,425	45.1%	5,141	27.5%	18,664	100.0%
2000	1,906	9.5%	4,893	24.4%	7,417	37.0%	5,820	29.0%	20,035	100.0%
Projected										
2005	2,330	10.0%	5,592	24.0%	8,155	35.0%	7,223	31.0%	23,300	100.0%
2010	2,660	10.0%	6,384	24.0%	9,044	34.0%	8,512	32.0%	26,600	100.0%
2015	3,344	11.0%	7,296	24.0%	10,032	33.0%	9,728	32.0%	30,400	100.0%
2020	3,784	11.0%	8,256	24.0%	11,008	32.0%	11,352	33.0%	34,400	100.0%

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

3.7 PROJECTION OF AIR CARGO ACTIVITY

Air cargo activity at the Airport is measured by the number of operations performed by dedicated all-cargo airlines, as well as the cargo volume carried by the commercial service passenger airlines serving the Airport. Cargo volume is carried by both the all-cargo airlines and within the belly hold of the commercial passenger airlines at the Airport.

3.7.1 All-Cargo Operations Projections

Table 3-33 presents historical and projected operations for all-cargo carriers at the Airport. As shown, since 1995, the Airport's all-cargo operations have remained relatively constant, averaging approximately 1,600 operations annually from 1995 to 2000.

For purposes of these analyses, it was assumed that the strong economic base of the Airport's Air Trade Area and the Airport's geographical location relative to South America, will provide for continued growth in all-cargo operations. As shown in Table 3-33, all-cargo operations are projected to increase from 1,604 in 2000 to approximately 2,360 in 2020, representing an annual compounded growth rate of 1.9 percent. By comparison, the FAA projects air carrier passenger and all-cargo operations to increase by 2.8 percent annually.

3.7.2 Enplaned and Deplaned Cargo Projections

Table 3-34 presents the Airport's historical and projected enplaned and deplaned cargo. This cargo is carried by both the all-cargo carriers and as belly hold cargo on the scheduled commercial airlines at the Airport. As shown, total air cargo (enplaned and deplaned) at the Airport has increased from 28 million pounds in 1995 to nearly 35 million pounds of air cargo in 2000, representing an annual compounded growth rate of 4.4 percent.

Air cargo at the Airport is further broken down into air mail and air freight. As shown, air mail at the Airport decreased by nearly half its previous levels in 1998, from 8.3 million pounds to 4.2 million pounds. This decrease was due to the opening of a regional distribution facility in the region and a subsequent operational change in the transportation of air mail at the Airport. Alternatively, air freight at the Airport has increased consistently since 1995, from 19.6 million pounds in 1995 to 31.7 million pounds in 2000, representing an annual compounded growth rate of 10.1 percent.

Table 3-33

TABLE 3-33
ALL-CARGO OPERATIONS PROJECTION

Year	Depatures	Operations	Annual Growth	U.S. Air Carrier Operations	U.S Growth
Historical					
1995	811	1,622	--	13,647,400	--
1996	804	1,608	-0.9%	13,893,300	1.8%
1997	816	1,632	1.5%	14,256,700	2.6%
1998	784	1,568	-3.9%	14,258,000	0.0%
1999	810	1,620	3.3%	14,582,300	2.3%
2000	802	1,604	-1.0%	14,961,400	2.6%
Projected					
2005	880	1,760		17,226,400	
2010	980	1,960		19,854,000	
2015	1,080	2,160		22,727,086	
2020	1,180	2,360		25,839,289	
Annual Compounded Growth Rate					
1995 - 2000	-0.2%	-0.2%		1.9%	
2000 - 2005	1.9%	1.9%		2.9%	
2005 -2010	2.2%	2.2%		2.9%	
2010 - 2015	2.0%	2.0%		2.7%	
2015 - 2020	1.8%	1.8%		2.6%	
2000 - 2020	1.9%	1.9%		2.8%	

Sources: Lee County Port Authority
FAA Aerospace Forecasts, Fiscal Years 2001 - 2012
Ricondo & Associates, Inc.

Table 3-34

TABLE 3-34
ENPLANED & DEPLANED CARGO PROJECTIONS

Year	AirTrade Area Population	Air Mail			Air Freight			Total Cargo	
		Pounds	% of Total	per Capita	Pounds	% of Total	per Capita	Pounds	per Capita
Historical									
1995	733,326	8,471,000	30.2%	11.55	19,556,600	69.8%	26.67	28,027,600	38.22
1996	753,680	9,018,000	26.9%	11.97	24,536,100	73.1%	32.56	33,554,100	44.52
1997	774,035	8,355,000	24.6%	10.79	25,651,600	75.4%	33.14	34,006,600	43.93
1998	794,390	4,196,000	12.8%	5.28	28,533,400	87.2%	35.92	32,729,400	41.20
1999	814,745	3,255,000	9.8%	4.00	29,799,700	90.2%	36.58	33,054,700	40.57
2000	835,100	3,166,000	9.1%	3.79	31,676,000	90.9%	37.93	34,842,000	41.72
Projected									
2005	923,123	2,890,400	7.2%	3.13	37,406,700	92.8%	40.52	40,297,100	43.65
2010	1,030,100	3,122,400	6.6%	3.03	43,870,900	93.4%	42.59	46,993,300	45.62
2015	1,131,950	3,317,900	6.1%	2.93	50,667,700	93.9%	44.76	53,985,600	47.69
2020	1,233,800	3,493,100	5.7%	2.83	58,043,800	94.3%	47.04	61,536,900	49.88
Annual Compounded Growth Rate									
1995 - 2000	2.6%	-17.9%			10.1%			4.4%	1.8%
2000 - 2005	2.0%	-1.8%			3.4%			3.0%	0.9%
2005 -2010	2.2%	1.6%			3.2%			3.1%	0.9%
2010 - 2015	1.9%	1.2%			2.9%			2.8%	0.9%
2015 - 2020	1.7%	1.0%			2.8%			2.7%	0.9%
2000 - 2020	2.0%	0.5%			3.1%			2.9%	0.9%

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

For projection purposes, air cargo at the Airport was projected on the basis of the ratio of air cargo per capita for both air mail and air freight, as detailed in the following sections:

- Air Mail – As shown in Table 3-34, due to the operational change in the transportation of air mail in the region, the ratio of air mail per capita decreased dramatically in 1998, from 10.79 pounds per capita in 1997 to 5.28 pounds per capita in 1998. Since 1998, this ratio has continued to decrease to 3.79 pounds per capita in 2000. For projection purposes, the ratio of air mail per capita is assumed to continue to decrease throughout the projection period. Overall, the ratio of air mail per capita is projected to decrease to approximately 2.8 pounds per capita in 2020. When combined with the Air Trade Area's projected increase in population, air mail is projected to also increase slightly to approximately 3.5 million pounds in 2020 representing an annual compounded growth rate of 0.5 percent.

- Air Freight – The ratio of air freight per capita has increased since 1995, from 26.67 pounds per capita to 37.93 pounds per capita in 2000. For projection purposes, the ratio of air freight per capita is assumed to continue to increase throughout the projection period. Overall, the ratio of air freight per capita is projected to increase to approximately 47 pounds per capita in 2020. When combined with the Air Trade Area's projected population increases, air freight is projected to increase slightly to approximately 58.0 million pounds in 2020, representing an annual compounded growth rate of 3.1 percent.

In total, enplaned and deplaned air cargo at the Airport is projected to increase from 34.8 million pounds in 2000 to approximately 61.5 million pounds in 2020, representing an annual compounded growth rate of 2.9 percent.

3.8 PROJECTION OF MILITARY ACTIVITY

As presented previously in Table 3-11, military operations at the Airport increased from 698 in 1995 to 1,737 in 2000, with the majority of this increase occurring in 1996. Since 1996, military operations at the Airport have consistently averaged approximately 1,700 annual operations.

Future military activity at the Airport will be influenced by U.S. Department of Defense policy, which largely dictates the level of military activity at an airport. For the purposes of these analyses, it is expected that there will be no growth in military activity at the Airport and the military will maintain its current levels of approximately 1,740 annual operations during the projection period.

3.9 SUMMARY OF PROJECTED AIRPORT OPERATIONS

Table 3-35 summarizes historical and projected aircraft operations for the Airport. In addition, **Figure 3-4** presents a summary of the Airport's annual operations projections graphically. As shown, total operations at the Airport are expected to increase from 77,042 operations in 2000 to approximately 137,900 annual operations in 2020, representing an annual compounded growth rate of 3.0 percent. This operational growth compares well with the projected operational growth projected for the Airport in the FAA's 2000 Aviation Capacity Enhancement Plan. (ACEP) By 2011, the FAA's 2000 ACEP projects annual operations to total approximately 104,000 annual operations. By comparison, operations are projected to reach approximately 105,700 in this forecast.

Table 3-35

TABLE 3-35
SUMMARY OPERATION PROJECTIONS

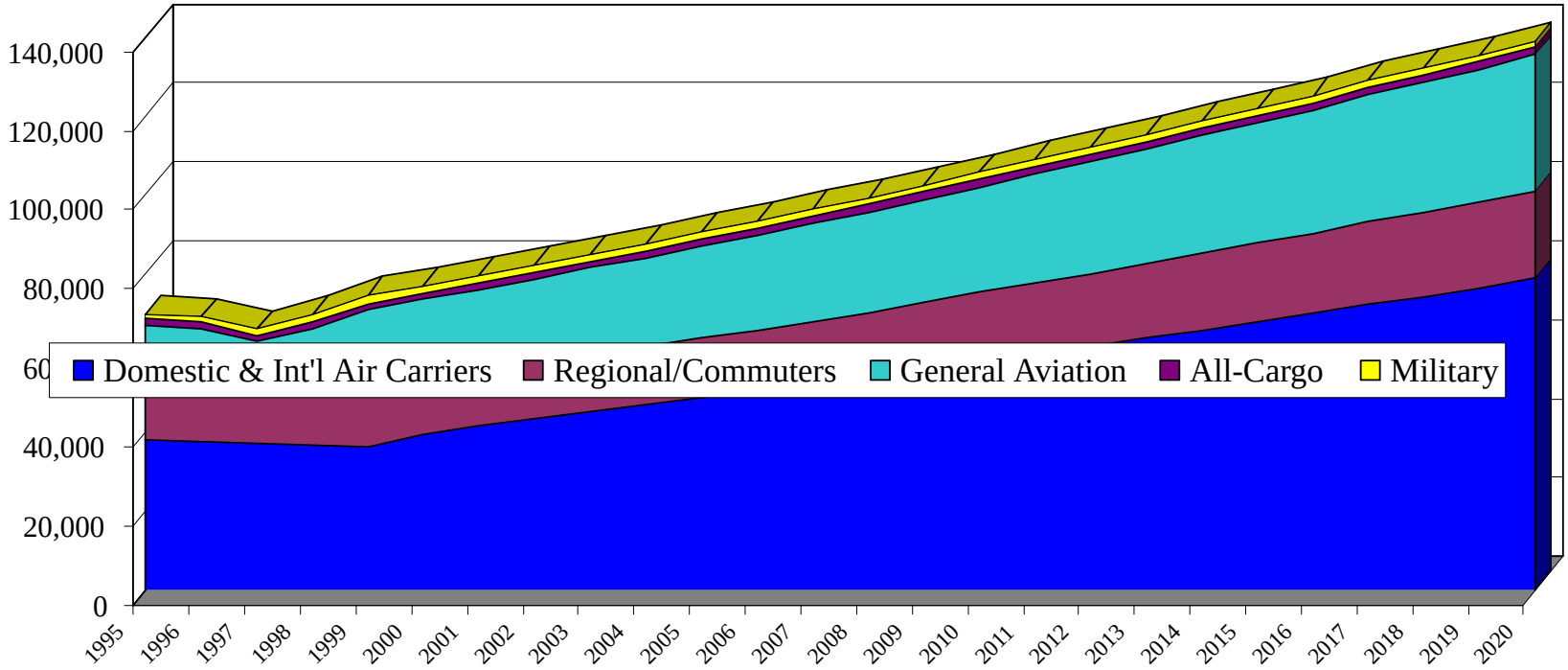
Year	Domestic Air Carriers	International Air Carriers	Regionals/ Commuters	General Aviation [1]	All-Cargo	Military	Airport Total
Historical							
1995	37,210	826	17,004	12,261	1,622	698	69,621
1996	36,694	872	16,528	12,250	1,608	1,152	69,104
1997	36,476	774	11,956	13,714	1,632	1,442	65,994
1998	35,674	1,016	15,454	14,075	1,568	1,943	69,730
1999	35,556	842	15,954	18,664	1,620	1,866	74,502
2000	38,240	976	14,450	20,035	1,604	1,737	77,042
Projected							
2005	47,200	1,400	15,200	23,300	1,760	1,740	90,600
2010	56,000	1,800	17,600	26,600	1,960	1,740	105,700
2015	65,800	2,200	20,000	30,400	2,160	1,740	122,300
2020	76,200	2,800	22,200	34,400	2,360	1,740	139,700
Annual Compounded Growth Rate							
1995 - 2000	0.5%	3.4%	-3.2%	10.3%	-0.2%	20.0%	2.0%
2000 - 2005	4.3%	7.5%	1.0%	3.1%	1.9%	0.0%	3.3%
2005 - 2010	3.5%	5.2%	3.0%	2.7%	2.2%	0.0%	3.1%
2010 - 2015	3.3%	4.1%	2.6%	2.7%	2.0%	0.0%	3.0%
2015 - 2020	3.0%	4.9%	2.1%	2.5%	1.8%	0.0%	2.7%
2000 - 2020	3.5%	5.4%	2.2%	2.7%	1.9%	0.0%	3.0%

[1] Also includes activity by miscellaneous air taxis.

Sources: Lee County Port Authority
Ricondo & Associates, Inc.

Figure 3-4

Figure 3-4
Summary of Projected Aircraft Operations



The following points summarize key findings with regard to the Airport's projected aircraft operations:

- Domestic and international air carrier operations are expected to experience the highest growth in aircraft operations throughout the projection period, with 3.5 percent and 5.4 percent annual compounded growth, respectively. Domestic air carrier operations are projected to nearly double from 38,240 in 2000 to 76,200 in 2020. Similarly, international air carrier operations are projected to increase from 976 in 2000 to 2,800 in 2020.

- Regional/commuter operations are projected to increase from 14,450 in 2000 to approximately 22,200 in 2020, representing an annual compounded growth rate of 2.2 percent.

- General aviation operations are projected to increase from 20,035 in 2000 to approximately 34,400, representing an annual compounded growth rate of 2.7 percent.

- All-cargo operations are expected to continue to grow from 1,604 operations in 2000 to 2,360 operations in 2020.

- Due to the uncertain nature of military activity, military aircraft operations are projected to remain constant at 1,740 operations through 2020.

3.10 DESIGN LEVEL PROJECTIONS

In addition to projecting annual activity levels at the Airport, it was necessary to project design level activity, defined in this study as activity during the peak hour of an average day in the peak month. These projections are critical, as most airports are designed to accommodate peak hour and average daily demands. **Table 3-36** presents the results of the demand level projections for the Airport. Standard methodologies were used to develop these design level projections, as described in the following sections.

3.10.1 Passenger Enplanements and Deplanements

Peak hour passenger volume is the standard aviation industry parameter by which passenger related airport facilities are sized. Unlike annual enplanement volumes, which are an indicator of relative airport size, peak hour statistics more accurately describe the demand for airport facilities based on specific use patterns. More accurately defined as peak month, average day, peak hour (PMADPH) passenger levels, this factor measures the number of enplaned, deplaned, or total passengers boarding or disembarking from aircraft in an elapsed hour on a typical day. The peak hour typically does not correspond exactly to a "clock hour" such as 7:00-7:59, but usually overlaps to clock hours (e.g., 7:20-8:19).

Table 3-36

TABLE 3-36
DEMAND LEVEL PROJECTIONS

ENPLANEMENTS	2000	2005	2010	2015	2020
Annual Enplanements	2,632,088	3,294,000	3,978,800	4,775,800	5,627,100
Peak Month (13.2% of Annual)	337,995	434,808	525,202	630,406	742,777
Average Day (31 Days)	10,903	14,026	16,942	20,336	23,961
Peak Hour (14.2% of Avg Day)	1,546	1,978	2,372	2,827	3,307
DEPLANEMENTS					
Annual Deplanements	2,632,088	3,294,000	3,978,800	4,775,800	5,627,100
Peak Month (13.2% of Annual)	337,995	434,808	525,202	630,406	742,777
Average Day (31 Days)	10,903	14,026	16,942	20,336	23,961
Peak Hour (17.8% of Avg Day)	1,941	2,469	2,948	3,498	4,073
AIRCRAFT OPERATIONS					
Domestic Air Carriers					
Annual	38,240	47,200	56,000	65,800	76,200
Peak Month (11.2 % of Annual)	4,282	5,285	6,271	7,368	8,533
Average Day (Peak Month/31 Days)	138	170	202	238	275
Peak Hour (15.2 % of Avg Day)	21	27	31	36	42
International Air Carriers					
Annual	976	1,400	1,800	2,200	2,800
Peak Month (12.5 % of Annual)	122	175	225	275	350
Average Day (Peak Month/31 Days)	4	6	7	9	11
Peak Hour (12.5 % of Avg Day)	1	1	1	1	1
Regional/Commuters					
Annual	14,450	15,200	17,600	20,000	22,200
Peak Month (10.0 % of Annual)	1,444	1,519	1,759	1,999	2,218
Average Day (Peak Month/31Days)	47	49	57	64	72
Peak Hour (10.9 % of Avg Day)	5	5	6	7	8
All-Cargo					
Annual	1,604	1,760	1,960	2,160	2,360
Peak Month (8.7 % of Annual)	140	154	171	189	206
Average Day (Peak Month/31 Days)	5	5	6	6	7
Peak Hour (0 % of Avg Day)	0	0	0	0	0
General Aviation					
Annual	20,035	23,300	26,600	30,400	34,400
Peak Month (11.4% of Annual)	2,285	2,657	3,034	3,467	3,923
Average Day (Peak Month/31 Days)	74	86	98	112	127
Peak Hour (10 % of Avg Day)	7	9	10	11	13
Military					
Annual	1,737	1,740	1,740	1,740	1,740
Peak Month (8.3 % of Annual)	145	145	145	145	145
Average Day (Peak Month/31 Days)	5	5	5	5	5
Peak Hour (25.0 % of Avg Day)	1	1	1	1	1
Total Airport Operations					
Annual	77,042	90,600	105,700	122,300	139,700
Peak Month	8,418	9,936	11,605	13,443	15,376
Average Day	272	321	374	434	496
Peak Hour	36	43	49	57	65

Sources: Lee County Port Authority
Official Airline Guide (OAG)
Ricondo & Associates, Inc.

Typical to other major leisure destinations, the Airport is a highly peaked facility, with strong seasonal traffic demand and operations, as well as high peaking in the middle of the day. These peaking characteristics produce proportionately higher congestion levels and delays at certain times of the day or year than other facilities with similar annual levels of enplanements or aircraft operations. For the Airport, the enplaning and deplaning peak occurs almost simultaneously, with the deplaning peak occurring from 11:00 a.m. to 11:59 a.m. and the enplaning peak occurring from 11:15 a.m. to 12:14 p.m. Secondary peaks also occur in the late afternoon periods, with a secondary deplaning peak from 3:00 p.m. to 3:59 p.m. and a secondary enplaning peak at 4:00 p.m. to 4:59 p.m.

To estimate the PMADPH enplanements and deplanements for the Airport, the following assumptions were used:

- A ratio of peak month passengers to annual passengers was computed. Using historical passenger data obtained from the Airport, the peak month of the year was found to be March. As presented in **Figure 3-5**, over the last three years, March has consistently been the peak month, accounting for approximately 13.2 percent of the Airport's annual enplanements and deplanements. For the purposes of these analyses, it was assumed that this ratio of peak month to annual activity will continue through the forecast period.

- Average day enplanements and deplanements were then estimated based on the number of days in the peak month of March, or 31 days.

- Finally, peak hour enplanements and deplanements for the Airport were estimated based on a review of the Airport's scheduled aircraft seats available during a Saturday (the peak day of the week) of the peak month of March. Scheduled seats for the Airport were obtained from the Official Airline Guide (OAG), and are presented in **Figure 3-6**. As shown, the deplaning peak at the Airport is much more pronounced than the enplaning peak. Based on this review, the peak enplanement period was found to account for 14.2 percent of the average daily seats, while the peak deplanement period accounted for 17.8 percent of the average daily seats. Over the projection period, it was assumed that the percentage of passengers enplaning and deplaning during the peak hour would decrease slightly due to the fact that airlines will typically begin scheduling off-peak operations as terminal gates and/or aircraft availability becomes more constrained during the peak period.

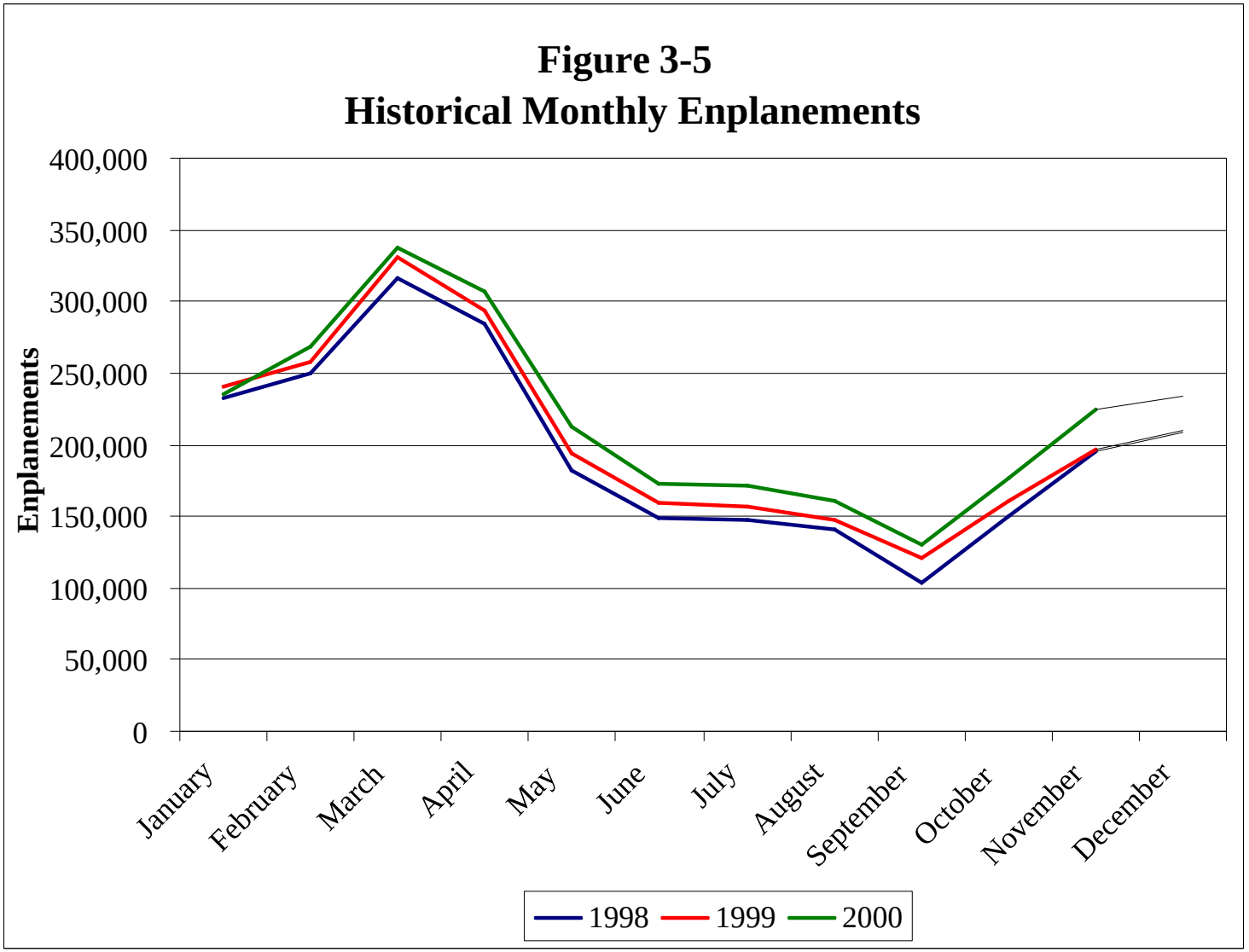
As presented in Table 3-36, passenger enplanements are projected to increase from approximately 1,546 enplanements in 2000 to approximately 3,307 in 2020. Passenger deplanements are projected to increase from approximately 1,941 deplanements in 2000 to approximately 4,073 in 2020.

3.10.2 Aircraft Operations

Design hour operations were determined for air carrier, regional/commuter, general aviation, all-cargo, and military activity at the Airport. The following presents the key assumptions used to estimate the PMADPH aircraft operations for the Airport for each of these categories:

Figure **3-5**

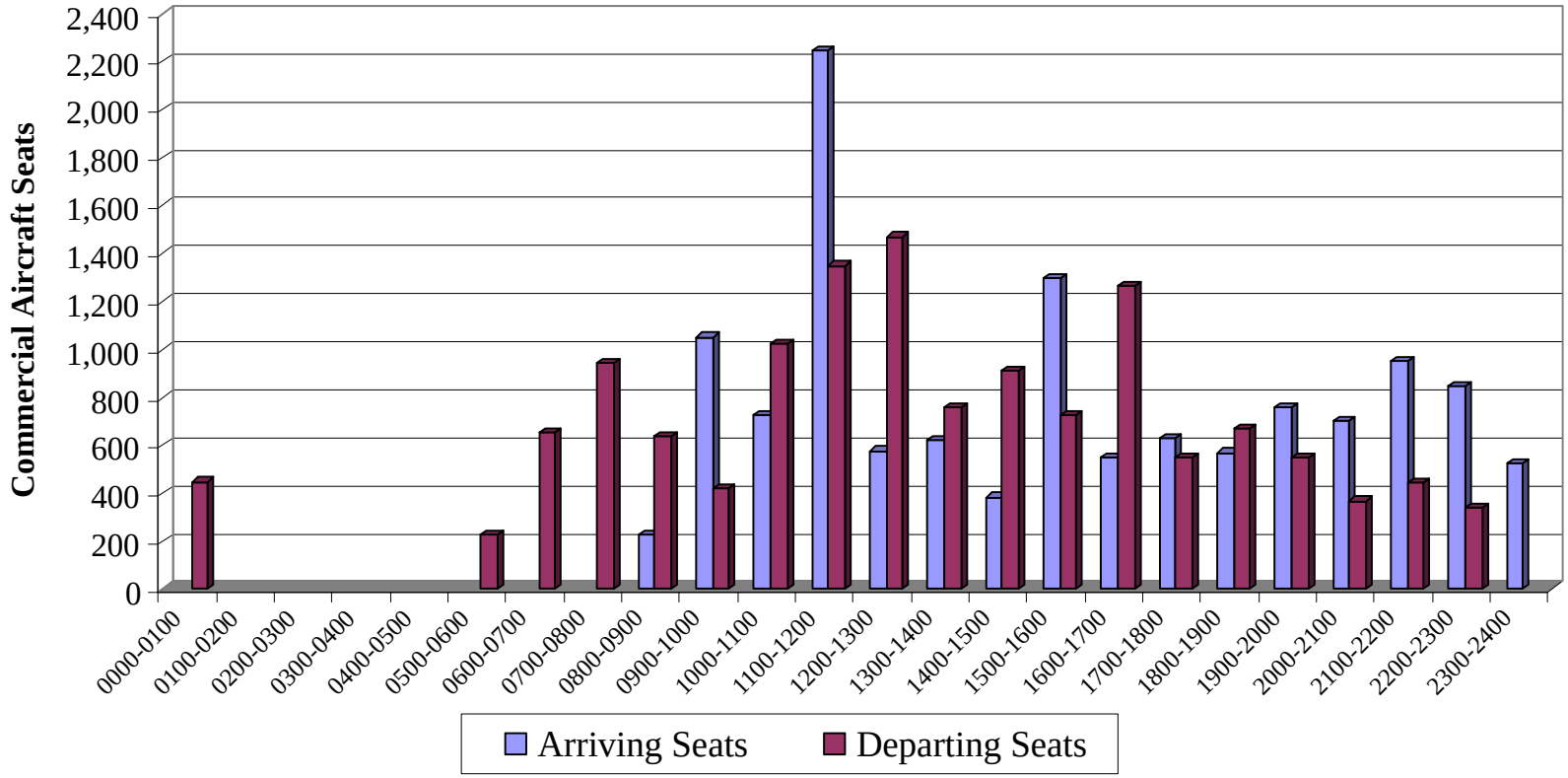
Figure 3-5
Historical Monthly Enplanements



Sources: Lee County Port Authority
Prepared by Ricondo & Associates, Inc.

Figure 3-6

Figure 3-6
Daily Distribution of Scheduled Airline Seats



Sources: Lee County Port Authority
Prepared by Ricondo & Associates, Inc.

- Airport landed weight records were reviewed for the past several years to determine a ratio of peak month air carrier and regional/commuter operations. Similar to passengers, March was found to be the peak month for scheduled commercial air carrier and regional/commuter operations at the Airport. Based on this review, the percentage of peak month operations to annual operations for domestic air carrier, international air carrier, and regional/commuter operations were found to be 11.2 percent, 12.5 percent, and 10.0 percent respectively.

- Average day operations for air carrier and regional/commuter operations were then estimated based on the number of days in the peak month of March, or 31 days.

- Peak hour air carrier and regional/commuter operations for the Airport were estimated based on a review of the Airport's scheduled aircraft operations during a Saturday (the peak day of the week) of the peak month of March. Scheduled aircraft operations for the Airport were obtained from the Official Airline Guide (OAG), and are presented in **Figure 3-7**. Similar to the passenger characteristics, the deplaning peak at the Airport is much more pronounced than the enplaning peak. The peak operational period for scheduled air carrier and regional/commuter airlines was found to be from 11:00 a.m. to 11:59 a.m., with 16 arrivals and 11 departures, or 27 total operations. Of this total, 21 are operated by domestic air carriers, 1 is performed by an international air carrier, and 5 are operated by regional/commuters. Over the projection period, it was assumed that the percentage of scheduled airline operations during the peak hour would decrease slightly due to the fact that airlines will typically begin scheduling off-peak operations as terminal gates and/or aircraft availability becomes more constrained during the peak period.

- FAA tower data were used to estimate the peak month factor for general aviation, all-cargo, and military operations at the Airport. Analysis of data for recent years showed:

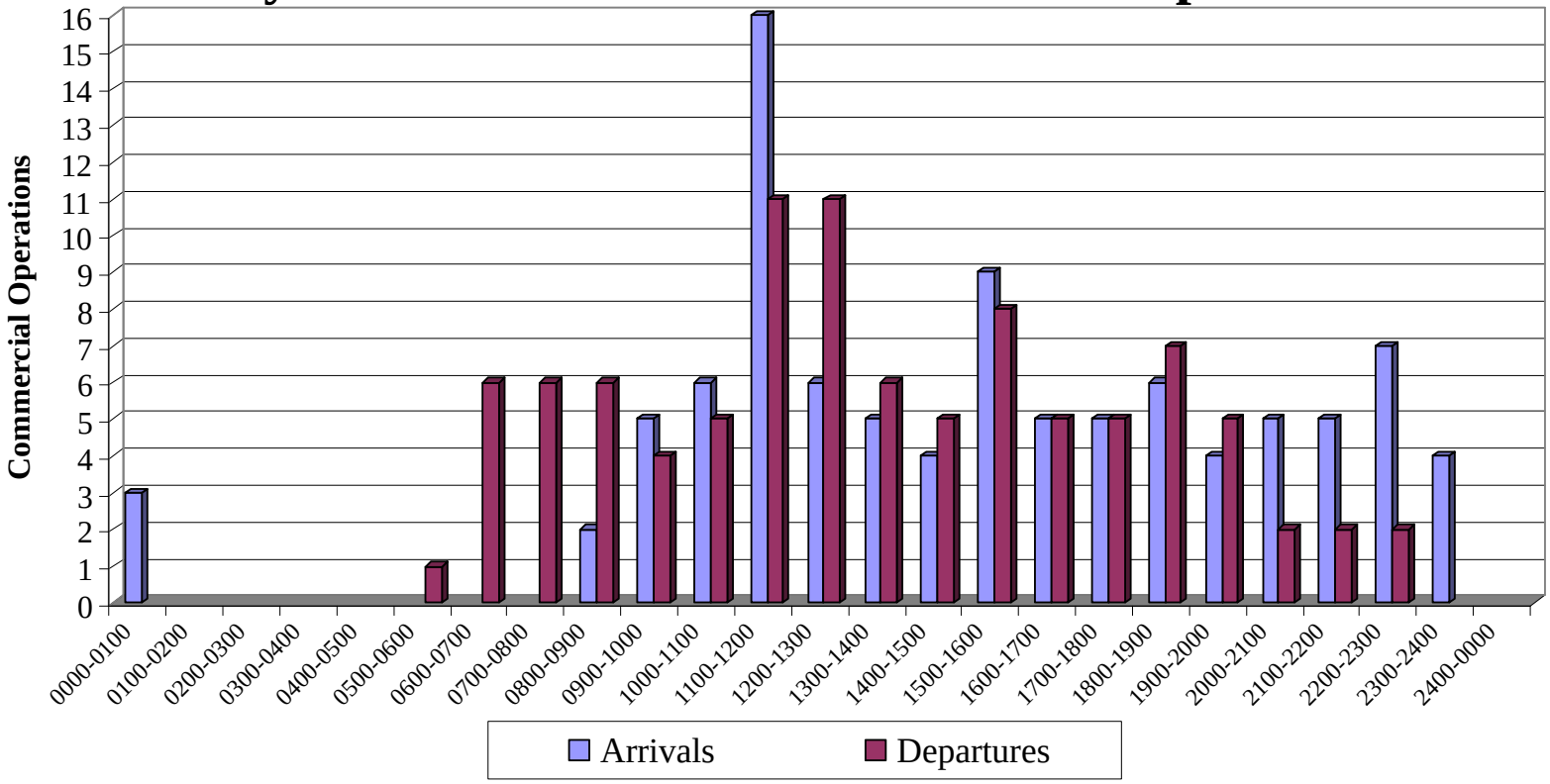
  - Peak month general aviation activity accounts for 11.4 percent of total annual general aviation operations
  - Peak month all-cargo activity accounts for 8.7 percent of total annual all-cargo operations
  - Peak month military activity accounts for 8.3 percent of total annual military operations

- Average daily operations for general aviation, all-cargo, and military operations were determined by dividing peak month operations by 31 days for each of these activity components.

- Because no hourly data for general aviation, all-cargo, or military operations were available, the peak hour factor was estimated. This peak hour estimate was made based on generally accepted planning criteria. For general aviation activity, the peak hour factor was estimated to be 10.0 percent. No peak hour operations were assumed for all-cargo operations due to the fact that the cargo operators typically operate during off-peak periods. Finally, because of the small number of operations occurring in the average day for the military component, the peak hour factor was estimated to be one operation, or 25 percent for military operations.

Figure 3-7

Figure 3-7
Daily Distribution of Scheduled Airline Operations



Sources: Lee County Port Authority
Prepared by Ricondo & Associates, Inc.

As shown in Table 3-36, peak hour aircraft operations for each of the various components of activity at the Airport were projected as follows:

- Domestic air carrier peak hour operations were projected to increase from 21 in 2000 to 42 in 2020
- International air carrier peak hour operations were projected to remain at one operation throughout the projection period
- Regional/commuter peak hour operations were projected to increase from 5 in 2000 to 8 in 2020
- General aviation peak hour operations were projected to increase from 7 in 2000 to 13 in 2020
- No peak hour all-cargo operations were projected throughout the projection period
- Military peak hour operations were projected to remain at one operation throughout the projection period

When combined, peak hour operations for the Airport are projected to increase from 36 hourly operations in 2000 to approximately 65 hourly operations in 2020. As presented, the Airport experiences a high level of peaking activity, which is expected to only increase in the future. At these levels, peak hour aircraft operational activity will play an important role in identifying the need for a future parallel runway at the Airport. As discussed earlier, these demand projections will be used in subsequent sections of this Master Plan Update to measure the Airport's capacity to efficiently process peak hour and annual demand, as well as to identify future airside and landside facility requirements.

4 DEMAND/CAPACITY ANALYSIS

4.1 INTRODUCTION

The purpose of this chapter is to assess RSW's existing capacity with respect to airfield facilities and compare this with the forecasted demand. 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 part of the basis for determining whether the existing airport facilities at Southwest Florida International Airport can meet the future demands of the users. Basic airport components such as runways, taxiways, airspace and ground access can then be reviewed to determine their capability to accommodate the forecast of aviation demand. Subsequent analysis will identify specific improvements required to address not only the function and capability of the basic facilities to support the projected activity, but also the requirements for improvements to other airport components served by these facilities. Such facilities include the passenger terminal, cargo facilities, associated ramps and aprons, hangars, aviation fuel capacity and storage, the Fixed Base Operator (FBO), and other airport support services.

The objective of this effort is to identify, in general terms, the adequacy or inadequacy of the existing airport facilities and outline what new facilities may be needed based on the level or threshold of activity that generates the need for expansion. Having established these facility requirements, alternatives for providing these facilities are developed and then later assessed to determine the most cost-effective and efficient means for addressing these requirements.

4.2 AIRFIELD CAPACITY FACTORS

Several 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." This same methodology is also recommended by the Florida Department of Transportation (FDOT). Because of its wide acceptance in determining airfield capacity and aircraft delay, it was the methodology used in this Master Plan. The following definitions are presented in AC 150/5060-5, Change 2, and will be used throughout this chapter:

- **Hourly Capacity of Runways** – A measure of the maximum number of aircraft operations which can be accommodated on the runway in an hour.

- **Annual Service Volume (ASV)** – A reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time.

- **Annual Aircraft Delay** – Total delay incurred by all aircraft on the airfield in one year.

Airfield capacity is affected by a number of factors, which will be analyzed collectively. The factors will provide the basis for establishing the operational capacity of an airport and include the following:

- Airfield Layout
- Instrument Approaches
- Aircraft Mix Index
- Meteorological Conditions
- Airfield Operational Characteristics

The following sections will evaluate each of these capacity factors with respect to RSW.

4.2.1 Airfield Layout

The airfield layout refers to the location and orientation of the runways, taxiways and apron areas. Runway 6-24 has a northeast to southwest orientation. The total pavement length is 12,000 feet long by 150 feet wide. The Runway is served by a full-length parallel taxiway, Taxiway A, located on the north side of the runway. The runway to taxiway separation adheres to standards set forth in AC 150/5300-13, Change 6, and provides 400 feet of separation for ADG IV (discussed in further detail in the following chapter). Taxiway A also provides access to the Fixed Base Operator (FBO), Cargo area, and the main passenger terminal via a number of taxilanes and taxiway connectors. Runway 6 has a total of seven connector taxiways, three of which are high-speed exit taxiways that are located to provide immediate access to the passenger terminal apron. Runway 24 also has a total of seven connector taxiways, two of which are high-speed exit taxiways.

RSW's straight forward layout limits the Airport to just two primary operating configurations. These consist of landings and departures to/from Runway 6 or landings and departures to/from Runway 24.

4.2.2 Instrument Approaches

The Airport is served by both precision and non-precision instrument approaches. Runway 6 has a Category I instrument landing system (ILS) for precision approaches (both vertical and horizontal guidance) to the runway. This system consists of a glideslope, localizer, Runway Visual Range system (RVR), and Medium Intensity Approach Lighting System (MALSR). Operations can occur on Runway 6 with approach minimums as low as 229 feet (decision height) and ½ statute mile visibility for all aircraft at any approach speed or a runway visual range of 2,400 feet. The localizer component of the ILS provides for a straight-in non-precision approach to Runway 6. This approach can be made with a minimum descent altitude (MDA) of 380 feet and visibility as low as ½ statute mile or a RVR of 2,400 feet for aircraft with approach speeds less than 140 knots (Category A, B, and C). Higher approach speeds require a ¾ statute mile visibility or a RVR of 4,000 feet.

Runway 6 has both Non-Directional Beacon (NDB) and Global Positioning Satellite (GPS) non-precision instrument approaches. The MDA for the straight-in NDB approach is 440 feet with visibility minimums of ¾ of a statute mile or a RVR of 4,000 feet for Category A, B, and C

aircraft, and one statute mile a RVR of 5,000 feet for aircraft having approach speeds of between 121 and 141 knots (Category D). The GPS approach for Runway 6 has an MDA of 380 feet and a minimum visibility requirement of ½ statute mile or a RVR of 2,400 feet for Category A, B, and C aircraft. For Category D aircraft, a minimum visibility of one statute mile is required or a RVR of 5,000 feet.

Runway 24 has two non-precision approaches, a Very-high Frequency Omni-directional Range/Distance Measuring Equipment (VOR/DME) approach and a GPS approach. The MDA for the VOR/DME non-precision instrument approach for all aircraft approach classifications is 360 feet with a visibility minimum of one statute mile. The GPS approach for Runway 24 has an MDA of 400 feet with a minimum visibility requirement of one statute mile for approach Category A, B, and C. For Category D aircraft the minimum visibility requirement increases to 1¼ statute mile.

RSW also has an airport surveillance radar (ASR) that provides non-precision approaches to both Runway 6 and Runway 24. These approaches have a MDA of 380 feet for both runways. The visibility minimums for the ASR on Runway 6 are ½ statute mile or a RVR of 2,400 feet for Category A, B, and C. Category D visibility minimums are one statute mile or a RVR of 5,000 feet. The Runway 24 ASR approach cannot utilize the RVR system and visibility minimums therefore increase to one statute mile for Category A, B, and C, and 1¼ statute miles for Category D aircraft.

4.2.3 Aircraft Mix Index

In reviewing the operational fleet mix data from the forecasts presented in the Aviation Activity Forecasts Chapter, it is possible to establish the index value required to compute an airfield's capacity. This index value, known as the aircraft mix index, is calculated based on the type or class of aircraft expected to serve the Airport. 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. Since RSW is an air carrier airport, the majority of the current aircraft mix includes Class C and D aircraft.

The mix index calculations indicate that during visual flight conditions approximately 82 percent of the aircraft operations at RSW are currently conducted by Class C aircraft with five (5) percent conducted by larger Class D aircraft. The smaller Class A and B aircraft account for the remaining 13 percent with Class B having the majority with 10 percent. During instrument meteorological conditions at peak periods, it is estimated that the percentage of Class C and Class D aircraft will increase to approximately 90 percent and 6 percent respectively with both Class A and Class B aircraft percentages decreasing significantly. During these conditions Class A and B aircraft account for a reduced percentage of the overall airport mix. This increase in the larger class aircraft and decrease in smaller class aircraft is due to the fact that under instrument meteorological conditions, the larger class aircraft associated with commercial airline operations are often better equipped and trained to make precision instrument approaches and landings into the Airport when weather conditions are poor.

The fleet mix is projected to decrease slightly in terms of Class C aircraft throughout the planning period with the percentage Class C dropping from 82 to 77 percent by 2020. This decrease is a result of an increasing trend towards the use of larger aircraft in both the international and

domestic markets. The larger aircraft are used during peak hour instead of an increase in frequency because of delay constraints. The percentage of Class D aircraft is therefore expected to increase throughout the planning period from 5 percent in 2000 to 11 percent by the Year 2020. Class A and B percentages are expected to remain fairly constant throughout the planning period due to the optimistic outlook and expected stabilization in the general aviation and smaller aircraft market. **Table 4-1** presents the aircraft mix analysis relative to VFR conditions.

TABLE 4-1
AIRCRAFT OPERATIONAL MIX (VFR)

Year	Percent Class				
	A	B	C	D	Mix Index (C+3D)
2000-Base Year	3%	10%	82%	5%	97
2005	3%	9%	81%	7%	102
2010	3%	9%	80%	8%	106
2020	3%	9%	77%	11%	111

Percentages may vary due to rounding
Source: Birk Hillman Consultants, Inc., 2001.
Ricondo & Associates, Inc.

The aircraft mix index under VFR conditions is expected to increase from 97 in 2000 to 111 in 2020 based on the projected changes in the fleet. **Table 4-2** presents the aircraft mix analysis relative to IFR conditions.

TABLE 4-2
AIRCRAFT OPERATIONAL MIX (IFR)

Year	Percent Class				
	A	B	C	D	Mix Index (C+3D)
2000-Base Year	1%	3%	90%	6%	108
2005	2%	3%	87%	8%	111
2010	2%	3%	85%	10%	115
2020	2%	3%	83%	12%	118

Percentages may vary due to rounding
Source: Birk Hillman Consultants, Inc., 2001.

The IFR aircraft mix index is expected to increase from 108 in 2000 to 118 by 2020. Again, this is due to the projected changes in the aircraft fleet mix.

4.2.4 Meteorological Conditions

Weather conditions can significantly affect utilization of the runways, and subsequently, affect the capacity of the airside facilities at an airport. Runway utilization is affected by wind conditions, cloud ceilings, and visibility, all of which factor into the direction in which take-offs and landings at an airport generally occur. The majority of the time runway use is solely

determined by the prevailing winds at the airport. However, 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 or arriving at an airport increases to provide increased margins of operational safety. However, aircraft operations may cease entirely when conditions have deteriorated below the lowest available 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 (AC 150/5060-5) 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.

Based on weather data received from the National Oceanic and Atmospheric Administration (NOAA), the National Climatic Data Center (NCDC), and per conversations with Air Traffic Control staff, a meteorological analysis was prepared for RSW. Hourly observations from NOAA's weather station located at Page Field for the ten year period ending in 2000 and information provided by ATC staff was used to determine the percentage of time the airport is operated under VFR, IFR, and PVC conditions. At RSW, VFR conditions were found to occur approximately 95 percent of the time, while IFR conditions occur approximately 4 percent of the time. PVC conditions and weather conditions below the published approach minimums were found to account for a combined total of 1 percent over the ten-year period. 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, RSW has a very low percentage of time under IFR or below minimums conditions when compared to other airports throughout the country.

4.2.5 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 at the airport. In most cases, the higher the percentage of arrivals during the peak period, the lower the service volume. RSW utilizes a single runway operation and, for purposes of calculating capacity figures, the percentage of arrivals at RSW was assumed to be 50 percent.

Runway Utilization

Based on wind rose analysis and a review of the runway operating configurations outlined in the previous Master Plan, it was determined that the runway utilization had not changed significantly at RSW. In both VFR and IFR conditions, Runway 6 is the most utilized runway accounting for approximately 80 percent utilization during VFR conditions and 85 percent during IFR conditions. Runway 24 is utilized approximately 20 percent of the time during VFR and only 15 percent during IFR weather. The Airport was assumed to be closed one (1) percent of the time due to weather conditions. These percentages are important in computing the weighted hourly capacity and annual service volume for the airport.

Percentage of Touch and Go's

A touch and go is defined as the operation of an aircraft, which lands and then makes an immediate take-off without coming to a full stop or exiting the runway. These operations are usually associated with flight training. Very little flight training exists at RSW, thus touch and go operations occur infrequently. For purposes of calculating the hourly capacity of the runway, a touch and go factor (T) of 1.00 was used reflecting less than one (1) percent touch and go operations at the Airport.

Taxiway Exits

Besides the importance of the runway configuration in the airside capacity model, the type and number of exit taxiways also play a very important role in the calculations. The location of exit taxiways can have a significant effect on the occupancy time of a landing aircraft on the runway. The longer an aircraft remains on the runway, the lower the capacity of the runway becomes.

At RSW, there are a total of nine (9) exits connecting the parallel taxiway to Runway 6-24. This includes the taxiway connectors located at each runway end. Based on the FAA's criteria and the fleet mix at RSW, the optimum exit factor relative to capacity is maximized when a runway has two, three, or even four exit taxiways within a range determined by the operations occurring on the runway. At RSW, this operational range is between 5,000 feet to 7,000 feet from the landing threshold. RSW has two taxiway exits for Runway 6 and two taxiway exits for Runway 24 located within this range. This corresponds to a taxiway exit factor (E) of 0.94 under VFR conditions and 0.92 under IFR conditions.

4.3 AIRFIELD CAPACITY

The characteristics of RSW's capacity as determined in the preceding section were used in conjunction with the methodology developed by the FAA to determine airfield capacity. FAA methodology generates three different values for measuring airfield capacity. These include:

- Hourly Runway Capacity
- Annual Service Volume
- Annual Aircraft Delay

4.3.1 Hourly Capacity of Runway System

The hourly capacity of the runway system measures the maximum number of aircraft operations that can be accommodated by the Airport's runway configuration in one hour. Based on 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. 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 as follows:

Hourly Capacity = C* x T x E

The hourly capacity base (C*) is calculated by applying the aircraft mix index and percent of aircraft arrivals. The calculations from the AC 150-5060-5 figures are delineated in **Table 4-3**.

TABLE 4-3
HOURLY CAPACITY OF RUNWAY SYSTEM (2000)

	VFR	IFR
Hourly Capacity Base (C*)	57	53
Touch and Go Factor (T)	1.00	1.00
Exit Factor (E)	0.94	0.92
Hourly Capacity	**54**	**49**

Source: Birk Hillman Consultants, Inc., 2001.

When analyzing the runway system with an aircraft mix of 82 percent Class C operations in VFR conditions and 90 percent in IFR conditions, no touch and go operations in VFR conditions, and a taxiway exit rating of two, existing hourly runway capacity is estimated to be 54 operations per hour under VFR conditions and 49 operations per hour under IFR conditions.

4.3.2 Annual Service Volume (ASV)

ASV is the approximate measure of an airport's capability in terms of annual throughput capacity. In other words, the ASV represents a reasonable theoretical limit of operations that the Airport can accommodate safely given its operating characteristics. A demand that approaches or exceeds the ASV will typically result in increasingly significant delays. No matter how substantial an airport's capacity may appear, delays may 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 capacity 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.

In order to gain an understanding of the overall capacity at RSW, the calculation of the Airport's Annual Service Volume (ASV) is necessary. RSW's ASV was calculated for each planning period (2000, 2005, 2010, and 2020). By referring to the FAA's methodology to estimate ASV, the ratio of annual demand to average daily demand during the peak month is determined, along with the ratio of average daily demand to average peak hour demand during the peak month. These values are then combined with the weighted hourly capacity according to the following formula:

Annual Service Volume = Cw x D x 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

For the calculation of annual capacity, a single weighted hourly capacity (Cw) 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 calculated for the base year and for each of the three planning periods are included in **Table 4-4**.

TABLE 4-4
WEIGHTED HOURLY CAPACITY OF RUNWAY SYSTEM(Cw)

Year	Operations per Hour
Base Year	
2000	44
Forecast	
2005	42
2010	41
2020	40

Source: Birk Hillman Consultants, Inc., 2001.

ASV – Actual Demand Profiles

Airport capacity as a whole is expressed as the maximum number of operations (takeoffs and landings) that can occur within a given period of time using standard air traffic management practices. The National Airspace System (NAS) capacity would be much greater if traffic were evenly distributed throughout the day (and night) and among all airports. In practice and at RSW, however, traffic demand has peak and off-peak periods. The extent of this peaking can have considerable impact on the ability of an airport to adequately serve demand.

RSW's ASV based on the actual or projected ratio of annual demand to actual or projected average daily demand in the peak month (D) and peak hour (H) for each of the planning periods at RSW is shown in **Table 4-5** below.

TABLE 4-5 ANNUAL SERVICE VOLUME ACTUAL PROFILES				
Year	**Cw**	**(D)**	**(H)**	**ASV**
Base Year				
2000	44	283.2	7.6	94,716
Forecast				
2005	42	282.2	7.5	88,906
2010	41	282.6	7.6	88,058
2020	40	281.7	7.6	85,637

Source: Birk Hillman Consultants, Inc., 2000.

Table 4-7 depicts very low ASV numbers in a decreasing trend towards the long-term planning period. These low numbers are not typical for a single runway airport but reflect the impact of the extreme seasonal and hourly peaking characteristics associated with operations at the Airport.

ASV – Theoretical Profiles

Theoretically, a single-runway Airport should have much higher ASV numbers then those calculated based on the actual demand ratios. This is due to the tendency of operational activity profiles to shift slightly with time to minimize potential for delays, thereby increasing capacity. Ranges of typical ASV (D) and (H) numbers have been identified by the FAA in AC 150/5060-5 as depicted in **Table 4-6** below.

TABLE 4-6 TYPICAL DEMAND RATIOS		
Mix Index	**Daily (D)**	**Hourly (H)**
0-20	280-310	7-11
21-50	300-320	10-13
51-180	310-350	11-15

Source: FAA AC 150/5060-5

To determine the theoretical annual service volume for RSW, a recalculation of the ASV was conducted with the FAA typical demand ratios presented in **Table 4-6** for each planning period. These numbers were used in conjunction with weighted hourly capacity numbers calculated previously for RSW. The demand ratios in the table depict a range to gain an understanding of low, medium, and high ASV scenarios that may be possible with a single runway configuration. The calculated mix indexes at RSW fall in the 51-180 range, thus values representing the low, medium, and high ranges of 310, 330, and 350 for (D) and 11, 13, and 15 for (H), were used. **Table 4-7** presents the resulting ASV numbers:

TABLE 4-7 THEORETICAL (FAA BASED) ANNUAL SERVICE VOLUME					
(D)	**(H)**	**2000 (Base)**	**2005**	**2010**	**2020**
310 (low)	11	150,040	143,220	139,810	136,400
330 (medium)	13	188,760	180,180	175,890	171,600
350 (high)	15	231,000	220,500	215,250	210,000

Source: Birk Hillman Consultants, Inc., 2001.

As depicted in **Table 4-7**, the ASV numbers are significantly higher than those calculated based on actual operational profiles. For the base year, 2000, the low range ASV is estimated at 150,040 while the high range ASV is estimated at 231,000. The high range is an estimate of the maximum possible demand that the Airport would be able to handle at the maximum FAA designated (D) and (H) values. This would assume virtually no monthly or hourly peaks, but rather flat and steady activity levels throughout the year. The low estimate of 136,400 would be representative of a more realistic number of ASV at RSW as the (D) and (H) values are representative of a facility with high seasonal and hourly peaking characteristics.

4.4 AIRFIELD DEMAND VS. CAPACITY

The comparison between demand and capacity provides a measurement for determining when capacity related enhancements should be considered. According to accepted industry standards as demand reaches 60 percent of capacity, planning for improvements should begin and when demand reaches 80 percent of capacity construction of these enhancements should commence. Two different methodologies developed by the FAA were considered in comparing the current and future demand at the Airport to the existing capacity. These include:

- Hourly Demand vs. Capacity
- Annual Demand vs. Annual Capacity

4.4.1 Hourly Demand Vs. Hourly Capacity

This section represents a detailed analysis of the projected hourly demand versus the hourly capacity of the runway system at RSW. As depicted in **Table 4-8**, the base year (2000) peak hour demand is 67 percent of the hourly capacity during VFR conditions and 78 percent during IFR conditions. In 2005, these percentages increase to 83 (VFR) percent and 94 percent (IFR) and continue to increase significantly throughout the planning period, exceeding 100 percent in 2010 under IFR conditions and before 2020 under VFR conditions. When the peak hour demand approaches 80 percent of the hourly capacity the peaking will begin to flatten and spread over a longer period unless additional capacity becomes available. This flattening will increase impacts during the surrounding hours as demand approaches or exceeds 100 percent of capacity.

Although hourly departure and arrival rates (hourly capacity) may appear to be less than the hourly capacity, concentration of flights within the peak hour will likely result in delays prior to reaching capacity levels. The more evenly the traffic is spread throughout peak hour, the better the Airport will be able to serve hourly demands approaching 100 percent of capacity.

TABLE 4-8 RATIO OF PEAK HOUR DEMAND TO HOURLY RUNWAY CAPACITY			
VFR			
Year	**Peak Hour Demand**	**Hourly Capacity**	**% of Capacity**
2000 (base year)	36	54	67%
2005	43	52	83%
2010	49	51	96%
2020	65	50	130%
IFR			
Year	**Peak Hour Demand**	**Hourly Capacity**	**% of Capacity**
2000 (base year)	36	47	78%
2005	43	46	94%
2010	49	46	107%
2020	65	46	141%

Source: Birk Hillman Consultant Inc., 2001.

4.4.2 Annual Demand vs. Annual Capacity

This section presents an analysis of projected annual demand versus the calculated annual service volume based on the FAA's theoretical demand profiles for airports similar to RSW. **Table 4-9** presents the airfield's estimated annual capacity levels.

TABLE 4-9 AIRFIELD CAPACITY LEVELS			
Year	**Annual Operations**	**Annual Service Volume (2000)** ①	**Capacity Level**
2000	77,042	150,040	51%
2005	90,600	143,220	63%
2010	105,700	139,810	76%
2020	139,700	136,400	102%

Source: Birk Hillman Consultants, Inc., 2001.
① ASV calculated using typical FAA demand ratios.

The capacity level in 2005 is expected to exceed 60 percent of the ASV increasing to nearly 80 percent by 2010. Based on this, it is recommended that planning for capacity enhancements at RSW be initiated as soon as practical to avoid future capacity deficiencies.

4.5 ANNUAL AIRCRAFT DELAY

As demand approaches capacity, delays increase at an exponential rate. For a given capacity, there is a tradeoff between demand and delay, with increases in demand accommodated only at the cost of longer and more frequent delays. Even when demand is quite low with respect to capacity, a change in an airport's operating conditions may reduce capacity and thereby increase the delay associated with a given level of demand. One of the major causes for delay besides the influence of weather is flight scheduling and peaking characteristics. Certain arrival and departure times are preferred by travelers, and as a result, airlines schedule their operations

accordingly. This peaking of demand produces overloads, traffic queues, and other forms of congestion that translate into delay not only at the point of incidence but elsewhere in the connecting nodes of the airport and airspace network. The relationship between delay and demand/capacity is very sensitive. Ideally, during a given hour, if aircraft using an airport sought service at a continuous rate equal to that at which aircraft operations could be processed, and if operating conditions at the airport were constant throughout the hour, then operations could reach the airport's highest capacity without significant delays. However, it must be realized that the actual rate of which aircraft arrive and depart is never continuous. As demand approaches airport capacity, delays related to congestion will no doubt occur. If demand begins to exceed airport capacity, delays will become more significant and occur at an increasing rate and it may take hours for an airport to fully recover from compounding delays that occur over a relatively short period.

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 levels to estimate the total amount of annual aircraft delay. The ASV figures from the FAA based ASV calculations were used. The FAA outlines a range of delay values based on the ratio of demand to capacity. **Table 4-10** outlines both the low and high ends of this range, and outlines the costs associated with the delay.

TABLE 4-10
ANNUAL AIRCRAFT DELAY

Year	Average Delay per Aircraft Operation, Low Ratio (minutes)	Average Delay per Aircraft Operation, High Ratio (minutes)	Average Total Annual Delay (hours)	Estimated Cost of Delay (annual)
Base Year				
2000	0.3	0.5	642	$768,900
Forecast				
2005	0.5	0.7	1,057	$1,323,000
2010	0.7	1.3	2,290	$2,798,800
2020	2.5	3.8	8,814	$11,623,900

Source: Birk Hillman Consultants, Inc., 2001.

As presented in **Table 4-10**, the estimated delay per aircraft operation in the base year for FAA low and high ratios of aircraft delay ranges from 18 seconds (0.3) to 30 seconds (0.5) respectively. These delays are expected to increase slightly by 2005 and nearly double by 2010. For planning purposes, the high ratio was used to estimate total annual delay. As noted, in the base year, 2000, the average delay per aircraft operation for the high average was estimated at 30 seconds (0.5 minutes), which equates to approximately 642 total annual hours of delay. This, in turn, equates to an estimated cost of approximately $768,900 annually. By 2020, the average delay per operation for the high average is projected to increase to 228 seconds (3.8 minutes) or 8,814 total annual hours of delay assuming no capacity improvements are done to the Airfield. The average delay per aircraft by 2020 is 3.8 minutes, which may have an impact on airport capacity. In addition, the annual cost of delay is estimated to approach $11,623,900 within this period.

4.5.1 Annual Delay Cost Basis

The estimated annual costs of delay throughout the planning period were calculated using typical costs by aircraft class, in dollars per minute, described in FAA AC 150/5060-5, Change 2. The same four aircraft classifications, A, B, C, and D, used to determine fleet mix were also used to calculate costs associated with aircraft delay. For the purposes of estimating delay costs, the aircraft classifications are broken down further into the type of aircraft based on the number of seats, and the type of operation, General Aviation, Air Taxi, or Air Carrier. Typical costs associated with each classification include the following ranges in dollars per minute:

- ✈ $0.60 to $1.80 for Class A (12,500 pounds or less, single engine) including aircraft from 1-3 seat GA aircraft to 4+ seat air taxi aircraft. Examples: Cessna 1152/172/182/210, Piper Warrior, Beechcraft Bonanza.

- ✈ $2.50 to $6.80 for Class B (12,500 pounds or less, multi engine) including aircraft from piston twin GA aircraft to twin turbine jet air taxi aircraft. Examples: Beechcraft Baron, Piper Seminole, Cessna Citation I, Cessna 310, Beech King Air 90/100/200/350.

- ✈ $2.80 to $35.50 for Class C (12,500 pounds to 300,000 pounds) including aircraft from piston engine GA, four turbine air carrier aircraft, and two engine air carrier jets to four engine air carrier jets. Examples: Cessna Citation II, Lear 35/55, Gulfstream II/III/IV, Boeing 727/737, Douglas DC9/MD-80.

- ✈ $39.00 to $79.30 for Class D (over 300,000 pounds) including all air carrier aircraft from two engine jets to four engine jets. Examples: Airbus A300/A310, Boeing 767, Lockheed L1011, MD-11, Airbus A340, Boeing 747.

The estimated costs of annual delay at RSW were derived based on the previously mentioned criteria and a percentage breakdown of the fleet mix for each aircraft typically operating at RSW in each classification. In this manner, delay costs were estimated for each aircraft within each classification based on their percentage of operations. This method was used to obtain the most accurate estimate possible to determine total delay costs. In addition, this method allowed for the compensation of the percentage changes forecast for the fleet mix, thus avoiding a generic dollar per minute figure based on the base year.

4.6 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”, RSW has an FAA controlled Air Traffic Control Tower (ATCT) and the airspace surrounding the airport is designated as Class C airspace. Class C airspace consists of two columns of space. The Class C airspace at RSW contains no modifications to the standard airspace configuration. 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 MSL and extends up to 4,000 feet MSL. Above 4,000 feet MSL, Class E airspace begins and continues up

to 17,999 feet MSL where it intersects the overlying Class A airspace. **Table 4-11** delineates the features of each airspace classification and outlines what requirements, services, and equipment is necessary for use in the different airspaces.

TABLE 4-11
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., 2001.
Abbreviations: SVFR = Special VFR.

The airspace surrounding RSW is controlled by three types of FAA designated air traffic control. These include the Air Route Traffic Control Center (ARTCC), Fort Myers approach/control, also known as Terminal Radar Approach Control (TRACON), and the air traffic control tower (ATCT). Due to the Airport's close proximity to other airports in the area, the navigation corridors for over flying traffic, the Gulf of Mexico, and the increasing aviation activity in the southwest Florida region it is important to maintain efficient traffic flow and coordination through the use of the abovementioned facilities. Based on discussions with the air traffic controllers no upgrades to these facilities are necessary in the near term, but as demand increases in the future, these facilities should be upgraded as necessary based on FAA requirements.

The airspace overlying RSW and the Fort Myers area is controlled by the ARTCC, also known as Miami Center. The center has delegated airspace in the area at 10,000 feet MSL and below to the Fort Myers approach/control. Fort Myers approach control is operational from 6am till 12pm seven days a week, 365 days a year. When not operational, Miami Center provides approach control service for the Airport. Fort Myers approach/control also provides control for the following airports: Naples, Page Field, Punta Gorda, Marco Island, and Immokalee.

The air traffic control tower (ATCT) at RSW controls airspace within the five nautical mile radius up to 4,000 feet MSL. This area of control is bordered by the Page Field control zone to

the northwest of the Airport. The fact that RSW and Page Field are located only 7 nautical miles apart, could provide some potential airspace conflicts in the future as the demand at both of these airports increases. The close proximity of RSW to Page Field has resulted in the establishment of ATC procedures to resolve potential airspace and aircraft conflicts. These procedures will also minimize the coordination necessary between the two facilities, thus providing controllers more focus on traffic specific to RSW. Traffic patterns at RSW have been designed and amended to keep traffic on the southeast side of the Airport to maintain separation from Page Field. Furthermore, departures on Runway 13 at Page Field require prior release from the RSW tower to avoid traffic conflicts with potential traffic departing or arriving at RSW. Departures from Page Field from Runway 13 are required to head straight out crossing directly over the RSW airfield. In addition, aircraft tracks are coordinated to comply with noise concerns for the surrounding area.

The alignment of the primary instrument runways at both airports are almost identical, thus minimizing the potential for conflicts. The primary runway at RSW is oriented at 6-24 and Page Field's runway is oriented in a 05-23 direction. Therefore, arriving and departing traffic can follow similar procedures when entering or leaving either airport environment. IFR traffic on arrival to both RSW and 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 also serves Marco Island Airport, and Naples Municipal Airport.

Radar coverage of the airspace surrounding RSW and the Fort Myers area is provided via the Southwest Florida International Airport Surveillance Radar (ASR). Radar control beyond the airport control areas for sequencing and separation is available from Fort Myers approach control for the area within the designated Airport Radar Service Area (ARSA). The ARSA allows for radar sequencing and separation procedures within 10 nautical miles of RSW, thus providing a more efficient traffic system to enhance airspace capacity. The ARSA provides positive control up to 4,000 feet MSL. The ASR is currently scheduled for upgrade to an ASR 11 and will be discussed further in the following chapter.

As previously mentioned, air navigation routes play an important role in the air traffic system. RSW has a large number of over-flights compared to other airports in the region. This is in part due to the fact that many of these navigational corridors (also known as Victor Airways) utilize the RSW VORTAC as a main navigation waypoint. The RSW VORTAC appears to be a congregation point for many low-enroute navigational corridors in the area. This influx of over flights is another factor contributing to the complexity of the air traffic control facilities. These transient flights normally operate in a north to south direction and vice versa. These flights must be coordinated with the east to west traffic flow created by aircraft arriving and departing at RSW. With the increase in air traffic expected at RSW and the Fort Myers area airports in general, in addition to the fact that this type of coordination is becoming more operationally intense, expansion of services and facilities may be required. Plans are being made to expand the current TRACON facility at RSW with additional building space and the upgrading of equipment. In addition, programs are planned to maximize the efficiency and coordination with other major TRACON/approach control facilities in the State of Florida. These include facilities at airports such as Orlando International Airport, Tampa International Airport, and Miami International Airport. This coordination on a larger scale will enable controllers to plan routes for aircraft coming into the airspace earlier, thus allowing additional control of the air traffic system. This coordination is expected to be provided by a new digital radar network.

As demand increases in this area for air traffic control services, so does the potential for capacity related conflicts. As several plans have already been initiated to cope with expected air traffic demand, additional plans should be considered as alternatives to those increases in demand.

5 FACILITY REQUIREMENTS

5.1 INTRODUCTION

To ensure that Southwest Florida International Airport will be able to adequately accommodate the various demands that are expected 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 an airport with respect to safety standards, capacity shortfalls and the demand for services provides a guide for 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 this section is to identify, in general terms, the adequacy or inadequacy of the existing airport facilities and outline what new facilities may be needed based on the level or threshold of activity that generates the need for expansion. Having established these facility requirements, alternatives for providing these facilities will be developed and then assessed to determine the most cost-effective and efficient means for meeting these requirements. It is important to note that 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 these capabilities are addressed first.

5.2 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 by Congress to assist in airport development. Southwest Florida International Airport is designated as a public use commercial service-primary airport according to 1998-2002 NPIAS transmitted to Congress in March 1999. Commercial service airports are defined as public airports receiving scheduled passenger service and having 2,500 or more enplaned passengers per year. There are 540 commercial service airports throughout the United States. Of these, 413 have more than 10,000 enplanements and are classified as primary airports. According to the 1998-2002 NPIAS, primary airports such as RSW receive an annual apportionment of at least $500,000 in Airport Improvement Program (AIP) funds, with a total amount determined by the number of enplaned passengers.

5.3 AIRPORT REFERENCE CODE AND CRITICAL AIRCRAFT

An initial step in identifying an airport's future 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.

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 in order to accommodate certain operations.

The 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, while the Roman numeral designates the Design Group (wingspan) of the most demanding aircraft. **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 6, "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 7.

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 7.

As determined in the 1992 Airport Master Plan conducted by Coffman & Associates, the Airport was designed to ARC D-V standards. This was due to the expected operations of larger aircraft such as the Boeing 747. Based on previous analyses at RSW and the expectation that large

aircraft such as the B747, A330, and A340 will provide service to the Airport in the future, it is recommended the ARC remain a D-V.

The future airport facility layout will be undertaken in accordance with FAA design criteria established in Advisory Circular 150/5300-13 Airport Design, Change 6. The specific design criteria associated with Airport Reference Code D-V are shown in **Table 5-3**.

TABLE 5-3
AIRPORT DESIGN – AIRPLANE AND AIRPORT DATA

Criteria	ADG D-V (Ft.)
Runway to Parallel Taxiway/Taxilane Centerline	400
Runway Centerline to aircraft parking area	500
Runway Width	150
Runway Shoulder Width	35
Runway Blast Pad Width	220
Runway Blast Pad Length	400
Runway Safety Area Width	500
Runway Safety Area Length Beyond each Runway End	1,000
Runway Object Free Area (ROFA) Width	800
ROFA Length Beyond Each Runway End	1,000
Runway Obstacle Free Zone (OFZ) Width	400
Runway OFZ Length Beyond Runway End	200
Taxiway Centerline to Parallel Taxiway/Lane Centerline	267
Taxiway Centerline to Fixed or Movable Object	160
Taxilane Centerline to Parallel Taxiway/Lane Centerline	245
Taxilane Centerline to Fixed or Movable Object	138
Taxiway Width	75
Taxiway Shoulder Width	35
Taxiway Safety Area Width	214
Taxiway Object Free Area Width	320
Taxilane Object Free Area Width	276
Taxiway Edge Safety Margin	15
Taxiway Wingtip Clearance	53
Taxilane Wingtip Clearance	31

Source: Airport Design AC 150/5300-13 Change 7.

5.4 AIRFIELD REQUIREMENTS

5.4.1 Airfield Capacity

The Airport's ASV as outlined in Chapter Four is currently estimated at 150,040 annual operations. Over the planning period, the ASV at RSW will decline slightly as the fleet mix shifts to a slightly higher percentage of Class D aircraft. As such, the ASV is projected to decrease to 136,400 annual operations or more than 100 percent of capacity by the Year 2020. This indicates the need for airfield improvements within the 20-year planning period.

RSW is projected to reach over 60 percent of capacity by 2005, almost 80 percent of capacity by 2010, and exceed 100 percent by 2020. Due to the extreme peaking characteristics at the Airport, and the current airfield configuration, the addition of a new runway would be the only improvement capable of providing the increase in capacity required to accommodate the projected demand. A parallel runway typically provides the greatest increase in capacity. However, this configuration can only be beneficial if wind conditions at the airport are compatible. Wind conditions at RSW are ideal to provide for such a configuration with Runway 6-24 accounting for over 98 percent wind coverage. Based on this, it is recommended that a new runway parallel to the existing Runway 6-24 be considered in providing the required capacity improvement at RSW.

5.4.2 Runway Requirements

This section addresses the specific requirements relative to Runway 6-24 as well as the new parallel runway. As a 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 150/5300-13, Change 6. The design standards are based on the critical aircraft's Approach Category, Design Group, and the approach visibility minimums at the Airport.

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 using individual aircraft performance manuals published by the manufacturers.

The runway's pavement strength is also an important factor to consider in the future runway requirements. Airport pavement strength is evaluated 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.

Runway 6-24

Runway Width

The current width for Runway 6-24 is 150 feet. Criteria contained in FAA AC 150/5300-13, Change 7, states that for the D-V designation, a runway width of 150 feet is adequate. However, if the runway at RSW is utilized by New Large Aircraft (NLA) in the future, the runway width will need to be upgraded to standards pertaining to FAA design group E-VI. These standards are discussed later in this chapter.

Runway Length Analysis

A runway length analysis for Runway 6-24 was conducted in the Runway Extension Justification Study completed in 1989 by Coffman & Associates. As a result of larger

aircraft operational demands, it was determined that a runway extension from 8,400 feet to 12,000 feet was required. This was adopted into the 1992 Airport Master Plan (Coffman Study). As a result, the extension of the runway to 12,000 feet was completed in 1994.

As determined from the aforementioned 1989 Runway Extension Justification Study, the 12,000-foot runway is capable of handling long-range activity by large aircraft including the Boeing 747-400. When comparing the stage lengths of the aircraft used in the Runway Extension Justification Study to the current aircraft using the airport, it was determined that the existing 12,000 foot runway is capable of handling all the types of aircraft using RSW today. This includes the newer short-haul jets and larger Airbus models such as the A330 and A340. As determined by the Coffman & Associates Study a stage length of approximately 2,500 nautical miles was calculated as being sufficient to reach all domestic markets. Based on this, the existing runway is more than sufficient in length to handle all current and projected domestic aircraft operations into and out of RSW. When compared to the initial runway length analysis, the current international route stage lengths have not changed significantly and still remain between 5,000 and 6,500 nautical miles. As such, no improvements are recommended with regard to the Runway 6-24 length.

Runway Pavement Strength

As indicated in the Inventory Chapter, the Runway 6-24 pavement is currently strength rated at 30,000 pounds single wheel loading (SWL); 190,000 pounds dual wheel loading (DWL); 430,000 pounds dual-tandem loading, and 840,000 pounds double-dual-tandem loading (DDTL). The 840,000-pound double-dual tandem strength rating satisfies the demands of the heaviest double dual tandem aircraft, the Boeing 747-400, that would serve RSW. As such, the pavement strength of Runway 6-24 is considered to be adequate throughout the planning period for all aircraft currently serving or projected to serve RSW. However, if NLA aircraft demand is identified during this period, pavement strength will need to be revisited to ensure that such operations will not require additional pavement improvements. This is addressed further later in this chapter.

Runway Condition

The existing runway is generally noted in fair condition. However, as indicated in the Inventory Chapter, the PCI indices depict certain areas of the 18-year old runway as being in very poor condition. With the rate of deterioration increasing as the pavement ages, a full rehabilitation of the runway is recommended in the near term. Various approaches to accomplishing this will be addressed in the Alternatives chapter of this Master Plan.

New Runway

The additional capacity provided by a new runway is not necessarily proportional to the number of runways, but is dependent on a number of factors that impact the use of each runway in the system. These include:

- Number of existing runways.
- Aircraft use restrictions associated with the use of the runway.
- Runway orientation/configuration.
- Runway length.
- Runway width.
- Runway strength.

A runway's utilization is determined in part by its length, strength, instrumentation, and separation from and orientation to the other runways at the airport. For example, adding a shorter commuter-length runway will limit its utility since larger aircraft will not be able to use it. Similarly, new runways oriented in a parallel manner to an existing runway system generally provide greater utility since aircraft approaches will not intersect with approaches to other runways.

Runway spacing is also a major factor in determining runway system capacity as it affects the dependency of runway operations, meaning that inadequate spacing between two parallel runways dictates that the use of one runway is dependent or constrained by activity on the other. The following sections outline key factors in developing a new runway to serve RSW.

Orientation/Configuration

The idea of a parallel runway at RSW has been present since the original plans for the Airport proposed in the 1970s. As previously mentioned, wind conditions are ideally suited to provide for such a configuration with 98.06 percent wind coverage for the 6-24 orientation. Thus, a parallel runway would be the optimal choice for a new runway. The original airport plan provided for a general aviation only parallel runway located north of the existing runway. Updated activity projections along with change in aircraft fleet mix projections set forth in the 1992 Master Plan conducted by Coffman & Associates, proposed a longer south parallel runway to accommodate air carrier aircraft and provide for simultaneous instrument approaches. This configuration would allow RSW to maximize its long-range flexibility in serving the growing demand for air service in the Southwest Florida Region. The previous master plan concluded that a parallel runway of the same length as the existing runway should be planned for, with a 5,875-foot spacing from the existing runway. This spacing was to allow the maximum possible development area for a midfield terminal without impacting the major inland slough to the south.

In 1993, the Coffman Parallel Runway Length and Separation Refinement Study reviewed the proposed new parallel runway's length and spacing to determine if development costs could be reduced. Based on this review, the Refinement Study suggested a reduction in spacing to 5,385 feet from the 5,875-foot spacing originally proposed. By doing so, it was determined that the double (now triple) row of 230 Kv power lines to the south would not require relocation along the length of the runway, only where they passed beyond the new runway's northern end. The 5,385-foot spacing

provided 1,095 feet of horizontal clearance from the 88-foot MSL power line poles, plus an additional six-foot clearance margin of safety. According to the 1994 Environmental Assessment, the reduced parallel runway spacing would reduce the length of power lines requiring relocation from approximately 19,000 feet to approximately 4,500 feet.

It is important to note that from an operational standpoint, as stated in the Coffman Parallel Runway Length and Separation Refinement Study, the installation of an Instrument Landing System (ILS) on either end of the parallel runway would not be possible. According to the report and the FAA, the power lines would severely distort the localizer signals, rendering the ILS approach unusable. This is a potential disadvantage considering the ultimate plan to have simultaneous precision instrument approaches. However, with the advent of Global Position System (GPS) technology, an ILS may not be needed. The use of GPS for precision approaches at RSW is discussed further in the Navaid Section of this chapter.

In conclusion, the proposed refinement as stated in the Parallel Runway Length and Separation Refinement Study reduced the runway separation from the original 5,875 feet to 5,385 feet. This new distance is 1,085 feet more than the FAA's minimum recommended separation of 4,300 feet required for simultaneous instrument approaches and provides considerable room to construct the Midfield Terminal Complex without conflicting with airspace requirements for a precision approach runway. Based on this, it is recommended that the revised configuration be maintained as the preferred configuration for the new runway. Future analysis should continue to consider the rate of passenger growth and whether adequate terminal area expansion can be accommodated within the midfield expansion envelop without an additional shift of the runway's location to the south.

Runway Width

As the new runway will be planned to accommodate simultaneous precision instrument approaches and the same commercial aircraft serving the current runway, the width of the new runway should adhere to Aircraft Design Group D-V as stipulated in FAA AC 150/5300-13, Change 6, which states that for D-V designations, a runway width of 150 feet is adequate. However, standards for New Large Aircraft (NLA) will have to be considered as the potential for such operations in the future exists.

Runway Length

The 1992 master plan noted that a shorter parallel runway length could meet most air carrier needs, but that a 12,000-foot length would ensure maximum flexibility for serving international flights. The primary advantages associated with having two 12,000 foot runways includes the capability to use either runway for all types of aircraft operations, thus providing the air traffic controller with the maximum flexibility, efficiency, and safety for assigning aircraft to runways. This would be especially advantageous in the Fort Myers area since air traffic has been increasing steadily for all the airports in close proximity.

In the Parallel Runway Length and Separation Refinement Study conducted by Coffman Associates in 1993, the minimum length requirements were again addressed. It was

determined that existing and projected international traffic levels did not likely warrant a full 12,000-foot runway in the near term. As such, runway length reductions that could reduce initial cost without impacting operational capabilities were explored.

It was noted that there were three sets of power lines beyond the northeastern end of the proposed parallel runway. The poles of the line closest to the proposed parallel runway, carrying 230 kv, are 73 feet above ground level (AGL) or 104 feet above mean sea level (MSL). The second power line, another 230 kv line, is slightly further away and has a maximum elevation of 119 feet MSL. The third line, carrying 500 kv, has a maximum elevation of 144 feet MSL and is therefore the controlling approach surface obstruction in the area of the proposed parallel runway. As calculated in the Refinement Study, the elevation difference between the runway threshold elevation and the 500 kv power line is 112 feet. It was determined that the threshold location for a 9,100-foot parallel runway would provide at least 20 feet of clearance from the top of the power lines to the 50 to 1 slope precision approach surface.

Based on a review of current and projected activity, it is anticipated that a length of 9,100 feet would provide the necessary capacity and capability to accommodate over 90 percent of projected aircraft departures through the Year 2020. Therefore, 9,100 feet is recommended as the minimum runway length to satisfy demand throughout the planning period.

Runway Strength

The strength of the existing runway at RSW is designed to accommodate aircraft as large as the Boeing 747-400 with an ADG D-V. As this designation represents the most critical aircraft expected to use the facilities, it is recommended that the new runway be designed to the same D-V standards. Even if the new runway will not be utilized by such large aircraft in the short-term period, the construction of a D-V pavement strength will ensure future compliance with larger aircraft demand and possible extension of the runway if required in the future. Again, with the potential for NLA activity at the Airport, pavement consideration should be addressed during the preliminary design phase.

5.4.3 Taxiway System Requirements

A proper 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 an efficient 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 required to ensure efficient access to each runway and runway end.
- Provide taxiway hold 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 taxiways are adequate to serve projected aircraft ARC.

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. The following sections outline requirements needed for the existing taxiway system at RSW.

Taxiway 'A'

Taxiway 'A' is the full-length parallel taxiway serving Runway 6-24. This taxiway, which is located on the north side of Runway 6-24, has been constructed to a width of 75 feet, and meets the design Group V's minimum taxiway width. Taxiway A's runway centerline to taxiway centerline spacing of 400 feet also meets the separation standards for Design Group V aircraft. The parallel taxiway has a total of nine taxiway connectors, all of which provide access to and from the parallel taxiway and the runway. Five of these taxiways, Taxiways A-4 through A-8, are high-speed exit taxiways. As noted in the Inventory Chapter, the full-length taxiway is in good overall condition. Several areas have been treated for cracking, but currently have no significant impacts on operations. However, Taxiway A-8 was observed to have severe cracking and a sealant has been applied as a temporary solution until the area can be resurfaced. With the current condition and age of Taxiway A and its associated connectors, it is recommended that resurfacing treatment be conducted in the short-term to intermediate period.

Taxilane 'B'

As noted in the Inventory Chapter, Taxilane B is the 1,580 foot long apron taxilane that runs parallel to the Passenger Terminal. It serves as the terminal apron area taxilane for aircraft transitioning to and from the gate positions and to and from taxiways A-6, A-7, and A-8. The separation distance from the Taxilane centerline to the parallel taxiway centerline is 435.5 feet. This separation distance exceeds the FAA minimum of 267 feet for ADG V type aircraft. Taxilane B is in good condition, but should be considered for resurfacing following the relocation of the terminal. The priority for the project will also depend on the ultimate reuse strategy for the existing terminal.

Runway 6-24 South Parallel Taxiways

To provide adequate access between the Midfield Terminal Complex and the existing Runway 6-24, a two-phase dual parallel taxiway system will be required. These taxiways are crucial to the efficient operation of aircraft taxiing to and from Runway 6-24. The nearest taxiway to the runway should be planned with the same FAA separation standards and taxiway width standards as the current parallel ADG V taxiway. Per interviews with Air Traffic Control (ATC), it is recommended this taxiway be planned to include a hold-bay/by-pass area to facilitate traffic movement efficiency and allow for improved sequencing of aircraft. The second parallel taxiway, developed as a later phase improvement, should be designed to New Large Aircraft (NLA) standards. The NLA standards demand an increase in the separation and taxiway width standards and are outlined later in this chapter.

New Runway North Parallel Taxiway

In reviewing projected demand and the configuration of the ultimate midfield program, it is recommended that the new runway be configured with a single parallel taxiway. It is recommended that the taxiway be built on the north side of the new runway to provide easy access to and from the midfield terminal. The taxiway should be spaced for NLA standards to accommodate the future needs of the Airport.

Dual Cross-Field Connector Taxiways

With the addition of the new parallel runway to the south of the existing runway and the new midfield terminal complex, there is a need to connect the two runways and the terminal area to provide an easy transition for aircraft taxiing in and out of the terminal area. Based on this, it is recommended dual cross-field connector taxiways be provided for adequate airfield operational flexibility. Thee cross-field connectors should be adequately spaced to accommodate the movement of NLA aircraft.

5.4.4 New Large Aircraft

A new generation of aircraft is on the horizon, which could carry over 600 passengers and weigh over one million pounds. The first of these "New Large Aircraft" (NLA) is anticipated to make its first test flight in the year 2004 and enter the commercial market by 2006. Specific characteristics of these aircraft are not fully known at this time. However, the FAA has started to identify standards for these aircraft and assess how they will affect U.S. airports.

Until recently, Airport Reference Code (ARC) E-V was the most stringent category and included aircraft with an approach speed greater than 166 knots and a wingspan larger than 171 feet but smaller than 214 feet. This ARC represented aircraft such as the Boeing 747, Boeing 777, and the Airbus A340. NLAs will be much larger than the Boeing 747 and will become the largest aircraft in the commercial airline fleet. When the idea of a New Large Aircraft appeared to take shape, the FAA created a new category for those aircraft. Struggling to develop a design standard for NLA aircraft, manufacturers guaranteed that the aircraft would fit in a square of 262 feet by 262 feet. Based on this, the FAA created a sixth category for aircraft that would have a wingspan greater than 214 feet but less than 262 feet. Approach speeds for this Category are still unknown but are expected to be over 166 knots. However, until an additional approach category is warranted, NLAs will be included in the approach Category E Design Group VI (Table 5-4).

TABLE 5-4
AIRCRAFT REFERENCE CODE (ARC)

Aircraft Approach Category		**Airplane Design Group**	
Category	***Approach Speed***	***Group***	***Wingspan***
Category A	< 91 kt.	Group I	< 49 ft.
Category B	≥ 91 kt. but < 121 kt.	Group II	≥ 49 ft. but < 79 ft.
Category C	≥ 121 kt. but < 141 kt.	Group III	≥ 79 ft. but < 118 ft.
Category D	≥ 141 kt. but < 166 kt.	Group IV	≥ 118 ft. but < 171 ft.
Category E	≥ 166 kt.	Group V	≥ 171 ft. but < 214 ft.
		Group VI	≥ 214 ft. but < 262 ft.

Source: FAA AC 150/5300-Change 7

Advisory Circular 150/5300-13, Change 7, includes the addition of taxiway, runway and shoulder dimension at standards required to accommodate ARC E-VI aircraft. These dimensions will be outlined later in this section. The FAA has also issued the "New Large Aircraft Issues Document" with the goal of making airport planners and designers aware of all the issues associated with NLAs utilizing an airport. Although it is difficult to determine when the NLA will operate at RSW, a plan that is flexible enough to accommodate these aircraft in the future should be developed as the airport continues to expand. Currently, no facilities need to be designed to NLA standards but consideration should be given to the separation requirements of taxiways, taxilanes and runways to allow for easy expansion or modification of facilities to accommodate NLA's in the future. A number of important issues will be discussed in the following sections.

Runway Issues

Even if the definitive Maximum Take-Off Weight (MTOW) of NLAs is not known yet, it is certain that it will be more than the B747's MTOW. According to the manufacturers, the weight will be spread among the larger array of landing gear configurations. In doing so, the impact on the pavement should not be significantly more than that of a B747. Therefore, runways already designed to accommodate B747's may not need any reinforcement or pavement alterations. However, design criteria for airfield pavement has not yet been issued by any organization (either the FAA or ICAO). In the "New Large Aircraft Issues Document", the FAA does mention that pavement will most likely require a new composition or a new texture to obtain additional traction or braking efficiency. Again, this has not been confirmed.

While details of whether or not pavement for NLAs will require reinforcement remains unknown, the main gear and the wings are much wider. As such, it has been determined that the runway will also have to be wider in order to provide an appropriate safety margin. Furthermore, as the engines will be further from the centerline when compared to the B747, shoulders will also have to be widened in order to protect the engines from ingestion of foreign object debris.

Table 5-5 shows the comparison of runway characteristics for ADG-V and ADG-VI. If RSW were to serve NLA in the future, the indicated improvements would need to be made.

TABLE 5-5
RUNWAY CHARACTERISTICS

	Airplane Design Group	
	V (current)	**VI**
Runway Width	150 ft	200 ft
Runway Shoulder Width	35 ft	40 ft
Runway Blast Pad Width	220 ft	280 ft
Runway Blast Pad Length	400 ft	400 ft
Runway Safety Area Width	500 ft	500 ft
Runway Safety Area Length Beyond RW End	1,000 ft	1,000 ft
Runway Object Free Area Width	800 ft	800 ft
Runway Object Free Area length Beyond RW End	1,000 ft	1,000 ft

Source: FAA AC 150/5300-13 Chg 7

Taxiway Issues

The issues that were mentioned for the runways also apply to the taxiways. The pavement strength issues for taxiways are also unknown. Due to the anticipated larger wheel track and the larger wingspan of NLA's, taxiways will also have to be widened and shoulders extended to provide adequate safety margins. Moreover, engines may hang over dirt or grass areas and the higher engine thrust may exceed blast limitations. There will therefore be a higher risk of foreign object damage and blast of debris on the taxiways. This risk can be minimized if the shoulders are widened and the clearance with other aircraft and vehicles is increased. It should be noted that there may be different clearances depending on whether two or four engines are used to taxi. If only two engines are used, then the engine exhaust will be more geographically concentrated but also stronger in force. If all four engines are used, the force associated with each engine's exhaust will be less, but the overall blast will be more widespread. **Table 5-6,** outlines some of the taxiway characteristics as identified in FAA AC 150/5300-13.

TABLE 5-6
TAXIWAY CHARACTERISTICS

	Airplane Design Group	
	V (current)	**VI**
Taxiway Width	75 ft	100 ft
Taxiway Edge Safety Margin	15 ft	20 ft
Taxiway Shoulder Width	35 ft	40 ft
Taxiway Safety Area Width	214 ft	262 ft
Taxiway Object Free Area Width	320 ft	386 ft
Taxilane Object Free Area Width	276 ft	334 ft

Source: FAA AC 150/5300-13 Chg 7

Because of the larger wheel track and wheelbase, over-steering may require additional pavement to make a 90-degree or greater turn onto a taxiway centerline. In addition, if the nose wheel is turned too early, the taxiway fillet may not be large enough for the main landing gear. Therefore, taxiway/taxiway and taxiway/runway fillets may have to be increased. Furthermore, an important factor that will have to be taken into consideration is NLA taxiing speed. The speed may have to be reduced to ensure a more accurate track of the aircraft and to further protect the pavement.

Separation Standards

As a result of having a large wingspan, the NLA taxiway-to-taxiway separation and taxiway-to-runway separation standards increase significantly. These separation standards are perhaps the most critical to airport design as they will determine the overall layout and spacing of the runways and taxiways. Additionally, the actual proposed separations are significantly more than the previous category. As such, expansion to accommodate NLAs may be difficult for many airports if adequate provisions were not made during initial development. These new separations are described and compared in **Table 5-7.**

TABLE 5-7 STANDARD LATERAL SEPARATION STANDARDS		
	Airplane Design Group	
	V (current)	VI
Runway Centerline/Parallel Taxiway Centerline	400 ft	600 ft
Runway Centerline/Aircraft Parking Area	500 ft	500 ft
Taxiway Centerline/Parallel Taxiway Centerline	267 ft	324 ft
Taxiway Centerline/Fixed or Movable Object	160 ft	193 ft
Taxilane Centerline/Parallel Taxiway Centerline	245 ft	298 ft
Taxilane Centerline/Fixed or Movable Object	138 ft	167 ft

Source: FAA AC 150/5300-13 Chg 7

Terminal Apron Issues

It has been determined that NLA will more than likely require reconfiguring existing terminal parking aprons because of the length and wingspan of these aircraft. In a best-case scenario, an NLA could take the place of two adjacent parking positions, which accommodate B747 type aircraft. In order to prevent the NLA from impacting two parking spaces of smaller aircraft when parked in a jumbo aircraft gate, it was initially envisioned that an NLA could park parallel to another aircraft with its wings overlapping due to its high ground to wing height. However, after review of the initial designs of the aircraft, it appears that the wingtip clearance may not be high enough to enable this to occur. Furthermore, the existing passenger gates may not be compatible with those aircraft and multiple bridges may be required to unload passengers more efficiently. In addition, due to the wide wheelbase, the turning radius will be increased, making the maneuverability of the aircraft more difficult when docking at the gate positions. Additional visual or electronic aids may be required to help guide and safely maneuver the NLAs on the ramp. Lastly, since the NLAs will be heavier than any other commercial aircraft currently in service, their breakaway engine thrust (initial thrust needed to make the aircraft move) will be higher than any others. It will therefore increase the risk of damage caused by debris on the ramp. To reduce this risk, a greater separation between the aircraft and proximate aircraft and vehicles will have to be established.

Airfield Signage, Marking and Lighting Issues

Since the runways and taxiways will have to be widened to accommodate NLAs, the edge lights will have to be relocated. As such, special consideration should be given to the angle of the lights. NLA pilots have to be able to see the lights when they taxi on the ground. Therefore, the angle of illumination to the aircraft cockpit height may have to be slightly increased.

Signage at RSW designating taxiways, runways, ramp areas, hazards, and taxi instructions are located at certain distances from the taxiways and runways centerline based on B747 criteria. However, NLAs will be much larger than B747s and the distance between signs and centerline may need to be increased. In addition, due to anticipated cockpit height, the distance from the pilots' eyes to the airfield signs and markings will increase significantly. Characters, numbers and letters may become too small and not legible. Signage may have to be replaced and markings repainted to accommodate the mentioned possible vision impairments for the NLA pilots.

Areas restricted to NLAs will have to be marked accordingly. Special NLA holding bars will have to be created to ensure that the aircraft tail does not penetrate the Object Free Zone. Over steering lines should be marked as appropriate on the pavement to enable the NLAs to turn properly.

Taxi and Guidance Issues

To avoid confusion and to ensure that pilots do not use restricted taxiways, specific guidance and procedures may be required for ground movements and operations. One way to guide the pilots is to have an adequate signage and markings system as described in the previous section. Another way to provide this guidance and safety to the pilots is through the use of cameras on the aircraft. For example, having a camera installed on the nose wheel strut to ensure that the nose wheel remains on the centerline to make sure that the wing tip clearances are adhered to.

To further aid NLA aircraft maneuvering, other types of technology have also been explored and suggested. This includes the DGPS (Differential Global Positioning System), which would be able to provide enhanced navigation on the ground. However, it is still under development as accuracy must be refined for such operations. Additionally, another type of GPS technology that may be available is the GPS/ADS-B (Automatic Dependent Surveillance-Broadcast). This system uses the accuracy of the information provided by the GPS system via a data link. It reports the position of an aircraft to the aircraft itself, to other aircraft and to air traffic control. Lastly, tracking wires embedded in the pavement have also been suggested and could provide an alternative solution.

Ground Service Issues

The unique dimensions of NLA will more than likely require new ground service equipment. Ground service personnel may also need specialized training when working on NLA's. For instance, the size of cargo containers may be too large or too heavy to be processed by regular load vehicles and ramps. Tugs may need additional power and greater traction to be able to tow NLA's in adverse weather conditions. Furthermore, those vehicles may require more resistance to the speed and heat of the exhaust blast or engine intake of NLAs. Thrust deflecting may even be required to protect the ground crew.

5.4.5 Pavement Marking

As mentioned in the Inventory Chapter, all pavement marking at RSW visually appears adequate and in good condition. Both Runway 6 and Runway 24 are marked as precision instrument runways and need no additional marking. Precision instrument runway markings consist of runway designation markers, a centerline stripe, threshold bars, threshold markings, aiming point markers, touchdown zone stripes, and side stripes indicating the extent of the full strength pavement. Currently the runway hold short markings are being re-striped at all taxiway runway intersections to comply with FAA requirements. The taxiways are also marked with centerline, edge, and sidebar striping, as well as hold line markings adjacent to the runway. When the runway is rehabilitated the markings will need to be repainted. Additionally, the future runway should reflect a similar level of marking. The existing runway marking will need to be modified to reflect a 6L-24R designation when the new runway is constructed. As such, the new runway will also need to be properly marked as 6R-24L.

5.4.6 Signage

Currently, there are approximately eighty-two lighted signs on the taxiways and runway at RSW to safely guide aircraft and ground vehicles. As determined in the inventory process, all signage at RSW is in good condition and should be updated when deemed appropriate by the Lee County Port Authority. As additional pavements are added, signage will need to be included and particular consideration should be given to potential signage modifications. For example, when the new runway is added, existing runway signage will need to be changed to reflect a 6L-24R designation. The same holds true for the new runway with a 6R-24L designation.

5.4.7 Airfield Lighting

When meteorological conditions are not optimum, a lighting system helps pilots using an airport to safely land and taxi on the airfield. If the system shows deficiencies, its utilization can then become dangerous as pilots may interpret a missing light in a straight line as a beginning of a turn. Therefore, daily care must be given to the system to ensure that every light is properly working and that no lights are obstructed by shrubbery or other objects. The following sections provide recommendations for future facility requirements for airfield lighting at RSW.

Runway Lighting

According to FAA AC 150/5340, High Intensity Runway Lights (HIRL) are required for a precision approach runway. RSW currently has HIRL lighting and satisfies all precision approach runway requirements relative to lighting. As mentioned in the Inventory Chapter of this master plan, no centerline or touchdown zone lighting systems are in place at RSW. Runway centerline and touchdown zone lighting systems are designed to facilitate landings, rollouts, and takeoffs. These systems are not required for a Category I runway. However, should RSW upgrade the runway to a Category II designation, runway centerline lighting and touchdown zone lights will be required (AC 150/5340-4C, Change 2). Additionally, if the runway remains a Category I runway and is widened to 200 feet to satisfy future new large aircraft requirements, the FAA recommends that centerline lighting be implemented. On this basis, it is recommended that the future runway be equipped with both edge and centerline lighting.

Taxiway Lighting

As mentioned in the Inventory Chapter, taxiway lighting is essential to safe operations during low visibility conditions and nighttime operations at an airport. Taxiway lights allow pilots to maneuver to and from the active runways, terminals and hangars. Taxiway edge lights also provide surface guidance to other ground vehicles on the airport. Currently, taxiway edge lighting, corner barrel reflectors, or centerline lighting is installed on all taxiways at RSW with the exception of the GA taxiway leading to the FBO. As the Midfield Terminal Complex is scheduled for completion in 2005, no additional taxiway lighting is recommended for the current RSW taxiway system configuration. However, with the addition of a new midfield taxiway system, centerline lighting for all associated taxiways is recommended. It is also less costly to install taxiway centerline lighting during initial construction, which will allow for the Airport to implement a Surface Movement Guidance Control System (SMGCS). This system will enhance safety for aircraft operating on the taxiway system under low visibility weather conditions.

5.4.8 Navaids

Airport Surveillance Radar (ASR)

The Airport Surveillance Radar is located approximately 1.5 miles north-northwest of the airport reference point (ARP). The current ASR is a FAA designated Series-8 radar with a critical area that encompasses approximately 40,000 square feet of land. An ASR-11, proposed by the FAA, is envisaged to be installed approximately 200 feet east-southeast of the existing ASR-8 facility. Signal deviations, caused by obstacles such as buildings, trees or vehicles, require that the ASR-11 be located at least 1,500 feet from any tall building or object which may cause signal deviations and at least one-half mile from any other electronic equipment. Future upgrades will depend on the FAA facility and system requirements.

The current location of the area surrounding the ASR northwest of the existing terminal is ideally suited for industrial/commercial use land since it is located in close proximity of both Chamberlin Parkway and Daniels Parkway. The FAA has indicated that development may be acceptable within the defined critical area if the heights of the buildings are controlled. It is recommended that before any planned development is considered in the ASR critical area coordination with the FAA take place early in the planning process.

Global Position System (GPS)

According to the FAA, precision GPS approaches are slated to become the industry standard in approximately five to seven years from the implementation of the RSW master plan update through the use of either the Wide Area Augmentation System (WAAS) or Local Area Augmentation System (LAAS). WAAS provides the required accuracy, availability and integrity to support GPS use as a primary means of navigation during all phases of flight through Category I Precision Approaches. The WAAS will improve basic GPS service to approximately seven meters vertically and horizontally. On-airport systems are not required to achieve a WAAS supported Category I precision approach and as such, a single WAAS is expected to have the ability to support multiple regional airports. LAAS is intended to support approaches to Category I minimums in those instances where WAAS cannot provide the necessary satellite coverage to achieve Category II and Category III precision capabilities. LAAS accomplishes this by using ground stations located at the airport to transmit signals with the highest level of accuracy to the aircraft making an approach. LAAS is expected to be accurate to within one meter or less and a single LAAS system can support approaches to multiple runway ends.

Currently, non-precision GPS approaches are available at RSW. However, as LAAS and WAAS become available in the future, these options may prove to be a viable alternative to upgrade the current system to Category II or Category III standards. As GPS approaches are slated to become the standard, such a system would enable RSW to upgrade its instrument approach Category for each runway end without requiring the costly implementation of ILS equipment. This cost savings may be especially advantageous to the proposed parallel runway complex. As details relative to the siting of GPS equipment are defined, the associated requirements of such should be reviewed relative to RSW.

Instrument Landing Systems

To enhance overall airport capacity and safety during adverse weather conditions, upgrade of the Airport's precision instrument approach may be warranted. RSW currently has a Category I ILS procedure for Runway 6 only. This approach permits pilots to descend to 200 feet above the touchdown zone elevation and a runway visual range of not less than 1,800 feet. A Category II procedure provides for approaches to a height above touchdown elevation of not less than 100 feet and with runway visual range of not less than 1,200 feet. Requirements to upgrade the current Category I ILS to a Category II ILS include additional Runway Visual Range (RVR) Equipment, an increase in the size of the ILS critical area, an upgraded approach lighting system, and runway centerline and touchdown zone lighting systems. It is recommended that at least one Category II approach be considered for the Airport for operating the primary configuration (west to east). This should consider either an upgrade of the current ILS Category I approach to a Category II for the existing Runway 6 or for the same end of the new parallel runway. The latter, however, would require relocation at the existing three sets of power lines to remove signal distortion. Finally, it is recommended that consideration be given to implement Category I precision approach capabilities (either ILS or GPS) for all remaining runway ends.

Approach Lighting System (ALS)

Currently, RSW has a Medium Intensity Approach Lighting System (MALSR) designated for use with a Category I runway. The system is installed at the Runway 6 approach end. Should the Airport upgrade to Category II standards, an ALSF-2 will be required. An ALSF-2 is an approach lighting system with sequenced flashing lights arranged specifically for Category II and III runways. Additionally, if other precision approaches are implemented, proper provisions should be made to install the required lighting system for the planned approach. As such, the identification of the specific lighting system for each runway end is dependent on which end will have a Category II precision approach. MALSR's should be added in a phased approach to all other runway ends to provide full Category I capabilities.

5.4.9 Visual Landing Aids

As noted in the Inventory Chapter, the Runway 6 and Runway 24 end at RSW both provide ground based visual aids known as Visual Approach Slope Indicators (VASI). They are considered to be in good to fair condition. However, the VASI system is becoming outdated and the FAA has recommended that existing VASIs be replaced with Precision Approach Path Indicators (PAPIs) when their useful life has expired. This is recommended since VASIs are no longer produced and replacement parts are increasingly difficult to obtain. Additionally, PAPIs provide a more accurate interpretation of glidepath establishment for pilots. The future runway should be equipped with PAPIs serving each runway end during its initial construction.

5.4.10 Helicopter Operations

Currently, there are no designated helipads at RSW and helicopter operations are minimal at the Airport. However, as rotorcraft operations have steadily increased over the past couple of years in the State of Florida, the addition of such facilities should be planned to accommodate potential future helicopter operations at the Airport. An FAA based helipad provides a controlled area for

a rotorcraft to initiate takeoffs and landings. Both a helipad and a helicopter parking area are important facilities for the safe operation of helicopters at an airport. It is anticipated that rotorcraft operations will continue to grow in the region, as is evident at nearby airfields such as Page Field and Naples.

The type of heliport demand at RSW would most likely be for a general aviation facility since the Airport is not located near a hospital, nor does it provide a market for larger transport commercial helicopters. FAA AC 150/5390-2A, *Heliport Design*, requires that a public-use general aviation heliport have at least one Final Approach and Takeoff Area (FATO). This area 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. The size of the FATO, TLOF, the safety area surrounding the FATO and the pavement strength depends on the design helicopter. By definition, the design helicopter 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. Since no regular helicopter traffic currently exists at RSW, a design helicopter utilizing the nearest airport, Page Field (FMY), was used. The design helicopter in the current Page Field Master Plan is the Bell Jet Ranger. The characteristics of this helicopter are shown in **Table 5-7**.

TABLE 5-7
HELICOPTER CHARACTERISTICS

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

From these characteristics and the criteria for heliport design found in AC 150/5390-2A, the area for a heliport was calculated to be approximately 11,000 square feet, including the safety area, the FATO and the TLOF. It is recommended that one heliport area of the calculated size be designated at RSW with enough space to expand for future facilities. In addition, the location and required land needed for such a heliport is also based on compatibility with imaginary surfaces as set forth in FAA CFR 14, Part 77, *Objects Affecting Navigable Airspace*. It is therefore recommended that a Part 77 analysis be conducted for any proposed helicopter operation area.

5.5 LANDSIDE REQUIREMENTS

5.5.1 Terminal Requirements

The high rate of historical passenger growth, increasing operations and current facility constraints have forced the LCPA to consider a long term solution to addressing terminal capacity shortfalls at RSW. As such, the potential for a midfield terminal with unimpeded access to both the existing and future parallel runways has been the subject of growing scrutiny over the past ten years. During a very intensive effort over the past 3 years, this has culminated into the Midfield Terminal Development Program. The first phase of the development program, currently in implementation, has been the subject of an extensive programming effort. Due to this, it is not

the intent of terminal analysis outlined herein to readdress the initial phase of terminal development. Rather, this analysis will summarize the first phase of development and then outline the additional development that might be expected to adequately provide for terminal expansion throughout the balance of the 20-year planning period.

Overview of the Midfield Program

In the year 2000, a study was conducted by DMJM Aviation that considered a new Midfield Terminal at RSW. This study outlined a conceptual program of terminal space and identified and assessed numerous terminal alternatives. The resulting preferred alternative was broken into phases and further refined based on both the design activity levels outlined in **Table 5-8** and the specific facility requests of the tenants and users. The activity levels used in outlining the first phase of development correspond to the 2010 projection of activity outlined by Leigh Fisher and Associates' Forecast Activity report prepared in 1995.

TABLE 5-8
ACTIVITY LEVELS USED FOR THE MIDFIELD TERMINAL STUDY

Annual	
Enplanements	4.5 million passengers
Departures	52,600 operations
Peak Month	
Peak Month Ratio	10.9%
Departures during Peak Month	5,734 operations
Average Day	
Average Day Ratio	3.23%
Daily Departures	185 operations
Daily Passenger Enplanements	20,457 passengers
Peak Hour	
Enplanements	2,599 passengers
Deplanements	3,132 passengers
Aircraft Departures	22
Aircraft Arrivals	26

Source: DMJM AVIATION

As outlined in **Table 5-9** the first phase of Midfield Terminal development program includes 28 gates, 120 ticket counters, 10 baggage claim devices and over 760,000 square foot of terminal space.

TABLE 5-9 FIRST PHASE MIDFIELD TERMINAL SUMMARY	
Number of Gates	28
Number of Ticket Counters	120
Number of Baggage Claim Devices	10
Space Summary	**Area (square feet)**
Airline Operations	21,143
In Transit Lounge	4,334
FIS	39,903
Ticketing	6,224
ATO	16,770
Holdrooms	73,860
Baggage Makeup	83,514
Baggage Claim	75,090
Baggage Offices	6,015
Concessions	41,228
General Circulation	159,339
Ticketing Lobby/Screening	60,071
Toilets	23,938
Support/Mechanical	74,964
Airport Administration	68,451
Unassigned	11,365
Total Space	**766,209**

Source: Spillis Candella DMJM 5-22-02

The ultimate design, configuration and layout of the midfield facilities include three terminals and five concourses with the ability to support 65 gates. The first phase of development includes a single terminal building serving three concourses, which support a range of aircraft sizes (**Table 5-10**). The layout and configuration of first phase allows for the expansion of each of the three concourses to provide a net increase of four gates each, prior to the need to construct a second terminal building.

TABLE 5-10 GATE BREAKDOWN	
Type of Aircraft	**Number**
Commuters	1
Large Narrowbody	20
Medium Widebody	6
Large Widebody	1
Total	**28**

Source: DMJM AVIATION

Additional improvements programmed as part of the first phase of the midfield program include the following:

- Surface parking
- Three-story parking garage
- Toll plaza complex

- Rental car customer service buildings
- 8 rental car quick return maintenance facilities
- Rental car fuel facility
- Taxicab limousine building
- Chiller plant
- Belly-haul cargo building

In reviewing the design levels outlined in **Table 5-8** against the new forecasts outlined in this master plan, it can be determined that the peak hour design levels roughly correspond to 2012 activity levels. This indicates that the first phase of the midfield development should be adequate, at least from a space perspective, throughout the short and intermediate term development periods. However, based on the analysis outlined in the following section it appears that consideration of additional gates may be required during this period.

Future Gate Requirements

One of the most important attributes of a terminal is its number of aircraft parking positions or 'gates'. If a terminal has too few gates, the airport may not be able to accommodate airline or passenger demand, or attract additional carrier service. If there are too many, the airport may have needlessly expended resources that could have been better used elsewhere. It is consequently important to try to get a good feel for actual gate demand prior to construction and to outline terminal development strategies that allow for easy gate expansion if demand requires. Two techniques for determining gate requirements are outlined in this section. The first considers peak hour demand and gate utilization rates. The second considers the number of total annual enplanements per gate. The results of each will be reviewed relative to the first phase of the midfield terminal development to determine potential shortfalls throughout the planning period.

Peak Hour Demand Methodology

One of the methods to calculate the number of gates required, suggested by the FAA in AC 150/5360, is to use a peak hour gate utilization rate. This rate can then be applied to future activity levels to estimate future gate requirements.

In 2000, there were 21 domestic aircraft operations during peak hour. Out of the 17 existing gates, one was assumed to be reserved for an international flight. Therefore, 16 gates were available to accommodate those 21 domestic movements. That means that on average each gate accommodated 21/16=1.3125 movements during the peak hour. According to the FAA, a domestic gate utilization factor typically should fall between 0.9 and 1.1. The utilization of gates at RSW is more than 20 percent higher than the FAA's "typical" range. This is an indicator of saturation during the peak hour and is readily apparent in considering the extreme congestion being experienced during existing peak periods at RSW. Therefore, in improving the level of service and providing greater flexibility during the peak hour, a utilization rate lower than that currently experienced should be used for projecting the number of domestic gates. For long range planning purposes it was assumed that a utilization factor of 1.1, at the high end of the FAA's range, would be reasonable. If the current gate utilization rate was 1.1, the airport would have 19 domestic gates available, rather than the current 16. This would reduce peak hour congestion, increase the level of service, and better position the airport to attract

new air service. Utilizing the 1.1 factor, it was projected that the total domestic gates required in 2010 would increase to 29 and, by 2020 to 39.

With respect to international activity, only one operation is anticipated during the peak hour through 2020. Therefore, a single international gate should be adequate to enable the accommodation of the international flight. However, as international operations typically have a greater turnaround time than domestic activity, an additional position or 'swing' gate may require consideration due to the increased potential for operational overlap.

Commuters and regional jets (RJ) have shorter turnaround times than commercial jet aircraft and a single position can typically handle multiple operations during a single hour period. With a turnaround time as short as 20 minutes, a single gate position can typically handle three operations (arrivals plus departures) during a single hour. According to the forecasts, the number of commuter/RJ operations during peak hour will increase from five to eight between 2005 and 2020. Based on three operations per hour, two commuter positions will be required through 2010 with an additional position by 2020.

Table 5-11 summarizes the gate requirements using the peak hour utilization methodology.

TABLE 5-11
GATES REQUIRED – PEAK HOUR UTILIZATION METHODOLOGY

	2005	**2010**	**2020**
Domestic Air Carriers	25	29	39
International Air Carriers	1	1	1
Commuters/Regionals	2	2	3
Total	**28**	**32**	**43**

Source: Birk Hillman Consultants, Inc.

Annual Enplanement Methodology

The ratio of annual enplanements per gate can often be used as a good indicator of future gate requirements. The higher the overall activity level and the flatter the peaks, the higher the likely ratio of enplanements per gate. This section outlines gate requirements using an annual enplanement throughput methodology.

Commuter, domestic, and international gates each typically support different levels of annual passenger activity. Although commuter gates can accomplish more turns in a given hour, the limited seating capacity usually results in the lowest volume of enplanements per gate. In defining the future gate requirements, an 80,000 annual enplanement level was estimated as an average throughput that might be expected at RSW. Domestic gates, typically serving a range of narrowbody aircraft, provide a higher annual enplanement volume, which could be expected to range between 115,000 and 140,000 annual enplanements per gate. Given the peaking characteristics of RSW, 125,000 enplanements per domestic gate was used as a reasonable estimate of throughput. Finally, international gates typically have the highest annual passenger

throughput due to the larger aircraft that these gates typically serve. While international gates can typically accommodate between 150,000 and 200,000 annual enplanements, it is anticipated that throughput at RSW will fall at the low end of that range. This is due to the inefficiencies that are typical with the relatively low volume of international activity. Projected gates using the annual enplanement methodology are outlined in **Table 5-12**.

TABLE 5-12
GATES REQUIRED – ANNUAL ENPLANEMENT METHODOLOGY

	2005	2010	2020
Domestic (Air Carriers)	24	29	41
International	1	1	2
Commuters/Regionals	3	3	4
Total	**28**	**33**	**47**

Source: Birk Hillman Consultants, Inc.

Summary of Gate Requirements

Both the peaking methodology and the annual enplanement methodology project a need for 28 total gate positions by 2005. By 2010, the total number of gates required is estimated at between 32 and 33. This indicates the need for additional gate development beyond that currently programmed in the first phase of the Midfield Terminal Development Program. By 2020, the estimated number of gates required will increase to between 43 and 47 or an additional 10 to 15 gates over the 2010 levels. Finally, an estimated ultimate gate capacity of 65, it appears that the midfield terminal complex will therefore be adequate to accommodate gate requirements throughout the 20-year planning period.

Space Requirements

To determine long-range terminal space requirements, the design activity levels for the first phase of the Midfield Terminal Development Program were compared to the projected 2010 and 2020 activity levels. The profile of space for the midfield was then used to project future space shortfalls based on the respective ratios of peak hour enplanements or deplanements for the given development period. Because 2010 projected activity levels were below the Phase 1 Midfield Design levels, the only projected space shortfall is the holdroom space required to accommodate the additional gates that were identified in the previous section. However, by 2020 most use classifications other than those associated with international activity will require additional space. Due to the relatively low projected levels for international activity, it was assumed that the Phase 1 FIS and In-Transit Lounge would be adequate to serve the projected demand throughout the planning period.

As outlined in **Table 5-13**, it is projected that a space shortfall of 10,600 square feet will exist by 2010 and that this shortfall will increase to almost 205,000 square feet by 2020.

TABLE 5-13 PROJECTED TERMINAL SHORTFALLS			
Planning Criteria	**Phase 1 Midfield**	**2010**	**2020**
Annual Enplanements (Pax)	4.5 million	3.98 million	5.63 million
PH Enplanements	2,599	2,372	3,307
PH Deplanements	3,132	2,948	4,073
		Facility Shortfalls	
Number of Gates	28	4-5	15-19
Number of Ticket Counters	120		33
Number of Baggage Claim Devices	10		3
		Space Shortfalls	
	(square feet)	**(square feet)**	**(square feet)**
Airline Operations	21,143		5,429
In Transit Lounge	4,334		
FIS	39,903		
Ticketing	6,224		1,693
ATO	16,770		
Holdrooms	73,860	10,600	38,400
Baggage Makeup	83,514		22,715
Baggage Claim	75,090		22,527
Baggage Offices	6,015		1,805
Concessions	41,228		15,783
General Circulation	159,339		33,193
Ticketing Lobby/Screening	60,071		16,339
Toilets	23,938		7,181
Support/Mechanical	74,964		21,228
Airport Administration	68,451		18,619
Unassigned	11,365		-
Total Space	**766,209**	**10,600**	**204,912**

Note: 2020 number represent total deficit versus Phase 1 midfield.
Source: Spillis Candella DMJM 5-22-02; Birk Hillman Consultants analysis 2002

Finally, the existing terminal is already capacity constrained. This will likely worsen considerably by the time the new terminal is opened in 2005. To minimize these problems until the midfield terminal complex is completed, both operational and facility modifications will be required. This includes possible modification of airline agreements, reallocation of resources, and use of temporary measures for accommodating activities during peak periods. In addition, a communications link between the existing terminal and the midfield terminal will be required to coordinate operations during the transition of operations.

5.5.2 Parking Requirements

Current Conditions

As previously outlined in the Inventory Chapter, the current number of available automobile parking spaces at Southwest Florida International Airport (RSW) is 4,905 spaces (including those

currently under construction) and is shown below in **Table 5-14**. Short-term and long-term parking consists of 2,356 spaces, economy parking includes 1,935 spaces and employee parking consists of 614 spaces. Rental cars currently have their own lots (separate from the terminal parking area) in which automobiles are stored and are accessed by passengers via shuttle buses from the terminal area.

TABLE 5-14
EXISTING AUTOMOBILE PARKING

Facility	Total Spaces
Short-term parking	735
Long-term parking	1,621
Economy parking	1,935
Employee parking	614
Rental car parking	-
Total	**4,905**

Source: LCPA

Midfield Terminal Complex Parking

The construction of the new Midfield Terminal Complex will make available a significant amount of additional auto parking spaces to the traveling public. The Midfield Terminal Complex is scheduled to be operational during the second quarter of 2005. It is anticipated that a total of 14,399 parking spaces will be incorporated into the construction of the new terminal as illustrated in **Table 5-15**. The Midfield Terminal design includes both structural and surface auto parking. The parking garage will be conveniently located to the new terminal building and will consist of three levels. The structure has also been designed to be able to accommodate two additional levels for future expansion. The first level of the garage will be dedicated to rental car operations and will contain 1,500 spaces. The second and third levels of the garage will contain 2,519 spaces (1,330 on level two and 1,189 on level three) and will be used for hourly parking. It is anticipated that the rental car operators will continue to utilize the off-site location currently in use for additional rental car overflow storage. This overflow storage demand can be substantial. For example, during 2000, the peak season rental car fleet at RSW totaled 17,400 vehicles. The ground level access for the rental car area will be via the terminal access road. The hourly parking will also access the garage via the terminal access road but will be isolated from the rental cars.

TABLE 5-15 MIDFIELD TERMINAL PARKING*	
Car Rental Ready/Return	1,500
Short-term	2,519
Long-term	8,942
Employee	1,288
Taxi	85
Limousine	45
Toll Booth	20
Total	**14,399**
***The Midfield Terminal is scheduled to open the second quarter of 2005	

Source: LCPA

Access to the 8,942 space surface daily parking lot will be via the terminal area access roadway and also from the recirculation roadway. The 1,288-space employee parking lot will be outside the terminal access loop road and west of the daily lot. The 130-space limousine and taxi parking lot is also outside the terminal access loop road and south of the daily lot. The 20-space tollbooth employee parking is located adjacent to the toll facilities. Because of the walking distances to the new terminal building, users of the surface daily lot and employee parking will utilize a shuttle bus system.

Projected Parking Demand

Hourly and Daily Demand

Auto parking requirements for the Midfield Terminal provide 2.5 auto parking spaces per 1,000 annual enplanements for the traveling public. This ratio does not include spaces for rental cars, employees or other ancillary uses. A design criteria of 4.5 million enplanements was utilized resulting in a requirement of 11,250 spaces for hourly and daily parking demand. For the purposes of this analysis, the same ratio was utilized for the Master Plan and applied against the approved enplanement forecasts for RSW. This analysis, completed for 2005, 2010, and 2020 is shown in **Table 5-16** and results in a total of 14,068 hourly and daily auto parking spaces required by the year 2020. The auto parking spaces are further delineated into hourly and daily requirements. Percentage splits of 17 percent hourly and 83 percent daily were used for both the Midfield Terminal Project and for the 20-year planning horizon. It is recommended that an additional 443 spaces for daily use and 2,164 spaces for hourly use be constructed by 2020.

Consideration should be given for 200 spaces adjacent to the terminal on the lower level to accommodate an hourly lot for “meeters and greeters” of arriving flights. This lot should be strictly policed to ensure short occupancy times for quick turnover. If this lot is constructed, the spaces constructed should be subtracted from the hourly lot demand.

Rental Car Demand

The initial construction of the Midfield Terminal will provide 1,500 rental car ready return spaces. It is estimated that the initial allocation will be adequate through 2010, but

an additional 1,500 spaces are anticipated by 2020. These estimates should be further refined by discussions with the rental car companies to better estimate actual demand.

Employee Lot Demand

The employee parking lot was sized to accommodate shift changes, which at times overwhelms the existing employee parking lot. It is anticipated that expansion of this lot will be necessary in conjunction with future enplanement growth, which will require additional employees. An additional 400 spaces are recommended for 2020.

Taxi and Limousine Parking Demand

The limousine and taxi parking lot will also require expansion to accommodate additional passengers. An additional 50 spaces are recommended by 2020.

Summary

Table 5-16, summarizes the current capacity and future demand of automobile parking at RSW. As depicted in the table, the current parking spaces available will be able to surpass those demanded through 2005. It is recommended that 719 spaces be constructed for 2010 and 4,557 spaces be constructed by 2020.

TABLE 5-16 FUTURE PARKING REQUIREMENTS			
Year	**2005**	**2010**	**2020**
Annual Enplanements	**3,294,000**	**3,978,800**	**5,627,100**
Passenger Parking Requirements	**8,235**	**9,947**	**14,068**
Hourly (17%)	1,340	1,691	2,392
Daily (83%)	6,895	8,256	11,676
Existing Space	**11,461**	**11,461**	**11,461**
Hourly (17%)	2,519	2,519	2,519
Daily (83%)	8,942	8,942	8,942
Surplus/Deficiency	**3,226**	**1,514**	**(2,607)**
Hourly (17%)	548	257	(443)
Daily (83%)	2,678	1,257	(2,164)
Rental Car Requirements	**1,500**	**2,250**	**3,000**
Existing Spaces	1,500	1,500	1,500
Surplus Deficiency	0	(750)	(1,500)
Employee Parking Requirements	**1,288**	**1,288**	**1,688**
Existing Spaces	1,288	1,288	1,288
Surplus Deficiency	0	0	(400)
Taxi and Limo Parking Requirements	**130**	**130**	**180**
Existing Spaces	130	130	180
Surplus Deficiency	0	0	(50)
Toll Booth Employee Requirements	**20**	**20**	**20**
Existing Spaces	20	20	20
Surplus Deficiency	0	0	0
TOTAL SPACES REQUIRED	**11,173**	**13,635**	**18,956**
TOTAL EXISTING SPACES	**14,399**	**14,399**	**14,399**
TOTAL SURPLUS/DEFFICIENCY	**3,226**	**764**	**(4,557)**

Source: RS&H 2001
**A 200 space meeter and greeter lot is recommended. If this lot is constructed, 200 spaces should be subtracted from the hourly requirements.*

5.5.3 Access Roads

The requirements for airport access roads will be addressed as part of this Master Plan and are incorporated in Section 5.10 of this Chapter, "Airport Access".

5.6 AVIATION SUPPORT FACILITIES

5.6.1 Airport Maintenance

A new 11,000 square foot Vehicle Maintenance Building and a 4,800 square foot covered storage area have recently been constructed west of the original facilities. The original airport maintenance facility, encompassing 1.65 acres and consisting of a 12,000 square foot building, is

expected to remain in operation as a maintenance field shop. It is located north of the runway and in the northwest corner of the Airport. The Airport Maintenance Department, which conducts the airport maintenance, is divided into four (4) groups, airfield, grounds, terminal, and vehicle maintenance. It has not been determined where each department will be located. Regardless, a service road is recommended to connect both the existing and new maintenance facilities without having to use the public roadway. In the event that the operations of the maintenance facilities reach capacity, the new maintenance facility possesses ample space for expansion.

5.6.2 Aircraft Maintenance Facilities

An increase in operations at RSW creates the demand for additional aircraft maintenance. Two (2) new facilities have previously been discussed in the Inventory section of this report; a large aircraft maintenance facility and a general aviation maintenance facility. The proposed large aircraft maintenance facility would support Boeing 747s or equivalent sized aircraft. As Miami International Airport is becoming saturated with large aircraft maintenance facilities, RSW represents a viable alternative location for such operations. RSW is not at a great distance from Miami and has the proper facilities, i.e. runway length and pavement strength, to support aircraft like the Boeing 747. Furthermore, RSW has fewer operations than Miami International Airport and it would thus be able to provide a more efficient maintenance operation without traffic and space constraints. Thus, it is recommended that land be set aside to provide for a large aircraft maintenance complex with a single initial phase hangar expandable to include at least two additional hangars. Provisions will need to be made for a hush-house or engine run-up facility to mitigate the potential noise increase associated with such an operation.

A general aviation maintenance facility for larger GA aircraft including jets would accommodate the increase in larger general aviation aircraft expected to operate at RSW in the future. Currently, the FBO at the Airport utilizes half of a 26,000 square foot hangar for such an operation. The other half of the hangar is used for storage and is limited in size for specific maintenance work. Since a new larger FBO facility is expected to be constructed at the Airport to attract larger general aviation aircraft including jets, a larger or new aircraft maintenance facility will be required. Thus, it is recommended that space be equivalent to that available in the current hangar be used exclusively for aircraft maintenance by 2010 and that space will be set aside to allow for expansion by an additional 10,000 square feet by 2020.

5.6.3 Airport Rescue and Fire-Fighting (ARFF)

According to the FAA, airports that serve any scheduled or unscheduled passenger activities of an air carrier with a passenger seating capacity of more than 30 seats must comply with FAR Part 139. FAR Part 139 outlines the requirements for each ARFF Index at an airport according to the length of aircraft frequently using the Airport. An aircraft frequently using the Airport experiences an average of five (5) daily departures from the Airport. The levels of protection are indicated by the different Indexes shown in **Table 5-17**.

TABLE 5-17 ARFF AIRPORT INDEX	
AIRPORT INDEX	**AIRCRAFT OVERALL LENGTH**
A	<90'
B	90' to <126'
C	126' to <159'
D	159' to <200'
E	200' and >

Source: FAA Far Part 139

As mentioned previously, Southwest Florida International Airport's ARFF activity levels currently require an FAA ARFF Index of D. However, it is anticipated that future activity of increasingly larger aircraft may require the Airport increase to an Index E rating. **Table 5-18** outlines the current airport equipment along with the requirements for both indexes D and E.

TABLE 5-18 ARFF EQUIPMENT REQUIREMENTS				
Designation	**Equipment Type**	**Water (gal.)**	**AFFF 3% (gal.)**	**Halon (lbs.)**
CFR 901	Oshkosh T-1500	1,500	205	500
CFR 903	Oshkosh T-1500	1,500	205	500
CFR 908	Oshkosh T-3000	3,000	405	0
Total		**6,000**	**815**	**1,000**
Index D Requirement		**5,000**	**100**	**500**
Index E Requirement		**6,000**	**100**	**500**

Source: Birk Hillman Consultants Inc., 2001

As outlined in **Table 5-18**, the existing equipment is capable of meeting the equipment requirements for both D and E indexes.

FAR Part 139 requires at least one ARFF vehicle to reach the midpoint of the farthest runway serving air carrier aircraft within three (3) minutes from the time of an alarm, from its assigned post, and that vehicle must be able to begin application of water foam, dry chemical, or halon 1211. Additionally, all other required ARFF vehicles are required to reach the same point within four (4) minutes of the alarm and begin their tasks. The ARFF is properly located for current operations at RSW. However, when the Midfield Terminal Complex and parallel runway alternatives are implemented, difficulty in complying with response requirements set by the FAA will likely require either relocation of the existing facility or development of a supplemental facility. It is recommended that alternatives for both be further explored based on the results of response times, cost of construction and operation, proximity to other facilities, and surveillance of airport operations area. As such, additional equipment may be required depending on the option selected. Regardless, periodic replacement of major equipment should be programmed to ensure the equipment available continues to meet performance requirements.

5.6.4 Fuel Storage Requirements

Planning for the storage of fuel to serve aircraft demand requires consideration of not only future operational demand but also fuel settling requirements, how fuel is transported to the Airport, the reliability of the supply and major changes to the aircraft stage lengths. Typically, fuel storage for 2-3 days provides adequate supply. However, if the fuel is coming from an area located at a significant distance from the fuel storage locations, these storage requirements could be double or more, especially in areas highly susceptible to major weather events or traffic delays. Fuel at RSW is tankered to the Airport by trucks from Tampa. Tampa is located approximately 140 miles from Fort Myers. Therefore, to be safe it is recommended that the fuel and supply at RSW be between 5-7 days and no less than 2-3 days at any time.

It was noted in the inventory that there are two fuel farms located at the Airport, one serving GA, and the other serving the commercial service airlines. The commercial fuel storage and hydrant-fueling facility owned by the Lee County Port Authority consists of three (3) 420,000-gallon Jet-A fuel tanks. Therefore, the current fuel storage capacity is 1,260,000 gallons plus an additional 70,000 gallons in the hydrant piping system. Fuel flowage records show that the average daily flow of Jet-A for the Year 2000 was 114,032 gallons. During the peak month, March of 2000, the recorded fuel flowage was 4,851,493 gallons, resulting in an average daily flowage of 156,500 gallons. In addition, the peak month for the Year 2001 recorded a flowage of 5,635,848 gallons, representing an increase of 784,355 gallons or 1.6 percent. Industry standards depict that a five to seven day storage capacity at the fuel farm at all planning levels would satisfy the appropriate level of service required at the Airport.

Future demand for aircraft fuel is driven primarily by the expected number of aircraft operations. Because no historical fuel sales information was available, an estimate of the approximate gallons of fuel per flight was used. This estimation varied depending on the fuel farm being analyzed. The main commercial operations fuel farm serves considerably larger aircraft that, on average, will be traveling much greater distances than the aircraft being serviced at the FBO. Therefore, the ratio assumed for the commercial operations equals 700 gallons of fuel per peak month jet operation. The ratio used for the GA/FBO analysis equals ten (10) gallons of fuel per each peak month for piston operations and 125 gallon per peak month for jet operations. This value is based on information from other airports with operations similar to that at RSW. 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)

In order to project the future storage requirements, expected operational demand growth can be applied to existing fuel flowage levels as outlined in **Table 5-19.**

TABLE 5-19 FUEL STORAGE REQUIREMENTS				
Year	**Peak Month Operations**	**Peak Month Demand (gallons)**	**Existing Capacity (gallons)**	**Existing Supply (days)**
Main Commercial Operations Fuel Farm				
2000 (Base Year)	6,133	4,293,100	1,260,000	8.8
2005	7,279	5,095,300	1,260,000	7.4
2010	8,571	5,999,700	1,260,000	6.3
2015	9,955	6,968,500	1,260,000	5.4
2020	11,406	7,984,200	1,260,000	4.7
GA/FBO Fuel Farm (Jet-A)				
2000 (Base Year)	2,285	285,625	60,000	6.3
2005	2,657	332,125	60,000	5.4
2010	3,034	379,250	60,000	4.8
2015	3,467	433,375	60,000	4.2
2020	3,923	490,375	60,000	3.7
GA/FBO Fuel Farm (100LL)				
2000 (Base Year)	2,285	22,850	12,000	15.8
2005	2,657	26,570	12,000	13.5
2010	3,034	30,340	12,000	11.8
2015	3,467	34,670	12,000	10.4
2020	3,923	39,230	12,000	9.2

Source: Birk Hillman Consultants Inc., 2001

As depicted in **Table 5-19** above, planning for the expansion of the fuel farm should commence as operations at the Airport are expected to increase significantly over the planning period. With the implementation of the midfield terminal, consideration should be given to allow for expansion of the current fuel farm, as the fuel will be pumped across the field via a hydrant fueling system to the new terminal. The current location of the fuel farm provides enough space for expansion and should be coordinated as deemed appropriate by the provider.

5.6.5 Air Traffic Control Tower

The current location and height of the air traffic control tower (ATCT) at RSW are sufficient for line of sight requirements for the existing runway. However, the height and location will not be sufficient for operations and safety when the midfield terminal is constructed and a new parallel runway is implemented. As such, the new tower location and height should be built to provide an unrestricted view of all operational aprons of the airfield. Based on FAA Order 6480.4 *Air Traffic Control Tower Siting Criteria*, a minimum visibility angle of 35 degrees relative to the runway grade should be provided to ensure the controller adequate depth perception. To determine approximate cab size, the control tower activity level must be determined. Using the

methodology outlined in FAA Order 6480.7C, *Airport Traffic Control and Terminal Radar Approach Control Facility Design Guidelines*, it can be determined that the new RSW air traffic control tower would need to meet Level 3 tower requirements by 2020. The tower height will be analyzed as part of the alternatives chapter and will be primarily driven by its location and the need to provide a clear line of sight of the entire airport operations area.

5.7 CARGO FACILITY REQUIREMENTS

Air cargo at RSW is processed through two facilities. These facilities are the all-cargo building and the airline/belly-haul cargo facility.

The all-cargo building consists of approximately 24,000 ft^2 of warehouse, located west of the general aviation facility. A 69,000 yd^2 aircraft apron adjacent to the all cargo facility allows for the aircraft to park and load/unload air freight. The apron can accommodate six aircraft simultaneously depending on their size. The facility has direct access to Chamberlin Parkway and has adequate truck dock and automobile parking to satisfy the facility's needs. Three all-cargo carriers currently utilize the apron and building. They include FedEx, UPS and Airborne Express.

The belly haul cargo building consists of approximately 15,500 ft^2 of common use warehouse owned by the Lee County Port Authority and leased to the airlines and others for processing belly haul cargo. This facility is located to the west of the existing passenger terminal building and east of the all-cargo building. This facility has no dedicated aircraft parking apron. Cargo is tugged between the aircraft parked on the passenger terminal ramp and the belly haul facility via the airport perimeter road. The facility is accessible via Regional Lane, which connects directly to Chamberlin Parkway.

The projected growth of the all-cargo activity is expected to differ from the projected growth of the belly-haul cargo activity. Additionally, the space requirements for the two buildings are computed differently. These requirements are detailed in the following sections.

5.7.1 All-Cargo Activity Demand

The 1993 Master Plan indicated that there were only two all-cargo operators at RSW; they included Fed Ex and UPS. Combined, these two cargo carriers shared 40 percent of the overall cargo activity in 1993. Since then, Airborne Express, which operates as an all-cargo carrier, began serving RSW. Air cargo at the Airport has grown 4.4 percent annually over the past five years. Although no exact breakdown was available, it is believed that Airborne Express greatly contributed to the increase in the freight carried in all-cargo aircraft. In the year 2000, cargo carried by all-cargo aircraft contributed to 70 percent of the total cargo enplaned and deplaned at the airport. It is expected that the percentage of all-cargo activity will continue this increasing trend as a percentage of total cargo activity. The projected all-cargo demand is outlined in **Table 5-20**.

TABLE 5-20 ALL-CARGO ACTIVITY				
Year	**Total Cargo (lb)**	**Proportion of All-Cargo/Total Cargo**	**All-Cargo (lb)**	**All-Cargo (Tons)**
2000	34,482,000	70%	24,137,400	12,069
2005	40,297,100	75%	30,222,800	15,111
2010	46,993,300	75%	35,245,000	17,623
2020	61,536,900	80%	49,229,520	24,615

Source: Birk Hillman Consultants, Inc.

Based on the growth of cargo worldwide, the share of cargo carried by all-cargo aircraft at RSW is anticipated to increase to 75 percent by 2005 and then to 80 percent by the year 2020. By the end of the planning period it is projected that 49 million pounds (24,500 tons) of cargo will be transported on all-cargo aircraft.

5.7.2 All-Cargo Building Requirements

Depending on the efficiency of the processing systems utilized by the cargo operators, the building space needed to process one ton of freight per year typically varies between 1 and 2.5 square feet. One square foot per annual ton of freight indicates that a cargo operation is extremely efficient and advanced automation equipment is often used in processing the cargo. This is typical of airports with very high cargo volumes. A ratio closer to two and a half square feet per annual ton is representative of a facility that has little or no automation and processes cargo less efficiently. This is typical of a lower volume operation. RSW is not a hub for any of the all-cargo operators, and the overall cargo volume is relatively low compared to other airports of similar size. (The current ratio of space to freight is roughly 2 ft^2 per annual ton). However, the three cargo operators currently serving RSW have been in business for many years and have well established and efficient air cargo processing standards. Due to the fact that the existing facility has multiple tenants, no standard mechanical handling system, and some off-site processing associated with one of the cargo operators, 1.7 square feet of building space per one annual ton of cargo was used as a reasonable basis for developing future space requirements. It is anticipated that this ratio will drop as volume increases. **Table 5-21** outlines the space requirements for the all-cargo building and anticipated surplus or deficit for each of the planning periods.

TABLE 5-21 SPACE REQUIREMENTS FOR THE ALL-CARGO ACTIVITY					
Year	**Space Required/Annual Ton of Cargo (Ft2/Ton)**	**Annual Volume Of Cargo (Tons)**	**Space Required (Square Feet)**	**Existing Space (Square Feet)**	**Surplus/ Deficiency (Square Feet)**
2000	1.7	12,069	20,520	24,000	3,480
2005	1.7	15,111	25,689	24,000	(1,689)
2010	1.6	17,623	28,200	24,000	(4,200)
2020	1.5	24,615	36,925	24,000	(12,925)

Source: Birk Hillman Consultants, Inc. 2001

The space required per annual ton of cargo is anticipated to decrease slightly through the planning period due to improved efficiencies inherent with increased volumes of activity. Based on the continued use of the existing facility, a deficiency of 1,689 ft^2 is projected in the year 2005. This is expected to increase to 12,925 ft^2 by 2020.

5.7.3 All-Cargo Apron Requirements

The existing air cargo apron can accommodate up to six aircraft simultaneously with a balanced mix of narrow body aircraft (757 or smaller) and wide body aircraft (767 or smaller). In the year 2000, the Airport typically experienced one DC-9, one 727, and one 757 on the ramp simultaneously. It is anticipated that as the total cargo volume grows at the airport the aircraft size is likely to increase and/or the frequency of flights will have to increase to meet the demand. The forecasts for cargo operations during the peak month average day, project five to six aircraft by the end of the planning period. Even if all six aircraft arrived simultaneously, they could all be accommodated on the existing cargo apron, assuming the fleet mix of all-cargo aircraft serving RSW does not change dramatically. Although the projections do not warrant additional aircraft parking apron through the planning period, the alternatives chapter of this report will identify options for additional apron area if cargo grows beyond the total volume projections for the twenty-year time frame. Additionally, based on the condition of the cargo pavement, rehabilitation should be programmed in the short-term planning period.

5.7.4 Belly-Haul Cargo Demand

Belly-haul cargo remains an important profit generator for commercial airlines and is carried by a majority of the major passenger airlines to supplement passenger revenues. In the year 2000, belly haul cargo accounted for 10.0 million pounds of the 31.7 million pounds of total cargo processed through RSW. This equates to an approximate 30 percent share with all-cargo tonnage expected to increase throughout the planning period. It is estimated that the share of belly-haul cargo activity versus overall air cargo will decrease to 25 percent by 2005 and 20 percent by 2020. **Table 5-22** details the share of belly-haul cargo carried by aircraft passengers throughout the planning period.

TABLE 5-22
BELLY-HAUL CARGO ACTIVITY

Year	Total Cargo (lb)	Proportion of Belly-Haul Cargo/Total Cargo	Belly-Haul Cargo (lb)	Belly-Haul Cargo (Tons)
2000	34,482,000	30%	10,009,400	5,005
2005	40,297,100	25%	10,074,300	5,037
2010	46,993,300	25%	11,748,300	5,874
2020	61,536,900	20%	12,307,380	6,154

Source: Birk Hillman Consultants, Inc.

By the end of the planning period it is projected that 12.3 million pounds of cargo will be transported on commercial aircraft compared to 10 million pounds in the Year 2000

5.7.5 Belly-Haul Cargo Facility Requirements

The current ratio of belly-haul cargo space to annual ton of cargo is 3.1. This indicates that the existing facility is either not fully utilized or its configuration/allocation of space is inefficient. The utilization ratio of the existing building was reviewed along with a recent survey conducted to identify the space required for a relocated facility adjacent to the midfield terminal complex. The DMJM Aviation belly-cargo survey, conducted in July 2000, asked the airlines involved with belly-haul cargo activity at RSW how much they would need in the new freight forwarding facility. The results of the survey are presented in **Table 5-23**.

TABLE 5-23
2005 BELLY-CARGO SURVEY

Airline	Cargo Space Required		Space Requirements (ft^2)		
	Yes	*No*	*Warehouse*	*Office*	*Total SF*
Continental Airlines		No①			
Delta Airlines	Yes		5,000	1,000	6,000
Northwest Airlines	Yes		1,200	300	1,500
TWA②		No①			
United Airlines	Yes		1,200	300	1,500
US Airways	Yes		1,200	300	1,500
AMR		No			
Totals			**8,600**	**1,900**	**10,500**

Source: DMJM Aviation
① As of the Year 2001, Continental Airlines and TWA still operate their cargo facilities at RSW. However, their cargo services are slated to be discontinued during the short-term planning period.
② This survey was conducted before American Airlines acquired TWA. However, since no additional information was provided, it was assumed that nothing had changed.

Although the cargo survey outlines 10,500 ft^2 in identified space needs, a new midfield facility is planned for 15,000 ft^2 to provide for flexibility in accommodating tenants and potential air service expansion. A 15,000 ft facility would provide a space to process a ratio of 2.6 ft^2 per annual ton in 2010 and 2.4 ft^2 per annual ton in 2020. As such, it is anticipated no expansion will likely be required to this facility through the end of the planning period. However, for long term planning purposes, it is recommended that land be set aside to provide for at least a 50 percent expansion of the pending belly-haul facility.

5.8 GENERAL AVIATION FACILITY REQUIREMENTS

The existing general aviation (GA) facility is located west of the existing passenger terminal and includes a general aviation terminal building, aircraft parking apron and a single multi-use hangar. The terminal is a two-story building with approximately 8,000 square feet of space, the aircraft parking apron is approximately 39,000 square yards and the multi-use hangar totals approximately 26,200 square feet. Construction has begun on a second GA facility located west of the existing GA facility. The new facility will include a new general aviation terminal building with approximately 51,500 square feet of space, and approximately 23,000 square yards of new aircraft apron. This new facility has the potential to expand in the future with an additional

39,950 square feet of building and another 17,940 square yards of aircraft parking apron. Private Sky is the new tenant and currently the only general aviation operator at RSW. They plan to use the existing apron and hangar facilities but plans for the reuse of the old GA terminal building were not known at the time of this analysis.

For planning purposes and determining the future requirements for general aviation aircraft, based and itinerant aircraft were analyzed separately since they serve different traffic segments and have different space requirements. The projected demand, hangar and apron parking requirements for each are detailed in the following sections.

5.8.1 Based Aircraft Demand

The number of based aircraft varied from 1 to 8 between 1995 and 2000. This number is expected to grow to 28 based aircraft by 2020, as projected in the Forecast Chapter. In order to determine the future requirements for based aircraft, the split of single-engine, multi-engine and jet aircraft was estimated. In doing so, the same percentages splits used in projecting the general aviation operations were applied. The results are outlined in **Table 5-24**.

TABLE 5-24
TYPES OF BASED AIRCRAFT

Year	Single-Engine Aircraft	Multi-Engine Aircraft	Jets	Total Number
2000	1	5	2	**8**
2005	1	8	4	**13**
2010	2	10	6	**18**
2020	3	16	9	**28**

Source: Birk Hillman Consultants, Inc. 2001.
Ricondo and Associates, Inc 2001.

It is worth noting that the calculations were rounded up in order to favor larger aircraft, especially jets, since the apron and hangar requirements for jet aircraft are slightly larger.

5.8.2 Based Aircraft Hangar Requirements

Southwest Florida is known for intense sunlight, heavy rains, occasional hail and strong winds, especially during the summer months. As such, aircraft owners often desire to store their aircraft in hangars year around, if possible. The Lee County Port Authority is currently experiencing a demand for hangars at Page Field General Aviation Airport that far exceeds capacity. While Page Field currently provides hangars for 30 percent of its based aircraft, it is expected to increase to 60 percent by 2020. This is in line with levels already provided by other airports in the region. It is expected that storage requirements will be similar at RSW, particularly in light of the number of high end turbo prop and GA jet aircraft either currently utilizing or projected to utilize the facility. **Table 5-25** outlines the anticipated based aircraft demand throughout the planning period.

TABLE 5-25 BASED AIRCRAFT: PERCENT OF HANGARED AIRCRAFT			
Year	**Total Number of Based Aircraft**	**Hangared Based Aircraft/ Total Based Aircraft**	**Hangared Aircraft Demand**
2000	8	40%	3
2005	13	40 %	5
2010	18	50 %	9
2020	28	60 %	17

Source: Birk Hillman Consultants, Inc. 2001.

In the year 2000, roughly 40 percent of the aircraft based at RSW were stored in the 26,000 square foot hangar located east of the existing GA terminal. The 26,000 square foot hangar has the capability to store six to seven aircraft simultaneously depending upon their size. It should be noted that Private Sky has started to provide maintenance services in the existing hangar. As such, the hangar is now used for both maintenance and storage of general aviation aircraft with half of the hangar space set aside for each.

In order to relate aircraft hangar demand into the hangar space required, the demand must be split into aircraft types. In reviewing, the projected based aircraft fleet at RSW, it is likely that a large number of jets based at RSW will choose to be stored in hangar facilities. The expense of these aircraft coupled with the extreme cost of repairs and maintenance tends to support this assumption. The remaining hangar space is anticipated to be occupied by multi-engine and single-engine aircraft. Based on the projection of larger corporate jets and multi engine aircraft based at RSW and the assumption that the majority of these will be stored in hangars, an average of 3,000 square feet per hangared aircraft was used to determine hangar space. The projected mix of aircraft and hangar storage requirements are included in **Table 5-26**.

TABLE 5-26 BASED AIRCRAFT: HANGAR REQUIREMENTS					
Year	**Single-Engine Aircraft**	**Multi-Engine Aircraft**	**Jets**	**Total Number of Hangared Positions**	**Hangar Space Required (S.F)**
2000	0	2	1	3	9,000
2005	0	2	3	5	15,000
2010	1	3	5	9	27,000
2020	1	8	8	17	51,000

Source: Birk Hillman Consultants, Inc. 2001

Since the number of hangared positions and the type of activity do not justify the construction of T-hangars but favor bulk hangars and/or multi-use hangars, it is recommended that the requirements for based and itinerant aircraft be combined for accommodation in the same hangars.

5.8.3 Based Aircraft Parking Apron Requirements

Based on the anticipated number and fleet of aircraft to be hangared, the number of aircraft remaining on the apron and the associated area required can be estimated. The analysis outlined

in **Table 5-27** assumes that single-engine and multi-engine aircraft each need about 800 square yards per parking position and that jet aircraft will need approximately 1,200 square yards.

TABLE 5-27
BASED AIRCRAFT: FLEET MIX OF NON-HANGARED

Year	Single-Engine Aircraft	Multi-Engine Aircraft	Jets	Total Number of Non-Hangared Positions	Total Based Aircraft Apron Area (Square Yards)
2000	1	3	1	5	4,400
2005	1	6	1	8	6,800
2010	1	7	1	9	7,600
2020	2	8	1	11	9,200

Source: Birk Hillman Consultants, Inc. 2001

5.8.4 Itinerant Aircraft Demand

Itinerant general aviation demand is often difficult to project. This is particularly true relative to the number of aircraft that will be parked on the apron at the same time. The FAA provides guidelines in Advisory Circular AC150/5300-13, Annex 5, Change 6, "Small Airport Buildings, Airplane Parking, and Tie-Downs" to calculate the number of itinerant aircraft utilizing the apron simultaneously. The steps to determine the itinerant parking demands at RSW followed the guidelines in the advisory circular and are outlined as follows:

1. Consider the total annual operations (as forecasted)
2. Consider the total operations of the peak month (11.4% of the year from forecasts)
3. Consider the operations of an average day of the peak month (divide by 31)
4. Assume the busy day is 10 percent more than the average day
5. Divide by two to obtain the total number of aircraft per day
6. Assume that 60 percent of the transient aircraft will be on the apron at the same time.

The results of the above calculations are presented in **Table 5-28** and are estimated for the busy day of the peak month for the years 2005, 2010 and 2020.

TABLE 5-28
PEAK ITINERANT AIRCRAFT DEMAND

Year	Annual Operations	Peak Month Operations	Average Day Operations	Busy Day Operations	Busy Day Aircraft	Aircraft at the FBO, at the same time
2000	16,816	1,917	62	68	34	**21**
2005	19,237	2,193	71	78	39	**24**
2010	21,803	2,404	78	86	43	**26**
2020	27,520	3,137	101	111	56	**34**

Sources: Ricondo & Associates, Inc.
Birk Hillman Consultants, Inc. 2001

5.8.5 Itinerant Hangar Requirements

Providing adequate hangar facilities for itinerant aircraft requires consideration of a number of factors. Some itinerant aircraft will only stay a couple of hours while others may stay for a couple of days to over a week. GA jets and high end turboprop aircraft are typically primary itinerants that want single or multiple overnight temporary storage. The percentage of itinerant aircraft owners willing to hangar their aircraft is projected to increase throughout the planning period due to some of the same reasons mentioned for the hangaring of the based aircraft. Since no information was available from the former FBO operator regarding the number of itinerant aircraft desiring hangars, estimates were used to project the numbered hangar spaces required. In the year 2000, it was estimated that ten percent of the aircraft at the FBO at the same time would want hangar facilities to store their aircraft. By 2020, it was projected that twenty percent of the itinerant aircraft would desire aircraft storage. **Table 5-29** depicts the projected number of itinerant aircraft demanding hangars and the associated area requirement

Table 5-29
ITINERANT AIRCRAFT IN HANGARS

Year	Total Number of Aircraft at the FBO	% of Aircraft in Hangars	Number of Aircraft in Hangars	Hangar Space Required (Ft^2)
2000	21	10%	2	7,000
2005	24	10%	3	10,500
2010	26	15%	4	14,000
2020	34	20%	7	24,500

Source: Birk Hillman Consultants, Inc. 2001

In order to provide maximum flexibility in the storage of aircraft, it was assumed that the majority of aircraft to be hangared would be the larger aircraft, such as the medium to larger size general aviation jets and multi engine aircraft. Utilizing the larger jets as the criteria for determining hangar space requirements would leave ample space to provide for the smaller jets and multi-engine turbo prop aircraft in hangars as well. To estimate the demand for itinerant aircraft hangar space 3,500 square feet per itinerant aircraft was used. This is 500 square feet larger than what was used to project based aircraft hangar requirements due to the necessity for accommodating the larger itinerant aircraft and also to provide additional flexibility in the movement of aircraft into and out of the hangars.

5.8.6 Itinerant Apron Requirements

For planning purposes apron parking requirements for itinerant aircraft tend to be larger than those for based aircraft. An average of 1,500 square yards per peak itinerant aircraft was used to determine the future apron requirements for itinerant aircraft. This figure takes into account the required wingtip clearances and taxilane/maneuvering area in front of the tie-down position. The total apron required to provide for itinerant aircraft is outlined in **Table 5-30.**

TABLE 5-30 APRON AREA FOR ITINERANT AIRCRAFT		
Year	**Number of Parking Positions**	**Area Needed (Sq. Yards)**
2000	19	28,500
2005	21	31,500
2010	22	33,000
2020	27	40,500

Source: Birk Hillman Consultants, Inc. 2001

5.8.7 Total GA Hangar and Apron Requirements

The goal of the two previous sections was to determine how much hangar and apron area will be required to accommodate the growth of each segment of projected general aviation activity. This section outlines the combined requirements for both based and itinerant aircraft and compares this to current conditions.

Table 5-31 provides a summary of the combined hangar requirements for based and itinerant aircraft as well as the projected deficiency or surplus for the development period.

TABLE 5-31 SUMMARY OF GA HANGAR REQUIREMENTS								
Year	**Based Aircraft**		**Itinerant Aircraft**		**Total Required**		**Existing Hangar Space**	**Hangar Space Deficient/Surplus**
	# of Aircraft	***Square Feet***	***# of Aircraft***	***Square Feet***	***# of Aircraft***	***Square Feet***	***Square Feet****	***Square Feet***
2000	3	9,000	2	7,000	5	16,000	13,000	(3,000)
2005	5	15,000	3	10,500	8	25,500	6,500	(12,500)
2010	9	27,000	4	14,000	13	41,000	0	(41,000)
2020	17	51,000	7	24,500	24	75,500	0	(75,500)

Source: Birk Hillman Consultants, Inc. 2001

* *Existing available hangar space is decreased due to increasing aircraft maintenance demand.*

The above analysis assumes that the existing 26,000 square-foot facility hangar would transition to aircraft maintenance exclusively by 2010. Based on this assumption, it is estimated that a 3,000-square foot deficiency in hangar storage space currently exists. This shortfall is projected to increase to 75,500 square feet by the year 2020. Thus, it is recommended that space be set aside to accommodate an additional 75,500 square feet of bulk or multi-use aircraft hangars in support of GA activity.

In determining the total GA apron area deficiency or surplus, the new apron project (approximately 23,000 square yards) associated with the new general aviation terminal facility was included in the existing apron figure. **Table 5-32** outlines the GA apron requirements.

TABLE 5-32 TOTAL GA APRON AREA REQUIREMENTS (Square Yards)					
Year	**Based Aircraft**	**Itinerant Aircraft**	**Total**	**Existing**	**Deficient/Surplus**
2000	4,400	28,500	32,900	48,650	15,750
2005	6,800	31,500	38,300	48,650	10,350
2010	7,600	33,000	40,600	48,650	8,050
2020	9,200	40,500	49,700	48,650	(1,050)

Source: Birk Hillman Consultants, Inc.

With the new 23,000 square yard apron project, projected demand for both based and itinerant aircraft parking positions are met through the 2010 planning period. By 2020, a 1,050-square yard projected shortfall of parking apron is anticipated. However, it is important to note that if the indicated hangar shortfalls are not provided for, the apron parking requirements will increase considerably.

5.9 NON-AVIATION SUPPORT FACILITIES

5.9.1 Multi-modal Facilities

A "multi-modal" facility is a facility(s) that provides an interface between multiple transportation types. These types may include air, roadways, rail, or sea and may be oriented to either the movement of freight, passengers, or both. As airports typically are provided with good surface access and provide air access by function, they also may offer a cost effective and efficient location for consolidation of other transportation facilities. In reviewing the potential need to provide for multi-modal facilities at RSW, a number of observations were made. However, as multi-modal access is a very complex issue requiring detailed analyses of numerous regional factors, it is recommended that a detailed multi-modal study be undertaken to confirm the need for and ultimate approach to multi-modal provisions.

Freight

Trucks are the dominant mode of transportation for businesses shipping goods into and out of the Southwest Florida region. As depicted in a business transportation survey conducted in the 2000 "Transportation Cornerstone, Southwest Florida" report by the Florida Chamber Foundation, trucking in southwest Florida, on average, accounted for about 88 percent of the total shipments. Rail, air, and ship all require the use of trucking in one stage of the trip. Due to the limited rail availability in the region, the use of trucks for transporting goods remains the key mode for Southwest Florida transportation logistics. As RSW forecasts indicate an increase in cargo operations and overall economic growth in the region, the potential need for freight warehousing, surface freight terminals, and other such consolidation facilities at the Airport should be considered.

The Seminole Gulf Rail provides the primary heavy rail freight service to the region connecting Vanderbilt Beach to the south with Arcadia to the north. The connection to CSX Rail Line in Arcadia provides access to the national rail system.

As noted in the before mentioned transportation survey, 25 percent of the businesses surveyed viewed rail as "highly important" or "essential" to their operations. However, a definite improvement in rail transportation was also envisaged as only 12 percent of the businesses that completed the survey rated the rail transportation mode as "adequate" or "very adequate". The Florida Chamber Foundation report also noted that the lack of inter-modal access to the Southwest Florida area prevents the businesses from more easily transporting their goods by rail and contributes to a greater dependence on trucks. This dependence on trucks is also responsible for the traffic congestion experienced on the major arterial roads in the area such as I-75 and U.S. 41. This is especially evident in the RSW area and at the Daniels Parkway I-75 interchange. With the potential for light industrial development on the airport and the airport's status as a Foreign Trade Zone, it appears that some type of heavy rail access should be considered between the airport and the Seminole Gulf Rail Line.

It has been noted that an easement did exist along the north side of Alico Road which provided a right of way for the Seminole Gulf Rail Company. Based on discussions with the local planning agencies the easement has been abandoned and no longer exists. Although rail is not a predominant mode of transporting passenger or freight in Southwest Florida, a link to the airport should be considered as part of an ultimate development plan. It is recommended that land be reserved for a passenger and freight multimodal link at the airport.

Passengers

Passenger transportation requires consideration of a range of other potential facilities. Options for rail can include heavy rail (AMTRAK), highspeed rail and light rail. Bus service includes local, long distance and prearranged charter. Surface transportation can include car pool or commuter facilities.

Southwest Florida currently has no direct regional passenger rail service of any kind. While Amtrak has a station in Fort Myers, all passengers are currently bused in from either Tampa or Orlando. It is unclear what demand levels would be required to justify extension of heavy rail passenger service to Fort Myers or whether in fact, the existing lines have the capacity to support such activity. While highspeed rail is being considered between major metropolitan areas in Florida, extension of this system to Fort Myers is not even in the preliminary planning stages. Additionally, given the existing and projected population base, such a system would not likely be considered economically feasible until well beyond the planning period. Again, given the regional population base and density, light rail will also not likely be feasible until well beyond the planning period.

Automobiles and buses appear to be the likely modes of passenger transport for the region for the forseeable future. The proximity of the Airport to I-75 would likeley result in good point-to-point bus service, but its distance from the major metropolitan areas would not likely make it a good location for a regional bus terminal.

5.9.2 Hotel

In considering potential sources of revenue enhancement for RSW, provision for development of an on airport hotel should be considered. While business oriented airport hotels are often located

within the terminal area of an airport, the profile of activity at RSW requires consideration of a site outside the terminal area that would benefit from use by both airport users and I-75 automobile traffic. Such a site would provide the greatest potential return to a hotel operator and provide the greatest potential for a successful operation. The size of the site should be adequate to support a 300 room hotel with ample space for meeting rooms.

5.9.3 Commercial/Industrial Areas

The expansion of commercial/industrial facilities and land use areas at RSW are important to the overall development of the Airport and its financial stability. The leasing of land for such facilities would provide the Airport with additional funds needed for continuous airport improvements. The demand for a suitable industrial area in close proximity of the Airport comes from the fact that the areas surrounding the Airport are growing rapidly in terms of commercial business, which is mostly based on tourism. The Airport is close to the main tourist and other industrial areas of Fort Myers and hence a commercial/industrial complex location at the Airport would provide an excellent distribution point for the continuation of export or import goods. Based on this, land should be identified with the ability to provide for such developments in enhancing the Airport's revenue system. Provisions should also be made to provide for basic infrastructure required to develop the identified sites.

5.9.4 Land Acquisition

Land Acquisition for I-75 Airport Access

The current plan to improve vehicle traffic to and from the Airport is to provide direct access to I-75 between Alico Road and Daniels Parkway. Along with the proposed plan to widen I-75 in 2008, this improvement plan will relieve the traffic congestion currently experienced on I-75. RSW is the only major commercial airport located in Florida without direct access to the Intrastate Highway System. The acquisition of land of approximately 460 +/- acres between Treeline Avenue /Ben Hill Griffin Parkway and I-75 has been identified for acquisition to provide a corridor to I-75. It is recommended that the LCPA pursue this acquisition aggressively due to intense development pressures in this region. The Airport Access section will provide additional discussion on this topic.

Land Acquisition for Area East of the New Parallel Runway

The acquisition of this land has been identified for the purpose of providing the operational safety required for the Runway Protection Zone (RPZ) and approach surface to the new runway. It is recommended this area be acquired to avoid future conflicts regarding the new parallel runway and to allow for the airport to control the lands in the RPZ. The approximate area recommended for acquisition is 139 acres. It is also recommended that land within the "Timber Trails" subdivision be acquired to help eliminate incompatible land uses. Voluntary acquisition of lots within the Timber Trails subdivision (f/k/a Piney Acres) as shown in the land acquisition map is recommended to protect the airport from incompatible land use. This subdivision is located at the east end of Runway 6/24 within the flight path. Due to its close proximity to the airport, the Timber Trails subdivision is included within Zone 3 of the noise zone overlay mapping. It is therefore within a zone that restricts development to no noise sensitive uses and prohibits the construction of single family homes. Since Timber Trails was platted prior to the establishment of the noise zones, the subdivision is vested and single family homes are allowed if certain requirements are met. This determination was made in a memo from the Lee County Attorney's Office in July 1998. One of the requirements was the submittal of an avigation easement prior to

the issuance of a building permit. The purpose of an avigation easement is to provide a legal basis for acknowledging the presence of noise impacts. Since the time of the determination, the Lee County Attorney's Office has removed the avigation easement requirement. Therefore, any protection granted to the Port Authority and/or notification to the property owner through the avigation easement process as been removed. The Port Authority initiated a voluntary land acquisition program within the southern portion of the Timber Trails subdivision as part of the 1992 Master Plan. Of the ninety-four (94) Timber Trails lots within the 1992 proposed acquisition boundary, seventy-seven (77) were purchased and seventeen (17) continue under private ownership. The majority of these lots are vacant land. Given this, it is recommended that the Port Authority complete the acquisition, on a voluntary basis, within the initial boundary.

Land Acquisition for Area West of the New Parallel Runway

Based on the noise contours approximately 88 acres of land south of the airport between the Ben Hill Griffin Parkway extension and Airport Haul road may need to be acquired to avoid potential noise problems. This land acquisition recommendation is due to aircraft noise. A discussion of noise and the effects on adjacent land uses is discussed further in Chapter 7, "Environmental Overview".

5.9.5 Storm Water Requirements

During the original construction of the airport, the storm water management system was permitted through the South Florida Water Management District (SFWMD). Subsequent development at the airport has been handled on airport through a number of detention/retention areas scattered throughout the Airport rather than a consolidated means of handling storm water. It is highly recommended that RSW implement a comprehensive storm water plan for all areas at the Airport to allow the most efficient development approach in consideration of the airport's large areas of wetland and environmentally sensitive land. Such a plan would allow the Lee County Port Authority to more efficiently plan building sites and determine land-use compatibility. All storm water improvements at the airport should strive to comply with the guidelines set forth in FAA Advisory Circular 150/5200-33, "Hazardous Wildlife Attractants on or Near Airports."

5.9.6 Mitigation

The land surrounding the existing airport facilities includes numerous wetlands and environmentally sensitive lands. To provide for major developments such as a new midfield terminal complex, off-site land areas have been purchased to allow for the mitigation of any associated impacts. Chapter 7, the Environmental Overview outlines the mitigation strategy for RSW and the details of mitigation lands required for future development will likely be incorporated in the ongoing Environmental Assessment.

Projects with mitigation implications that are currently programmed include:

- Fill Habitat Areas and Unimproved Ponds (Midfield Program)
- Removal of Unsuccessful Mitigation Area "G"
- Mitigation Management

5.9.7 Rehabilitate All Service Roads

To increase safety and efficiency of service road operations at the Airport, it is recommended that a plan be implemented to rehabilitate all service roads.

5.9.8 Flight Kitchen

Per discussions with the operators of the flight kitchen at RSW, no additional areas are anticipated for catering facilities due to the general trend of a reduction of in-flight meals being served on flights operating at the Airport.

5.9.9 Security Fencing/Access

Since a number of major new airport developments have been planned, the replacement, upgrade and reorientation of security fencing will be required in related areas of the Airport. Additional checkpoints should also be considered as appropriate to provide controlled access to airside facilities.

5.9.10 Landscaping

Landscaping is important to the image and attractiveness of an Airport. This is important not only for the tourist associated areas but also to enhance the facility's overall interface with the community. It is therefore recommended that an ongoing capital program be established with adequate budget for the continual improvement of these areas.

5.10 AIRPORT ACCESS

The Southwest Florida International Airport (RSW) is located ten miles southwest of the City of Fort Myers, Florida as shown in the General Location Map, **Exhibit 5-1**. The Airport opened in 1977 and has undergone significant expansion to meet the air service needs of Southwest Florida. As a part of this continued expansion, a new midfield terminal is currently under construction. Access to the existing terminal area and the new midfield terminal complex will be discussed in this narrative.

5.10.1 Existing Terminal Facility

Access to the Airport Terminal area is currently provided by two roads on Airport property, Chamberlin Parkway (located at the northwest corner of the Airport) and Paul J. Doherty Parkway (located at the northeast corner of the Airport) as shown on **Exhibit 5-2**. They both are four-lane divided roadways, which connect to off-site Daniels Parkway. Daniels Parkway (six lane divided, SR 876) runs in an east-west direction and provides access to Interstate 75 to the west of the airport. Daniels also provides access to I-75 from the communities of Lehigh Acres, Gateway and to the northeast Airport service area.

5.10.2 The New Midfield Terminal Complex

The new midfield terminal complex, is proposed to open during the first quarter of 2005 and will replace the existing passenger terminal facility. With the proposed opening of the Midfield Terminal, several access roadway systems will be constructed to serve the new facility. These new roadways, shown in **Exhibit 5-3**, include the construction of Treeline Avenue (TA) from its current intersection with Daniels Parkway (SR 876) south to the new airport terminal access roadway system. The roadway's name will change to Ben Hill Griffin Parkway (BHGP) (at its intersection with the Airport Passenger Terminal Access Road) and will continue in a southerly direction to its intersection with Alico Road.

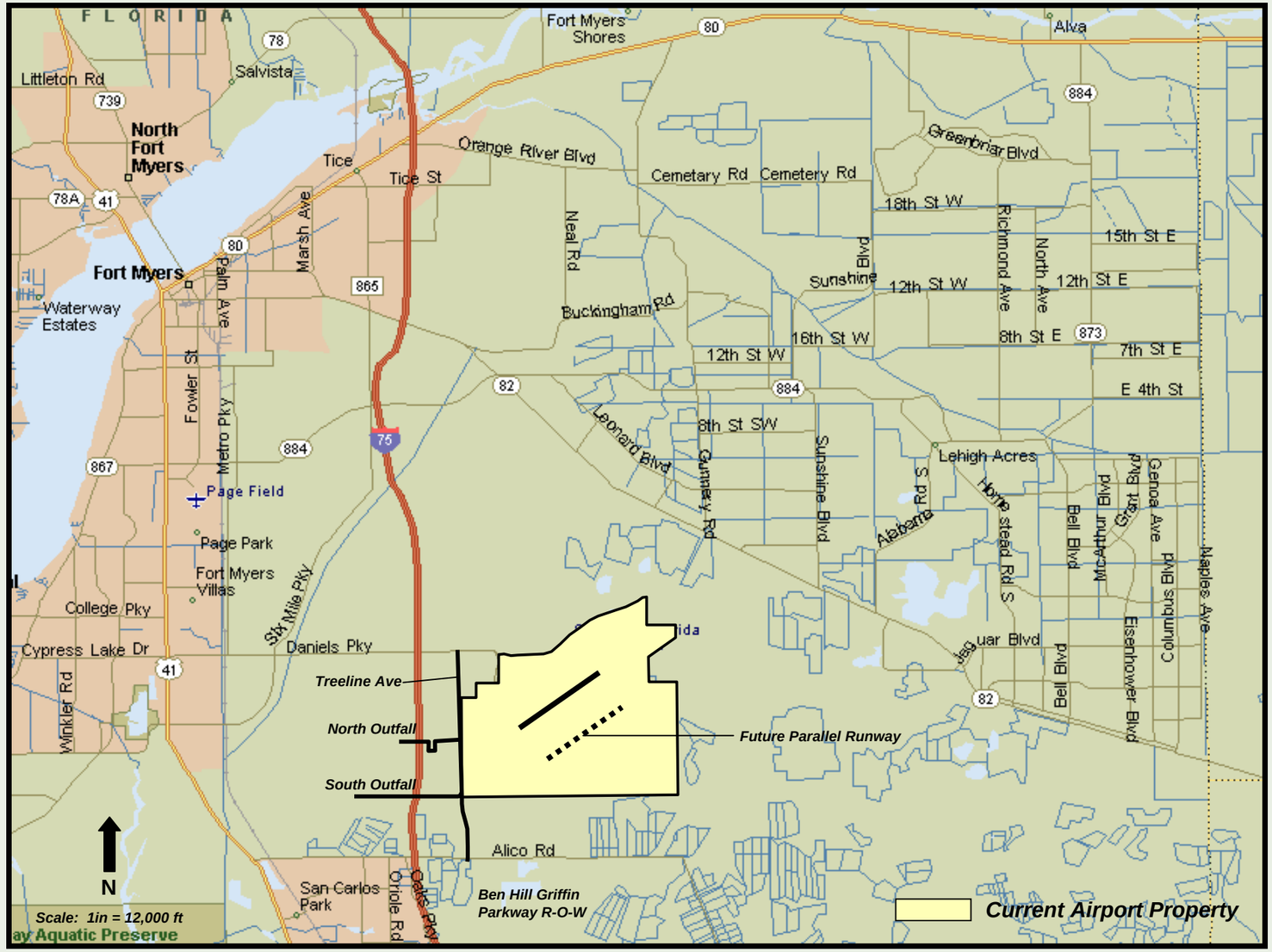
Exhibit 5-1

Vicinity Map

LOCATION WITHIN FLORIDA

Source: Microsoft Expedia Streets, 2001 and Reynolds, Smith and Hills Analysis, 2002

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE VICINITY MAP	**EXHIBIT** 5-1

Exhibit 5-2

Existing Roadway Access

Lee County Port Authority

Birk Hillman
Orlando · Miami · Atlanta

DMJM Aviation

RS&H

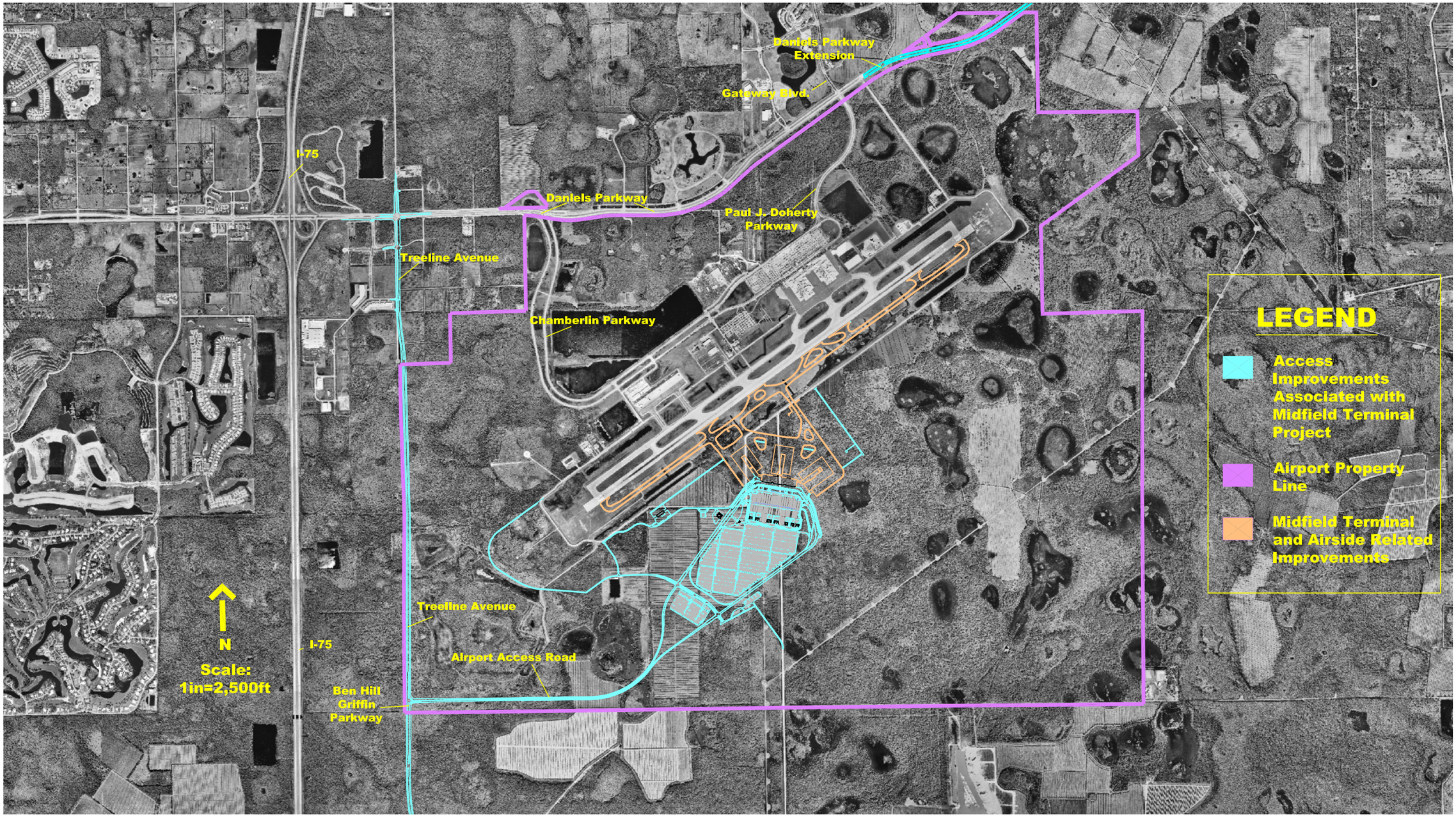
SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA

MASTER PLAN UPDATE
EXISTING ROADWAY ACCESS

EXHIBIT
5-2

Exhibit 5-3

Midfield Roadway System



Source: Reynolds, Smith and Hills, Inc., 2002

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TA/BHGP will be constructed as a divided four-lane controlled access roadway with future expansion potential to 6 lanes. Access to TA/BHGP has been restricted by the Lee County Board of County Commissioners in order to minimize signalization and disruption of flow along this roadway. The TA and Daniels Parkway intersection will be configured so that there will be three left turn lanes heading toward I-75 to enhance the flow from the Airport to I-75. The intersection at BHGP and Alico Road will provide for two right turn lanes in order to facilitate traffic movement from the Airport to I-75 traveling in a southerly direction. The proposed speed limit along TA/BHGP will be posted at 45 MPH.

Passenger and employee access to the new Midfield Terminal Complex, shown on **Exhibit 5-3** will be via a four-lane divided access roadway system from TA and BHGP. The roadway system loops in front of the passenger terminal providing direct access and parking. The terminal roadway system will be designed to direct departing traffic to the upper level and to direct arriving traffic to the lower level to enhance traffic flow and improve curbside capacity and function. Surface and structural garage parking will also be provided to service the passenger terminal.

5.10.3 Need for Improved Airport Access

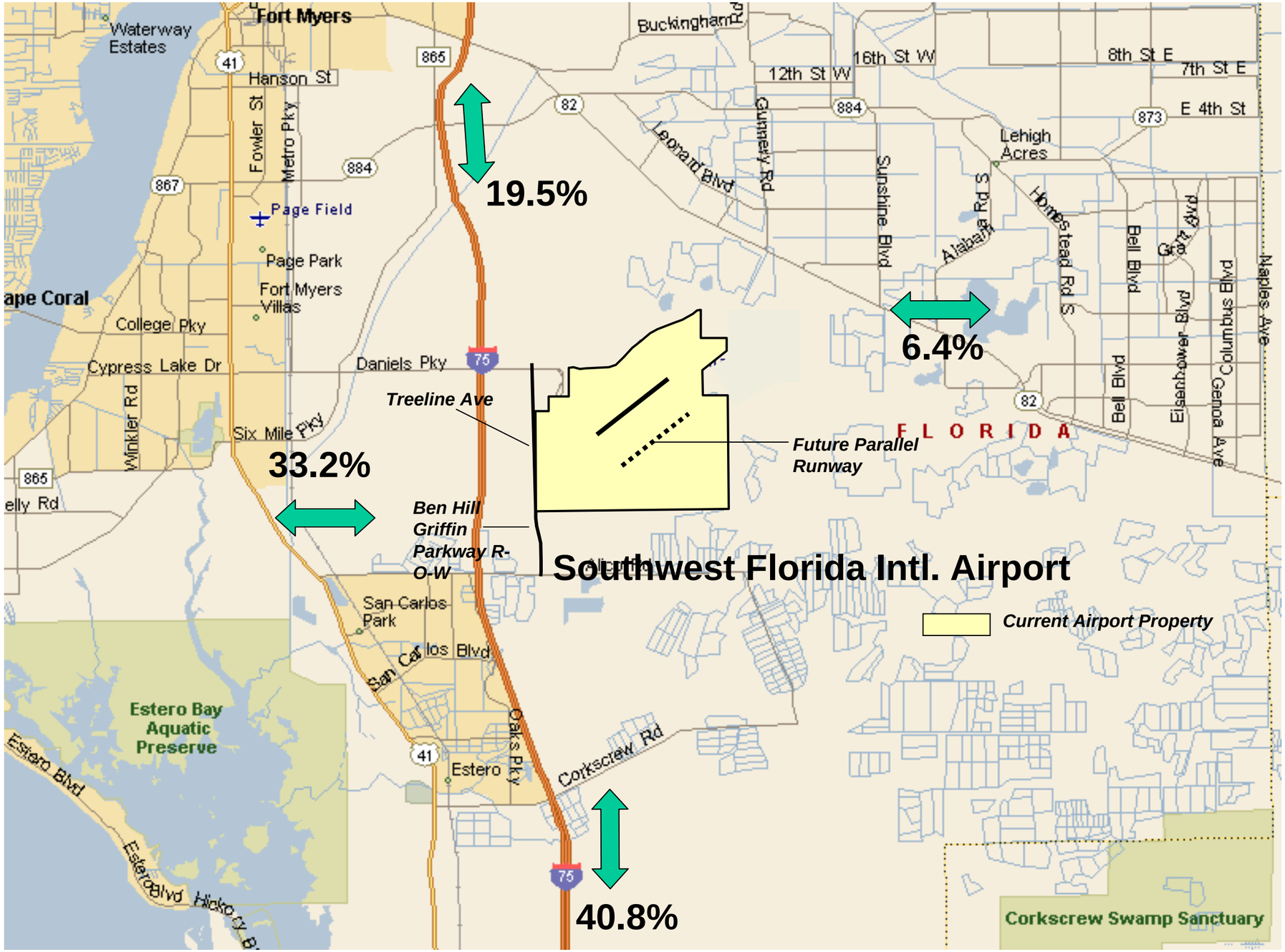
In order to provide for the air transportation needs of the community, the Airport is carrying out several major expansions to the existing airport; a new midfield passenger terminal complex, planned new parallel runway, planned future terminal expansion and associated access roadways. To be able to best provide for these increased access needs, it is necessary to understand the airport service area, current and future passenger volumes and associated access routes. These passenger characteristics were recommended in an origin and destination survey.

In 1998, the Lee County Port Authority conducted an origin and destination survey to determine passenger travel patterns to and from the Airport. The following sketch illustrates the direction of travel to the Airport. It was found that 75% of the passenger traffic was from the south and west of the Airport, and about 25% was coming from the north and east of the facility as shown in **Exhibit 5-4**.

Current and Previous Studies

Roadway access to the Airport has been studied in numerous documents due to the Airport's crucial role in providing access to southwest Florida. This section will provide a brief summary of some of the studies that reference access to the airport.

Exhibit 5-4
Origin and Destination Survey



Source: Lee County Port Authority Origin and Destination Survey, 2002

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Lee County Metropolitan Planning Organization - 2020 Long Range Transportation Plan

Lee County adopted the 2020 Long-Range Plan in December 2000. The purpose of the Lee County (MPO) 2020 Long-Range Transportation Plan (LRTP) is to develop a process and plan to address the future transportation and intermodal needs of the greater metropolitan area. This plan coordinates and guides implementation of transportation capital improvement programs with the Florida Department of Transportation (FDOT) and local and regional agencies. Additionally, the plan is developed to meet the criteria of the Federal Transportation Equity Act of the 21st Century (TEA 21) which requires a fully integrated intermodal transportation system.

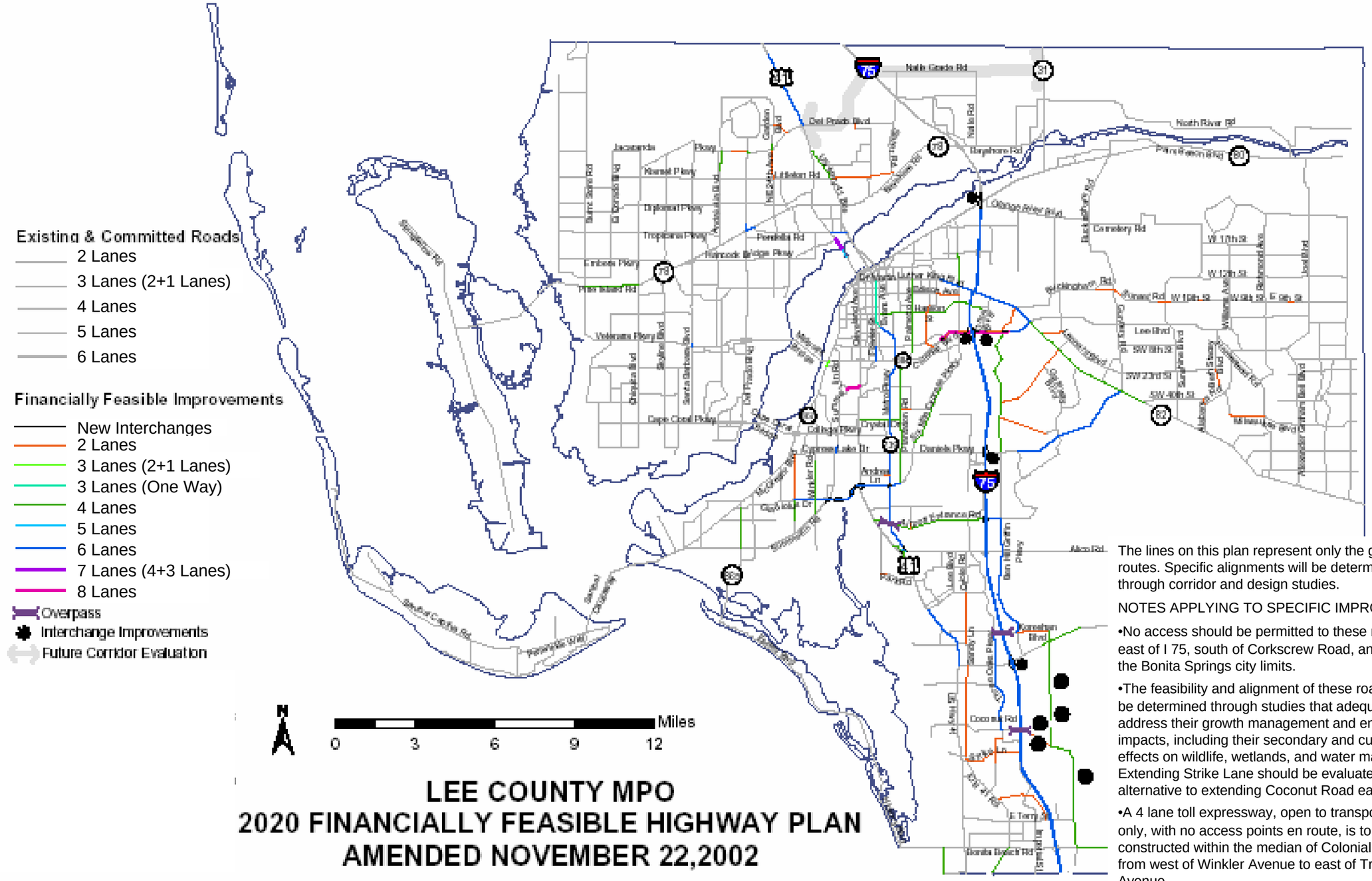
Multimodal transportation involves the moving of passengers or freight between points of origin and destination using two or more modes. For freight transport, that means an exchange of freight between air to truck for delivery. For air passengers, that means the exchange between the aircraft and the surface transportation mode, which is typically, an automobile. The three elements of the intermodal transfer process are (1) the landside portion including the highway network, (2) the intermodal transfer facility, and (3) the airside portion of the airport including the runway environment and airway system. This overview will provide a brief description of the highway system as an integral part of this intermodal network.

To provide a "seamless" transportation connection between modes, the three elements mentioned above must work in harmony. Each element must be able to cope with travel demands to provide a high quality of service.

Roadway improvements identified in the 2020 Long Range Cost Feasible Highway Plan are shown in **Exhibit 5-5**. Improvements associated with the Airport referenced in the document include direct access to Interstate 75.

Exhibit 5-5

MPO 2020 Financial Feasible Map



LEE COUNTY MPO
2020 FINANCIALLY FEASIBLE HIGHWAY PLAN
AMENDED NOVEMBER 22,2002

Source: Lee County 2020 Transportation Plan, 2002

The lines on this plan represent only the general routes. Specific alignments will be determined through corridor and design studies.

NOTES APPLYING TO SPECIFIC IMPROVEMENTS

- No access should be permitted to these roads east of I 75, south of Corkscrew Road, and north of the Bonita Springs city limits.
- The feasibility and alignment of these roads should be determined through studies that adequately address their growth management and environmental impacts, including their secondary and cumulative effects on wildlife, wetlands, and water management. Extending Strike Lane should be evaluated as an alternative to extending Coconut Road east of I 75.
- A 4 lane toll expressway, open to transponder users only, with no access points en route, is to be constructed within the median of Colonial Boulevard from west of Winkler Avenue to east of Treeline Avenue.

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Transportation Cornerstone Southwest Florida – Florida Chamber of Commerce Foundation

This 2000 study was initiated by the Florida Chamber to evaluate and address the transportation needs of Southwest Florida and identified the lack of direct Airport access to an Interstate Highway System. The study indicated that RSW is the primary gateway to the region. While expansion of the passenger terminal facility with the new midfield terminal will help the airport keep up with projected passenger demand, surface access is of particular concern. The study recommended that the Lee County Port Authority (LCPA) work cooperatively with FDOT, MPO governing boards and local governments to address a long-term solution for surface access to the facility.

I-75 PD&E Study

The Florida Department of Transportation (FDOT) has funded a Project Development and Environmental (PD&E) Study for the I-75 Corridor in Lee and Collier Counties. The completion date of the study is anticipated to be early Spring 2003. The limit of the study is from SR 951(Collier Boulevard) to SR78 (Bayshore Road). The purpose of this study is to develop strategies to mitigate I-75 congestion through the year 2030. The study will recommend the widening of I-75 from the current 4 lanes to as many as 10 lanes (6 local lanes, 4 special-use/express lanes to accommodate future traffic demand in Southwest Florida). As part of the PD&E study, Airport access was also evaluated and the recommended alternative will be presented later in this section.

I-75 Interchange Planning Study

A System Interchange Modification Report (SIMR), by the Federal Highway Administration (FHWA) approved in September 2002, was prepared to address the projected traffic volume, access and operational needs of the interrelated interchanges along I-75 including Alico Road and Daniels Parkway interchanges. This report also recommends improvements to provide enhanced access to the Airport.

5.10.4 Airport Master Plan Update/Lee Plan Coordination

As part of the Airport Master Plan Update process, the Airport will submit a Lee Plan Amendment for approval by Lee County, Southwest Florida Regional Planning Council, and the Florida Department of Community Affairs. This document will serve to ensure that the airport master plan and future local, regional and state planning efforts are compatible and consistent.

A number of traffic studies have been completed in the past to review traffic around RSW. These include:

- 1976/77 DRI Application for Development Approval
- 1988/89 Daniels Parkway Widening and Extension Engineering Report prepared by Johnson Engineering
- Southwest Florida Regional Airport Travel Patterns (O-D Study dated November 1989 for counts performed on February 23, 1989) prepared by David Plummer Associates in support of the Terminal Expansion DRI SD

- August 1989 DRI Application for Development Approval Question 31, Appendix, and Sufficiency Responses prepared by David Plummer Associates
- Final draft spreadsheet of proportional share road impacts prepared by Lee County DOT
- *Airport Master Plan Update Final Technical Report (Revised 2/11/92)*
- October 7, 1994 traffic impact statement for the Northeast Access Road entitled "1997 & 2002 Traffic Analysis for the Northeast Access Road" prepared by Greiner Engineering and included in the DRI NOPC for the Northeast Access Road
- 1995 Florida DOT I-75 Master Plan
- May 1998 "Vision 2010 Implementation Plan" (addressed only airport landside traffic patterns and parking needs)
- October 15, 1998 Final Report "1998 Travel Patterns on the SWFIA" O-D Study by Southwest Transportation Engineering, Inc.
- December 7, 1998 Preliminary Analysis HCS Runs prepared by RS&H
- Ongoing Lee County MPO Transportation Plans.
- Various Lee County DOT Annual Traffic Count Reports
- Annual SWFIA DRI Traffic Monitoring Reports
- Miromar Lakes DRI Traffic Study
- 2000/01 Alico/I-75 Interchange Improvement PDE Study
- I-75 Project Development and Environment Study in Lee and Collier Counties
- CFASPP Update, (traffic counts from January 29, 2001 thru February 1st on Chamberlin, Fuel Farm, and Doherty)

5.10.5 Airport Access Improvements

Southwest Florida continues to experience rapid urbanization due to increased demand from tourism and the relocation of retirees to the area. This rapid growth is reflected in the approved aviation enplanement forecasts presented in this Airport Master Plan Update, which expects an increase of enplanements from 2,632,088 in the year 2000 to 5,627,100 by the year 2020 (in other words doubling in 20-years or roughly a three percent increase per year). Continued growth of the region will result in continued increases in activity at the Airport and will also place heavy burdens on the local roadway network.

The Florida Intrastate Highway System (FIHS) Modal Plan, "Summary Report - Needs Assessment" June, 2000 states that the FIHS serves major international airports located in Florida, which handle over 90% of Florida's air freight and passengers. RSW is the only Florida Airport with international service not directly accessible to the FIHS.

A study was prepared recently which analyzed the nearby roadway system as a result of the opening of the Midfield terminal in 2005. This study, *Phase 2 – Final Report for Transportation Demands & Needs of the Southwest Florida International Airport Treeline Avenue/Terminal Access Road System* prepared by Southwest Transportation Engineering, Incorporated and Reynolds, Smith & Hills, Incorporated, September 7, 2000 was reviewed for this analysis.

This report analyzed 3 scenarios that included 3 different internal access road combinations. The third scenario was the preferred and selected scenario. This report also included 2 alternative traffic scenarios for each access scenario. The traffic scenarios were titled "Low Traffic" and

"Baseline Traffic." The results that are summarized in this report are from Scenario 3 for both Baseline and Low Traffic.

The intersections of Treeline Avenue at Daniels Parkway and Treeline Avenue at the Airport access road were determined to need grade separation to provide acceptable levels of service in the future. Otherwise, any other at grade improvements at these two intersections would result in LOS F. The intersection of BHG Parkway and Alico Road was not analyzed.

Additional analysis was undertaken to determine the year that a grade separation would first be required. Turning movements for each year between 2005 and 2020 for the Low and Baseline conditions were determined. These volumes were obtained by prorating the traffic between the 2005, 2010, and 2020 study years. These turning movement volumes were analyzed for each scenario to determine when a grade separation would be required. Grade separation would be required for Treeline Avenue at Daniels Parkway intersection by 2008 for the Baseline Traffic condition, and by 2013 for the Low Traffic condition.

For the Treeline Avenue at the Airport Access Road intersection, grade separation was not needed through 2020 for the Low Traffic condition. For the Baseline Traffic condition, it was determined that grade separation would be required by 2011.

Therefore, under the existing at grade configuration at the Airport Access Road Treeline Avenue will fail at approximately 2011. An alternative access must be provided to and from the airport to I-75 to maintain acceptable levels of service and reduce the volume of traffic on Treeline Avenue / BHG parkway. The direct connection to the interstate would provide relief to Treeline Avenue and would allow it to operate at acceptable levels of service for many years beyond its currently estimated life.

The previous Airport Master Plan Update approved by FDOT and the FAA in 1994 showed the need for direct access to I-75. This Interstate access connector, as proposed, was not implemented due primarily to spacing concerns. However, as listed above, FDOT is currently actively analyzing direct airport access to I-75 and it is recommended that the LCPA continue to work cooperatively with FDOT and Lee DOT on an acceptable solution.

Current Access Improvements

As mentioned earlier, numerous traffic studies have been prepared for the Airport. The Airport is currently constructing a North-South Roadway (Treeline Avenue/Ben Hill Griffin Parkway) parallel to I-75 that will service the new Midfield Terminal Complex. This roadway system is expected to be a temporary access solution and is predicted to experience a degredation in level of service by the year 2011 and 2012 without additional roadway improvements. The Phase 2 – Final Report of the Transportation Demands and Needs of the Southwest Florida International Airport Treeline Avenue/Terminal Access Road System, dated September 7, 2000, concluded that while the Treeline Avenue/Ben Hill Griffin Parkway will serve the interim needs of the new Midfield Terminal Complex, the proximity of the Treeline Avenue and Daniels Parkway intersection to I-75 limit its capacity and as traffic volumes increase other improvements would be required to maintain an acceptable level of service. The study also identified the need for a long-term solution to provide direct access to I-75 and to begin coordinating this solution with local, regional and state state transportation agencies. To respond to growth demands in

the region the FDOT initiated a study to evaluate the I-75 Corridor in Lee and Collier Counties. This study also resulted in identifying recommended interchange solutions along this corridor, including access from I-75 to the Airport. This recommended alternative is presented below.

Concept "2FMR"

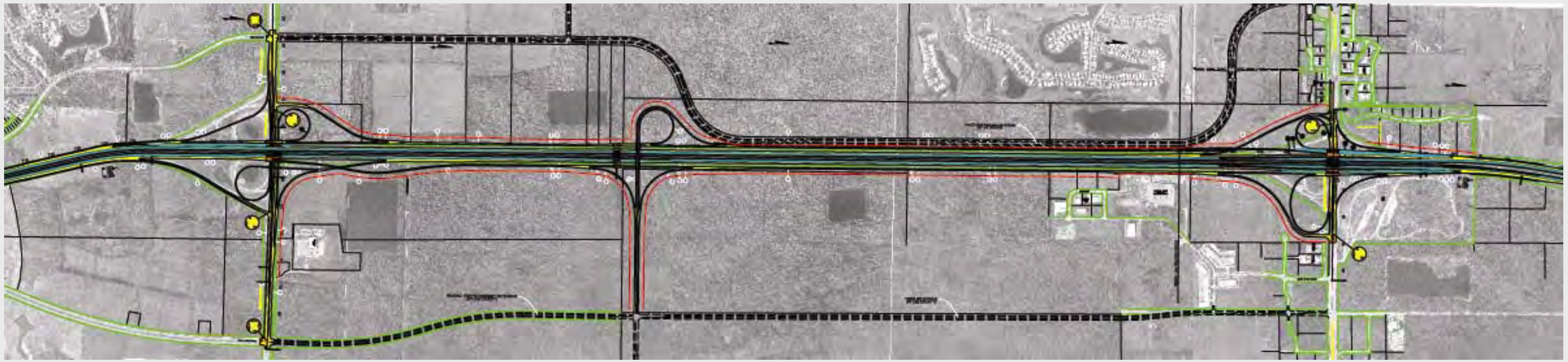
Concept "2FMR", shown on **Exhibit 5-6**, was produced as part of the FDOT Study Team efforts and is the recommended Airport access alternative. This alternative uses both Daniels Parkway and Alico Road interchanges along with a parallel Collector/Distributor Roadway System on the east and west sides of I-75. An interchange would be constructed with the C/D roads to provide Airport access. The proposal would provide for a direct connector to the Midfield Terminal Complex. While the intersection of this direct access connector with Treeline Avenue / Ben Hill Griffin Parkway is shown at grade, it is recommended that the LCPA explore the possibility of making this a grade separated interchange to enhance traffic flow. This improvement could also make the segment of the roadway system located on airport property eligible for FAA / FDOT funding. This concept, while still in preliminary stages appears to be the best strategy to accommodate direct access to I-75 from the airport while still meeting both Federal and State design standards. A Preliminary Design and Environmental Study (PD&E) is currently underway for this concept and further refinement of this concept is anticipated. It is recommended that the LCPA continue to assist Lee DOT in coordinating the need for improved airport access with FDOT to ensure it is accomplished in a compatible, phased and cost-effective manner.

Land Acquisition Recommended

Concept "2FMR" will be shown dashed on the Airport Layout Plan ensure continued agency coordination. The corridor for this alternative was used to determine possible future land acquisition requirements to provide direct access to I-75. For planning purposes, a 2,700 foot-wide corridor was assumed to be adequate with the south Airport drainage out-fall forming the southern boundary and then progressing northward 5,300 feet to the northern corridor boundary. Land acquisition requirements for the trumpet interchange and C/D system is estimated to be approximately 460 acres and will include some land acquisition west of I-75. This corridor is shown in **Exhibit 5-7**. This area should be sufficient to allow some alignment flexibility and provide storm water management detention/retention areas if necessary. It is important that the LCPA continue to work with Lee DOT, MPO and FDOT to investigate acquiring this corridor as soon as possible to provide access to Interstate 75. The area along the proposed TA/BHGP alignment is under extensive development pressure and any delay in the acquisition of this land will make acquiring access right-of-way to I-75 much more costly.

Exhibit 5-6

Concept “2FMR”



New Midfield Terminal Complex

Proposed Roadway Improvements

Road Right Of Way

Bridge / Fly-over

I-75

Source: URS/Greiner, FDOT I-75 PD&E

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
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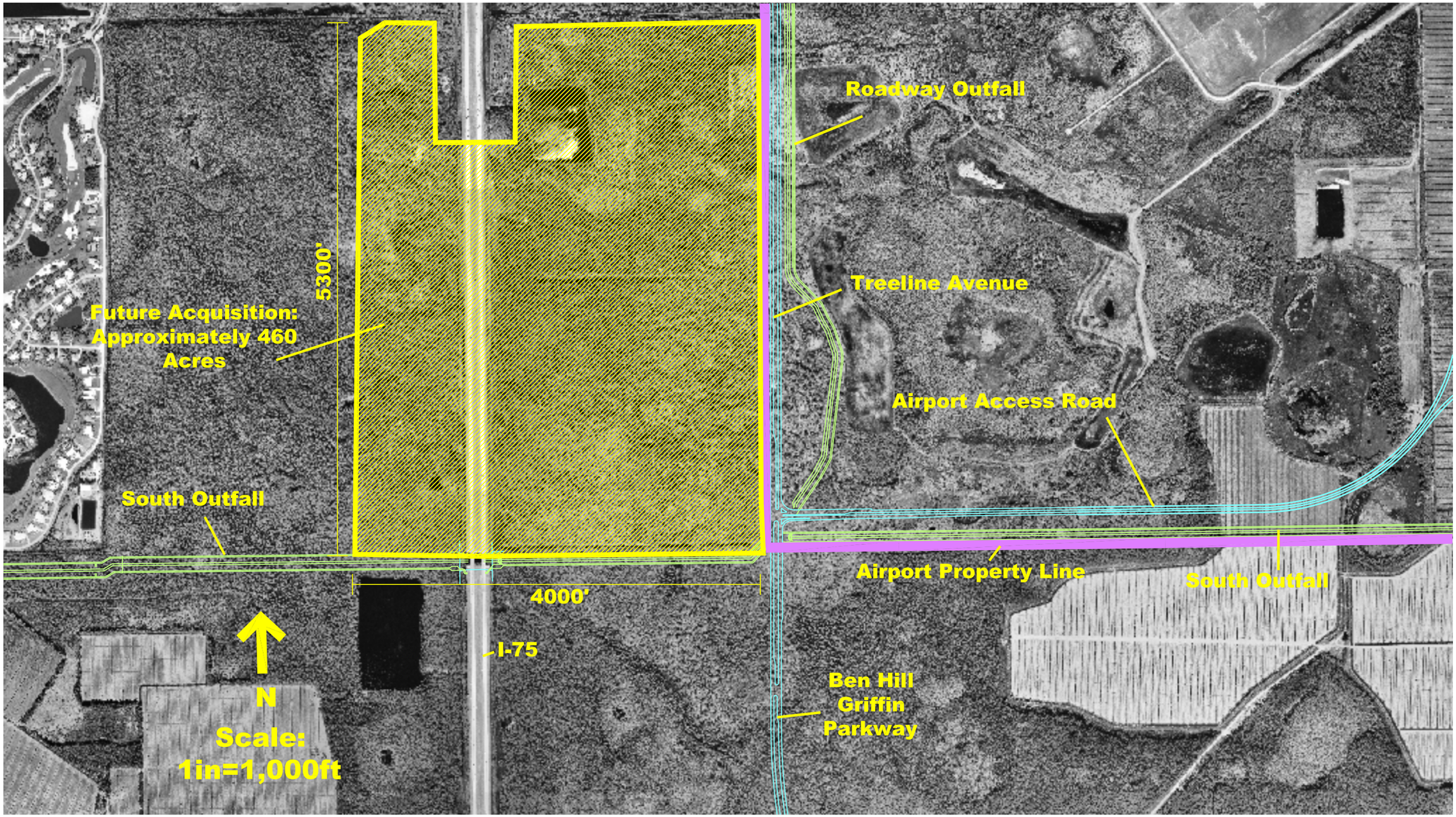
MASTER PLAN UPDATE
CONCEPT 2FMR

EXHIBIT
5-6

Exhibit 5-7

Land Acquisition Map



Source: Reynolds, Smith and Hills, Inc. Analysis, 2002

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5.10.6 Preliminary Estimates of Probable Costs

Preliminary Estimates for probable costs are shown in the financial chapter of this report. Identification of the agencies to lead the effort in acquiring the land necessary for the construction of this improvement are not available at this time.

5.10.7 Summary and Conclusions

Good accessibility is the lifeblood of any airport. The Airport accessibility problems can not be solved unless LCPA, FHWA, FDOT, the MPO and other interested groups and individuals work together to create an equitable, workable solution.

The overall functional design of Concept 2FMR, which has been included and referenced in this report, has been agreed to conceptually by the appropriate parties.

The overall Concept should continue to be refined by the appropriate agencies and decisions made regarding timing of construction, staging and funding.

However, to summarize:

- Southwest Florida resident and tourist populations are increasing at a rapid rate.
- Air transportation for passengers and freight is an integral part of the regional transportation system.
- Capacity constraints in the road system network reduce the effectiveness of the total transportation system.
- Passenger and freight air services are a vital link to the economic viability of the entire Southwest Florida region and therefore every effort should be made to enhance existing market share by providing the Airport with adequate access.
- Traffic studies confirm the need for access improvements and a link between Southwest Florida International Airport and I-75.
- Access alternatives will require continuing coordination among Transportation agencies and will probably require phasing for implementation. More detailed engineering and design studies will provide the exact layout, right-of-way needs and construction details for the project(s).
- It is important to acquire the right-of-ways as soon as possible because of intensive development pressure along TA/BHGP. Early coordinated acquisition of this property will save money, reduce future development impacts and ensure land needed for airport access.

5.11 FACILITY REQUIREMENTS SUMMARY

Table 5-33 summarizes the major facility requirements recommended for RSW throughout the 20-year planning period.

Table 5-33

TABLE 5-33
FACILITY REQUIREMENTS SUMMARY TABLE

TIMELINE	THROUGH 2005	2010	2020
Runways Runway 6L-24R Runway 6R-24L	Rehabilitate and Re-stripe Runway 6L-24R	New parallel Runway 6R-24L (9,100'X 150')	
Taxiways		Construct West Cross-Field Connector Taxiway Repair North Ramp New Parallel Taxiway for Runway 6R-24L Hold Bay & By-Pass Improvements to Runway 6-24 South parallel taxiway	Construct East Cross-Field Connector Taxiway Cross-Field taxiway to Midfield ramp connector
Cargo	Rehabilitate existing air cargo apron New Midfield Freight Forwarding Facility	Expand Air Cargo	Expand Air Cargo
Terminal	Terminal enhancements-existing building 28-gate Midfield Terminal (Phase 1) Security Enhancements to existing terminal and new Midfield Terminal	Demolition of existing terminal building 4-5 gate midfield terminal expansion (Phase 2)	11-14 gate expansion/new concourse (phase 3) Air Carrier Apron Expansion
Storm Water/Mitigation	Stormwater Master Plan Cargo Area Drainage Improvements Remove Mitigation Area "G"	Stormwater/Drainage Improvements	Stormwater/Drainage Improvements
Land Acquisition	Land east of Runway 24L-RPZ/Noise and power line relocation Land west of Runway 6R-Noise Land for I-75 access road	Mitigation Land Acquisition Continuation of Land Acquisition Program East of Runway 24L Land for I-75 access road	Mitigation Land Acquisition Continuation of Land Acquisition Program East of Runway 24L
GA Activity	Construct multi-use hangars	Construct multi-use hangars	Construct multi-use hangars Expand GA Apron
NAVAIDs	Upgrade to ASR-11 Upgrade VASI to PAPI (during runway Rehab)	Runway 24R ALS Precision GPS Approach	Runway 6L Cat. II ILS w/ALS upgrade Upgrade RVR for Runway 6L-24R Airport Rotating Beacon
Access	Cargo/perimeter road improvements Connector road for maintenance facilities Roadway Signage Modifications	Rehab perimeter, service and fuel farm roads Expand Entrance road to 6 lanes Rehab Chamberlin Parkway	Miscellaneous Roadway Improvements I-75 Airport Access
Supplemental Facilities			
Fuel Farm		Fuel Farm Expansion Improvements	
Flight Support	Aircraft Maintenance Facility Engine Run-up Facility/Hush-House	Relocate ATCT	
ARFF		Purchase of new ARFF vehicle Construct New ARFF facility-Mid-field	
Automobile Parking	Construct Mid-field surface parking Construct Mid-field parking garage Construct Mid-field taxi/limo parking	Expand surface parking (employee spaces) Expand garage parking (additional wings) Expand parking toll booth Rehabilitate existing parking lot	Add levels 4 and 5 to parking garage Expand surface parking
Miscellaneous	Utility improvements Rental car fuel farm (Midfield) Part 150 Noise Study	Relocate high voltage power lines Utility improvements Develop multi-modal center (freight) Design/Const. Infrastructure	Relocate rental car facilities Utility improvements Helipad Master Plan Update

6 ALTERNATIVES

6.1 INTRODUCTION

The previous chapter identified a number of facilities that were determined necessary for Southwest Florida International Airport (RSW) to adequately accommodate the aviation demands expected over the course of the twenty-year planning period. The alternatives section analyzes both the viability of meeting the identified needs as well as how best to undertake the improvements from an operational, environmental, 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.

A number of primary components of the airport are addressed in the alternative analysis that follows. These airport components include:

- ✈ Airside Alternatives
  - Runway Rehabilitation
  - All-Cargo and General Aviation
  - Aircraft Maintenance
  - Aircraft Rescue and Fire Fighting (ARFF)
  - Air Traffic Control Tower (ATCT)
- ✈ Landside Alternatives
  - Terminal
  - Rental Cars

The alternatives review not only considers these 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. One key consideration when addressing the location and configuration of future facilities at RSW is the near term relocation of passenger activities from the north side of Runway 6/24 to the midfield location. The relocation will not only change the operational characteristics of the airport, but areas previously occupied by the terminal operation will now become available for development. To determine whether the existing terminal facilities should be maintained or modified to accommodate another use, a terminal disposition study (**Appendix A**) was commissioned. This study concluded that it was not feasible to reuse the existing terminal structure or facilities. Demolition of the existing passenger terminal will provide considerable development opportunities and flexibility for accommodating expansion of non-passenger functions.

Defining the future development configuration of facilities at the airport must also consider the phasing of development activities within the areas that are available, both in the present and in the future. Proper development phasing to avoid unnecessary or premature construction of costly infrastructure must be considered in the planning process. Location and infrastructure service related considerations also play a large part in the alternatives analysis. Other factors against which the alternatives are reviewed include:

- Utilization of existing property;
- Ability to serve projected demand with existing facilities;
- Impacts to terminal area navigation aids and their associated critical areas;
- Conformance with FAA airport design standards;
- Provisions for expandability and flexibility;
- Capital costs;
- Operational efficiency;
- Phasing and constructability;
- Stormwater and drainage considerations;
- Environmental compatibility;
- Landside accessibility.

In completion of this chapter, each alternative, or component thereof, that is recommended for implementation will be modified to their final form to provide a comprehensive development plan.

6.2 AIRSIDE ALTERNATIVES

6.2.1 Runway Rehabilitation

In reviewing the facility requirements, it is apparent that the existing runway will require major structural rehabilitation before the new parallel runway becomes available. To determine the best means of accomplishing this while maintaining ongoing operations a detailed alternatives analysis was conducted. This analysis was the subject of an independent report and its results are presented separately.

6.2.2 All-Cargo and General Aviation

Both the existing all-cargo and general aviation facilities are located adjacent each other at the west end of the airfield north of the runway. Constraints to the west of the cargo facility include a 16 acre retention pond. Constraints to the east of the general aviation facility include the existing ARFF and air traffic control tower. Since the all-cargo and general aviation facilities are located adjacent each other with constraints on each side, expansion of either of the facilities has the potential to directly affect the other. Therefore, for the purpose of ultimately developing a cost effective overall approach to future development, alternatives addressing both all-cargo and general aviation facilities were identified.

To provide for development through the 20 year period, future all-cargo facilities will need to provide approximately 37,000 square feet of building space. This is roughly a fifty percent increase from the existing area of 24,000 square feet. However, it is anticipated that cargo aircraft parking, currently providing for six narrow body aircraft during peak periods, will not require a major increase by the end of the planning period. It is anticipated that any additional aircraft parking demand can be staged from the soon to be vacated existing terminal ramp.

Future general aviation facilities will need to provide for a considerable increase in hangar storage area. The addition of four large hangars should be adequate to provide for the 75,000

square feet projected hangar shortfall. Assuming the hangar space is provided, minimal additional hangar space will be required.

Alternatives for the required all-cargo and general aviation development include the following:

Alternative 1: GA Expansion West and Cargo Expansion in the old Terminal Area
This alternative includes GA hangar development eastward adjacent the existing GA apron (**See Exhibit 6-1**). This requires demolition of the existing general aviation terminal. Subsequent expansion would occur to the west immediately adjacent the all-cargo apron. This would result in the displacement of the all-cargo facilities or locating new cargo tenants in the old air carrier terminal area. As the need for the additional GA hangars grows, the entire cargo operation would eventually be relocated to the western half of the existing terminal apron. The all-cargo relocation would free up considerable expansion potential for GA while allowing considerable all-cargo facility expansion westward from its new location.

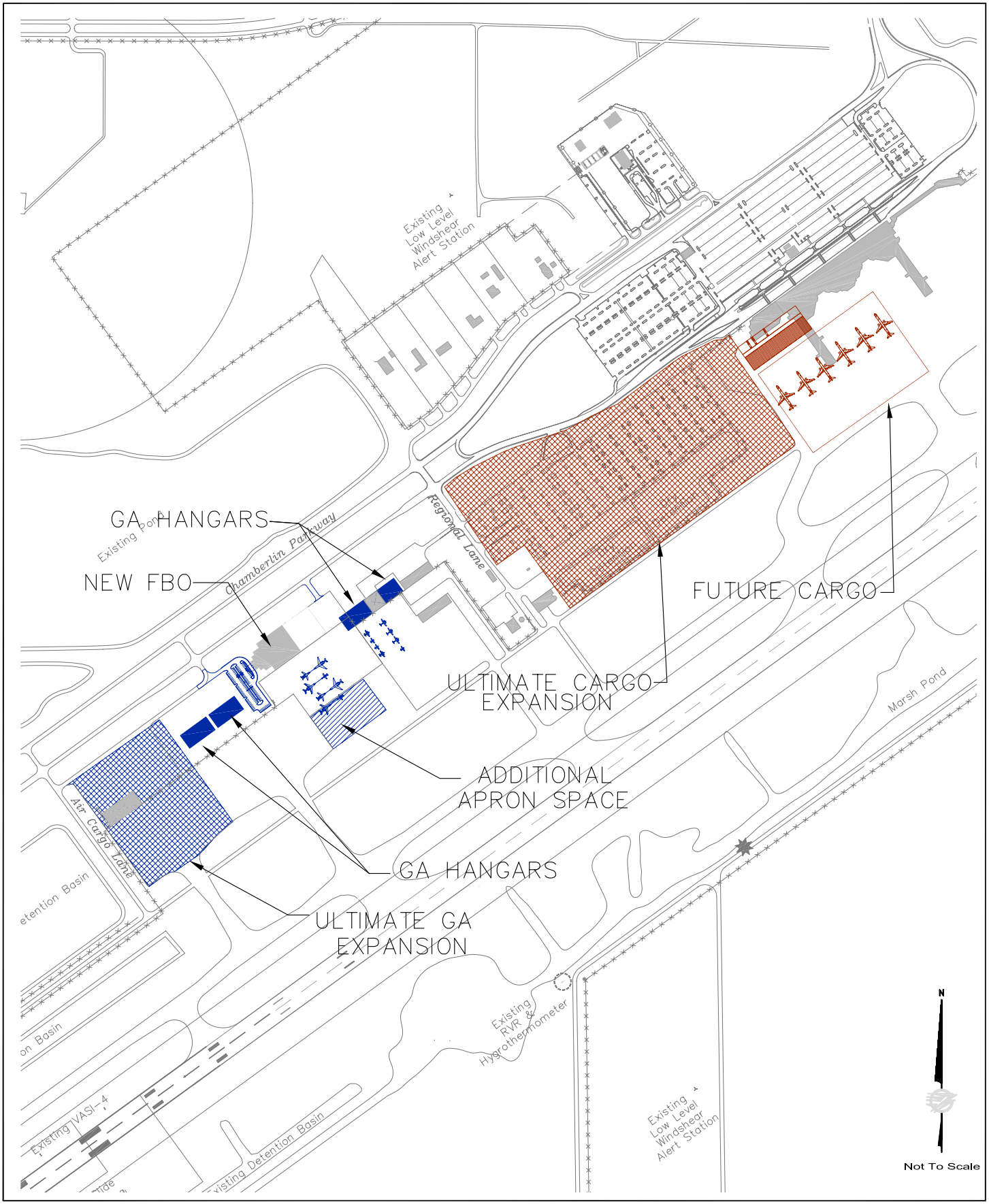
Pros

- GA stays in its existing location in keeping with the pending plans to expand westward with the flexibility to expand both west and slightly to the east.
- Reuses existing terminal apron for cargo relocation.
- Provides ample space for additional expansion beyond 2020 for both GA and cargo.
- All-cargo relocation fits well with a potential multi modal facility located just to the north of the existing terminal building.
- May require a split cargo operation for a period of time but not GA operations.
- Existing all-cargo apron provides good depth for expansion of GA facilities.
- Offers opportunity for second FBO operation from the existing all-cargo building.

Cons

- Demolition of existing FBO building is required to construct new aircraft hangars.
- Access and parking in the terminal area would need to be modified to allow for large trucks, truck parking, and a docking area for loading and unloading of cargo.
- Cargo expansion would be limited until the passenger terminal operation is relocated.
- Requires relocation of two dry detention ponds located to the west of the terminal area to provide for ultimate cargo expansion.

Exhibit 6-1



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Alternative 2: GA Expansion West and Cargo Relocation to Parking Area

Alternative 2 consists of hangar development to the east in the immediate proximity of the existing GA apron and former FBO terminal (**See Exhibit 6-2**). As with Alternative 1 this would require demolition of the existing general aviation terminal. Additional GA hangars would be added along the north side of the existing all-cargo apron. This would result in the displacement of the all-cargo facilities. Alternative 2 differs from Alternative 1 in that it offers the potential for all-cargo development prior to the relocation of the existing terminal operation. The all-cargo relocation would free up considerable expansion potential for GA while allowing considerable all-cargo facility expansion both eastward and westward from its new location. This option would be especially attractive if a new operator expressed a near term desire to develop a new facility at the airport.

Pros

- Ultimately has the potential to reuse a portion of the existing terminal area apron.
- Provides considerable all-cargo and GA growth potential.
- Cargo could be relocated in the short term without impacting terminal operations at the existing terminal building.
- The ultimate all-cargo relocation fits well with a potential multi modal facility located just to the north of the existing terminal building.
- Does not require split cargo or GA operations.
- Existing all-cargo apron provides good depth for expansion of GA facilities.
- Offers opportunity for second FBO operation from the existing all-cargo building.

Cons

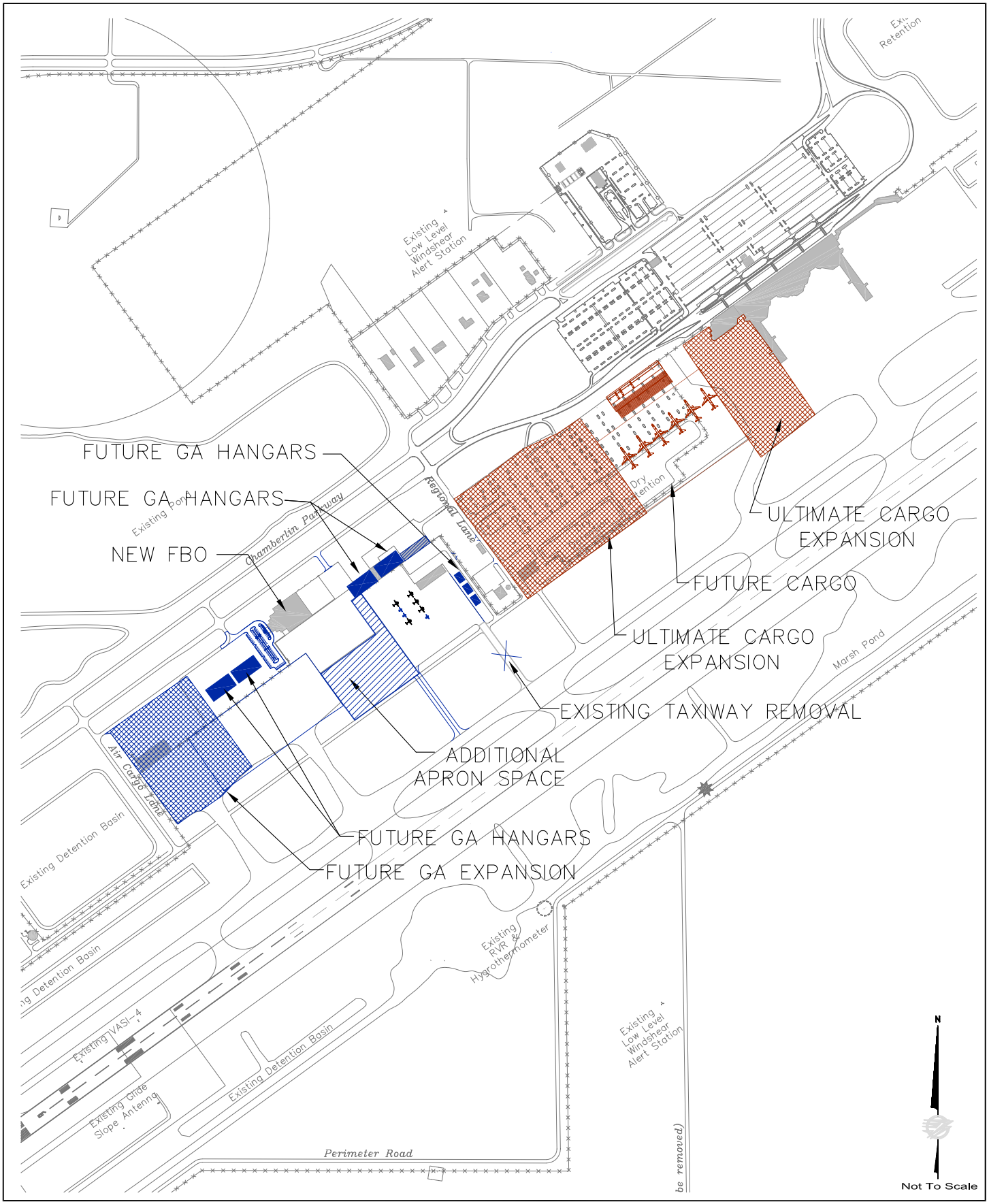
- Access and parking will need to be modified to accommodate larger trucks and a docking area for trucks will need to be designed.
- Does not reuse terminal apron in the first phase of development.
- Demolition of existing FBO building is necessary to construct new aircraft hangars with this alternative.
- Requires adding a new taxiway for improving traffic flow into the G.A. area.
- Requires relocation of two dry detention ponds located to the east of the ARFF station.

Alternative 3: Cargo Expansion West and Split GA Expansion

This alternative would expand the all–cargo building to the east with ultimate cargo ramp and additional facility expansion to the west (**See Exhibit 6-3**). This would displace the 16 acre pond located immediately west of the existing cargo facility. Prior to the westward expansion, cargo aircraft exceeding the peak capacity of six on the existing ramp could be staged from the existing terminal area.

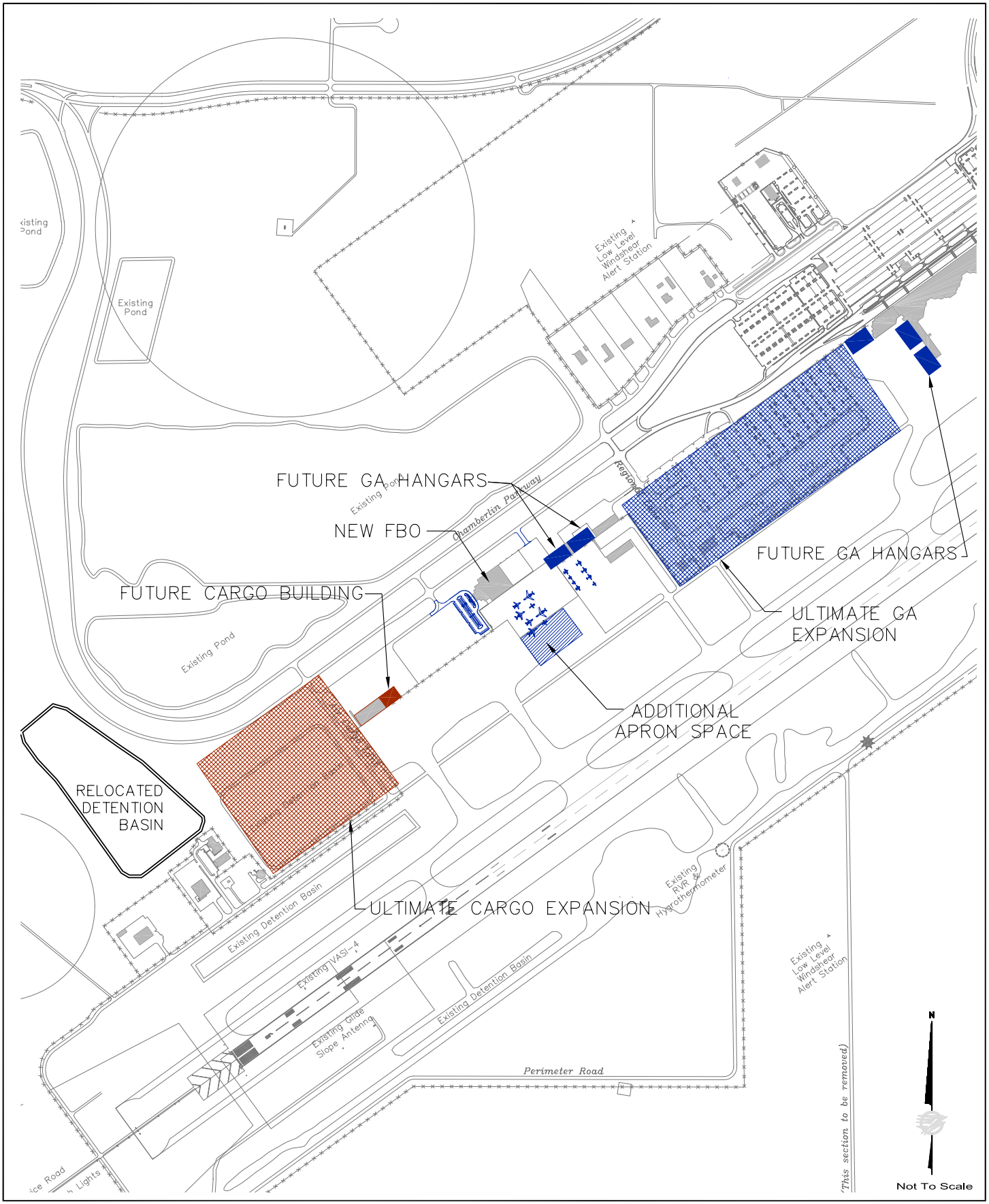
Alternative 3 consists of a split GA operation. Initially, hangar expansion would take place in the existing GA area. Upon relocation of the terminal operation to the midfield, future GA hangars would be constructed in the general area of the existing west concourse. This also offers the opportunity to add a second FBO operation through conversion of the existing FIS facilities.

Exhibit 6-2



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	GA/CARGO ALTERNATIVE 2	EXHIBIT 6-2

Exhibit 6-3



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	GA/CARGO ALTERNATIVE 3	EXHIBIT 6-3

Pros

- GA expansion would not impact the existing cargo area.
- Construction of additional GA hangars could begin as soon as the midfield terminal operations are relocated.
- Expands existing infrastructure for both GA and cargo.
- Provides opportunity for an additional FBO operator from the existing international arrivals building.

Cons

- Cargo expansion is limited if tremendous growth is experienced in cargo traffic.
- Existing FBO building requires demolition for future aircraft hangars.
- Requires relocation of detention pond to allow for cargo expansion.
- Potential multi modal facility locations are not as desirable in relation to the cargo facility as they are in Alternative 1 and 2.
- If cargo outgrows this location, further facility development would result in splitting the cargo operation.

Recommended GA and All- Cargo Alternative

With the desire to provide maximum flexibility in developing additional air cargo service for the region, Alternatives 1 and 2 appear to provide the greatest potential all-cargo development area. While neither of the alternatives maintain ultimate long term use of the existing cargo facilities, both provide consolidated cargo and GA areas with considerable expansion potential. Although implementing either of these alternatives will result in additional capital costs, both will allow the airport to aggressively market new operators. The consolidation of land uses reflected in each will ensure that the associated development can be implemented efficiently thereby minimizing the potential for 'dead' areas or areas with limited long term development potential.

The selection of the exact alternative will greatly depend on the timing of the required development. For the most part, Alternative 1 should be adequate to meet demand upon relocation of the passenger terminal operation and takes advantage of the existing terminal apron. However, in the case of considerable short-term demand, Alternative 2 provides the ability to develop facilities prior to the completion of the midfield complex. This may prove advantageous in attracting a given operator and may warrant consideration if the opportunity was attractive enough.

Alternative 3, while maintaining the existing cargo operation, remains limited in its ultimate expansion of cargo unless the cargo operation is split. With this alternative GA would end up accounting for a large portion of the north airfield unless it were also split. The more the similar land uses are separated the less likely that the use of the overall land area will be maximized. Based on this, Alternative 3 was generally considered the least desirable alternative.

Finally, based the information outlined herein, it is recommended that GA and All-Cargo Alternative 1 be included in the preferred development plan.

6.2.3 Aircraft Maintenance

No large aircraft maintenance facilities currently exist at the airport. However, a 7.78 acre land lease does exist for the development of such facilities in a location east of the existing terminal adjacent the roughly 5 acre L-shaped detention pond. This location currently has no other identified use and provides considerable expansion capability to the west upon relocation of the terminal operation to the midfield. While the site is somewhat restricted in the short term, no other location on the airport offers better short-term development or long-term expansion potential. In consideration of this, all of the alternatives considered for aircraft maintenance generally incorporate the existing leasehold area and expand westward to provide for potential demand through the 20-year period.

Alternative 1: Maximum use of "L" Pond Area

Alternative 1 provides maximum use of the area in the vicinity of the existing leasehold through the relocation of the L-shaped detention pond (**See Exhibit 6-4**). This area would allow adequate space for at least two, and possibly three, large aircraft hangars. An engine run-up area equipped with a blast fence or similar type of noise attenuation device would be located on the existing terminal apron. By coordinating its use, this facility could be used without impact to the existing terminal operation.

Pros

- Could be constructed and used prior to relocation of the terminal operation to the midfield.
- Allows flexibility for between one and three large aircraft hangars in the short term.
- Provides considerable growth potential to the west.
- Does not reuse the existing terminal building.

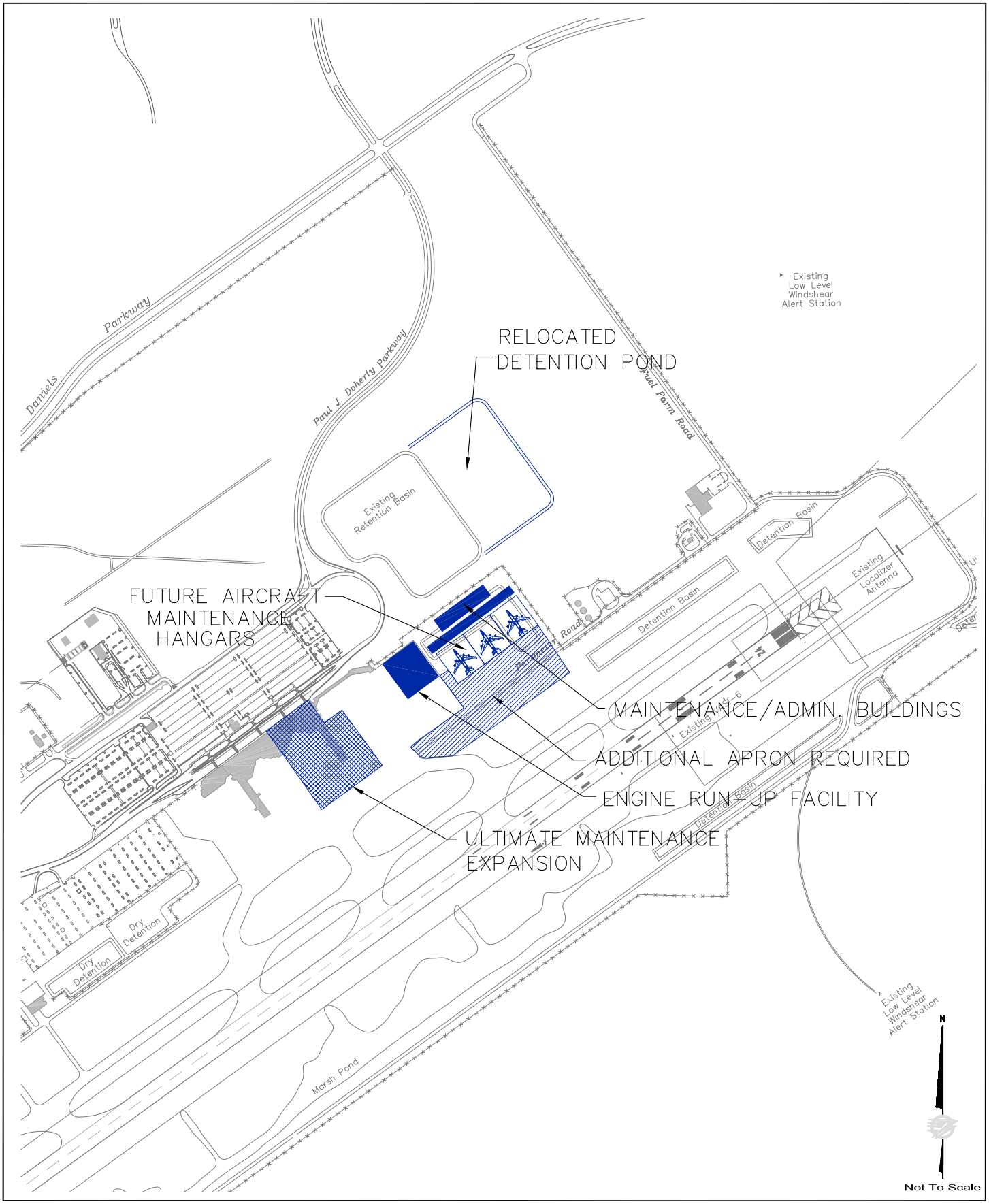
Cons

- Requires relocation of the existing detention pond.
- In the short term, employees and delivery vehicles would be required to use the terminal's primary loop roadway system.
- Requires additional apron to be constructed for maneuvering of aircraft.
- Reduces the potential for reuse of the existing apron.

Alternative 2: Utilize Terminal B Addition and Maintain Retention Pond – Consolidated Facility

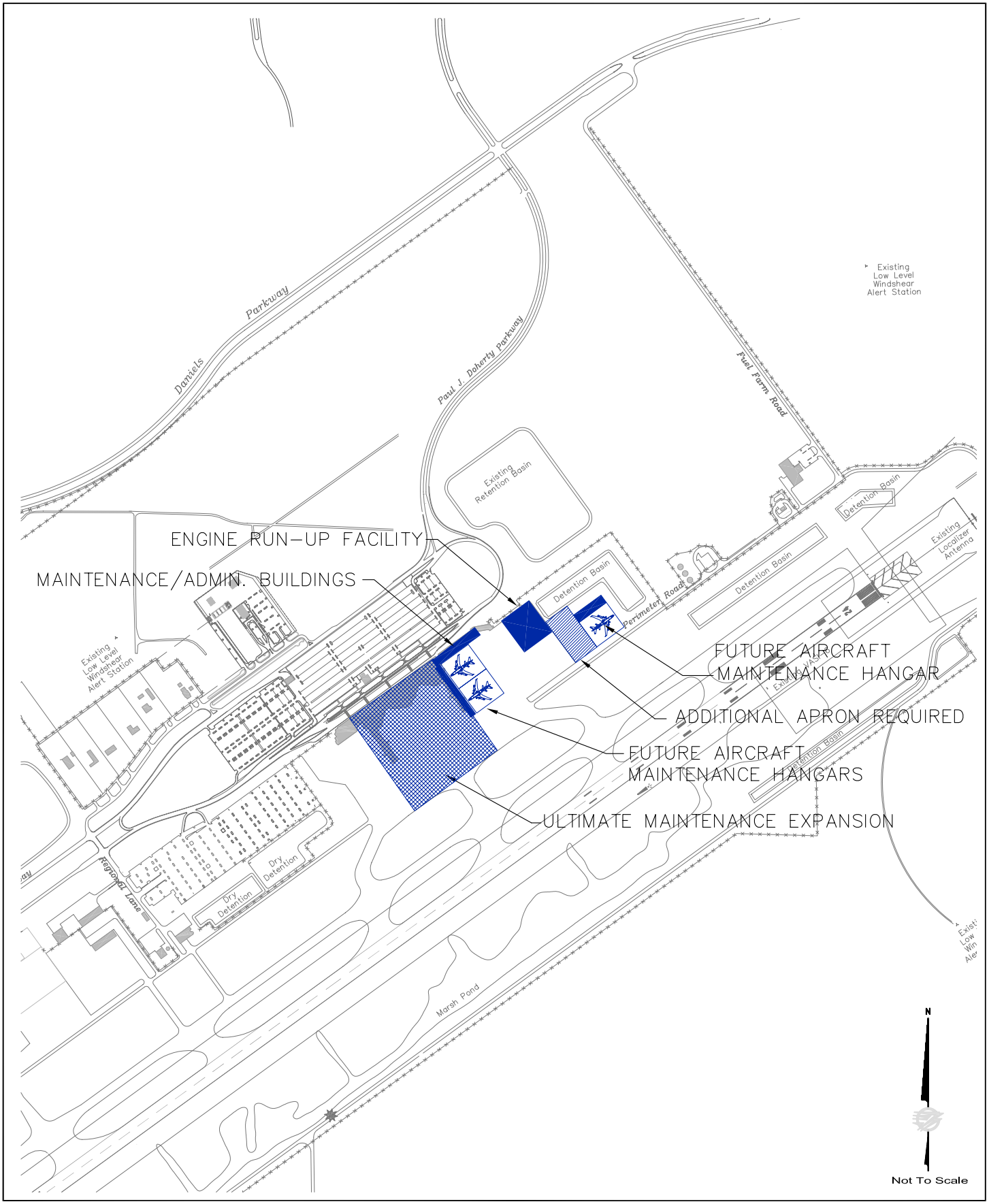
In this alternative the retention pond impact would be minimized. A single hangar and associated ramp would be constructed in the short term. Upon relocation of the terminal operation to the midfield, a larger maintenance operation would be constructed in the proximity of east end of the old terminal. The maintenance bays would be configured to take advantage of the existing pavement gradient. This configuration could be mirrored around the workshops and storage areas to ultimately provide for two additional maintenance bays. The Terminal B addition would be used for offices in support of the maintenance operation. The original hangar could ultimately be converted to a hush house or an engine run-up area could be constructed as in Alternative 1 to provide for noise attenuation (**See Exhibit 6-5**).

Exhibit 6-4



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	AIRCRAFT MAINTENANCE FACILITY ALTERNATIVE 1	EXHIBIT 6-4

Exhibit 6-5



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	AIRCRAFT MAINTENANCE FACILITY ALTERNATIVE 2	EXHIBIT 6-5

Pros
- Best fit within the description of the existing lease envelope.
- Minimal impacts to the existing detention pond.
- Good reuse of the aircraft apron.
- Good potential for expansion to the west.

Cons
- Requires additional apron to be constructed.
- Requires rehab of a portion of the existing terminal.
- Minimal space for offices and parts storage without impacting maintenance stall.
- Access may be difficult without impacting pond.
- Limited first phase development potential.
- In the short term, employees and delivery vehicles would be required to use the terminal's primary loop roadway system.

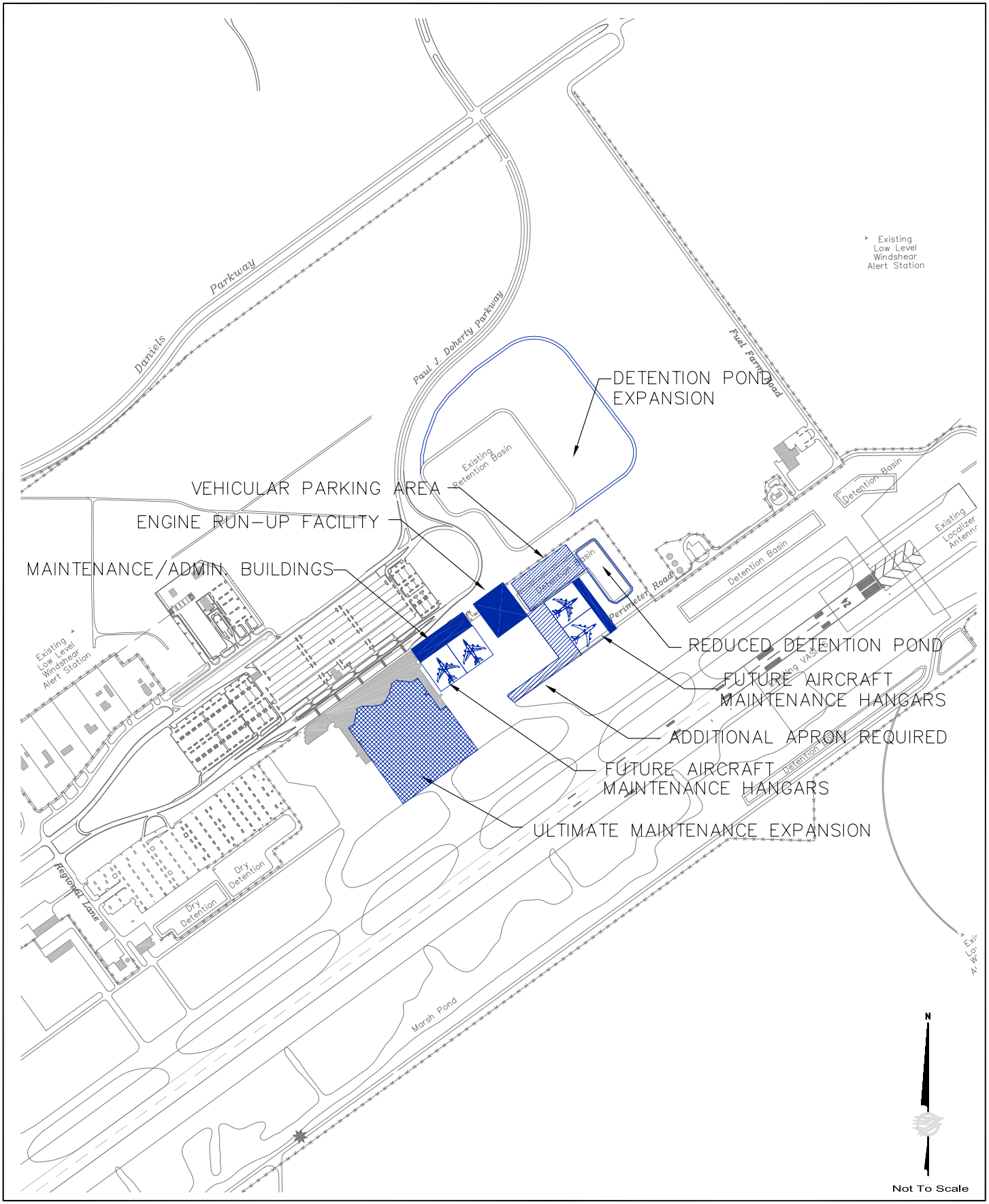
Alternative 3: Utilize Terminal B Addition and Maintain Retention Pond – Split Facility

In this alternative two hangars will be constructed to the east utilizing the existing apron and minimizing potential impacts to the detention pond. Maintenance offices could be constructed with this alternative adjacent to those hangars. A hush house or engine run-up area would be located just west of the existing detention pond. This alternative also has the potential to reuse a portion of the terminal concourse for offices or storage of aircraft spare parts. Adjacent to the proposed offices, two additional hangars sized to accommodate 747 type aircraft could be constructed with minimal rework of the existing site (**See Exhibit 6-6**).

Pros
- Matches well with existing leasehold description.
- Provides space for additional expansion to the west.
- Provides efficient reuse of apron.
- Provides plenty of space for maintenance offices.

Cons
- Requires additional apron to be constructed.
- Impacts a portion of the existing detention pond.
- Requires rehab of a portion of the existing terminal.
- In the short term, employees and delivery vehicles would be required to use the terminal's primary loop roadway system.
- Requires relocation of service road.

Exhibit 6-6



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	AIRCRAFT MAINTENANCE FACILITY ALTERNATIVE 3	EXHIBIT 6-6

Recommended Aircraft Maintenance Alternative

Providing the greatest short-term development potential, Alternative 1 appears the most desirable alternative for a large aircraft maintenance facility. This alternative also provides the most efficient use of airside land which an asset that will grow increasingly scarce as the airport development continues. While Alternatives 1 and 2 impact the existing detention basin to a lesser extent, they neither provide for the most efficient use of the land nor the best short term development potential. The latter of which may prove critical to the attractiveness and feasibility of such a facility to a private operator. Based on this and the recommendation of the terminal disposition study not to reuse the existing terminal building (**See Appendix A**), it is recommended that Aircraft Maintenance Alternative 1 be included in the preferred development plan.

6.2.4 Aircraft Rescue and Fire Fighting (ARFF)

With the construction of a new parallel runway, a new ARFF facility will be required to provide adequate emergency response capabilities to all areas of the new runway. Options include 'satellite' supplemental facilities or development of a new more centrally located primary facility.

Alternative 1: Central Midfield Satellite

ARFF Alternative 1 consists of a supplemental satellite facility located centrally between the runways to the east of the midfield connector taxiways (**See Exhibit 6-7**). This facility would be capable of housing two vehicles and associated personnel.

Pros

- Provides good ARFF proximity to terminal area and airfield.
- Could potentially be expanded to serve as primary facility.
- Would provide improved response times to emergencies in terminal and the south airfield.
- Good location for surveillance of the air operations area.

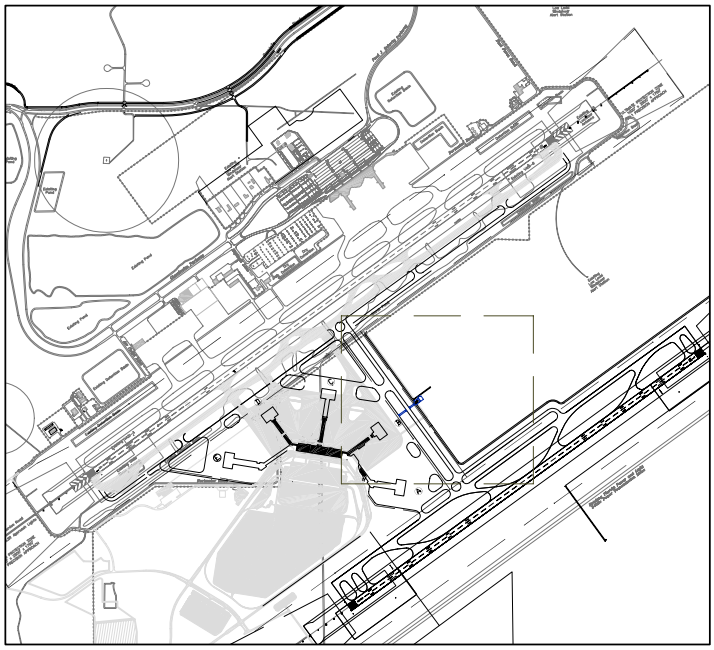
Cons

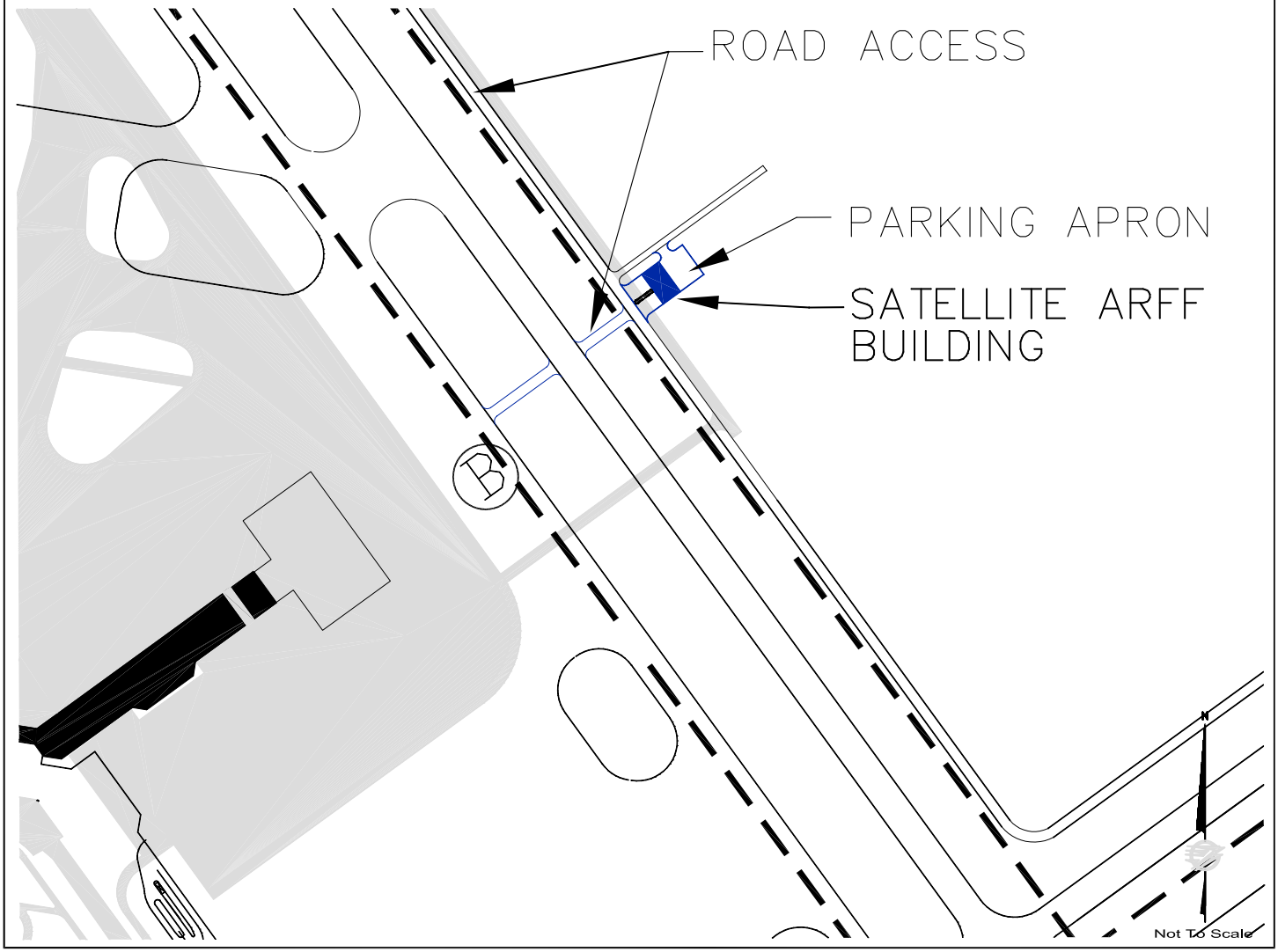
- Primary facility constrains GA and cargo expansion options.
- Requires circuitous access.
- Cheaper initial facility cost but higher overall operation cost.
- Requires crossing active taxiways to get to terminal and terminal apron.

Alternative 2: South Midfield Satellite

Similar to Alternative 1, Alternative 2 consists of a supplemental satellite facility located between the runways to the east of the midfield connector taxiways. However, this alternative would locate the facility near the intersection of the east parallel connector taxiway and the parallel taxiway serving the future parallel runway (**See Exhibit 6-8**). Again, this facility would be capable of housing two vehicles and associated personnel.

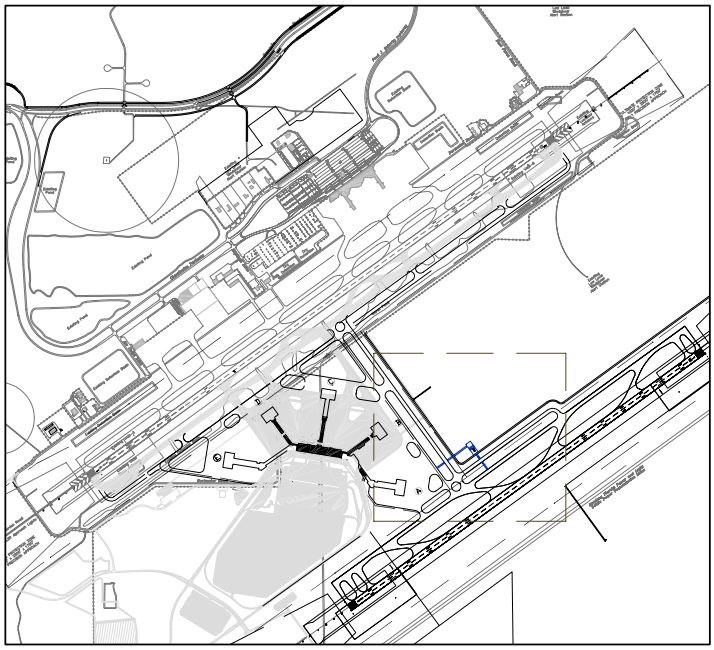
Exhibit 6-7

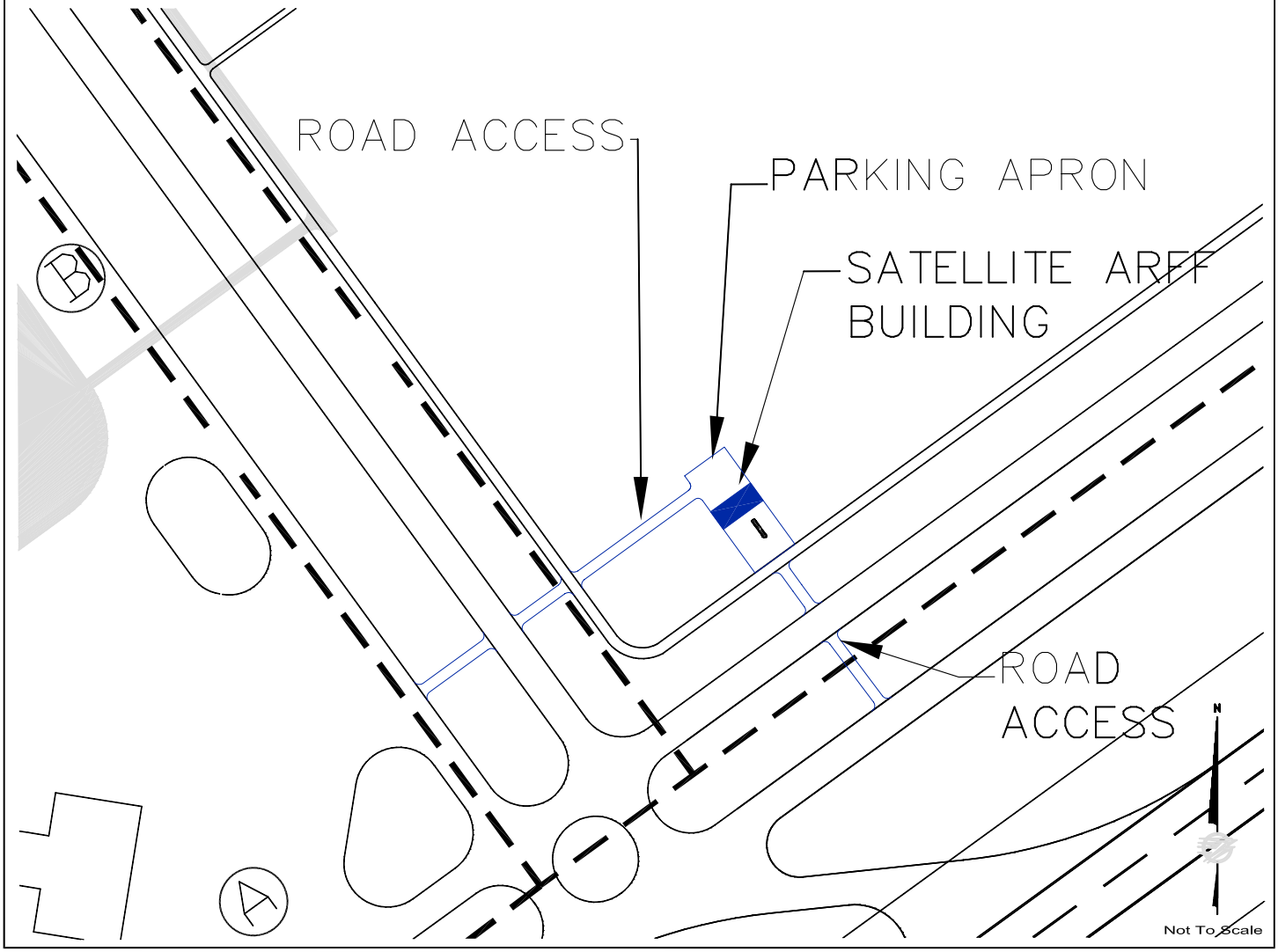




Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	ARFF FACILITY ALTERNATIVE 1	EXHIBIT 6-7

Exhibit 6-8





Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	ARFF FACILITY ALTERNATIVE 2	EXHIBIT 6-8

Pros
- Good proximity to the midfield terminal.
- Improved response times to the terminal and new south runway.
- Straight access to the terminal apron and proposed south runway.

Cons
- Primary facility constrains GA and cargo expansion options.
- Requires circuitous access.
- Cheaper initial facility cost but higher overall operation cost.
- Not as centrally located compared to Alternative 1 and 3.
- Would be difficult to convert to the primary ARFF station in the future because of longer response times to the North airfield.
- Requires crossing active taxiways to get to terminal and terminal apron.

Alternative 3: Central Midfield Primary

ARFF Alternative 3 consists of a new primary facility in the same central midfield location as Alternative 1. However, Alternative 3 would result in complete closure and relocation of all ARFF operations to the new primary site (**See Exhibit 6-9**). This facility would be capable of housing up to five large ARFF vehicles and associated personnel.

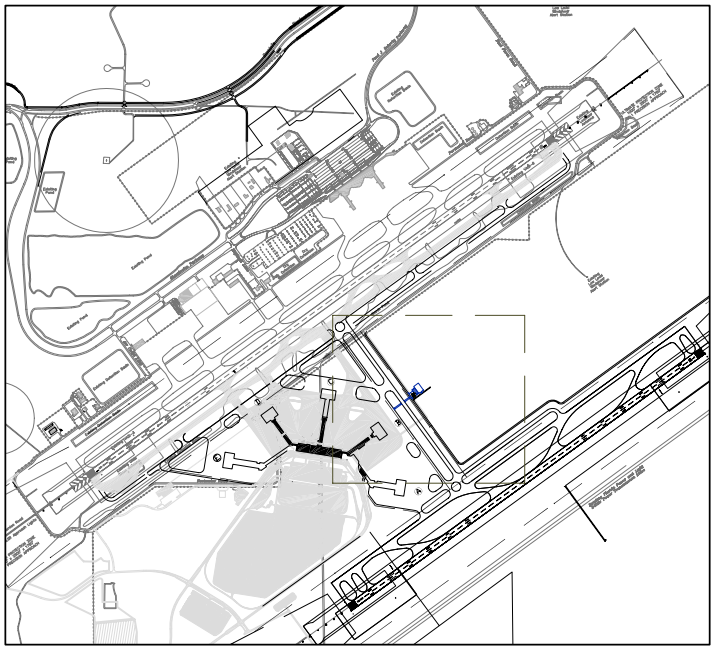
Pros
- Minimizes staffing and equipment requirements.
- Provides good ARFF proximity to terminal area and airfield.
- Provides for additional future expansion of G.A. or cargo on the north side of the airport.
- Most centrally located of all the alternatives considering full build out of the airport.
- Great location for surveillance of the air operations area.

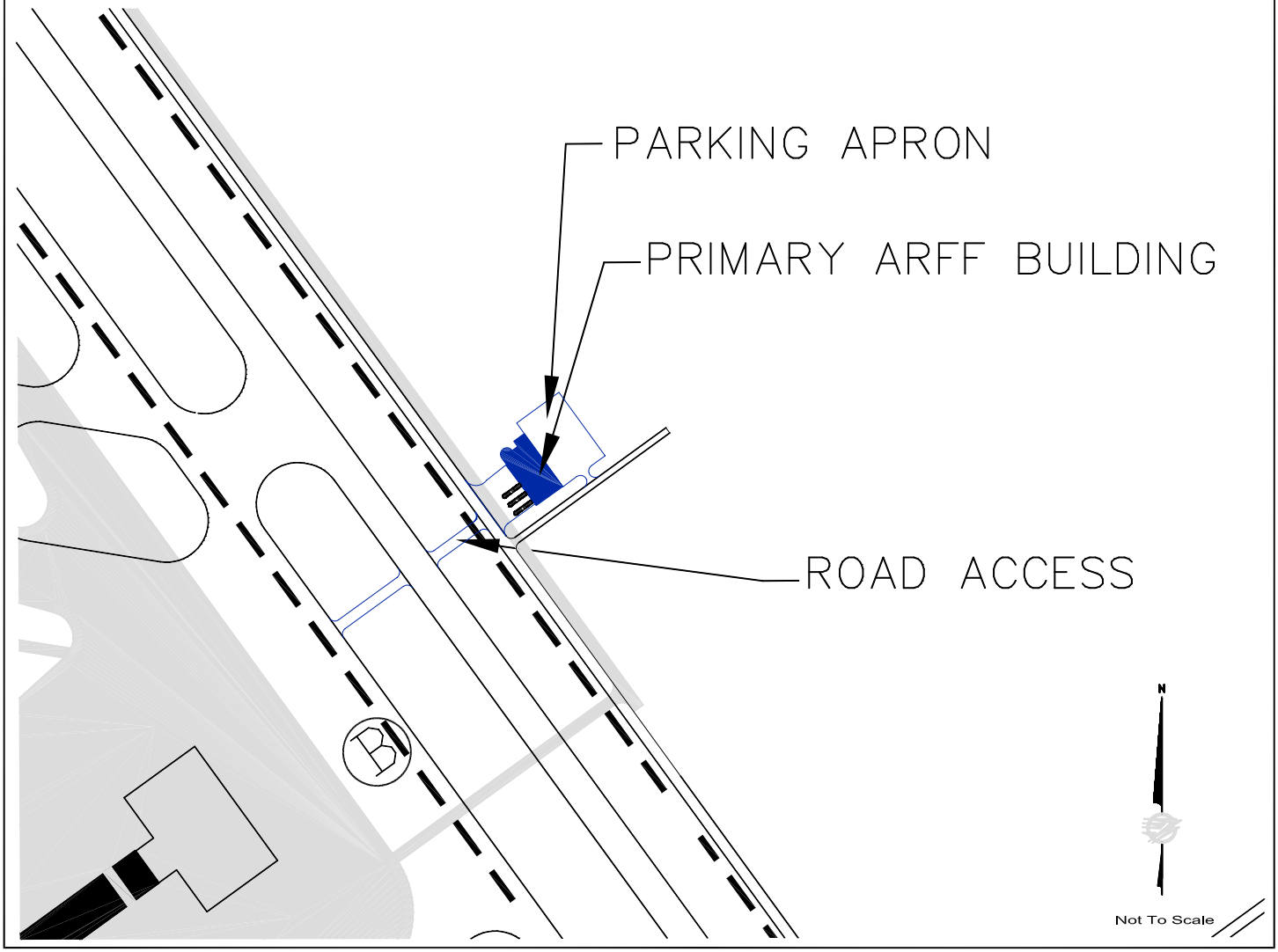
Cons
- Requires circuitous access.
- More expensive initial facility cost.
- Would require crossing active taxiways and runway to reach north side of the airfield.

Recommended ARFF Alternative

Each of the alternatives provide attractive options for ARFF development as required by the addition of the future runway. Alternative 2 provides the best response capability to the new runway while Alternatives 1 and 3 provide the best response capabilities to the future terminal area. Alternatives 1 and 2 are supplemental facilities and maintain the existing ARFF facility, while Alternative 3 consolidates the ARFF activities in a single centrally located facility. Alternative 3, by consolidating the future ARFF requirements into a single facility, results in the lowest equipment and personnel requirement while at the same time freeing up land to the east of the GA facilities. Balancing long term operating costs with accessibility, Alternative 3 is recommended as the preferred development option.

Exhibit 6-9





Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	ARFF FACILITY ALTERNATIVE 3	EXHIBIT 6-9

6.2.5 Air Traffic Control Tower (ATCT)

Construction of a new parallel runway will require development of a new air traffic control tower (ATCT) that provides adequate line of sight to both runways and their approaches as well as designated taxiway 'movement' areas. This will require development of a facility that is more centrally located. Options for a new ATCT include sites centrally located both east and west of the future connector taxiways.

Alternative 1: West Midfield - Terminal Top

The terminal top ATCT would be located in the future midfield terminal at the base of Concourse C (**See Exhibit 6-10**). The estimated minimum controller eye height required for Alternative 1 based on a concourse headhouse elevation of 70 feet above ground level (agl) is approximately 340 feet agl. This assumes that the visibility of no part of a taxiway or runway can be obstructed by the location of a fixed object. In this case the most critical view would be from the tower over Concourse B to the west parallel connector taxiway. It is important to note that aircraft parked around the concourse may result in a further increase in controller eye height requirements.

Pros

- Provides good accessibility.
- Is centrally located.
- Provides good utility access.

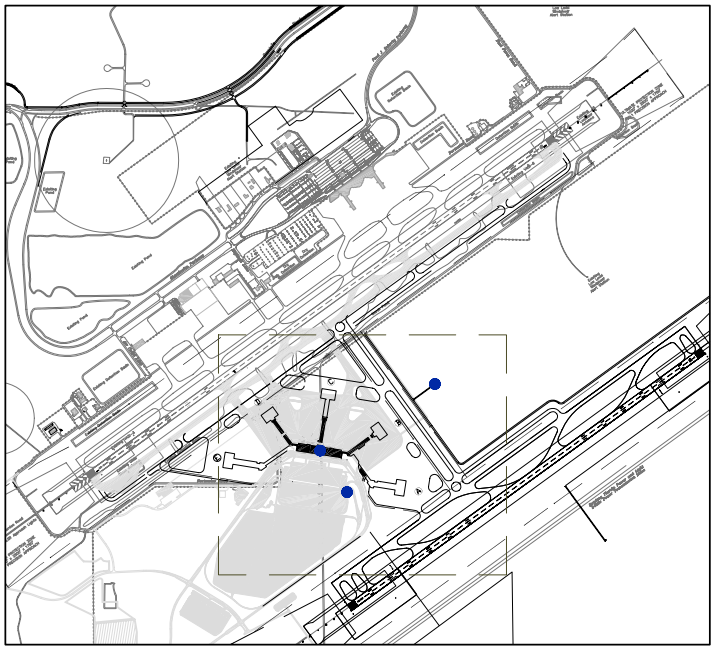
Cons

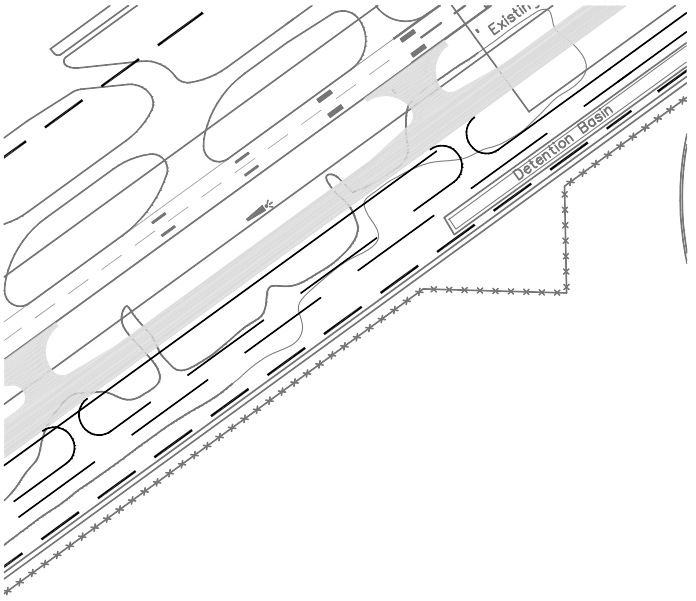
- Has a number of potential security concerns.
- Would require modifications to the terminal to support the design of the tower.
- Requires higher controller workload.
- Must act immediately to incorporate into midfield terminal design.
- Requires the second highest tower.
- Detracts from architectural features of the terminal complex.

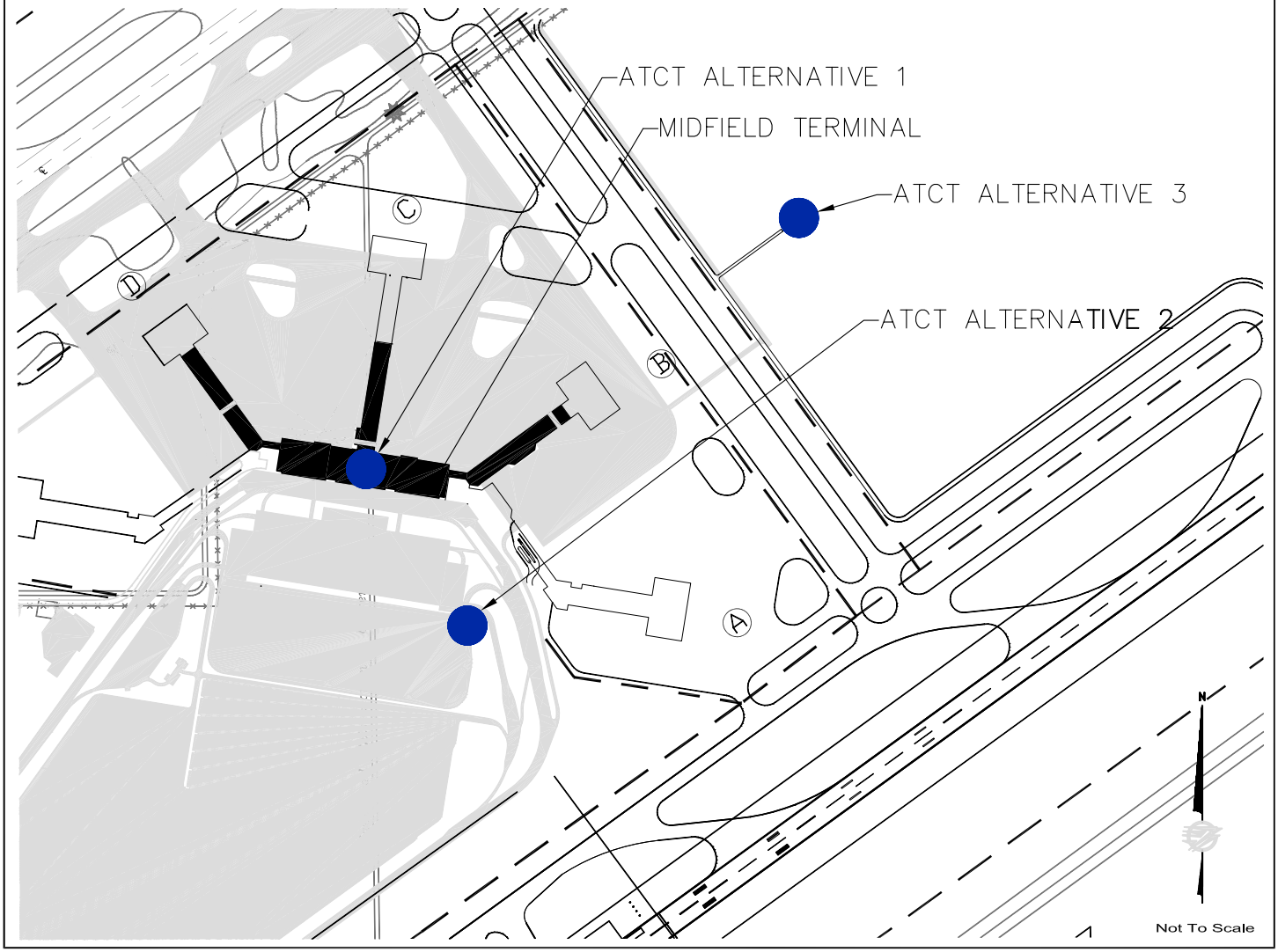
Alternative 2: West Midfield – Southeast of Terminal

ATCT Alternative 2 consists of a new tower located south of the Phase 1 midfield terminal and east of the existing parking garage (**See Exhibit 6-10**). This terminal area alternative minimizes the development conflicts with the terminal while still providing a fairly central terminal area location. Applying the same criteria as Alternative 1, the estimated minimum controller eye height required for Alternative 2 is approximately 540 feet agl. In this case the most critical view would be from the tower location over Concourse D to the south dual parallel NLA taxiway. Again, it is important to note that aircraft parked around the concourse may result in a further increase in controller eye height requirements.

Exhibit 6-10







Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	ATCT ALTERNATIVES	EXHIBIT 6-10

Pros
- Easily accessible from landside.
- Independent structure not part of another building (see Alternative 1).
- Provides good utility access.

Cons
- Has potential security concerns.
- Requires high controller workload.
- Requires the highest tower.
- Potentially inhibits future flexibility of future terminal area expansion.
- Must act immediately to incorporate into midfield terminal design.
- Detracts from architectural features of the terminal complex.

Alternative 3: East Midfield

ATCT Alternative 3 is located centrally between the runways to the east of the midfield connector taxiways. This alternative minimizes conflicts with the midfield facilities with a remote location (**See Exhibit 6-10**). Applying the same criteria as Alternative 1, the estimated minimum controller eye height required for Alternative 3 is approximately 260 feet agl. The most critical view would be from the tower location over Concourse E to the south dual parallel NLA taxiway. Once again, it is important to note that aircraft parked around the concourse may result in a further increase in controller eye height requirements.

Pros
- Provides the most secure location.
- Requires lowest controller workload.
- Appears to requires the lowest tower height.
- Best overall alternative for viewing entire airport.
- The most centrally located of all the alternatives.
- Allows related facilities to be collocated with facility.

Cons
- Requires circuitous access.
- Utilities would have to be extended into area from the midfield complex.
- Would require all employees to have security access to the airside to get to facility.

Recommended Air Traffic Control Tower Alternative

The ideal ATCT facility location provides good line of sight to all operational areas of an airport with a minimal controller workload. While access is also important, it must be balanced with security which is an increasingly important aspect of air traffic facilities. While both Alternatives 1 and 2 provide good access to the towers, they also result in the highest controller workload and present development and security challenges within the future terminal area. They also have the greatest controller eye height requirements. ATCT Alternative 3, likely requiring the shortest tower, would result in the lowest controller workload and most secure site with minimal chance of impacting future development. By sharing infrastructure with the recommended ARFF alternative, costs

associated with Alternative 3's infrastructure can be spread between the two facilities. Therefore, based on the functional benefits of each proposed tower location and those factors reviewed herein, ATCT Alternative 3 is recommended for inclusion in the preferred development plan.

6.3 LANDSIDE ALTERNATIVES

6.3.1 Terminal

The Phase 1 Midfield Terminal Project includes development of over 760,000 square feet of building space including a main terminal and three concourses. Although each concourse has been planned with the ability to expand to add gates, by the end of the 2020 period there will be shortages in terminal space as well. The activity levels projected for 2020 indicate the need for an additional 205,000 square feet of terminal and concourse space as well as an additional 15 to 19 gates. This will require the next major phase of terminal development. Options for this development based on the current midfield concept include expansion of the terminal and either development of a new concourse to the west or to the east. In each case a 4-5 gate headhouse expansion to Concourse C is planned by 2010. Alternatives providing for the balance of the facility shortfalls are further addressed below:

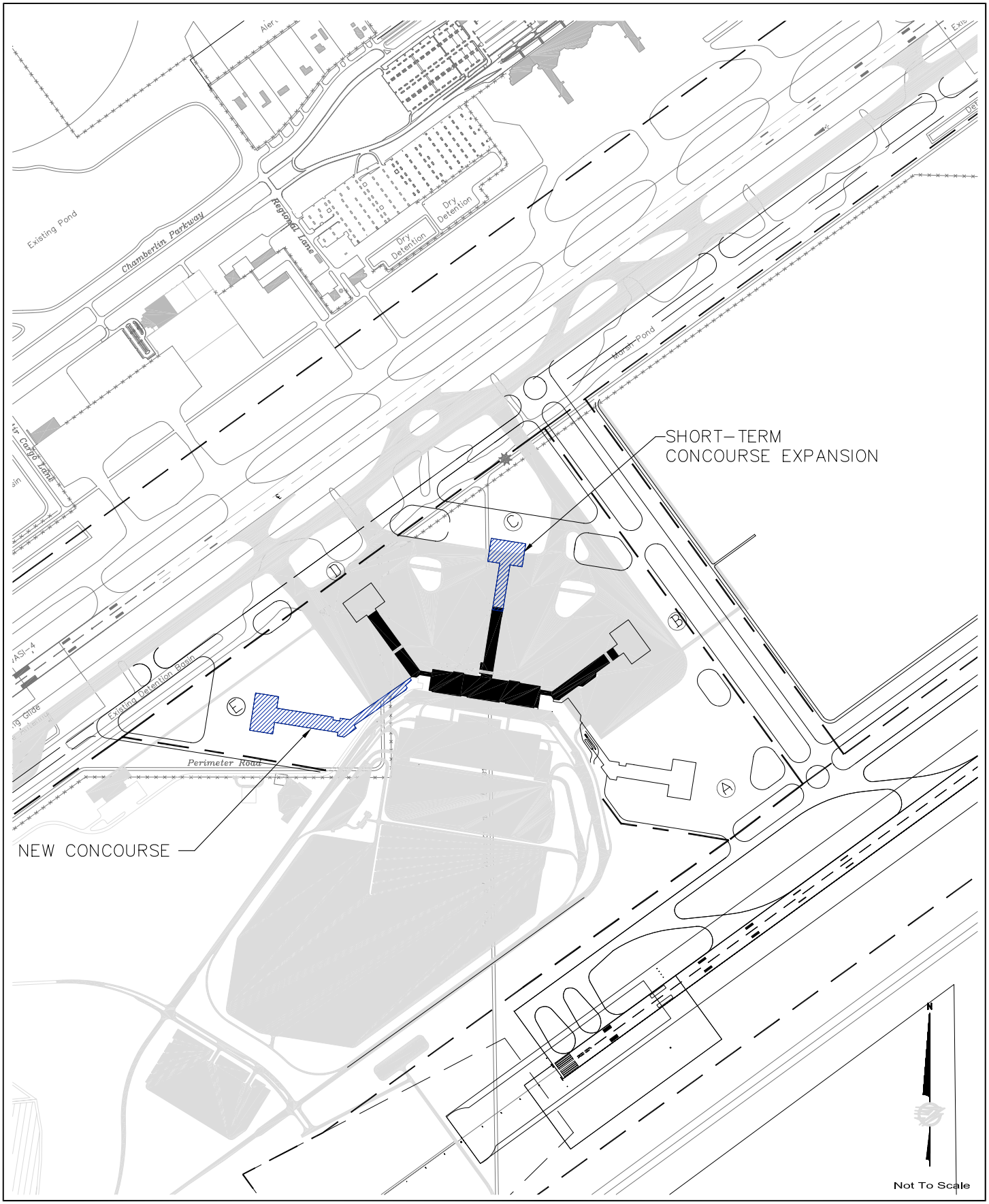
Alternative 1: West Concourse
The west concourse expansion would consist of expansion of the terminal building westward, addition of a connector, and a new concourse. This concourse, designated Concourse E by the midfield conceptual development program, would have the nearest proximity to the departure end of the existing runway (**See Exhibit 6-11**).

Pros
- Does not depend on development of new runway.
- Provides shortest taxi times to Runway 6.
- Would not require future parallel connector taxiway.
- Provides close proximity to airline cargo building.

Cons
- May require partial dual parallel taxiway to reduce potential for queuing conflicts at the existing Runway 6 departure end.
- Requires long taxi distance to future Runway 6R end.
- Requires long walking distances to main terminal.
- Appears to require more apron than Concourse A expansion.
- Aircraft tail height restrictions for positions at the end of the concourse may be required due to potential for penetrations to Part 77 surfaces.

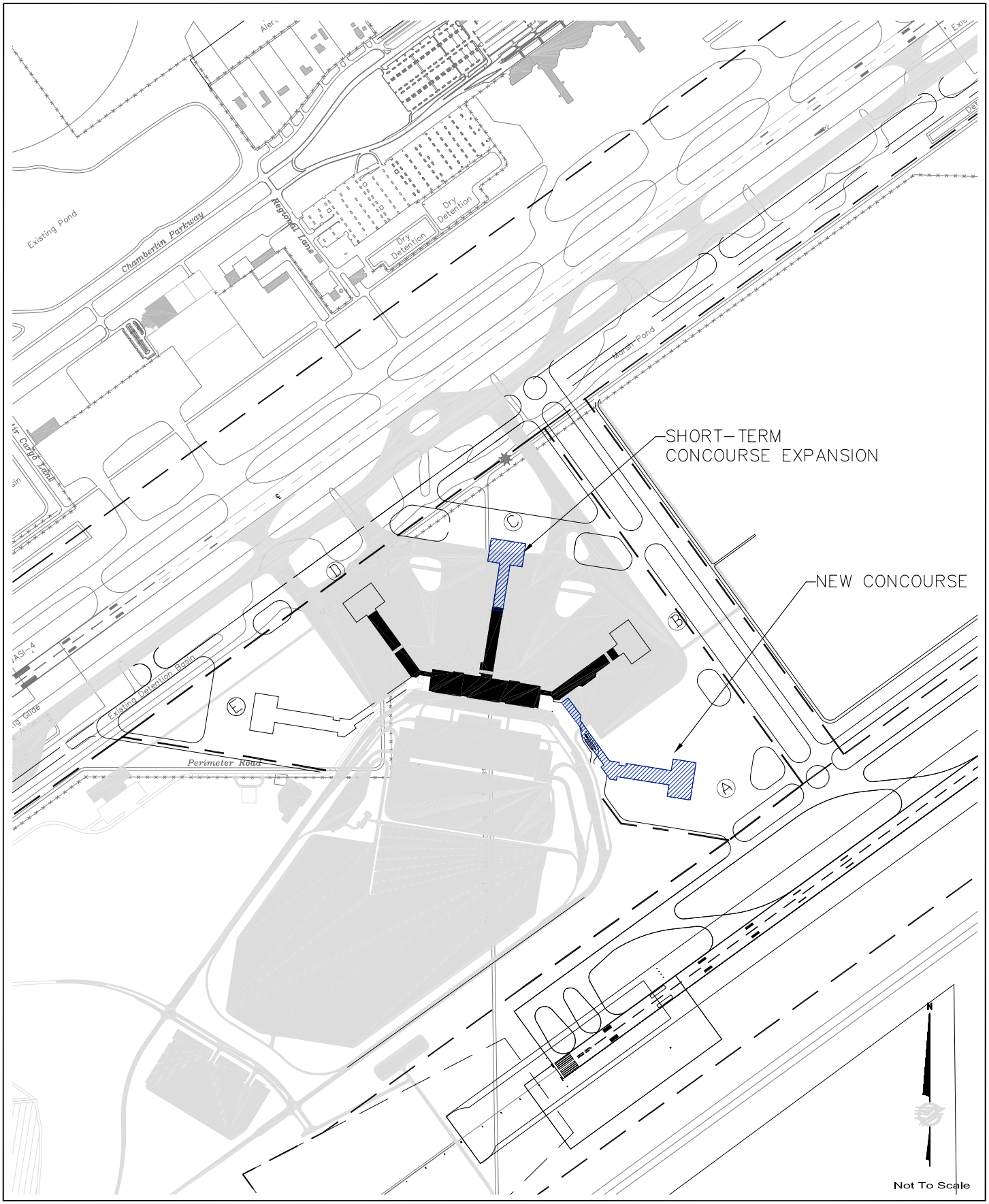
Alternative 2: East Concourse
Similar to Concourse E, addition of an east concourse would consist of expansion of the terminal building eastward, addition of a connector and a new concourse. This concourse, designated Concourse A by the midfield conceptual development program, would have the nearest proximity to the departure end of the future parallel runway (**See Exhibit 6-12**).

Exhibit 6-11



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	MIDFIELD TERMINAL ALTERNATIVE 1	EXHIBIT 6-11

Exhibit 6-12



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	MIDFIELD TERMINAL ALTERNATIVE 2	EXHIBIT 6-12

Pros
- ✈ Provides good airfield balance with new runway.
- ✈ Provides shortest taxi times to the new Runway 6 end.
- ✈ Appears to require less apron than Concourse E expansion.

Cons
- ✈ Requires long taxi distance to existing Runway 6 end.
- ✈ Requires long walking distances to main terminal.
- ✈ Aircraft tail height restrictions for positions at the end of the concourse may be required due to potential for penetrations to Part 77 surfaces.

Recommended Terminal Alternative

The recommended terminal alternative will largely depend on the timing of development of the new parallel runway. Based on a review of the projected activity, it is anticipated that the new runway will become operational near the end of the 10-year timeframe. With this in mind, the east concourse, Alternative 2, is ideally positioned to take advantage of the added airfield capacity. However, if for some unforeseen reason the new runway development is delayed until well beyond the anticipated period, the west concourse development, Alternative 1, may be more desirable as it provides the shortest taxi distance to the existing runway. Conversely, it also results in the greatest potential for congestion near the Runway 6 end and would likely require the addition of a dual parallel taxiway section. Therefore, with the addition of the new parallel runway anticipated prior to the construction of the new concourse, Terminal Alternative 2 is the preferred development alternative.

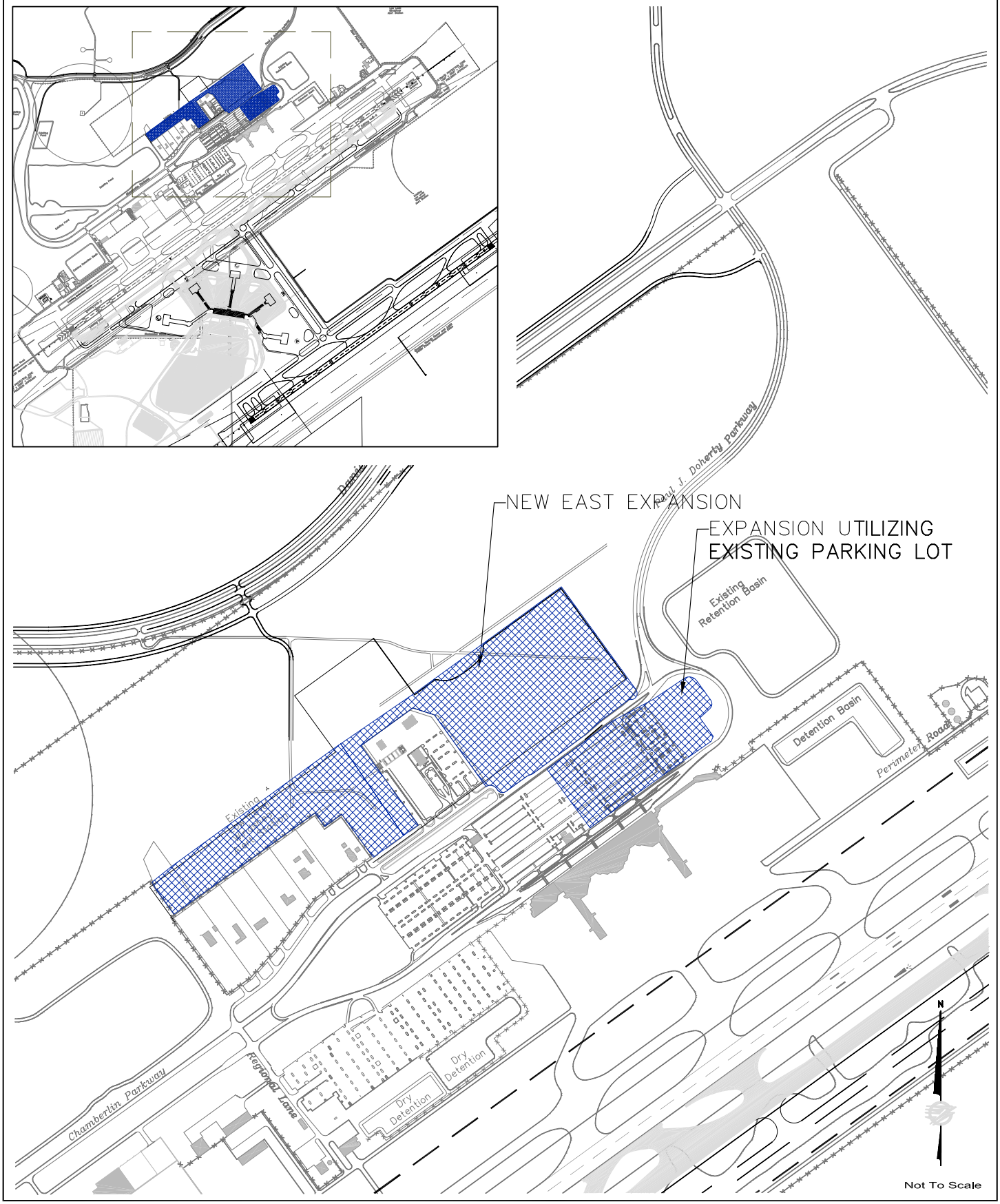
6.3.2 Rental Cars

Rental car activity is a key revenue growth area at many of Florida's airports including RSW. The existing rental car storage and maintenance facilities are located adjacent the terminal area loop road just north of the automobile parking area. With the relocation of passenger operations to the midfield terminal area considerable parking area in the northern airfield will become available for alternative use. However, these facilities may not provide the most operationally efficient location for rental car activities due to the distance between them and the new terminal facilities. The following alternatives explore a number of locations for future rental car development that either focus on reuse of existing facilities, operational efficiency, or some combination thereof.

Alternative 1: Existing Expansion and Vacated Parking

Rental Car Alternative 1 continues the planned expansion of the existing facilities and provides for additional expansion in the existing terminal parking area (**See Exhibit 6-13**). This alternative reduces the depth of the Alamo leasehold to provide for consistent frontage on Daniels Parkway for non-aviation use.

Exhibit 6-13



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	RENTAL CAR ALTERNATIVE 1	EXHIBIT 6-13

Pros
- ✈ Maintains use of existing rental car facilities.
- ✈ This option requires the least initial capital investment.
- ✈ Maintains good off-site access.
- ✈ Utilizes part of terminal parking lot for additional rental car expansion.
- ✈ Minimizes potential leases with current rental car tenants.

Cons
- ✈ Operationally inefficient - long distance from new terminal facilities.
- ✈ Restricts potential long-term non-aeronautical development along Daniels.
- ✈ This option requires the greatest ongoing operational cost.

Alternative 2: Complete Relocation to New Terminal Area and Nearby Remote

Alternative 2 includes the complete relocation of the existing rental car operations to the west terminal area. This alternative splits the rental car function between the immediate terminal area and a location bordering the Treeline Avenue extension (**See Exhibit 6-14**). By placing all of the rental car operations in the proximity of the terminal area, this alternative provides a considerable operational advantage.

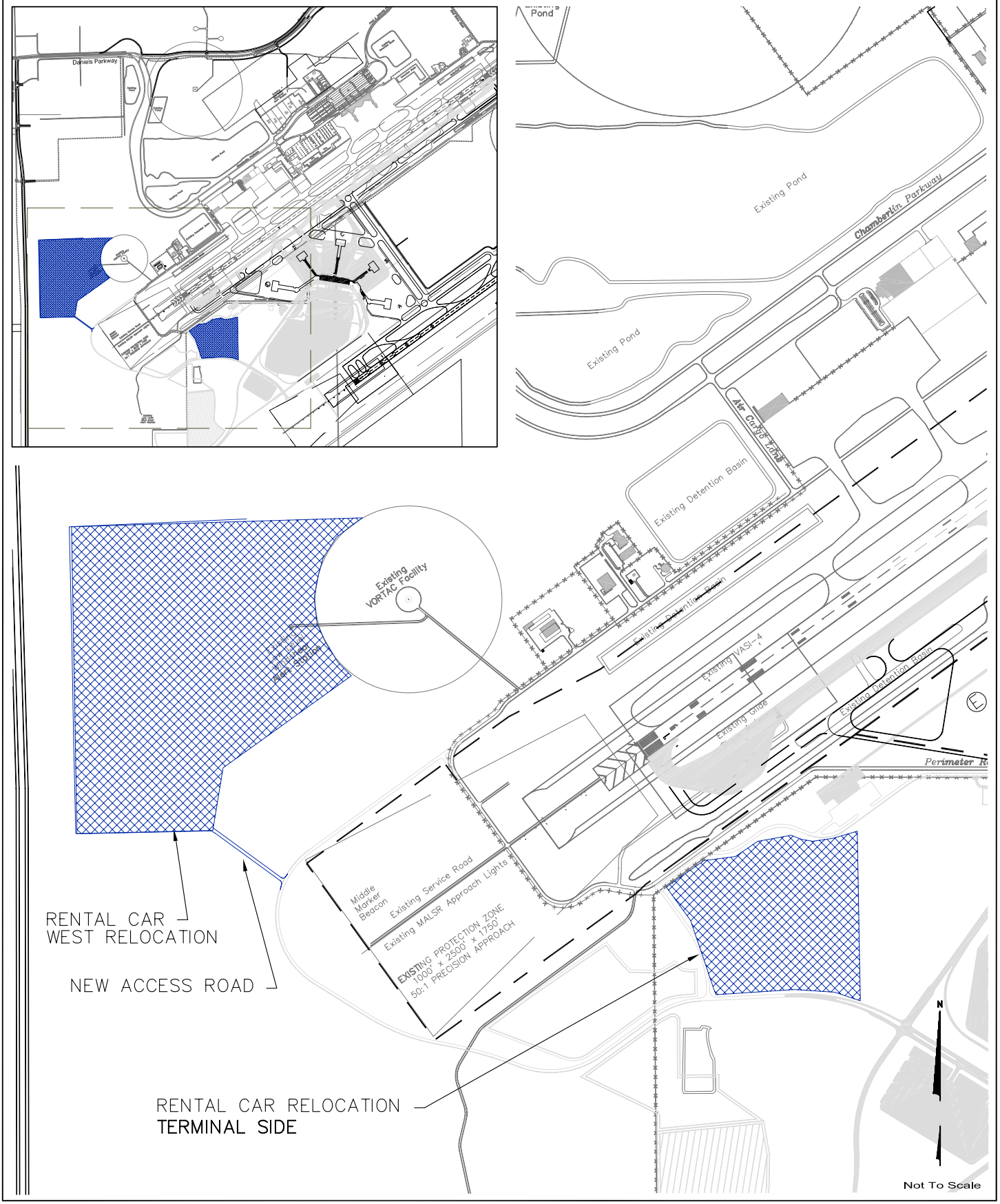
Pros
- ✈ Most operationally efficient – very short distance to terminal area.
- ✈ Accessible from planned access roads.
- ✈ Reduces traffic flow through the north side facilities.
- ✈ Considerably increases the depth of the non-aviation developable land with frontage to Daniels.
- ✈ Reduces the congestion of rental car shuttles on access road around runway.

Cons
- ✈ Does not maintain use of existing facilities.
- ✈ Likely one of the highest initial capital costs.
- ✈ Would require breaking or modifying existing leases with tenants.
- ✈ Reduces the potential area available for surface auto parking at midfield.

Alternative 3: Maintain Existing, Expand to both Vacated Parking and West Remote

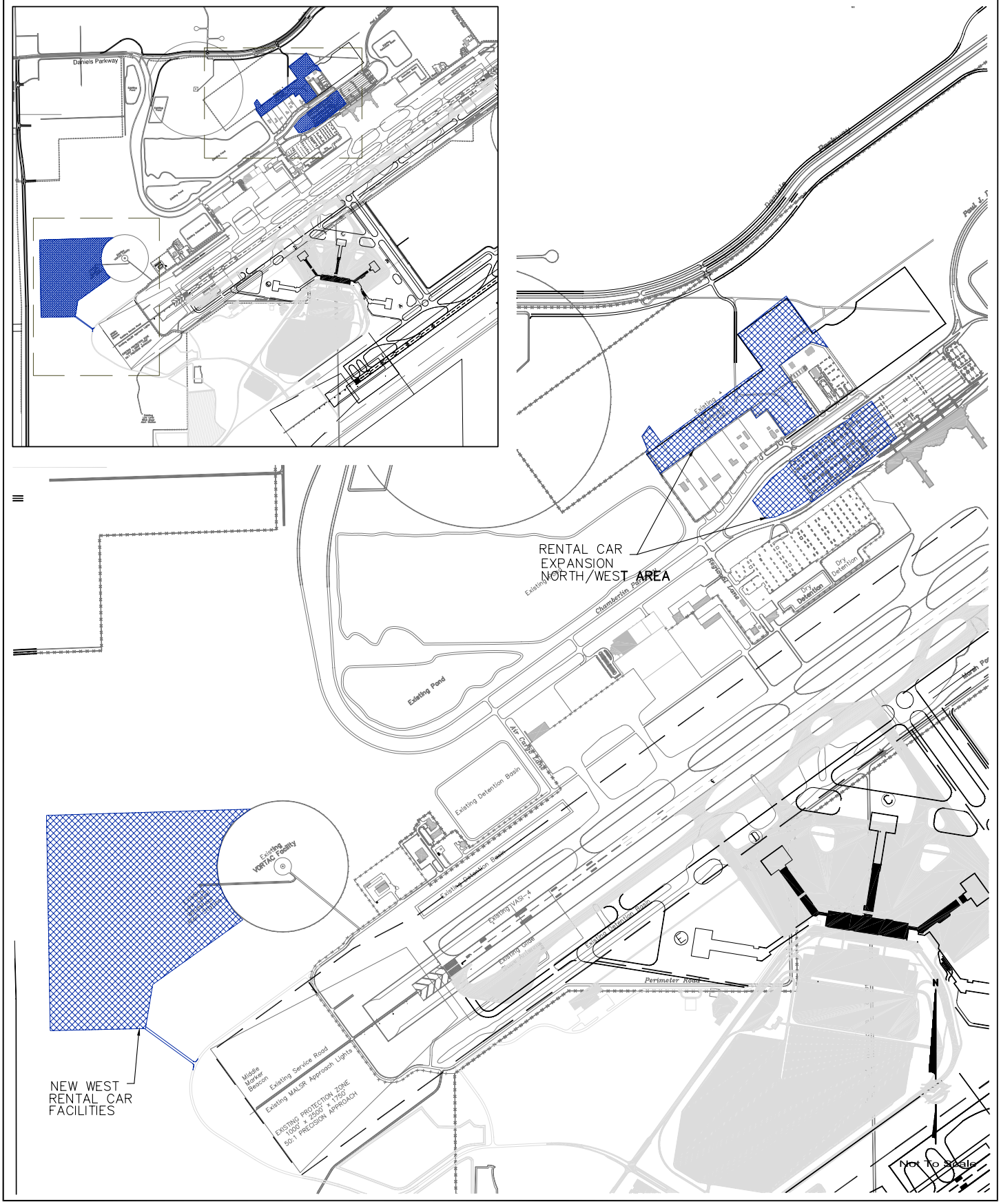
Alternative 3 offers a combination of areas to meet the future rental car needs. It maintains the existing operations and takes advantage of a portion of the soon to be vacated north terminal parking area. Additionally, it provides expansion at a location bordering the Treeline Avenue extension (**See Exhibit 6-15**). This option balances the use of existing facilities with some enhancement to operational efficiency for some rental car operators.

Exhibit 6-14



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	RENTAL CAR ALTERNATIVE 2	EXHIBIT 6-14

Exhibit 6-15



Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	RENTAL CAR ALTERNATIVE 3	EXHIBIT 6-15

Pros

- ✈ Improves operational efficiency – reduces distance for some operators.
- ✈ Reuses a portion of existing terminal parking area for additional rental car expansion.
- ✈ Would not require Airport to break existing leases with rental car tenants.

Cons

- ✈ Does not provide similar level of service to all operators.
- ✈ Reduces development flexibility for area between existing terminal area and Daniels.
- ✈ Still results in considerable traffic between the new midfield and the old terminal area.

Recommended Rental Car Alternative

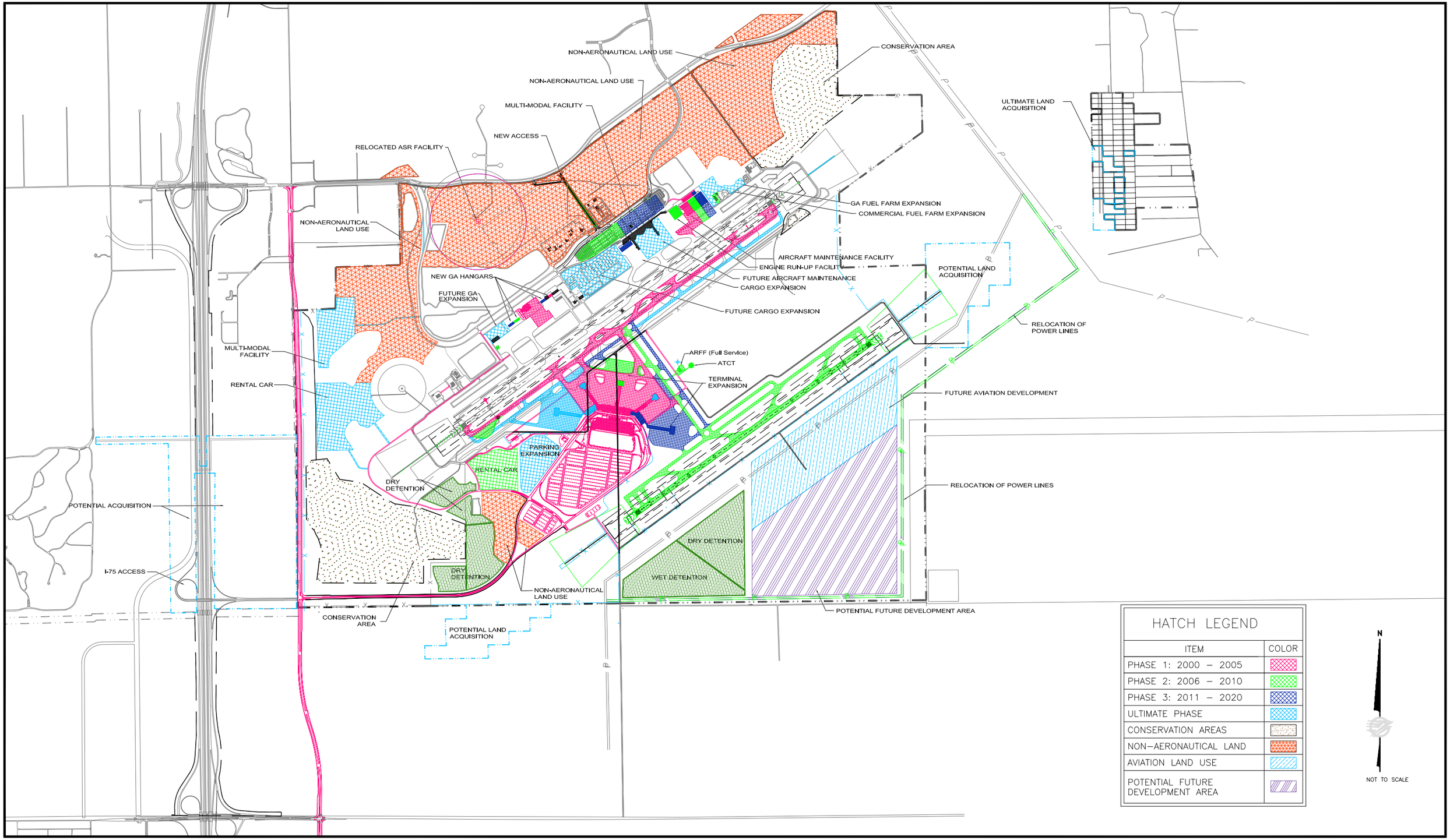
The three rental car alternatives include a range of options that include simply expanding existing facilities to full rental car relocation. Expanding the existing facilities has an obvious capital cost advantage while relocation of the facilities has a long-term operational cost advantage. With the relocation of the midfield complex a considerable distance from the existing rental car area both rental car Alternative 2, full rental car relocation, and Alternative 3, partial rental car relocation, were considered the most desirable. In reviewing the future revenue generation potential for the north side of the airport, it is apparent that full relocation of the rental car facilities provides the most flexibility for revenue enhancement. Based on this and the analysis included above, it is recommended that the rental car facilities ultimately be fully relocated as outlined in Alternative 2.

6.4 RECOMMENDED DEVELOPMENT PLAN

The recommended development program is outlined in **Exhibit 6-16**. The program can be summarized as follows:

- ✈ Upon relocation of the midfield terminal, the north airfield is reconfigured to maximize potential cargo, general aviation, and aircraft maintenance activities.
- ✈ With relocation of the rental car facilities to the proximity of the new midfield terminal area, considerable land becomes available along the north side of the airport to support non-aviation revenue enhancing development.
- ✈ The projected passenger demand throughout the 20 year development period is handled in the new midfield terminal complex through the expansion of one of the concourse headhouses and the development of Concourse A and associated terminal area.
- ✈ A new 9,100'parallel runway is added along with a new central primary aircraft rescue and fire fighting facility and air traffic control tower.
- ✈ Primary landside access will shift from Treeline Avenue to a direct connection with I-75.
- ✈ The land south of and adjacent to the new runway is preserved for ultimate aviation related development.

Exhibit 6-16



HATCH LEGEND	
ITEM	COLOR
PHASE 1: 2000 – 2005	
PHASE 2: 2006 – 2010	
PHASE 3: 2011 – 2020	
ULTIMATE PHASE	
CONSERVATION AREAS	
NON–AERONAUTICAL LAND	
AVIATION LAND USE	
POTENTIAL FUTURE DEVELOPMENT AREA	

N

NOT TO SCALE

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SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA

MASTER PLAN UPDATE

RECOMMENDED DEVELOPMENT PLAN

DATE:	MARCH 2004
PROJECT NO:	C06901
FILE NAME:	
DESIGNED BY:	F.B.B
DRAWN BY:	F.B.B
CHECKED BY:	S.R

EXHIBIT

6-16

7 ENVIRONMENTAL OVERVIEW

7.1 INTRODUCTION

An airport is an important transportation resource that provides both metropolitan and rural areas with access to the national transportation system, as well as being a direct stimulator to local and regional economies. Because of the size and nature of an airport, it may generate impacts to the natural, social and economic systems in the area. Through careful planning and implementation of mitigation measures, an airport can provide valuable transportation service, economic development and compatibility with the surrounding environment.

As part of the Southwest Florida International Airport (RSW) Master Planning process, an overview of environmental conditions of the proposed site has been prepared to examine the potential impacts of the proposed development plan. The primary emphasis of this environmental overview is to present a broad overview of general environmental conditions at RSW. It is not intended to provide the level of detail required for an Environmental Assessment (EA). This information will be used to determine what specific projects and environmental concerns may require further federal-level EA, Environmental Impact Statement (EIS) or other specialized environmental study in the future.

The environmental overview has been developed using information supplied through coordination and review of local, regional, state and federal governmental requirements and a review of previous studies and historical documents for RSW.

7.2 FEDERAL ENVIRONMENTAL REQUIREMENTS

The National Environmental Policy Act (NEPA) of 1969 provides for the study and documentation of the impacts of any proposed federal action. NEPA, legislative mandates and Presidential Executive Orders outline specific federal agency environmental review requirements. The Federal Aviation Administration (FAA) is typically the lead governmental agency that is obligated to review major airport development and improvement actions proposed by an airport sponsor, as most major projects involve some form of funding grant request by the airport sponsor to the FAA. As a result, the FAA must review the project for impacts prior to providing funds. It is mandated by Congress, and implemented through NEPA, that adverse environmental impacts be avoided or minimized to the greatest possible extent when federal dollars are being used. NEPA requires that alternatives be considered to avoid or reduce potential adverse effects, to identify necessary mitigation measures and to document public participation in the decision-making process. The guiding document in airport environmental matters is FAA Order 5050.4A, Airport Environmental Handbook.

Three levels of FAA environmental review of development projects are outlined in Order 5050.4A. Each review is dependent upon the level of development being proposed. The three levels of FAA Environmental review are:

- Those development projects that are normally categorically excluded from further environmental analysis;
- Those development projects normally requiring an EA; and
- Those development projects normally requiring an EIS.

7.2.1 Categorical Exclusions

FAA Order 5050.4A defines certain airport development projects as being categorically excluded from formal environmental study. When a project is identified as a Categorical Exclusion, the proposed airport development project is allowed to proceed without further environmental studies. In 5050.4A, airport development actions normally categorically excluded from environmental review (EA or EIS) include:

- Runway, taxiway, apron or loading ramp construction or repair work including extension (except for major runway extensions) strengthening, reconstruction, resurfacing, marking, grooving, fillets and jet blast facilities and new heliports on existing airports (except where such action would create environmental impacts of airport property).
- Installation or upgrading of airfield lighting systems, including runway end identifier lights, visual approach aids, beacons and electrical distribution systems.
- Installation of miscellaneous items including segmented circles, wind or landing direction indicators, measuring devices or fencing.
- Construction or expansion of passenger handling facilities.
- Construction relocation or repair of entrance and service roads.
- Grading or removal of obstruction on airport property and erosion control actions with no off-airport impacts.
- Landscaping generally, and landscaping or construction of physical barriers to diminish impact of airport blast and noise.
- Projects to carry out noise compatibility programs.
- Land acquisition and relocation associated with any of the above items.
- Federal release of airport land.
- Removal of displaced thresholds.

7.2.2 Environmental Assessment (EA)

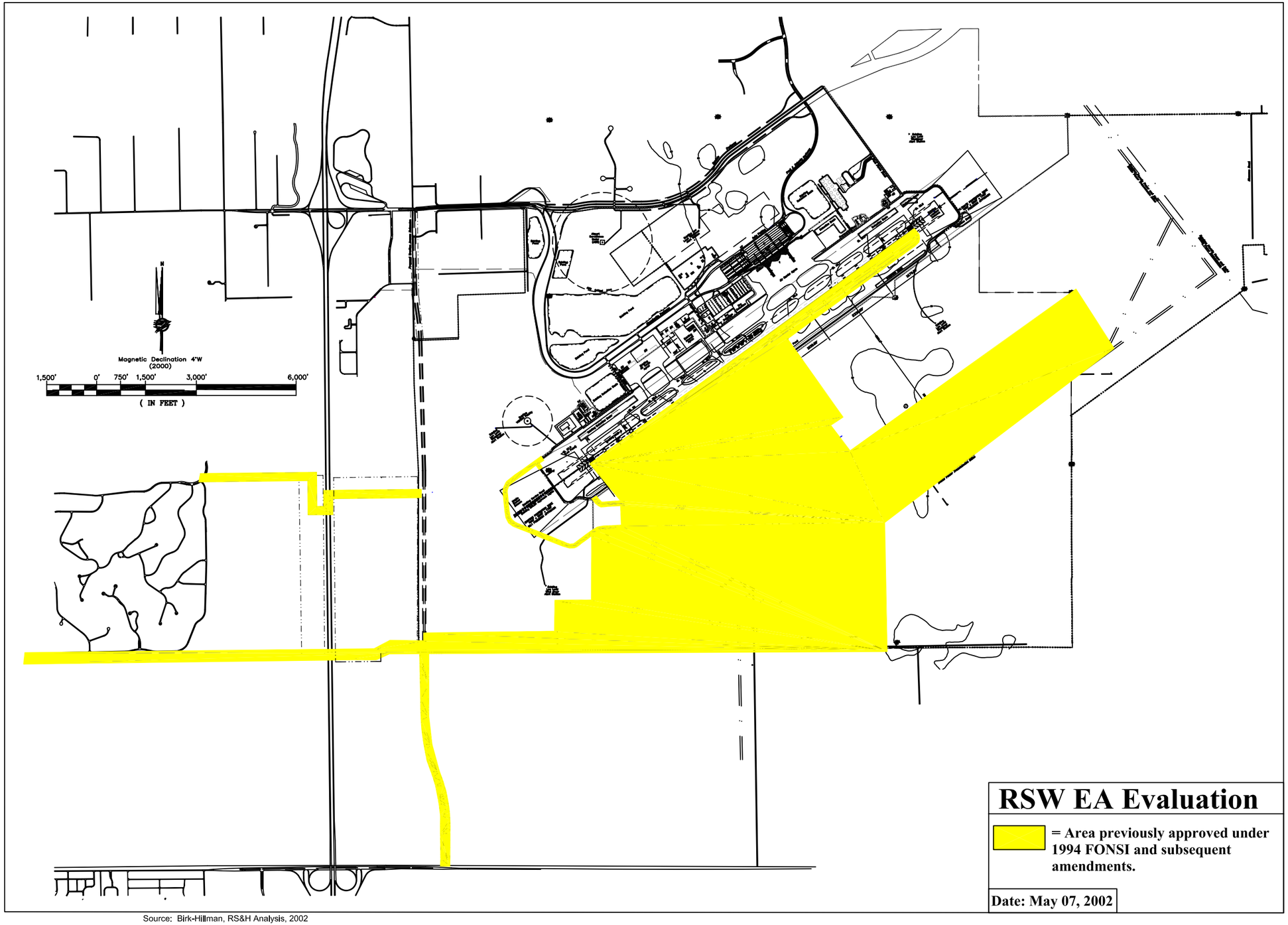
An EA examines potential impacts to determine whether they exceed predefined thresholds of significance or create sufficient controversy to require FAA to prepare a full EIS, or if the FAA can provide a Finding of No Significant Impact (FONSI). The FAA will either issue a FONSI as a result of the EA review process and the proposed airport development can proceed, or it will determine that an EIS must be prepared. Actions normally requiring an EA include the following:

- A new airport location.
- A new runway.
- A major runway extension.
- Runway strengthening that would result in a 1.5 DNL (the average day-night sound level) increase in noise impacting a sensitive area within the 65 DNL contour.
- Construction or relocation of entrance or service road connections to public roads that adversely affect the capacity of such public roads.
- Land acquisition associated with any of the above items including land acquisition that would result in the relocation of residential units when there is evidence of insufficient compatible replacement dwellings, major disruption of business activities, or acquisition that involves land covered under Section 4(f) of the Department of Transportation (DOT) Act.
- Establishment or relocation of an Instrument Landing System (ILS) or an approach lighting system.
- An airport development action that involves extraordinary circumstances or involves Section 4(f) lands; land areas or structures eligible for or designated as significant, historical, architectural or cultural; land acquisition for conversion of farmland; impacts to wetlands, coastal areas, or floodplains; or endangered or threatened species.

The last EA for RSW was prepared in 1994 and it addressed the long-term development needs of the airport. The analysis included the development of the midfield terminal complex and the future parallel runway. A graphic depicting the area covered in the 1994 EA is shown in Exhibit 7-1. Since that time, additional coordination has been conducted with the Federal Aviation Administration and in a letter dated May 15, 2002, it is assumed that any of the development shown within the limits identified in the next exhibit is covered under the 1994 FONSI and will not require any additional environmental processing.

Any of the proposed development outside the limits depicted in **Exhibit 7-1** may require additional environmental processing. The LCPA has recently initiated an Environmental Assessment that will address all the environmental impacts of those projects outside the area identified in the 1994 FONSI.

Exhibit 7-1



Source: Birk-Hillman, RS&H Analysis, 2002

RSW EA Evaluation

= Area previously approved under 1994 FONSI and subsequent amendments.

Date: May 07, 2002

Lee County Port Authority

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SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
MASTER PLAN UPDATE
FONSI APPROVED DEVELOPMENT MAP

EXHIBIT
7-1

7.2.3 Environmental Impact Statement

If proposed development results in significant environmental impact, an EIS may be required. An EIS is a thorough review process that provides federal, state, regional, local and other agencies an opportunity to participate in the project as coordinating or commenting agencies. The detail of the EIS is determined either by the EA, or during the FAA environmental scoping process. Full evaluation of the proposed project or action, as well as all reasonable and prudent alternatives, must be undertaken. Actions normally requiring an EIS include:

- The development of a first-time airport layout plan, or airport location approval for commercial service airport in a Standard Metropolitan Statistical Area (SMSA).
- Financial participation in, or airport layout plan approval of, a new runway capable of handling air carrier aircraft at a commercial service airport in a SMSA.

It is not anticipated that an EIS will be required for any of the development proposed in this Master Plan Update.

7.3 FEDERAL, STATE, REGIONAL AND LOCAL ENVIRONMENTAL COORDINATION

In addition to satisfying FAA regulations, proposed airport development also needs to comply with federal, state, regional and local environmental and permitting requirements and will require approval by those agencies. Potential federal, state, regional and local agencies, other than the FAA, that would be involved in the review process for RSW include:

- Lee County Development Services (Growth Management and Local Permitting)
- Lee County Department of Transportation (Airport Access)
- South Florida Water Management District (Storm Water Management and Permitting)
- Southwest Florida Regional Planning Council (Growth Management)
- Florida Department of Environmental Protection (FDEP), Southwest District
- Florida Department of Transportation (Airport Access)
- Florida Department of State, Division of Historical Resources (Historic and Cultural Resources)
- United States Environmental Protection Agency, Public Affairs Office (Threatened and Endangered Species, Water Quality)
- United States Fish and Wildlife Service (Threatened and Endangered Species)
- United States Army Corps of Engineers, Flood Control and Water Management Program, Jacksonville District (Wetlands Impact)
- United States Department of the Interior, Bureau of Land Management, Eastern States Office (Section 4F Lands)
- United States Department of Agriculture, Forest Service United States National Park Service (Section 4F Lands)
- National Marine Fisheries Service, Southeast Regional Office (SERO), Protected Resources; (Biotic Communities) and
- Federal Emergency Management Agency (FEMA) (Floodplains).

7.4 GROWTH MANAGEMENT REGULATIONS

The Airport is currently operating under Growth Management Regulations under the Florida Department of Community Affairs. Regulations that affect airports currently are under revision to simplify the process. The Lee County Port Authority is currently working with Lee County to incorporate this Airport Master Plan document into the local Comprehensive Plan.

7.5 AIRPORT MASTER PLAN ENVIRONMENTAL OVERVIEW

As discussed earlier in this chapter, the environmental overview analysis prepared for this Airport Master Plan is neither intended nor required to be prepared at the level of detail of an EA or EIS. Its intended purpose is to provide a review of the environmental issues that may need to be considered in a future, formal environmental study and assist in the selection of the preferred development plan. In addition, coordination was conducted with the Florida State Clearinghouse to allow various state agencies an opportunity to review the anticipated development expected to occur at RSW and to conduct a data base research of potential issues that would be impacted by the proposed development. A copy of the comments received from the Florida State Clearinghouse is included in **Appendix B**.

A preliminary analysis of environmental conditions related to the Airport's recommended development alternatives was evaluated in relation to the 21 impact categories outlined in FAA Order 5050.4A. These impact categories include:

- Noise
- Compatible Land use
- Social Impacts
- Induced Socioeconomic Impacts
- Air Quality
- Water Quality
- DOT Section 4(f) Lands
- Historical, Architectural, Archaeological and Cultural Resources
- Biotic Communities
- Endangered and Threatened Species of Flora and Fauna
- Wetlands
- Floodplains
- Coastal Zone Management Program
- Coastal Barriers
- Wild and Scenic Rivers
- Prime and Unique Farmland
- Energy Supply and Natural Resources
- Light Emissions
- Solid Waste Impacts
- Construction Impacts
- Other Considerations

Discussion is provided below on the potential impacts to these environmental categories resulting from the proposed Airport Master Plan development.

7.5.1 Aircraft Noise

Background

A number of noise analyses have been prepared at Southwest Florida International Airport (RSW) over the past 25 years. These included the noise analysis portion of the environmental document prepared for the new facility in the late 1970's, an FAR Part 150 study prepared in the late 1980's and the most recent update to the FAR Part 150 study completed and approved by the FAA in 1995.

Following the approval of the FAR Part 150 study, minor adjustments were made to operational procedures (flight corridors) based on requests from neighboring communities and from FAA's air traffic control and were included in the 2001 Future Aircraft Noise Contour Update, prepared in 1997.

Included as part of both FAR Part 150 studies was the development of a noise/land use compatibility overlay zone that limits the future development of property around the Airport to uses compatible with aircraft noise and overflight. The 1995 FAR Part 150 study expanded the noise/land use analysis to incorporate the long-term effects of a future parallel air carrier runway. The overlay zone has been incorporated into the Lee Plan (Lee County's Comprehensive Plan) and into the Lee County Land Development Code.

The noise analysis documented in this section of the Master Plan provides updated year 2000 baseline noise exposure contours based on actual operations for the year and future noise contours associated with both the current single runway configuration and the future parallel runway system.

Aviation Noise Fundamentals

A number of key terms associated with the assessment of noise need to be defined to ensure that the reader is familiar with terminology that will be used in describing the noise exposure on areas surrounding RSW. The following provides a listing of key terms.

A-Weighted Sound Level
A-weighted sound is a sound pressure level, which has been filtered or weighted to reduce the influence of the low and high extremes. Unweighted sound pressure levels do not correlate well with human assessment and response to noise loudness. As a result, a variety of techniques to filter sound have been developed. A-weighting has been found to correlate well with the human hearing response and with a person's subjective judgement of the loudness of sounds. A-weighting gives greater emphasis to the sounds in the speech important frequency bands and less emphasis to the lower and higher frequencies. A-weighting is widely used and almost universally accepted in analyzing noise and its affects on people.

Equivalent Sound Level (Leq)
Leq is the energy average noise level over a specified time. This approach is normally employed for a duration of 1 hour, 8 hours or a 24-hour period. Equivalent signifies that the total acoustical energy associated with the fluctuating sound (during the specified time period) is equal to the total acoustical energy associated with the steady sound level

of Leq for the same specified period of time. The purpose of Leq is to provide a single number measure of noise averaged over a set time period.

Day Night Sound Level (DNL)

DNL was developed as a single number measure of community noise exposure. DNL was introduced as a simple method for predicting the effects on a population of the average long-term exposure to noise. DNL is an enhancement of the Equivalent Sound Level (Leq) metric through the addition of a 10 dB penalty for nighttime (10 p.m. to 7 a.m.) noise intrusions. The incorporation of the 10 dB penalty is in recognition of the increased annoyance that is generally associated with noise during the later night hours. DNL employs the same energy equivalent concept as Leq and uses a 24-hour time integration period. DNL was developed under Environmental Protection Agency (EPA) auspices, and embodies extensive information regarding the physical description of noise as related to human acceptability in residential areas. The basic elements and concepts of DNL are as follows:

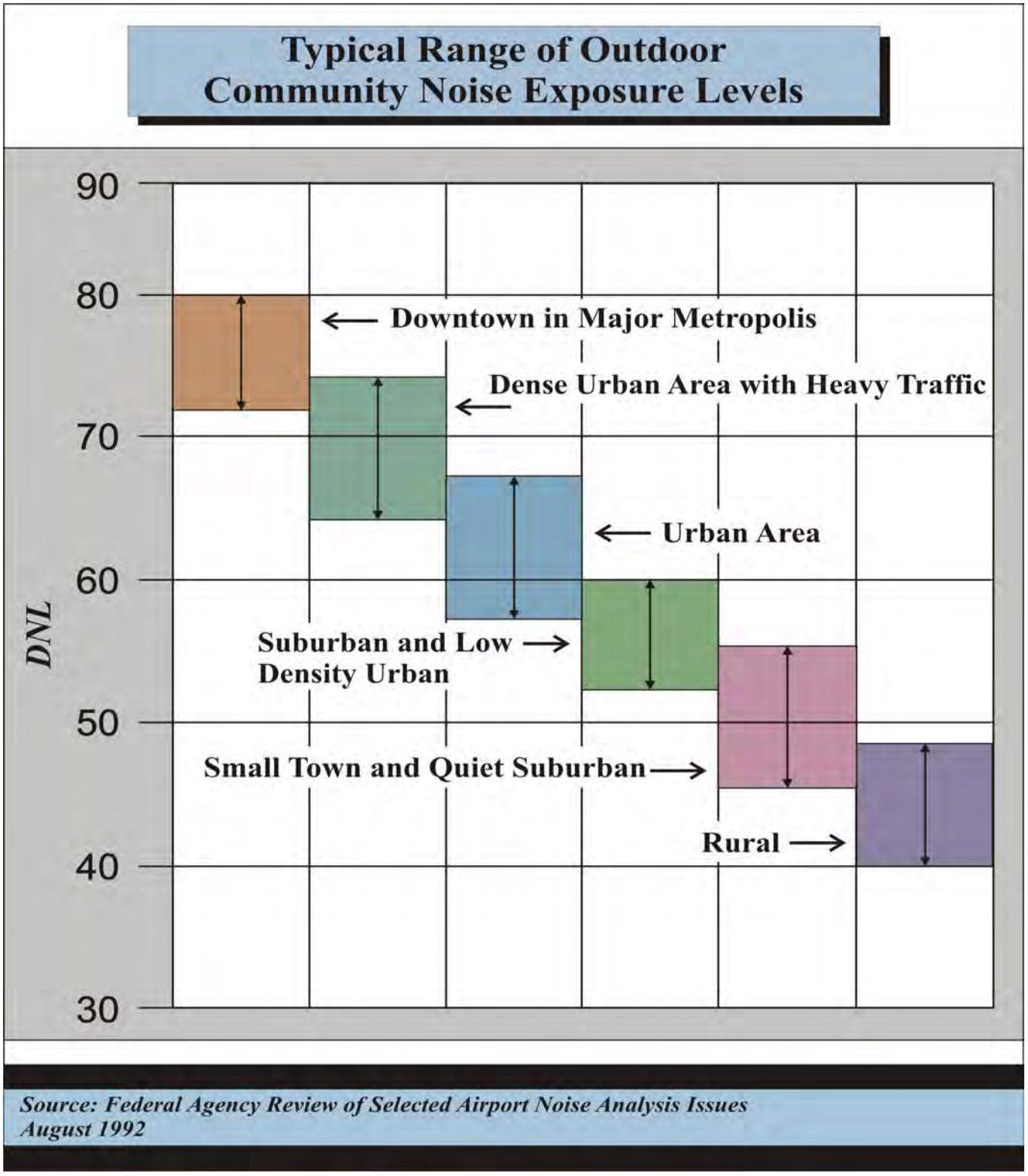
- Frequency Weighting - Use of the standard A-weighting which most closely reflects the response to the human ear.
- Time-of-Day Weighting - The 10 dB nighttime penalty accounts for greater sensitivity to noise and/or lower background levels at night.
- Energy Averaging - The energy-mean is the best general single-number description of sound level that varies with time, in terms of average community response.

In 1981, the FAA formally adopted DNL as the single system for determining exposure of individuals to aircraft noise. The use of DNL as the most appropriate measure of noise and its affect on persons was reconfirmed in the early 1990's after careful re-consideration by the Federal Interagency Committee on Urban Noise and subsequent re-evaluation by the Federal Interagency Committee on Aircraft Noise. DNL is the most widely accepted descriptor for aviation noise because of the following characteristics:

- DNL is a measurable quantity.
- DNL provides a simple method to compare the effectiveness of alternative airport scenarios.
- DNL can be understood by airport planners and the public who are not familiar with acoustics or acoustical theory.
- DNL is a measure that can describe a community's reactions to environmental noise.
- DNL is the best measure of noise exposure to identify significant impacts on the quality of the human environment.
- By Federal interagency agreement, DNL is the best descriptor of all noise sources for land use compatibility planning.
- DNL is the only metric with a substantial body of scientific survey data on the reactions of people to noise.

DNL is currently preferred by the FAA, EPA and HUD as an appropriate measure of cumulative noise exposure, thus, the DNL is used to assess aircraft noise exposure at RSW. **Exhibit 7-2** gives an indication of typical ranges of outdoor community noise exposure levels in DNL.

Exhibit 7-2



Source: Environmental Science Associates, 2002

Computation of DNL

In calculating DNL, the Leq level is used as the hourly equivalent sound level. The hourly noise figures are summed for the 15 hours of daylight (7 a.m. to 10 p.m.) and added to the sum of Leq hourly figures for the remaining 9 hours of nighttime with a 10 dB penalty added to the nighttime figures (to reflect added human sensitivity to nighttime noise). The result is the DNL noise level or a 24-hour summary of noise levels for a given location. When aircraft noise contours are calculated, however, the noise levels are solely due to the aircraft and do not include background or ambient noise levels.

Integrated Noise Model

The standard methodology for generating the DNL contours at airports involves the use of the Integrated Noise Model (INM). The INM was developed by the Transportation Systems Center of the United States Department of Transportation (USDOT) at Cambridge, Massachusetts and is undergoing continuous refinement. The model is designed as a conservative planning tool, and is periodically updated based on the philosophy that each version should present a conservative approach to noise prediction. Version 6.0c (the most current version of the model at the time of the study) was used for the noise analysis described in this report.

Methodology

The INM works by defining a network of grid points at ground level around an airport (RSW in this study). It then selects the shortest distance from each grid point to each flight track and computes the noise exposure generated by each aircraft operation, by aircraft type and engine thrust level, along each flight track. Corrections are applied for atmospheric acoustical attenuation, acoustical shielding of the aircraft engines by the aircraft itself, and aircraft speed variations. The noise exposure levels for each aircraft are then summed at each grid location. The cumulative noise exposure levels at all grid points are then used to develop noise exposure contours for selected values (e.g. 60, 65, 70, and 75 DNL). DNL noise contours of equal noise exposure can then be plotted.

INM Input Data

In order to develop DNL noise contours, the INM uses a series of input factors. Some of these factors are included in the database for the model (such as engine noise levels, thrust settings, aircraft profiles and aircraft speeds) and others are Airport-specific and need to be determined for each condition analyzed. This Airport-specific data includes the airport elevation, average annual temperature, runway layout, the mathematical description of ground tracks above which aircraft fly, and the assignment of specific aircraft with specific engine types at specific takeoff weights to individual flight tracks. The INM input factors specific to RSW for this analysis include:

- Aircraft operations and fleet mix
- Runway orientation and use
- Stage lengths of aircraft
- Time of day/night of operations
- Flight tracks

Operational Activity and Fleet Mix

The aircraft operations and fleet mix used in the noise analysis was based on the activity and forecasts presented in the Master Plan Update. **Table 7-1** summarizes the annual airport operational activity. In 2000, a total of 77,042 operations occurred, or an average of 211 operations per day. By 2020, operations are forecasted increase to 139,160, or 381 per day. The breakdown of operations and fleet mix for domestic and international air carrier aircraft are presented in **Tables 7-2** and **7-3.**

Table 7-1
Domestic Air Carrier Operations and Fleet Mix
Southwest Florida International Airport

Year	Domestic Air Carrier	International Air Carrier	Regional / Commuter	General Aviation	Cargo	Military	Total
2000	38,240	976	14,450	20,035	1,604	1,737	**77,042**
2005	47,200	1,400	15,200	23,300	1,760	1,740	**90,600**
2010	56,000	1,800	17,600	26,600	1,960	1,740	**105,700**
2015	65,800	2,200	20,000	30,400	1,920	1,740	**122,060**
2020	76,200	2,800	22,200	34,400	1,820	1,740	**139,160**

Sources: LCPA and Ricondo & Associates

Table 7-2
Domestic Air Carrier Operations and Fleet Mix
Southwest Florida International Airport

	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
A319/320	2,514	6.6	3,390	7.2	4,362	7.8	5,522	8.4	6,858	9.0
B717	234	0.6	806	1.7	1,570	2.8	2,568	3.9	3,810	5.0
B727-200	2,898	7.6	2,682	5.7	2,122	3.8	1,246	1.9	0	0.0
B737-200	2,780	7.3	2,574	5.5	2,036	3.6	1,196	1.8	0	0.0
B737-300	3,160	8.3	3,514	7.4	3,714	6.6	3,826	5.8	3,810	5.0
B737-400	3,118	8.2	4,302	9.1	5,642	10.1	7,262	11.0	9,144	12.0
B737-500	562	1.5	992	2.1	1,532	2.7	2,216	3.4	3,048	4.0
B737-700/800	498	1.3	2,348	5.0	4,844	8.7	8,110	12.3	12,192	16.0
B757	7,152	18.7	8,980	19.0	10,836	19.4	12,946	19.7	15,240	20.0
B767-200	1,184	3.1	2,040	4.3	3,108	5.6	4,458	6.8	6,096	8.0
B767-300	2,404	6.3	3,406	7.2	4,560	8.1	5,970	9.1	7,620	10.0
L1011/DC10	178	0.5	284	0.6	410	0.7	570	0.9	762	1.0
DC9	2,304	6.0	2,134	4.5	1,688	3.0	992	1.5	0	0.0
MD-80/87	9,236	24.2	9,730	20.6	9,562	17.1	8,908	13.5	7,620	10.0
Total Operations	**38,222**	**100.0**	**47,182**	**100.0**	**55,986**	**100.0**	**65,790**	**100.0**	**76,200**	**100.0**

Sources: Official Airline Guide (OAG) and Ricondo & Associates

Table 7-3
International Air Carrier Operations and Fleet Mix
Southwest Florida International Airport

	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
A319/320	442	45.1	614	43.8	768	42.6	908	41.3	1,120	40.0
A330	276	28.2	394	28.1	506	28.1	618	28.1	784	28.0
B737-200	86	8.8	92	6.6	78	4.3	48	2.2	0	0.0
B737-700/800/900	0	0.0	18	1.3	46	2.6	82	3.7	140	5.0
B747	0	0.0	8	0.6	18	1.0	34	1.5	56	2.0
B757-200	84	8.6	132	9.4	184	10.2	244	11.1	336	12.0
B767-200	90	9.2	142	10.1	200	11.1	264	12.0	364	13.0
L1011	2	0.2	2	0.1	2	0.1	2	0.1	0	0.0
Total Operations	**980**	**100.0**	**1,402**	**100.0**	**1,802**	**100.0**	**2,200**	**100.0**	**2,800**	**100.0**

Sources: OAG and Ricondo & Associates

The fleet mix of the regional/commuter activity includes single engine propeller, medium/large turboprop and regional jet aircraft. Destinations served by regional/commuter aircraft operating at RSW include Key West, Miami, Tampa and Orlando. Over the next 20 years, the trend to increase the use of regional jets (typically referred to as RJ's) by airlines will continue. By 2020, RJ's are expected to account for almost 40 percent of the regional/commuter fleet at RSW. The breakdown of operations and fleet mix for regional/commuter aircraft is presented in **Table 7-4**.

Table 7-4 Regional/Commuter Aircraft Operations and Fleet Mix Southwest Florida International Airport										
	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
Cessna 402 (4-14)	2,126	14.7	1,904	12.5	1,822	10.4	1,636	8.2	1,332	6.0
Beech 1900 (15-19)	3,896	27.0	3,796	25.0	4,044	23.0	4,198	21.0	4,218	19.0
EMB 120 (20-40)	1,986	13.7	2,039	13.4	2,290	13.0	2,316	11.6	2,220	10.0
ERJ 135 (20-40)	496	3.4	680	4.5	982	5.6	1,544	7.7	2,220	10.0
ATR-42 (41-60)	3,642	25.2	3,833	25.2	4,404	25.0	4,544	22.7	4,440	20.0
Canadair RJ (41-60)	910	6.3	1,278	8.4	1,888	10.7	3,030	15.2	4,440	20.0
ATR-72 (61+)	1,115	7.7	1,253	8.2	1,519	8.6	1,639	8.2	1,665	7.5
ERJ 170 (61+)	279	1.9	418	2.7	651	3.7	1,093	5.5	1,665	7.5
Total Operations	**14,450**	**100.0**	**15,201**	**100.0**	**17,600**	**100.0**	**20,000**	**100.0**	**22,200**	**100.0**

Sources: OAG, Ricondo & Associates and Environmental Science Associates

In 2000, cargo activity accounted for approximately 1,600 operations at RSW. Currently, the airport is served by Federal Express, United Parcel Service and Airborne Express. Cargo operations are forecasted to peak in 2010 with approximately 1,960 operations. **Table 7-5** presents the cargo operations and fleet mix at RSW over the next 20 years.

Table 7-5 Cargo Aircraft Operations and Fleet Mix Southwest Florida International Airport										
	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
B727-200	535	33.3	587	33.3	653	33.3	640	33.3	607	33.3
B757	535	33.3	587	33.3	653	33.3	640	33.3	607	33.3
DC9	535	33.3	587	33.3	653	33.3	640	33.3	607	33.3
Total Operations	**1,605**	**100.0**	**1,761**	**100.0**	**1,959**	**100.0**	**1,920**	**100.0**	**1,821**	**100.0**

Source: LCPA, Ricondo & Associates and Environmental Science Associates

Table 7-6 and **Table 7-7** summarize the itinerant and local general aviation (GA) activity at RSW. In 2000, approximately 84 percent of the GA activity was itinerant and 16 percent local. These percentages are forecasted to be similar in 2020 with approximately 80 percent of the GA operations being itinerant and 20 percent local. The greatest

numbers of itinerant GA aircraft operating at RSW are multiengine turboprop aircraft. In 2000, these aircraft accounted for approximately 37 percent of the itinerant GA activity at RSW. The fleet mix of itinerant aircraft is assumed to remain constant over the next 20 years.

The local GA traffic involves aircraft making a close-in pattern off the airport's runway. GA jet aircraft account for approximately 80 percent of the local operations. Noise associated with general aviation jet aircraft can vary widely with older general aviation Stage 2 jets having noise levels higher than some larger commercial service aircraft. For the purpose of this study, Stage 2 GA jet activity was assumed to be 23 percent and Stage 3, 77 percent. This assumption is based on National Business Aviation Association's (NBAA) estimate of FAA registered aircraft in the United States.

Table 7-6
Itinerant General Aviation Aircraft Operations and Fleet Mix
Southwest Florida International Airport

	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
Single Engine	1,598	9.5	1,836	9.5	2,071	9.5	2,339	9.5	2,614	9.5
Multiengine Piston	4,120	24.5	4,735	24.5	5,342	24.5	6,032	24.5	6,742	24.5
Multiengine Turboprop	6,222	37.0	7,151	37.0	8,067	37.0	9,109	37.0	10,182	37.0
Jet (Stage 2)	1,177	7.0	1,353	7.0	1,526	7.0	1,723	7.0	1,926	7.0
Jet (Stage 3)	3,700	22.0	4,252	22.0	4,797	22.0	5,416	22.0	6,054	22.0
Total Operations	**16,817**	**100.0**	**19,327**	**100.0**	**21,803**	**100.0**	**24,619**	**100.0**	**27,518**	**100.0**

Source: LCPA, Ricondo & Associates and Environmental Science Associates

Table 7-7
Local General Aviation Aircraft Operations and Fleet Mix
Southwest Florida International Airport

	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
Single Engine	160	5.0	198	5.0	240	5.0	290	5.0	344	5.0
Multiengine Turboprop	482	15.0	596	15.0	720	15.0	868	15.0	1,032	15.0
Jet (Stage 2)	592	18.4	732	18.4	882	18.4	1,064	18.4	1,266	18.4
Jet (Stage 3)	1,982	61.6	2,448	61.6	2,954	61.6	3,562	61.6	4,238	61.6
Total Operations	**3,216**	**100.0**	**3,974**	**100.0**	**4,796**	**100.0**	**5,784**	**100.0**	**6,880**	**100.0**

Source: LCPA, Ricondo & Associates and Environmental Science Associates

Table 7-8 and **Table 7-9** summarize the itinerant and local military activity at RSW. In 2000, approximately 10 percent of the military operations were itinerant and 90 percent local. The mix of aircraft includes small jet and large transport aircraft. Given the limited availability of military operations data, the number and type of military operations are assumed to remain constant in the future.

Table 7-8
Itinerant Military Aircraft Operations and Fleet Mix
Southwest Florida International Airport

	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
Sabrliner	139	80.0	139	80.0	139	80.0	139	80.0	139	80.0
C130	35	20.0	35	20.0	35	20.0	35	20.0	35	20.0
Total Operations	**174**	**100.0**	**174**	**100.0**	**174**	**100.0**	**174**	**100.0**	**174**	**100.0**

Source: LCPA, Ricondo & Associates and Environmental Science Associates

Table 7-9
Local Military Aircraft Operations and Fleet Mix
Southwest Florida International Airport

	2000		2005		2010		2015		2020	
Aircraft Type	Operations	%	Operations	%	Operations	%	Operations	%	Operations	%
Sabrliner	1,252	80.0	1,252	80.0	1,252	80.0	1,252	80.0	1,252	80.0
C130	314	20.0	314	20.0	314	20.0	314	20.0	314	20.0
Total Operations	**1,566**	**100.0**	**1,566**	**100.0**	**1,566**	**100.0**	**1,566**	**100.0**	**1,566**	**100.0**

Source: LCPA, Ricondo & Associates and Environmental Science Associates

Runway Utilization

The FAR Part 150 for RSW, approved in 1995, indicated the airport operates in a northeasterly flow approximately 85 percent of the time with the remaining 15 percent in a southwesterly flow. FAA's Air Traffic Control personnel indicated that these percentages were still applicable for existing and future conditions at RSW.

Stage Lengths

An aircraft's "stage length" (or trip length) refers to the distance an aircraft flies to its next destination after departing an airport. The stage length is important in noise modeling, since the longer the distance an aircraft will travel to its next destination the greater its fuel load and overall weight and, as a result, the lower its departure profile will be. The stage lengths, included in **Table 7-10**, for departures at RSW range from stage lengths 1 to 6 with the following indicating the ranges of these stage length descriptors.

Stage length 1 – 0 to 500 miles
Stage length 2 – 500 to 1,000 miles
Stage length 3 – 1,000 to 1,500 miles
Stage length 4 – 1,500 to 2,500 miles
Stage length 5 – 2,500 to 3,500 miles
Stage length 6 – 3,500 to 4,500 miles

Table 7-10
Aircraft Stage Length Percentages
Southwest Florida International Airport

Aircraft Type	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6
Domestic Air Carrier						
A319/320		90%	10%			
B717		90%	10%			
B727-200		90%	10%			
B737-200		90%	10%			
B737-300		90%	10%			
B737-400		90%	10%			
B737-500		90%	10%			
B737-700/800		90%	10%			
B757		90%	10%			
B767-200		90%	10%			
B767-300		90%	10%			
L1011/DC10		90%	10%			
DC9		90%	10%			
MD-80/87		90%	10%			
International Air Carrier						
A319/320			100%			
A330						100%
B737-200			100%			
B737-700/800/900			100%			
B747						100%
B757-200			100%			
B767-200			100%			
L1011			100%			
Cargo						
B727-200		100%				
B757	100%					
DC9	100%					

** All Regional/Commuter, GA and Military Aircraft modeled 100% Stage Length 1

Source: Air Carrier Schedule – 2000 and Environmental Science Associates

Time of Day Operations

The percentages of aircraft that operate during the day (7 am-10 p.m.) and nighttime (10 p.m.- 7 am) were developed through a review of the flight schedules and discussions with FAA's Air Traffic Control and Airport Operations Personnel for non-scheduled activity.

The separation of aircraft activity into daytime and nighttime periods is important because the INM includes a penalty for aircraft noise during the nighttime hours. The results of the evaluation are included in **Table 7-11**.

Table 7-11
Time of Day Percentages
Southwest Florida International Airport

Aircraft Type	DEPARTURES		ARRIVALS	
	DAY	NIGHT	DAY	NIGHT
Domestic Air Carrier	90%	10%	80%	20%
International Air Carrier	90%	10%	80%	20%
Regional/Commuter	90%	10%	80%	20%
Cargo	50%	50%	50%	50%
General Aviation	100%	minimal	100%	minimal
Military	100%	minimal	100%	minimal

Source: Air Carrier Schedule – 2000, LCPA and Environmental Science Associates

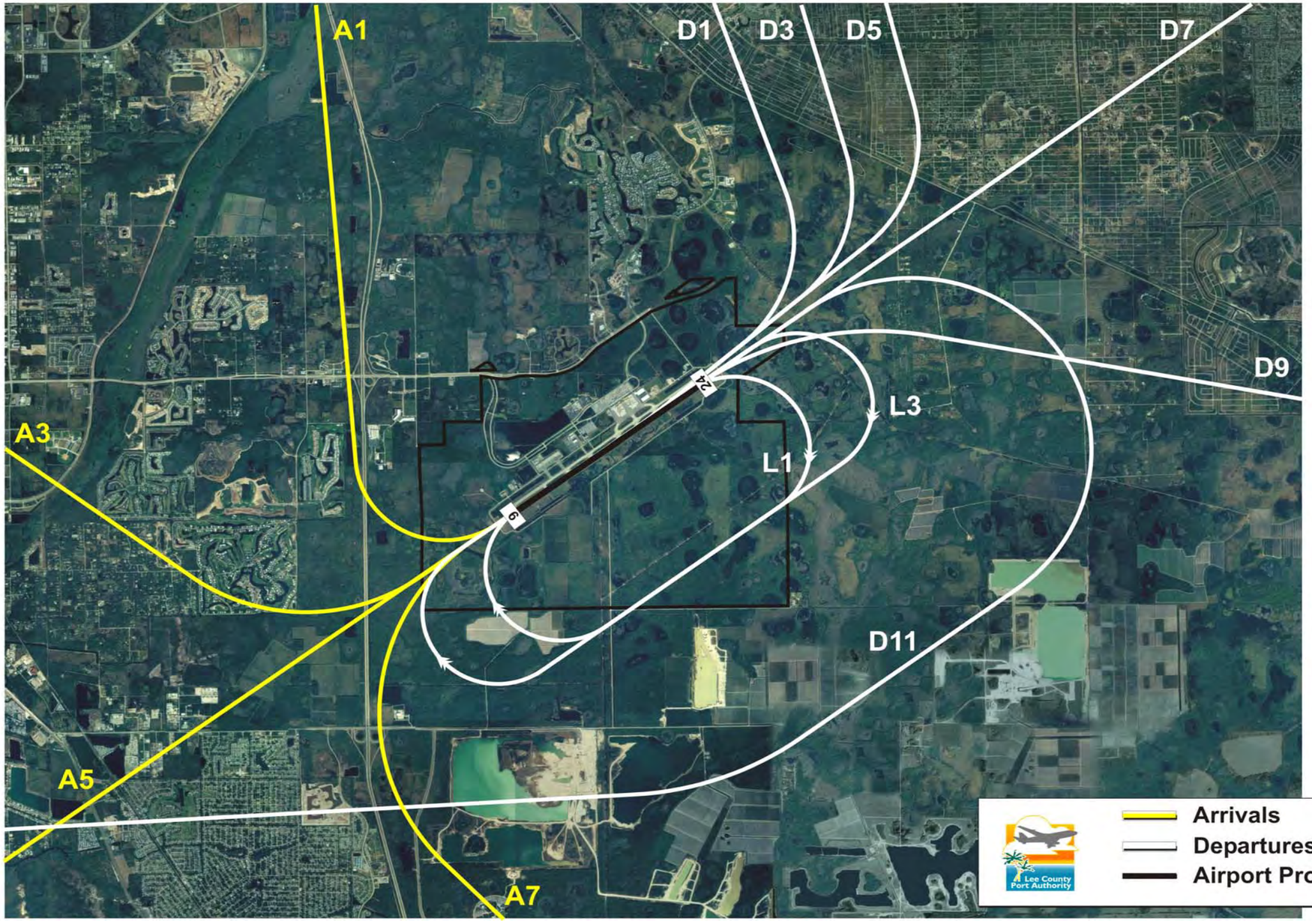
Flight Tracks

The location of flight corridors is an important factor in determining the geographic distribution of noise contours on the ground. The arrival and departure corridors from the FAR Part 150 Study and the 2001 Future Noise Contour Update were reviewed with FAA's Air Traffic Control personnel. Flight corridors utilized by arriving and departing aircraft in all flow conditions were reviewed and a series of centerlines of flight corridors (flight tracks) were established for each condition. The aircraft arrival and departure flight tracks off Runway 6-24 for northeast-flow condition are shown on **Exhibit 7-3** and for southwest-flow on **Exhibit 7-4.**

As noted earlier, the airport operates in a northeast flow approximately 85 percent of the time. Just over 80 percent of all domestic air carrier aircraft operating at RSW depart Runway 6 and turn left heading north (Tracks D1, D3, D5). A very small percentage (less than 1 percent) of the domestic air carrier aircraft depart runway heading or depart and make an immediate right turn (Tracks D7 and D11). This right turn typically includes aircraft departing to Houston or Dallas. During southwest flow, the vast majority of domestic air carrier aircraft departing Runway 24 turn right to northern destinations. Given the different departure performance characteristics of these aircraft, it was determined that these aircraft generally begin their turn between 3.5 NM and 4.5 NM from the beginning of takeoff roll (Tracks D13 and D15) with a small percentage departing straight along Runway heading (Track D17). Domestic air carrier aircraft arriving on Runways 6 and 24 have been identified using a straight in arrival procedure (Tracks A5 and A11).

Exhibit 7-3

Northeast Flow Tracks 85% Single Runway

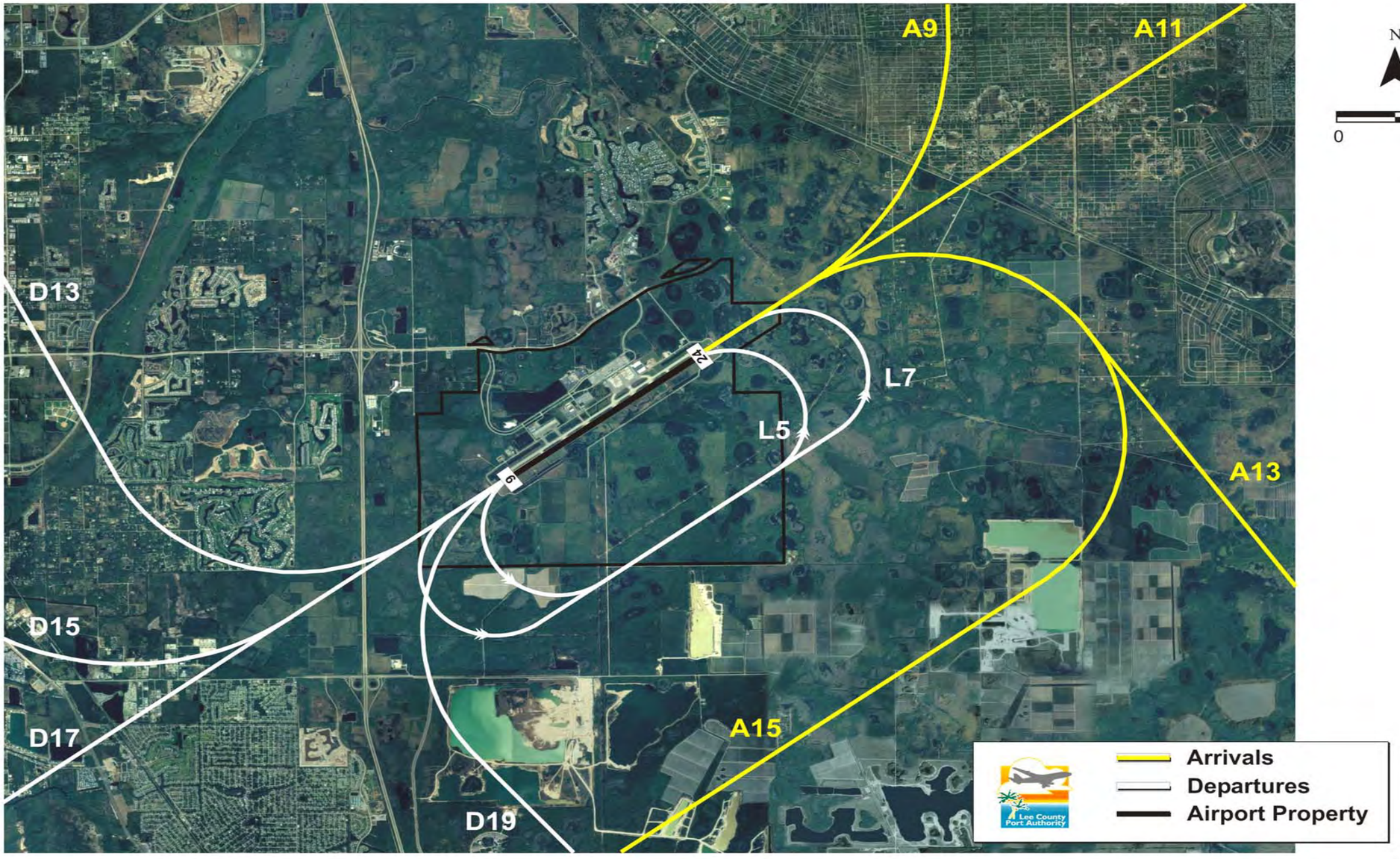


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE NORTHEAST FLOW TRACKS (85%) - SINGLE RUNWAY	**EXHIBIT** 7-3

Exhibit 7-4

Southwest Flow Tracks (15%) Single Runway



Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE SOUTHWEST FLOW TRACKS (15%) - SINGLE RUNWAY	EXHIBIT 7-4

Given the longer stage lengths of the international air carrier aircraft destinations, Canada and Europe, these aircraft were identified departing straight out and arriving straight in (Tracks D7, D17, A5 and A11). Regional/Commuter aircraft departures were split 50-50 between northern and southern destinations. The northern destinations include Tampa and Orlando (Tracks D1, D3, D5 and D13) and the southern destinations include Miami and Key West (Tracks D9 and D19). Arrivals were also split among northern and southern locations (A1, A3, A7, A9, A11 and A13). Itinerant GA aircraft were modeled using the same track percentages as the Regional/Commuter aircraft. Cargo aircraft were identified departing to and arriving from Memphis, St. Pete/Clearwater and West Palm Beach. As such, two-thirds of these aircraft have been modeled to and from northern destinations (Tracks D3, D15, A5 and A11) and one-third to and from southern destinations (Tracks D9, D19, A7 and A11). Itinerant military aircraft have been modeled using straight in and straight out procedures (Tracks D7, D17, A5 and A11). Local single engine piston and turboprop aircraft have been modeled following a close-in pattern off Runway 6-24 (Tracks L1 and L5). Local jet and military aircraft have been modeled following a larger pattern off the runway (Tracks L3 and L7). The flight track use percentages by aircraft group with a single runway configuration are summarized in **Tables 7-12**, **7-13** and **7-14**.

Table 7-12
Departure Corridor Percentages – Single Runway System
Southwest Florida International Airport

Flow	Runway	Track	Domestic Air Carrier	International Air Carrier	Regional/ Commuter	Itinerant GA	Cargo	Itinerant Military
NE	06	D1	38.25		21.25	21.25		
		D3	25.50		12.75	12.75	55.25	
		D5	19.55		8.50	8.50		
		D7	0.85	85.00				85.00
		D9			42.50	42.50	29.75	
		D11	0.85					
SW	24	D13	7.50		7.50	7.50		
		D15	6.00				9.75	
		D17	1.50	15.00				15.00
		D19			7.50	7.50	5.25	
Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: FAA Air Traffic and Environmental Science Associates

Table 7-13
Arrival Corridor Percentages – Single Runway System
Southwest Florida International Airport

Flow	Runway	Track	Domestic Air Carrier	International Air Carrier	Regional / Commuter	Itinerant GA	Cargo	Itinerant Military
NE	06	A1			21.25	21.25		
		A3			21.25	21.25		
		A5	85.00	85.00			55.25	85.00
		A7			42.50	42.50	29.75	
SW	24	A9	2.25		7.50	7.50		
		A11	0.75	15.00	1.50	1.50	9.75	15.00
		A13			6.00	6.00	5.25	
		A15	12.00					
Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: FAA Air Traffic and Environmental Science Associates

Table 7-14
Local Pattern Percentages – Single Runway System
Southwest Florida International Airport

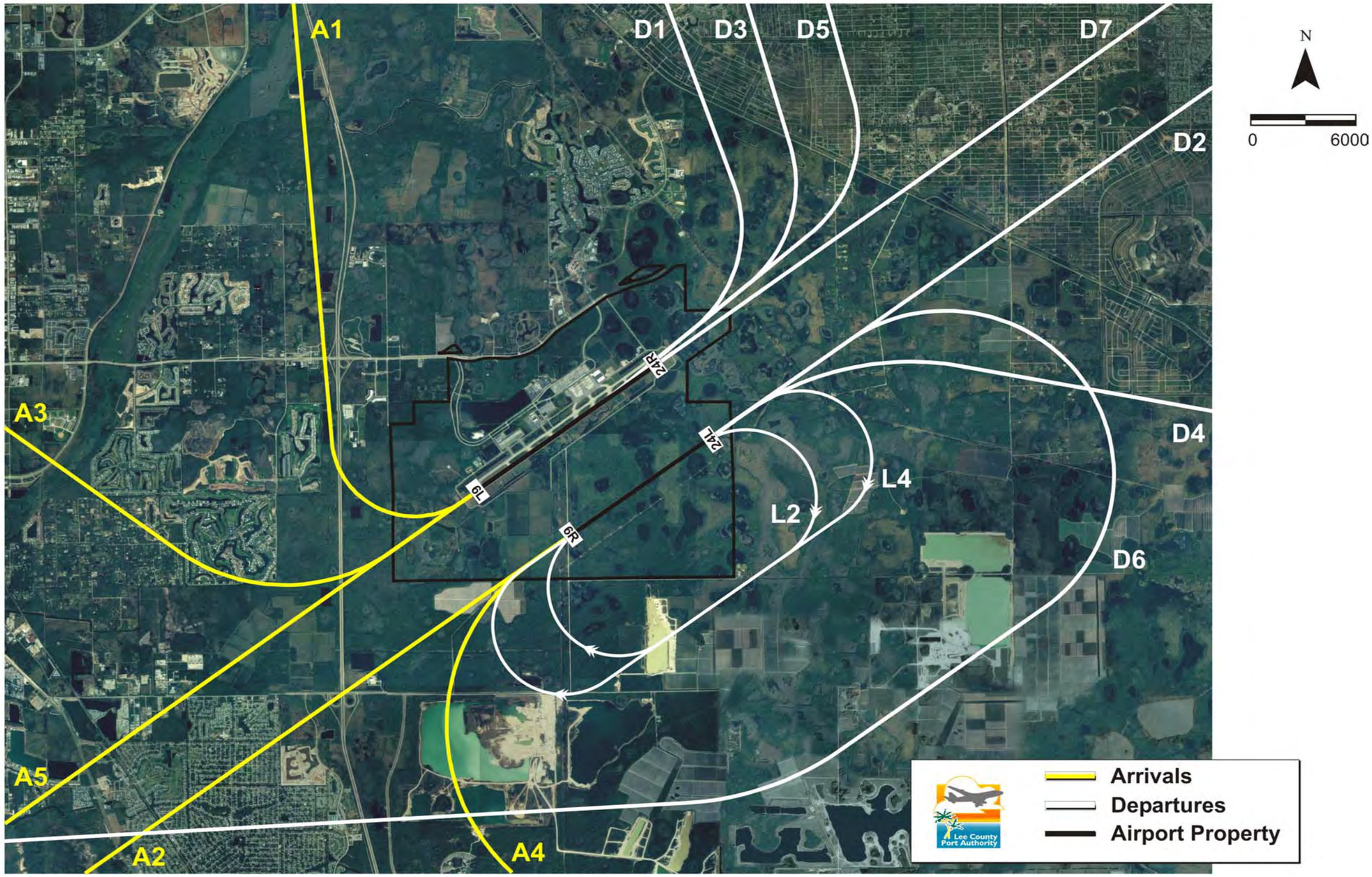
Flow	Runway	Track	Local Prop/Turboprop	Local Jet	Local Military
NE	6	L1	85		
		L3		85	85
SW	24	L5	15		
		L7		15	15
Total			**100.00**	**100.00**	**100.00**

Source: FAA Air Traffic and Environmental Science Associates

A new 9,100-foot parallel runway, located 5,385 feet southeast of the existing Runway 6-24, is projected to be operational in 2010. When the new runway opens, it will be designated 6R-24L, with the current Runway 6-24 being re-designated 6L-24R. FAA Air Traffic personnel indicated with the parallel runway configuration, aircraft departing to and arriving from the north will generally use Runway 6L-24R and aircraft departing to and arriving from the south will generally use Runway 6R-24L. It was also indicated that local traffic would use Runway 6R-24L. Given the longer length of Runway 6L-24R, all international air carrier operations have been modeled on this runway. The aircraft arrival and departure flight tracks with the parallel runway system for northeast-flow condition are shown on **Exhibit 7-5** and for southwest-flow on **Exhibit 7-6**. The flight track percentages with the parallel runway system are shown in **Tables 7-15** through **7-17**.

Exhibit 7-5

Northeast Flow Tracks (85%) Parallel Runways

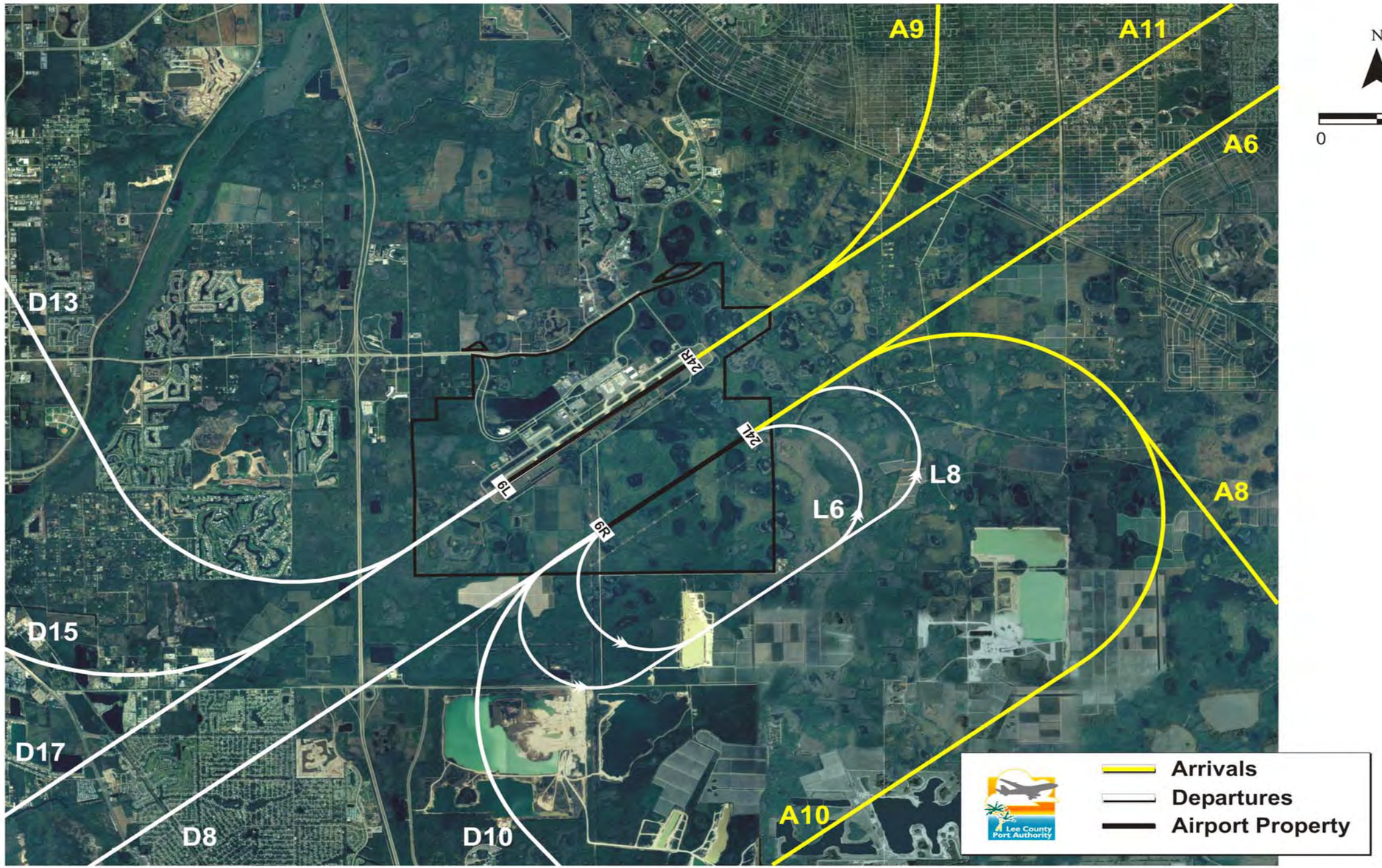


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE NORTHEAST FLOW TRACKS (85%) - PARALLEL RUNWAYS	EXHIBIT 7-5

Exhibit 7-6

Southwest Flow Tracks (15%) Parallel Runways



Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE SOUTHWEST FLOW TRACKS (15%) - PARALLEL RUNWAYS	EXHIBIT 7-6

Table 7-15
Departure Corridor Percentages – Parallel Runway System
Southwest Florida International Airport

Flow	Runway	Track	Domestic Air Carrier	International Air Carrier	Regional / Commuter	Itinerant GA	Cargo	Itinerant Military
NE	06L	D1	38.25		21.25	21.25		
		D3	25.50		12.75	12.75	55.25	
		D5	18.70		8.50	8.50		
		D7	0.85	85.00				51.00
	06R	D2	0.85					34.00
		D4			42.50	42.50	29.75	
		D6	0.85					
SW	24R	D13	7.50		7.50	7.50		
		D15	6.00				9.75	
		D17	0.75	15.00				9.00
	24L	D8	0.75					6.00
		D10			7.50	7.50	5.25	
Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: FAA Air Traffic and Environmental Science Associates

Table 7-16
Arrival Corridor Percentages – Parallel Runway System
Southwest Florida International Airport

Flow	Runway	Track	Domestic Air Carrier	International Air Carrier	Regional / Commuter	Itinerant GA	Cargo	Itinerant Military
NE	06L	A1			21.25	21.25		
		A3			21.25	21.25		
		A5	51.00	85.00			55.25	51.00
	06R	A2	34.00					34.00
		A4			42.50	42.50	29.75	
SW	24R	A9	2.25		7.50	7.50		
		A11	0.38	15.00	1.50	1.50	9.75	9.00
	24L	A6	0.37					6.00
		A8			6.00	6.00	5.25	
		A10	12.00					
Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: FAA Air Traffic and Environmental Science Associates

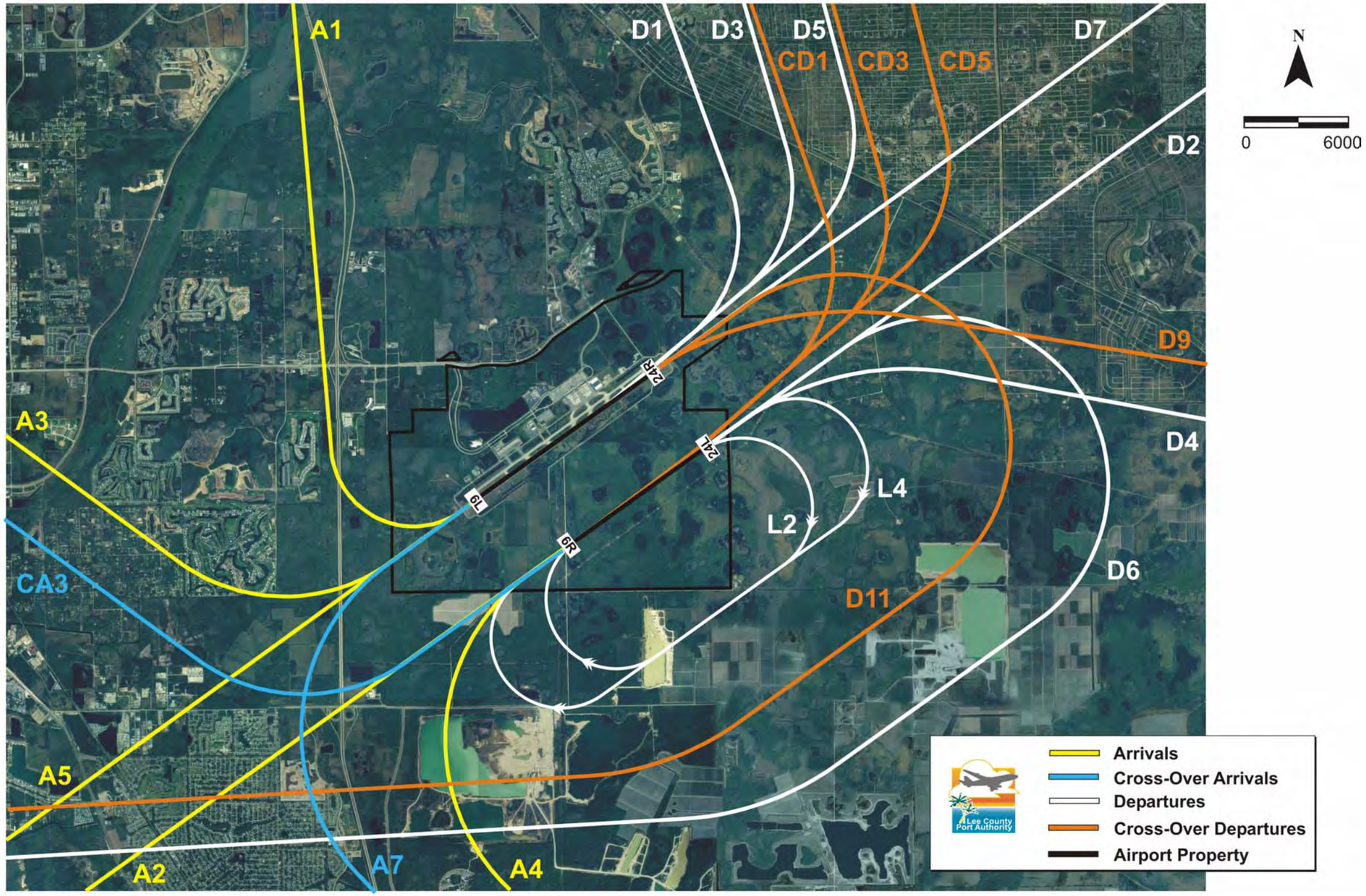
Table 7-17 Local Pattern Percentages – Parallel Runway System Southwest Florida International Airport					
Flow	**Runway**	**Track**	**Local Prop/Turboprop**	**Local Jet**	**Local Military**
NE	6R	L2	85%		
		L4		85%	85%
SW	24L	L6	15%		
		L8		15%	15%
Total			**100.00**	**100.00**	**100.00**

Source: FAA Air Traffic and Environmental Science Associates

One airfield operations alternative that may occur in the future has been identified as the "balanced runway system." This alternative places approximately 50 percent of the itinerant operations on Runway 6L-24R and approximately 50 percent of itinerant operations on Runway 6R-24L. In order to accommodate this, additional flight tracks were identified. These tracks are referred to as cross-over tracks. These cross-over tracks are identified on **Exhibits 7-7** and **7-8**. The Runway 6L-24R cross-over tracks include aircraft arriving from and departing to destinations south of RSW. The Runway 6R-24L cross-over tracks include aircraft arriving from and departing to destinations north of RSW. It should be noted that all international air carrier departures have been assigned to Runway 6L-24R. Also, all local traffic has been assigned to Runway 6R-24L. The flight track percentages associated with the balanced runway system are shown in **Tables 7-18** through **7-20**.

Exhibit 7-7

NE Balanced

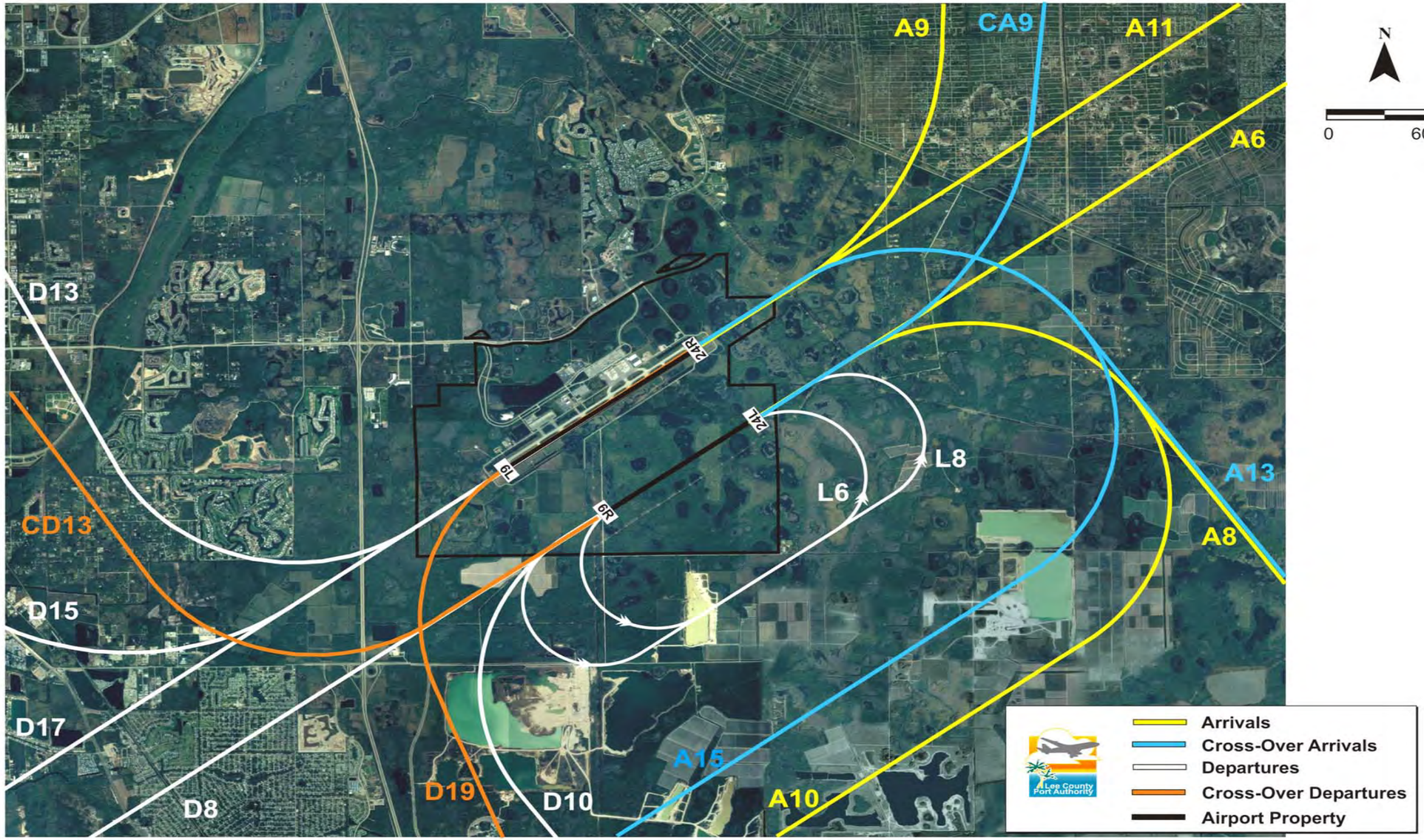


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE NORTHEAST FLOW TRACKS (85%) BALANCED - PARALLEL RUNWAYS	**EXHIBIT** 7-7

Exhibit 7-8

SW Balanced



Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE SOUTHWEST FLOW TRACKS (15%) BALANCED - PARALLEL RUNWAYS	EXHIBIT 7-8

Table 7-18
Departure Corridor Percentages – Balanced Runway System
Southwest Florida International Airport

Flow	Runway	Track	Domestic Air Carrier	International Air Carrier	Regional / Commuter	Itinerant GA	Cargo	Itinerant Military
NE	06L	D1	19.13		10.63	10.63		
		D3	12.75		6.37	6.37	27.63	
		D5	9.35		4.25	4.25		
		D11	0.42					
		D7	0.85	85.00				42.50
		D9			21.25	21.25	14.87	
	06R	CD1	19.12		10.62	10.62		
		CD3	12.75		6.38	6.38	27.62	
		CD5	9.35		4.25	4.25		
		D6	0.43					
		D2	0.85					42.50
		D4			21.25	21.25	14.88	
SW	24R	D13	3.75		3.75	3.75	2.44	
		D15	3.00				2.43	
		D17	0.75	15.00				7.50
		D19			3.75	3.75	2.62	
	24L	CD13	6.75		3.75	3.75	4.88	
		D8	0.75					7.50
		D10			3.75	3.75	2.63	
Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Environmental Science Associates

Table 7-19
Arrival Corridor Percentages – Balanced Runway System
Southwest Florida International Airport

Flow	Runway	Track	Domestic Air Carrier	International Air Carrier	Regional / Commuter	Itinerant GA	Cargo	Itinerant Military
NE	06L	A1			10.63	10.63		
		A3			10.63	10.63		
		A5	42.50	42.50			27.63	42.50
		A7			21.25	21.25	14.87	
	06R	A2	42.50	42.50			27.62	42.50
		A4			21.25	21.25	14.88	
		CA3			21.24	21.24		
SW	24R	A9	1.13		3.75	3.75		
		A11	0.38	7.50	0.75	0.75	4.88	7.50
		A13			3.00	3.00	2.62	
		A15	6.00					
	24L	CA9	1.12		3.75	3.75		
		A6	0.37	7.50	0.75	0.75	4.87	7.50
		A8			3.00	3.00	2.63	
		A10	6.00					
Total			**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Environmental Science Associates

Table 7-20 Local Pattern Percentages – Parallel Runway System Southwest Florida International Airport					
Flow	**Runway**	**Track**	**Local Prop/Turboprop**	**Local Jet**	**Local Military**
NE	6R	L2	85%		
		L4		85%	85%
SW	24L	L6	15%		
		L8		15%	15%
Total			**100.00**	**100.00**	**100.00**

Source: Environmental Science Associates

Noise Contours

Noise contours prepared for the baseline 2000 condition are shown on **Exhibit 7-9** and contours for future conditions with a single runway are presented for the years 2005 and 2010 on **Exhibits 7-10** and **7-11** respectively. Future noise contours with the parallel runway system are presented for the year 2010 on **Exhibit 7-12** and for the years 2015 and 2020 on **Exhibits 7-13** and **7-14** respectively. The 2020 balanced runway alternative noise contours are shown on **Exhibit 7-15**.

A comparison was made of the area within each of the noise contour limits for each condition analyzed. **Tables 7-21** through **7-23** provide the limits for the single runway conditions in 2000, 2005 and 2010 respectively and **Tables 7-24** through **7-27** provide the same information for the years 2010, 2015 and 2020 with the parallel runway system.

In comparing the Tables, there is a gradual increase in contour areas for each year analyzed between 2000 and 2020. In 2010, with the parallel runway in place, there is a more noticeable increase in the overall width of the contours but most of this increase occurs over Airport property.

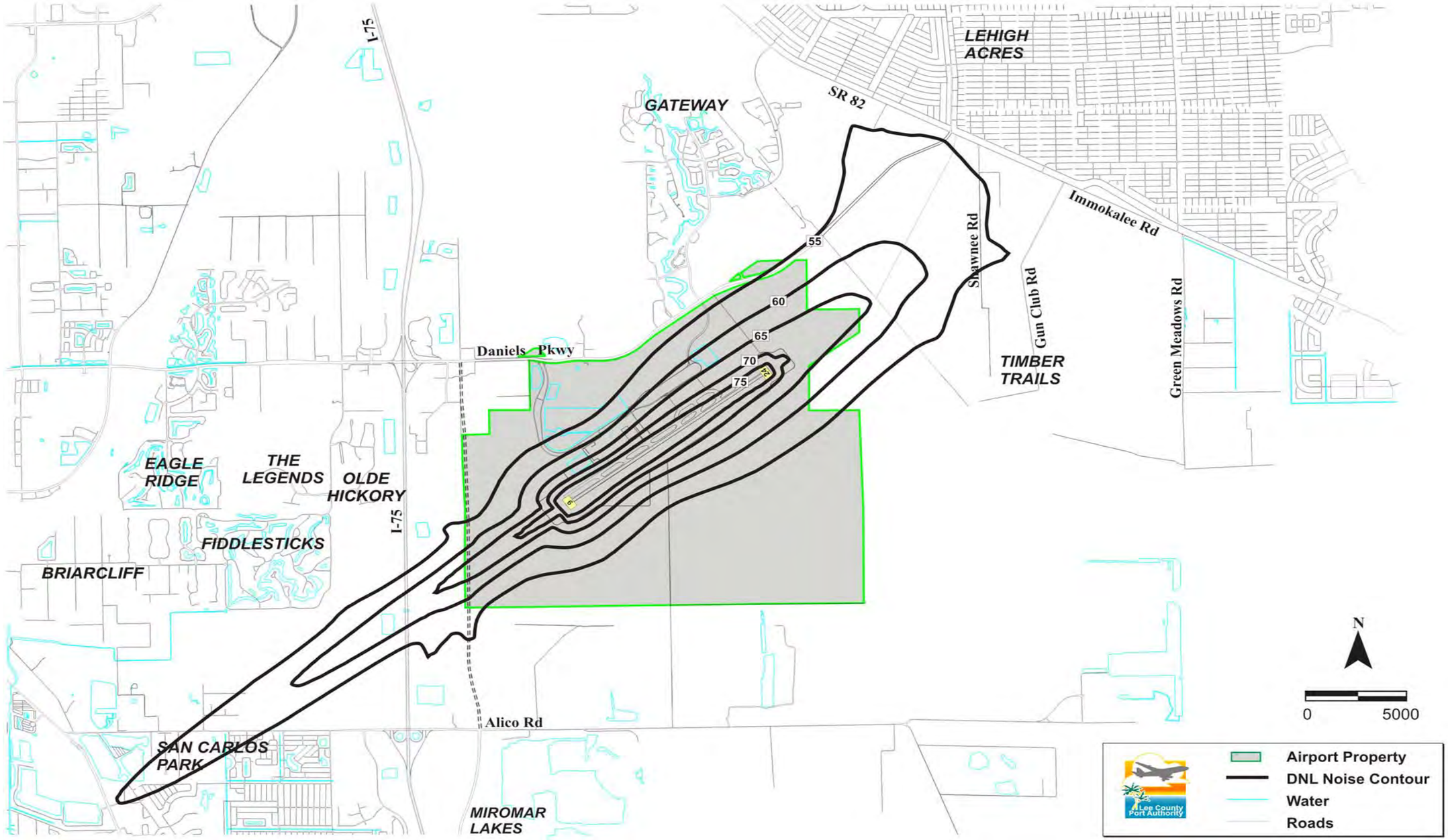
Exhibit 7-9
2000 DNL Noise Contours

Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2000 DNL NOISE CONTOURS	EXHIBIT 7-9

Exhibit 7-10

2005 DNL Noise Contours

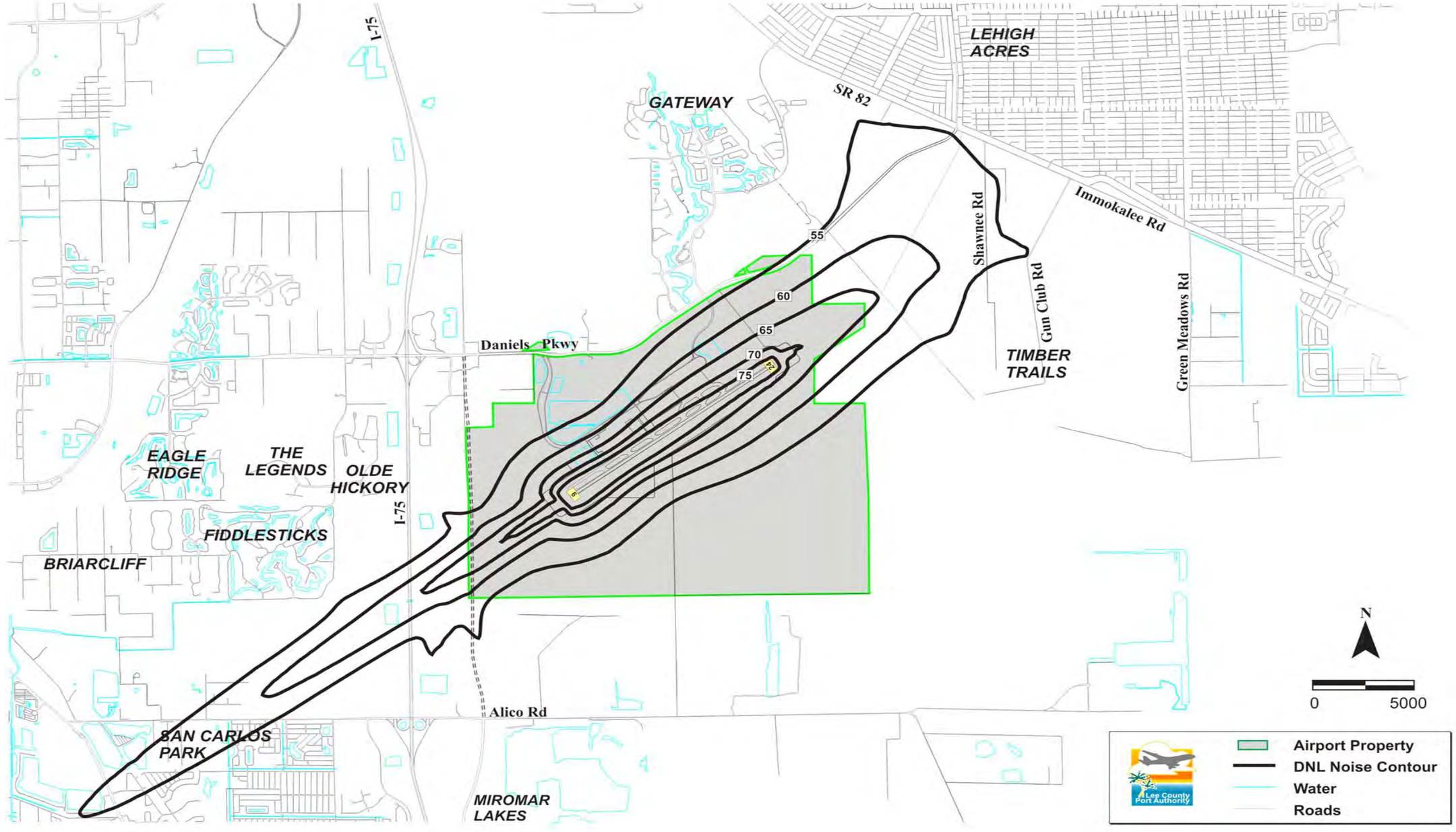


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2005 DNL NOISE CONTOURS	**EXHIBIT** 7-10

Exhibit 7-11

2010 DNL Noise Contour

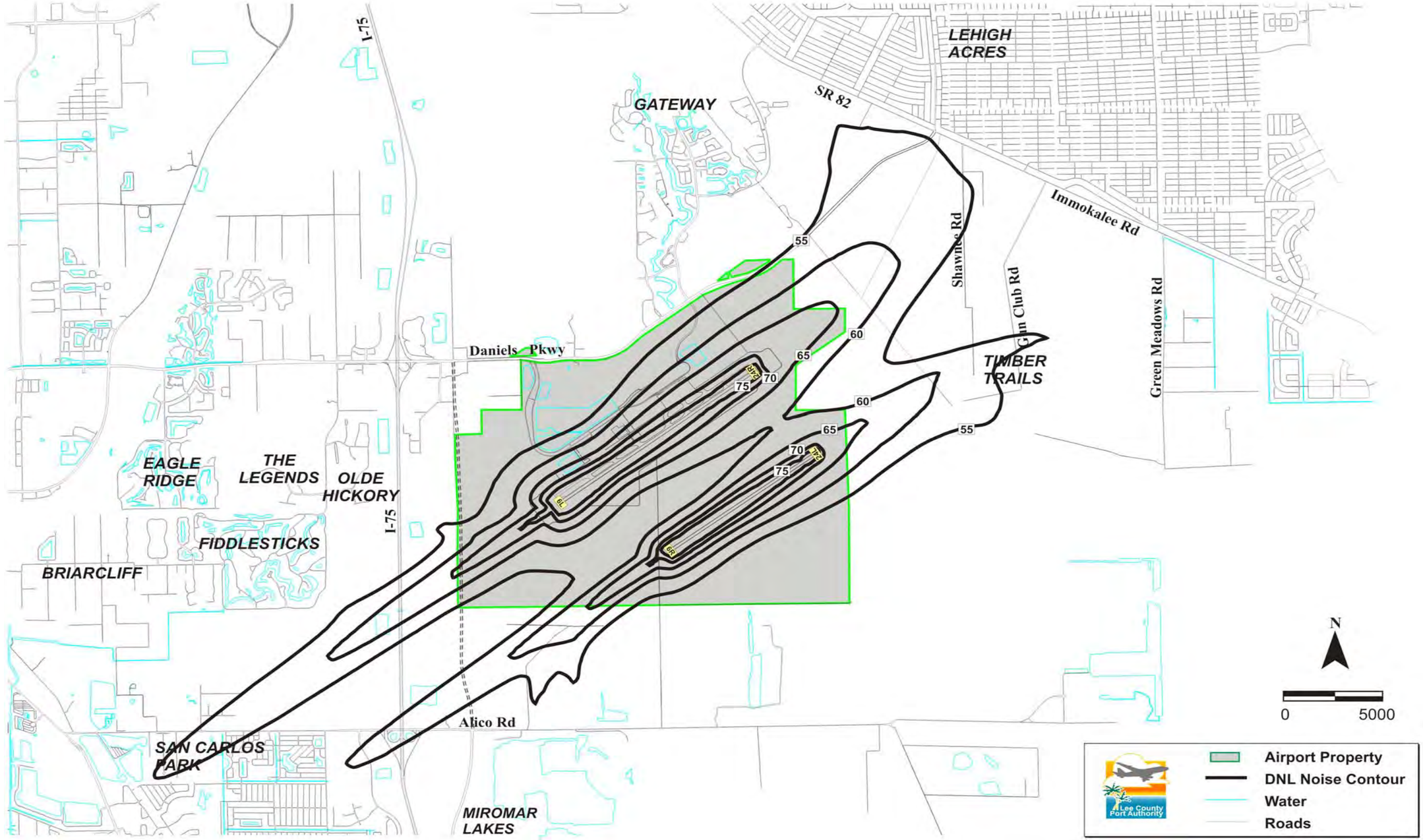


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2010 DNL NOISE CONTOURS	**EXHIBIT** 7-11

Exhibit 7-12

2010 DNL Parallel Runways Noise Contours

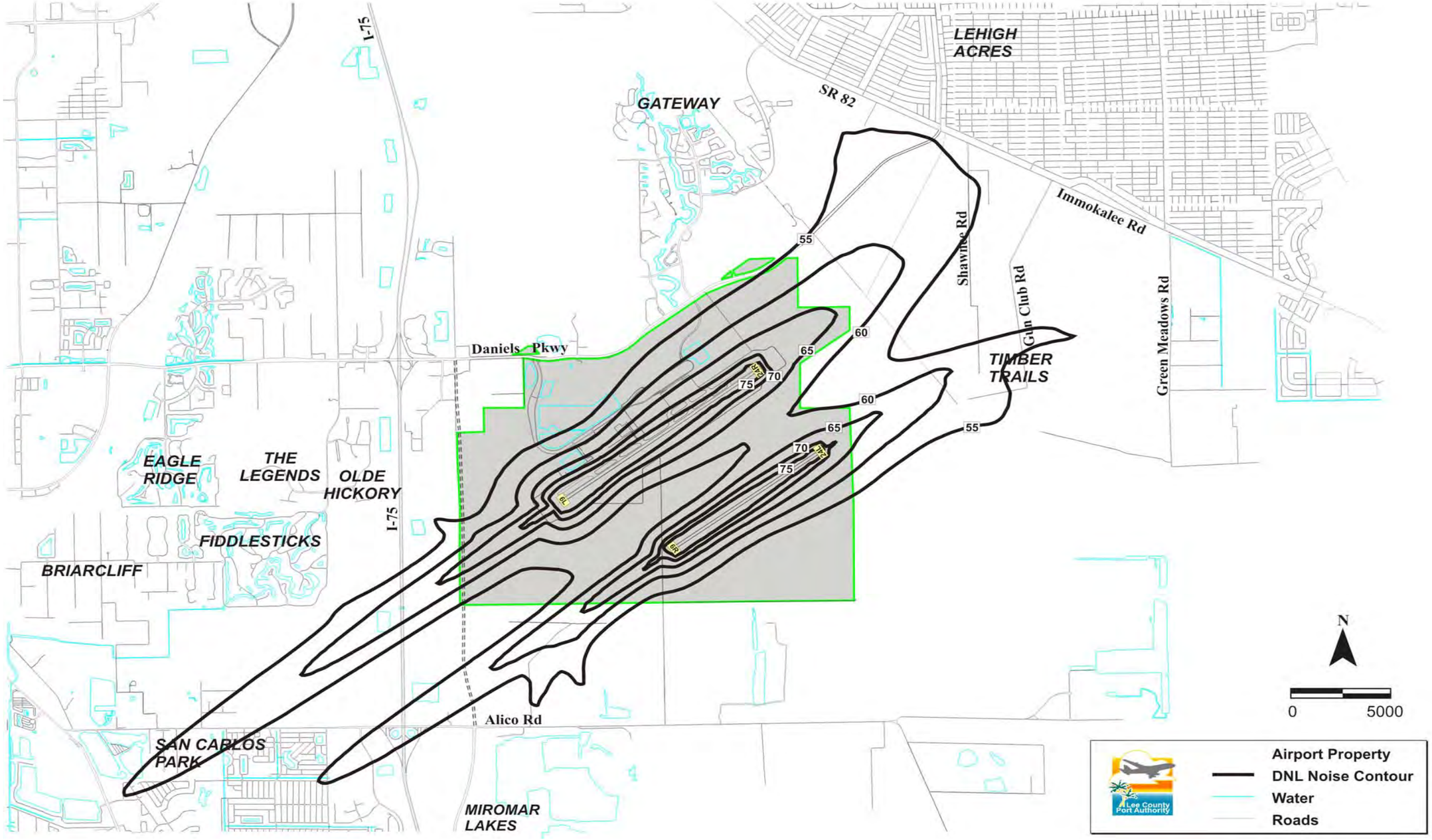


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2010 DNL PARALLEL RUNWAYS NOISE CONTOURS	**EXHIBIT** 7-12

Exhibit 7-13

2015 DNL Parallel Runways Noise Contours

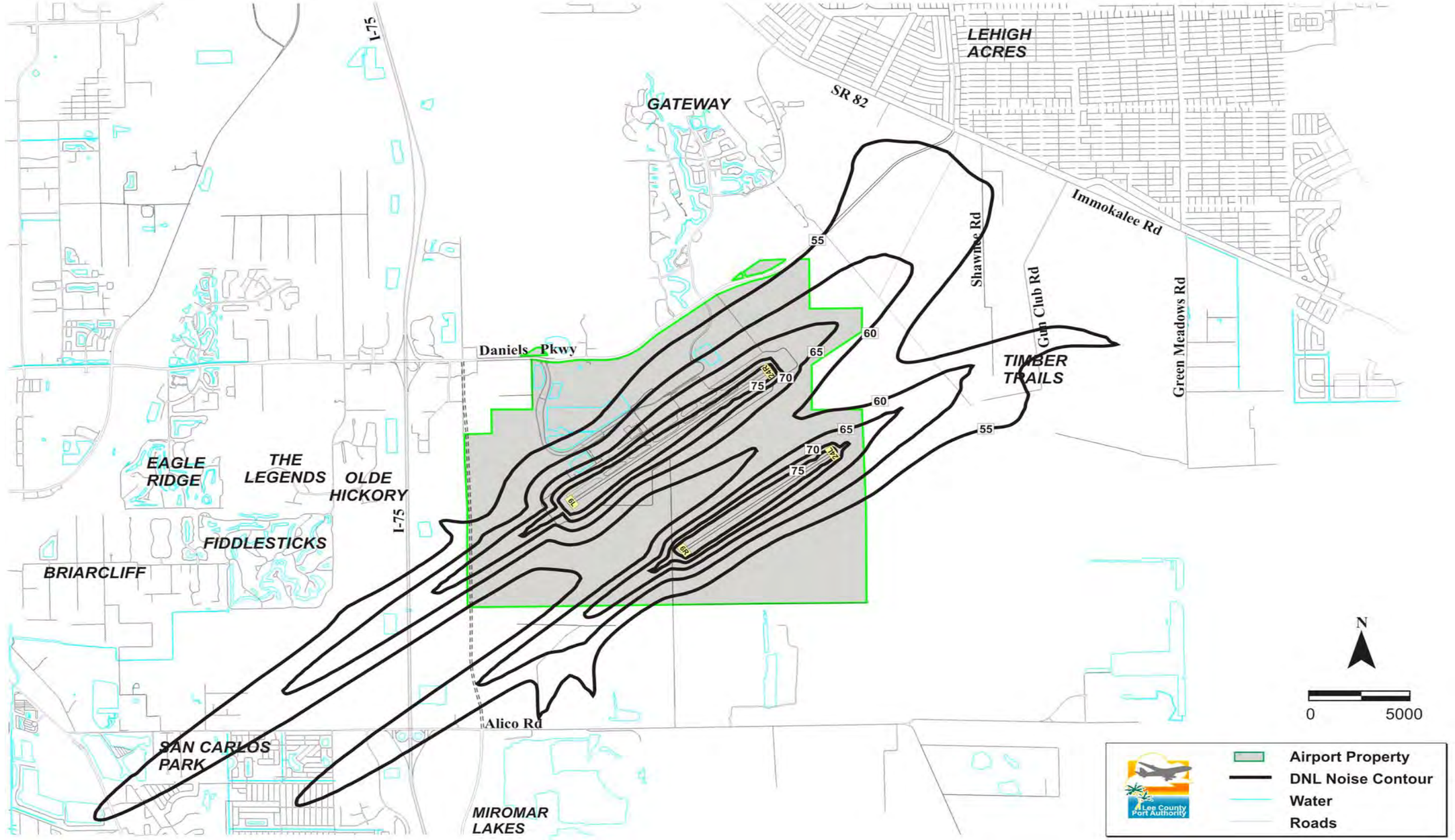


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2015 DNL PARALLEL RUNWAYS NOISE CONTOURS	**EXHIBIT** 7-13

Exhibit 7-14

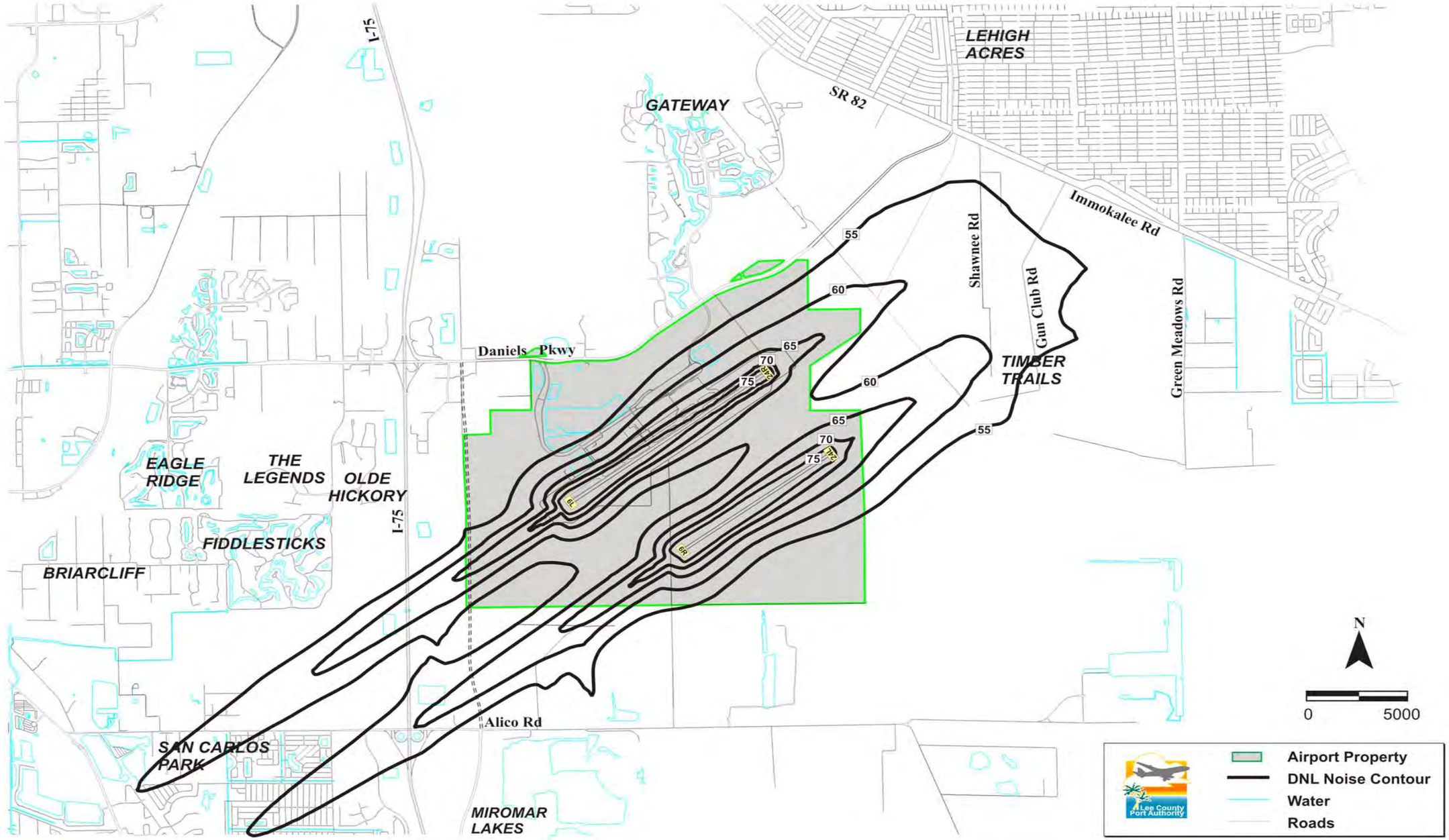
2020 Parallel Runways Noise Contours



Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2020 DNL PARALLEL RUNWAYS NOISE CONTOURS - PREFERRED RUNWAY ANALYSIS	EXHIBIT 7-14

Exhibit 7-15
2020 Balanced



Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE 2020 DNL PARALLEL RUNWAYS NOISE CONTOURS - BALANCED RUNWAY ANALYSIS	EXHIBIT 7-15

Table 7-21 2000 Noise Contour Surface Areas Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	6227	9.73	5.32 (55-60 DNL)
60	2822	4.41	2.31 (60-65 DNL)
65	1345	2.10	1.18 (65-70 DNL)
70	587	0.92	0.45 (70-75 DNL)
75	300	0.47	0.47 (75+ DNL)

Source: Environmental Science Associates

Table 7-22 2005 Noise Contour Surface Areas Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	6777	10.58	5.82 (55-60 DNL)
60	3045	4.76	2.52 (60-65 DNL)
65	1435	2.24	1.27 (65-70 DNL)
70	622	0.97	0.48 (70-75 DNL)
75	315	0.49	0.49 (75+ DNL)

Source: Environmental Science Associates

Table 7-23 2010 Noise Contour Surface Areas Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	7216	11.27	6.24 (55-60 DNL)
60	3219	5.03	2.69 (60-65 DNL)
65	1496	2.34	1.32 (65-70 DNL)
70	652	1.02	0.51 (70-75 DNL)
75	324	0.51	0.51 (75+ DNL)

Source: Environmental Science Associates

Table 7-24 2010 Noise Contour Surface Areas – Parallel Runways Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	9080	14.18	7.76 (55-60 DNL)
60	4112	6.42	3.61 (60-65 DNL)
65	1800	2.81	1.57 (65-70 DNL)
70	792	1.24	0.60 (70-75 DNL)
75	408	0.64	0.64 (75+ DNL)

Source: Environmental Science Associates

Table 7-25 2015 Noise Contour Surface Areas Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	9435	14.74	8.07 (55-60 DNL)
60	4272	6.67	3.82 (60-65 DNL)
65	1829	2.86	1.59 (65-70 DNL)
70	814	1.27	0.63 (70-75 DNL)
75	412	0.64	0.64 (75+ DNL)

Source: Environmental Science Associates

Table 7-26 2020 Noise Contour Surface Areas Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	9676	15.11	8.34 (55-60 DNL)
60	4337	6.77	3.94 (60-65 DNL)
65	1815	2.83	1.57 (65-70 DNL)
70	811	1.27	0.63 (70-75 DNL)
75	405	0.63	0.63 (75+ DNL

Source: Environmental Science Associates

Table 7-27 2020 Noise Contour Surface Areas – Balanced Runway System Southwest Florida International Airport			
Contour	**Acres**	**Square**	**Square Miles Within**
		Miles	5 DNL Range
55	10156	15.86	8.84 (55-60 DNL)
60	4495	7.02	4.21 (60-65 DNL)
65	1797	2.81	1.55 (65-70 DNL)
70	805	1.26	0.64 (70-75 DNL)
75	397	0.62	0.62 (75+ DNL

Source: Environmental Science Associates

The property located within the 65 DNL contours is either Airport property or off-Airport undeveloped property under all years of evaluation and all runway configurations. Table 7-28 identifies the acres within the 65 DNL contour that are on and off Airport property.

Table 7-28 65 DNL On/Off Airport Property Southwest Florida International Airport		
Year	**Acres On Airport**	**Acres Off Airport**
2000	1309	36
2005	1374	61
2010 (single runway)	1416	80
2010 (parallel runways)	1772	28
2015	1789	40
2020	1751	64
2020 (balanced runways)	1670	127

Source: Environmental Science Associates

Single Runway Noise Contours (2000, 2005 and 2010)
The baseline 2000 contours, presented on **Exhibit 7-9**, show the characteristic pattern that will be seen on all noise contour exhibits. That is, the contours are relatively long and narrow southwest of the Runway and wider northeast of the Runway. This is a result of the aircraft flow operating in a southwest to northeast direction 85 percent of the time. When compared to departures, noise exposure associated with arrivals generates less sideline noise due to their lower power settings but increases the extent of the noise exposure along the centerline of the approach due to their lower altitudes. Departures, on the other hand, generate greater sideline noise due to higher thrust settings but the extent of the contour is reduced due to the higher altitudes attained.

The differences in the size and extent of the noise contours in future years (2005 and 2010) when compared with the baseline 2000, are caused by the differences in the number of aircraft operations and the fleet mix. The noise contours for the year 2005, shown on **Exhibit 7-10** increase slightly in size in all directions due to an approximate 20 percent increase in domestic air carrier activity and a 40 percent increase in international air carrier activity. The increase in noise contour size in 2005 is relatively minor due to the fact the some of the noisiest aircraft in the fleet (B-727s and B737-200s) are reduced in numbers compared with the 2000 condition. The B727s and 737-200 aircraft are older aircraft in the fleet and are typically being retired by the airlines.

As shown in **Exhibit 7-11**, in 2010 with the single runway, the noise contours slightly increase again compared to the 2005 condition. The increase however, is again tempered by additional reduction in the numbers of B-727 and B-737 type aircraft.

Parallel Runway Noise Contours (2010, 2015 and 2020)
Since it is projected that the parallel runway will be in operation around the year 2010, this study has analyzed the noise exposure in 2010 under both a single runway and parallel runway condition. In 2010 with a new parallel runway in operation, the noise exposure off the existing Runway 6L-24R reduces in size compared with the 2010 single runway condition. See **Exhibit 7-12** compared to **Exhibit 7-11**. This reduction in noise exposure is a result of some aircraft using the new parallel Runway 6R-24L. The extent

of noise exposure widens around the Airport due to the two-runway system but also reduces in the extent of the length of the noise contours to the northeast and southwest. It should be noted that the noise contours off the new Runway 6R-24L are smaller than those on the existing Runway 6L-25R. This is caused by larger number of aircraft being assigned to the existing Runway due to the existing runway being longer (and thus, in some cases preferred by airlines for use in departure) and due to the existing runway being closer to adjacent air cargo and other facilities.

By the years 2015 and 2020, the extent and width of the noise contours remains generally the same as the 2010 parallel runway condition. See Exhibits 7-13 and 7-14. Although the total number of operations increases throughout this timeframe, the noisier B-727s and B-737-200s are completely phased out by 2020. Thus, the operational increases are off-set by the reduction in the noisiest aircraft resulting in noise contours remaining almost constant between the years 2010 and 2020.

Although the 2020 balanced runway alternative 65 DNL area decreases when compared to the 2020 65 DNL area (1797 acres for the 2020 balanced alternative and 1814 acres for 2020) the 65 DNL off-airport noise exposure increases (64 acres off-airport in 2020 and 127 acres off-airport with the balanced runway system). See Exhibits 7-14 and 7-15.

Land Use Considerations

The FAA and the Florida Department of Transportation (FDOT) have developed land use guidelines that relate the compatibility of aircraft activity to areas surrounding airports. These guidelines, provided in **Tables 7-29** and **7-30** identify land use activities that are acceptable within the 65, 70 and 75 DNL contours.

Table 7-29
FAA - Land Use Compatibility Guidelines
Southwest Florida International Airport

Land Use	Yearly Day-Night Average in Decibels: Below 65	65-70	70-75	75-80	80-85	Over 85
RESIDENTIAL	Y	N_1	N_1	N	N	N
Residential, other than mobile homes and transient lodgings						
Household units. (11)						
Single units - detached (11.11)						
Single units - semidetached (11.12)						
Single units - attached row (11.13)						
Two units - side-by-side (11.21)						
Two units - one above the other (11.22)						
Apartments - walk up (11.31)						
Apartments - elevator (11.32)						
Group quarters (12)						
Residential hotels (13)						
Other residential (19)						
Mobile home parks (14)	Y	N	N	N	N	N
Transient lodgings (15)	Y	N_1	N_1	N_1	N	N
PUBLIC USE:						
Schools	Y	N_1	N_1	N	N	N
Educational services (68)						
Hospitals and nursing homes	Y	25	30	N	N	N
Hospitals, nursing homes (65.13, 65.16)						
Churches, auditoriums and concert halls	Y	25	30	N	N	N
Cultural activities (including churches) (71)						
Auditoriums, concert halls (72.1)						
Government services (67)	Y	Y	25	30	N	N
Transportation	Y	Y	Y_2	Y_3	Y_4	Y_4
Railroad, rapid rail transit/street railway (41)						
Motor vehicle (42)						
Aircraft (43)						
Marine craft (44)						
Highway and street right-of-way (45)						
Parking (46)	Y	Y	Y_2	Y_3	Y_4	N
COMMERCIAL USE						
Offices, business, and professional	Y	Y	25	30	N	N
Finance, insurance and real estate services (61)						
Personal services (62)						
Business services (63)						
Professional services (65)						
Other medical facilities (65.1)						
Miscellaneous services (69)						
Wholesale and retail - building materials, hardware and farm equipment	Y	Y	Y_2	Y_3	Y_4	N
Wholesale trade (51)						
Retail trade - building materials, hardware and farm equipment (52)						
Repair services (64)						
Contract construction services (66)						
Retail trade - general	Y	Y	25	30	N	N
General merchandise (55)						
Food (54)						
Automotive, marine craft, aircraft and accessories (55)						
Apparel and accessories (56)						
Furniture, home furnishings and equipment (57)						
Eating and drinking establishments (58)						
Other retail trade (59)						
Utilities (48)	Y	Y	Y_2	Y_3	Y_4	N
Communication (47)	Y	Y	25	30	N[4]	N

Land Use	Yearly Day-Night Average in Decibels: Below 65	65-70	70-75	75-80	80-85	Over 85
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y_2	Y_3	Y_4	N
Food and kindred products (21)						
Textile mill products (22)						
Apparel and other finished products - fabric leather and similar materials (23)						
Lumber and wood (except furniture) (24)						
Furniture and fixtures (25)						
Paper and allied products (26)						
Printing/publishing/allied industries (27)						
Chemicals and allied products (28)						
Petroleum refining/related industries (29)						
Rubber and misc. plastic products (31)						
Stone, clay and glass products (32)						
Primary metal industries (33)						
Fabricated metal products (34)						
Miscellaneous (39)						
Photographic and optical	Y	Y	25	30	N	N
Professional/scientific/controlling instruments photographic/optical goods; watches, clocks (35)						
Agriculture (except livestock) and forestry	Y	Y_6	Y_7	Y_8	Y_8	Y_8
Agriculture (except livestock) (81)						
Agricultural related activities (82)						
Forestry activities and related services (83)						
Livestock farming and breeding (81.5 to 81.7)	Y	Y_6	Y_7	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Fishing activities and related services (84)						
Mining activities and related services (85)						
Other resource production and extraction (89)						
RECREATIONAL						
Outdoor sports arenas and spectator sports (72.2)	Y	Y_5	Y_5	N	N	N
Outdoor music shells, amphitheaters (72.11)	Y	N	N	N	N	N
Nature exhibits and zoos (71.2)	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Amusements (73)						
Parks (76)						
Public assembly (72)						
Resorts and group camps (75)						
Other cultural, entertainment and recreation (79)						
Golf courses, riding stables and water recreation (74)	Y	Y	25	30	N	N

Source: FAA Advisory Circular 150/5020-12
Y (Yes) = Land use and related structures compatible without restrictions.
N (No) = Land use and related structures are not compatible and should be prohibited.
25, 30 or 35 = Land use and related structures generally compatible; measures to achieve Noise Level Reduction (NLR), outdoor to indoor, of 25, 30 or 35 must be incorporated into design and construction of structure.
Number in ( ) = Standard Land Use Coding Manual (SLUCM).

1 Where the community determines that residential uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 and 30 dB should be incorporated into building codes and be considered in individual approvals.
2 Compatible where measures to achieve NLR of 25 are incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.
3 Compatible where measures to achieve NLR of 30 are incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.
4 Compatible where measures to achieve NLR of 35 are incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.
5 Land use compatible provided special sound reinforcement systems are installed.
6 Prime use only, any residential buildings require a NLR of 25 to be compatible.
7 Prime use only, any residential buildings require a NLR of 30 to be compatible.
8 Prime use only, NLR for residential buildings not normally feasible, and such uses should be prohibited.

Table 7-30
FDOT - Airport Compatible Land Use Guidelines
Southwest Florida International Airport

Impacted Zones(DNL) / Land Uses and Activities	Overflight 55-65	65-70	70-75	75-80	80-Up	Zones Inner	Zones Outer***
RESIDENTIAL DEVELOPMENT							
Single Units; row, semi- & detached	Y	I_1	I_2	N	N	N	I_{11}
Duplexes	Y	I_1	I_2	N	N	N	I_{11}
Multi-family units	Y	I_1	I_2	N	N	N	I_{11}
Residential hotels & motels	Y	I_1	I_2	N	N	N	I_{12}
Transient lodgings	Y	I_1	I_2	I_3	N	N	I_{12}
Mobile home parks & courts	Y	N	N	N	N	N	N
Recreational vehicle (RV) parks	Y	N	N	N	N	N	N
Other residential	Y	I_1	I_2	N	N	N	N
RELIGIOUS; CULTURAL; RECREATIONAL							
Outdoor Activities							
Religious services & assemblies	Y	N	N	N	N	N	I_{13}
Entertainment assemblies	Y	N	N	N	N	N	I_{13}
Sports event assemblies	Y	C_4	I_4	N	N	N	I_{13}
Sports arenas, courts, fields & tracks	Y	C_4	C_4	I_4	N	N	I_{16}
Circuses & carnivals	Y	C_4	I_4	N	N	N	$I_{12,13}$
Amusement & theme parks	Y	C_4	I_4	N	N	N	$I_{12,13}$
$C_{12,18}$ Playgrounds & neighborhood parks	Y	C_6	C_6	I_6	N	N	$I_{12,13}$
Community & regional parks	Y	I_6	I_6	N	N	N	$I_{12,13}$
Indoor Activities							
Churches, mosques, synagogues & temples	Y	I_2	I_3	N	N	N	I_{12}
Theaters & auditoriums	Y	$I_{2,4}$	$I_{3,4}$	N	N	N	I_{12}
Stadiums & arenas	Y	$C_{1,4}$	$I_{2,4}$	$I_{3,4}$	N	N	I_{12}
$C_{18,19}$ Gymnasiums & natatoriums	Y	C_1	I_2	$I_{3,4}$	N	N	I_{12}
SERVICES							
Hospitals & nursing homes	Y	I_2	N	N	N	N	I_{12}
Other medical facilities	Y	I_2	N	N	N	N	I_{12}
Day care facilities	Y	I_2	N	N	N	N	I_{12}
Educational facilities	Y	I_2	N	N	N	N	I_{17}
Government services	Y	C_1	C_2	I_3	N	N	I_{17}
Correctional institutions	Y	C_1	I_2	N	N	N	I_{12}
Cemeteries	Y	C_1	C_2	C_3	$C_{6,7}$	C_{15}	C_{15}
Professional, financial & insurance	Y	C_1	C_2	I_3	N	N	I_{12}
Business & real estate	Y	C_1	C_2	I_3	N	N	I_{12}
Repairs and contract construction	Y	C_1	C_2	I_3	N	N	I_{12}
Personal & miscellaneous	Y	C_1	C_2	I_3	N	N	I_{12}
TRANSPORTATION; COMMUNICATIONS; UTILITIES							
$C_{18,19}$ Passenger facilities	Y	C_1	C_2	C_3	N	N	I_{12}
Cargo-freight facilities	Y	Y	C_2	C_3	$C_{6,7}$	N	C_{12}
Road, rail and water transit ways	Y	Y	C_2	C_3	$C_{6,7}$	$C_{15,18}$	C_{12}
Vehicle parking	Y	Y	C_2	C_3	$C_{6,7}$	$C_{15,18}$	C_{12}
$C_{18,19}$ Vehicle storage	Y	Y	C_2	C_3	$C_{6,7}$	$C_{15,18}$	C_{12}
Telecommunications	Y	C_1	C_2	I_3	$C_{6,7}$	N	I_{12}
Broadcast communications	Y	C_1	C_2	I_3	N	N	I_{12}
Electric generating plants	Y	Y	C_1	C_2	$C_{6,7}$	I_{19}	C_{18}
Sewer-waste water treatment	Y	Y	C_1	C_2	$C_{6,7}$	I_{19}	C_{18}
Gas utility facilities	Y	Y	C_1	C_2	$C_{6,7}$	N	C_{18}
Electric utility facilities	Y	Y	C_1	C_2	$C_{6,7}$	I_{19}	C_{18}

Impacted Zones (DNL) / Land Uses and Activities	Overflight 55-65	65-70	70-75	75-80	80-Up	Zones Inner	Zones Outer***
RETAIL TRADE							
Building materials & hardware	Y	Y	C_1	C_2	$I_{3,7}$	N	C_{12}
Automotive, farm & marine craft	Y	C_1	C_2	C_3	N	N	C_{12}
Apparel and general merchandise	Y	C_1	C_2	C_3	N	N	I_{12}
Groceries & food stuff	Y	C_1	C_2	C_3	N	N	I_{12}
Eating & drinking establishments	Y	C_1	C_2	C_3	N	N	I_{12}
Shopping malls & centers	Y	C_1	C_2	C_3	N	N	N
Gasoline, diesel & heating oil	Y	Y	C_1	C_2	$I_{3,7}$	N	I_{12}
Liquified & bottled gas	Y	Y	C_1	C_2	$I_{3,7}$	N	I_{12}
WHOLESALE TRADE							
Home furnishings & building materials	Y	Y	C_1	C_2	$C_{3,7}$	N	C_{12}
Food products & general merchandise	Y	Y	C_1	C_2	$C_{3,7}$	N	C_{12}
Liquified gasses	Y	Y	C_1	C_2	$C_{3,7}$	N	$I_{18,19}$
Petroleum & distillate products	Y	Y	C_1	C_2	$C_{3,7}$	N	$I_{18,19}$
Industrial chemicals	Y	Y	C_1	C_2	$C_{3,7}$	N	$I_{18,19}$
Explosive & pyrotechnic products	Y	Y	C_1	C_2	$C_{3,7}$	N	$I_{18,19}$
Other wholesale trade	Y	Y	C_1	C_2	$C_{3,7}$	N	
MANUFACTURING							
Food products & processing	Y	Y	C_1	C_2	$I_{3,7}$	N	C_{12}
Textiles & apparel	Y	Y	C_1	C_2	$I_{3,7}$	N	C_{12}
Lumber & wood products	Y	Y	C_1	C_2	$I_{3,7}$	N	C_{18}
Paper & allied products	Y	Y	C_1	C_2	$I_{3,7}$	N	
Chemical & allied products	Y	Y	C_1	C_2	$I_{3,7}$	N	$I_{18,19}$
Petroleum refining & related products	Y	Y	C_1	C_2	$I_{3,7}$	N	N
Explosive & pyrotechnic products	Y	Y	C_1	C_2	$I_{3,7}$	N	N
Rubber & plastic products	Y	Y	C_1	C_2	$I_{3,7}$	N	I_{18}
Clay & glass products	Y	Y	C_1	C_2	$I_{3,7}$	N	I_{19}
Primary & fabricated metal products	Y	Y	C_1	C_2	$I_{3,7}$	N	I_{18}
Electronic & optic products	Y	C_1	C_2	I_3	N	N	I_{18}
Professional & scientific products	Y	C_1	C_2	I_3	N	N	I_{18}
Other manufacturing	Y	C_1	C_2	C_3	N	N	C_{18}
RESOURCE PRODUCTION & RECOVERY							
Livestock & poultry farming	Y	$C_{2,5}$	$I_{3,5}$	I_5	N	N	C_{20}
Animal & poultry breeding	Y	$I_{2,5}$	$I_{3,5}$	N	N	N	N
Crop & related agricultural production	Y	$C_{1,5}$	$C_{2,5}$	$C_{3,5}$	$I_{6,7}$	N	C_{20}
Fishing & aquaculture activities	Y	$C_{1,5}$	$C_{2,5}$	$C_{3,5}$	$C_{6,7}$	N	C_{19}
Forestry & timber production	Y	$C_{1,5}$	$C_{2,5}$	$C_{3,5}$	$C_{6,7}$	$I_{18,20}$	
Oil & natural gas wells	Y	Y	C_2	C_3	$C_{6,7}$	N	N
Strip & open pit mining	Y	Y	C_2	C_3	$C_{6,7}$	N	N
Stone & mineral quarries	Y	Y	C_2	C_3	$C_{6,7}$	N	N
Other mining & resource recovery	Y	Y	C_2	C_3	$C_{6,7}$	$I_{18,19,20}$	

Y (Yes) = Land use is normally compatible without restriction and should be allowed.

$C_{(1..20)}$ = Land use is generally compatible with some limitations or restrictions. The use should be allowed only if Condition Note $_{(1..20)}$ is met.

$I_{(1..20)}$ = Land is basically incompatible and should be discouraged. Where there is a demonstrated community need for the use and viable alternative options are not possible, the use may be allowed if Condition Note $_{(1..20)}$ is met. Condition Note $_{(1..20)}$ will not eliminate or alter the basis of the incompatibility but is intended to lessen or mitigate the potential for impact on the land use function, activity or occupants.

N (No) = Use is not compatible and should not be permitted.

NLR = Noise Level Reduction (outdoor to indoor) achieved through incorporation of sound attenuation into the design and construction of structures to lessen or mitigate a potential interior noise impact on occupants or activities. Achievement of 25, 30 or 35 decibel (dB) reductions, exterior to interior sound level, are the standard acceptable minima for mitigation of airport generated noise impact.

Noise Impacted Zones

1. Measures to achieve NLR of 25 dB must be included in the design and construction of the structures where occupants reside; the public is received; office areas are located; or noise sensitive activities or functions occur.
2. Measures to achieve NLR of 30 dB must be included in the design and construction of the structures where occupants reside; the public is received; office areas are located; or noise sensitive activities or functions. occur.
3. Measures to achieve NLR of 35 dB must be included in the design and construction of the structure where occupants reside; the public is received; office areas are located, or noise sensitive activities or functions occur.
4. Sound reinforcement or amplification systems must be installed.
5. Residential structures are not permitted.
6. Occupied structures are not permitted.
7. Individual hearing protection devises must be worn where structural or other forms of physical noise attenuation is not available.

Aircraft Overflight Zones

11. Density limited, 1-2 dwelling units per acre or 20% or less lot coverage for PUDs.
12. Density limited, 1-2 occupied structures per acre; occupancy 10 or less per structure.
13. Population density limited, 40 persons per acre or less.
14. Passenger terminals or facilities for staging, transfer or loading of passengers are not permitted. ....

Although the FAA has indicated that all lands outside the 65 DNL are compatible with aircraft noise, it encourages local planning agencies to promote compatible development beyond the 65 DNL. Studies have shown that a significant number of people are annoyed with aircraft noise beyond the 65 DNL. **Exhibit 7-16** shows generalized community reactions to noise in terms of DNL. Lee County has developed an overlay zone that it uses to ensure development in areas surrounding the Airport are compatible with aircraft noise (see **Exhibit 7-17**). These limits extend beyond the 65 DNL to include areas that are subject to frequent aircraft overflights. **Exhibit 7-18** shows the existing overlay zones with the generalized flight corridors in the immediate vicinity of RSW.

Overlay Zoning

Over the past 15 years, a series of noise studies and off-Airport land use compatibility studies have been completed for RSW. These have led to the implementation of operational procedures and land use measures aimed at maintaining long-term land use compatibility between the Airport and future land development.

In 1990, a FAR Part 150 study was approved by the Federal Aviation Administration (FAA) for RSW. The study identified preferred noise abatement flight corridors for aircraft approaches and departures and established an off-airport Noise Overlay Zone for the purpose of providing long-term land use compatibility between aircraft activity and future land use in the airport environs. The operational procedures were implemented by the FAA's air traffic control and the Overlay Zone was established in the Lee County Land Development Code by the Lee County Commission.

In 1995, a FAR Part 150 Update was approved by the FAA that identified flight corridors from a proposed (environmentally approved) parallel runway and expanded the Noise Overlay Zone to reflect noise exposure and flight corridors associated with the two runway system. Following the approval of the study by the FAA, the expanded Overlay Zone was approved by the Lee County Commission through its incorporation into the Lee County Comprehensive Plan (Lee Plan) and the Land Development Code.

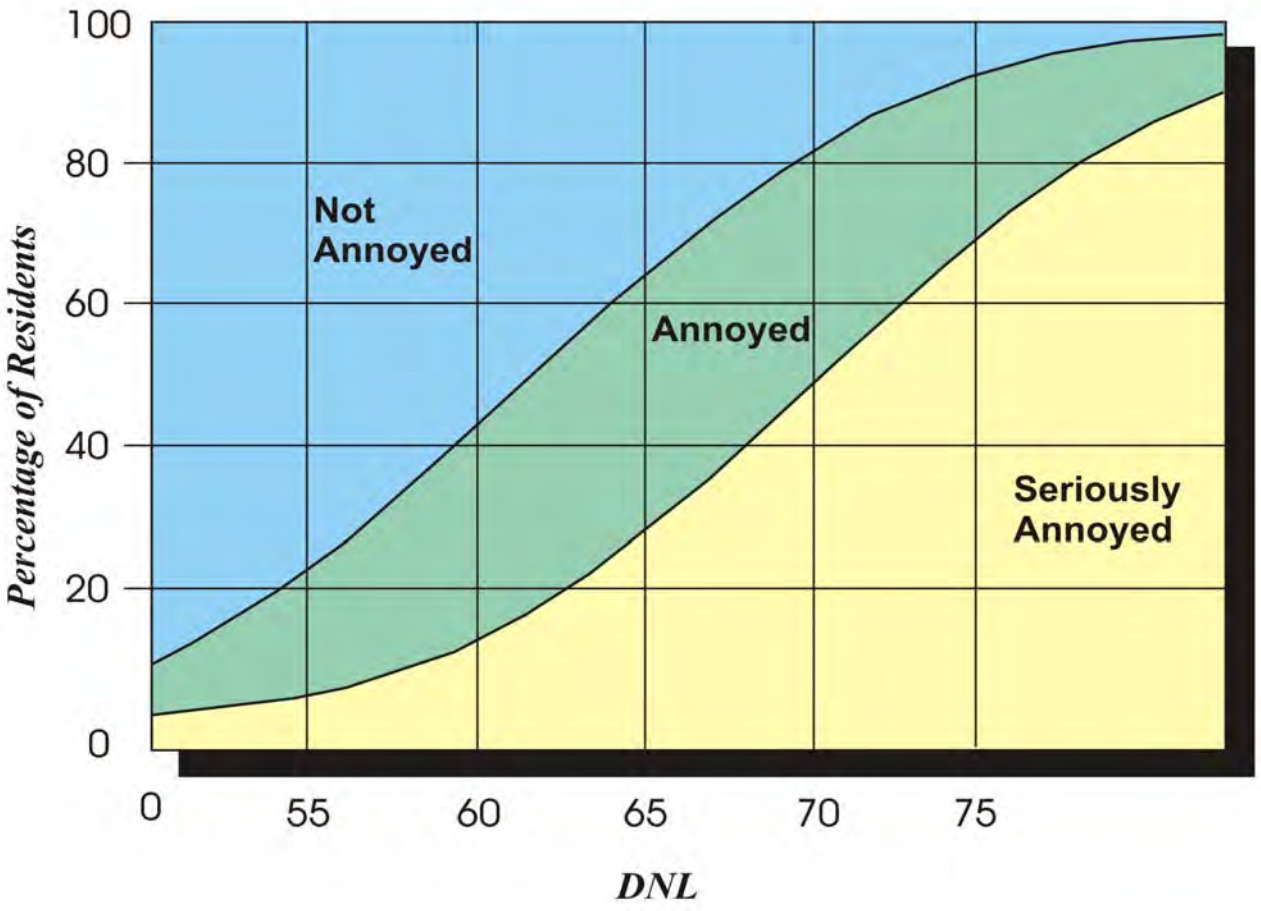
Under the approved off-Airport Noise Overlay Zone plan, all land use requirements contained in the Lee County Development Code would apply as if no Overlay Zone was in place. However, for properties located within the Overlay Zone, certain additional requirements must be met for new development. Specifically, four sub-zones were included as part of the off-Airport Noise Overlay Zone. Zone 4 represents Airport property, Zone 3 represents an area where new noise sensitive uses are restricted from development, Zone 2 restricts the development of new mobile homes and Zone 1 represents an area where no Noise Overlay Zone restrictions apply (see **Exhibit 7-17**).

Following the incorporation of the Overlay Zones in the Lee Plan (Comprehensive Plan) and the Lee County Land Development Code (LDC), clarification was made to identify the specific land uses included in the LDC that would be considered noise sensitive in Overlay Zones 2 and 3 (and thus, non-permissible for future development). As a guideline to the evaluation, the land uses that involved activities where noise would be an annoyance were typically considered non-compatible uses within Noise Overlay Zone 3. For Overlay Zone 3 noise sensitive uses included, but were not limited to, residential uses, cultural facilities, religious institutions, health care facilities, and public schools. Overlay Zone 2 was much less restrictive but did not allow such uses as mobile home dwelling units and park trailers.

Exhibit 7-16

Annoyance Caused by Aircraft Noise

Annoyance Caused by Aircraft Noise in Residential Communities Near Major Airports



Source: FAA Report EE-85-2-Aviation Noise Effects

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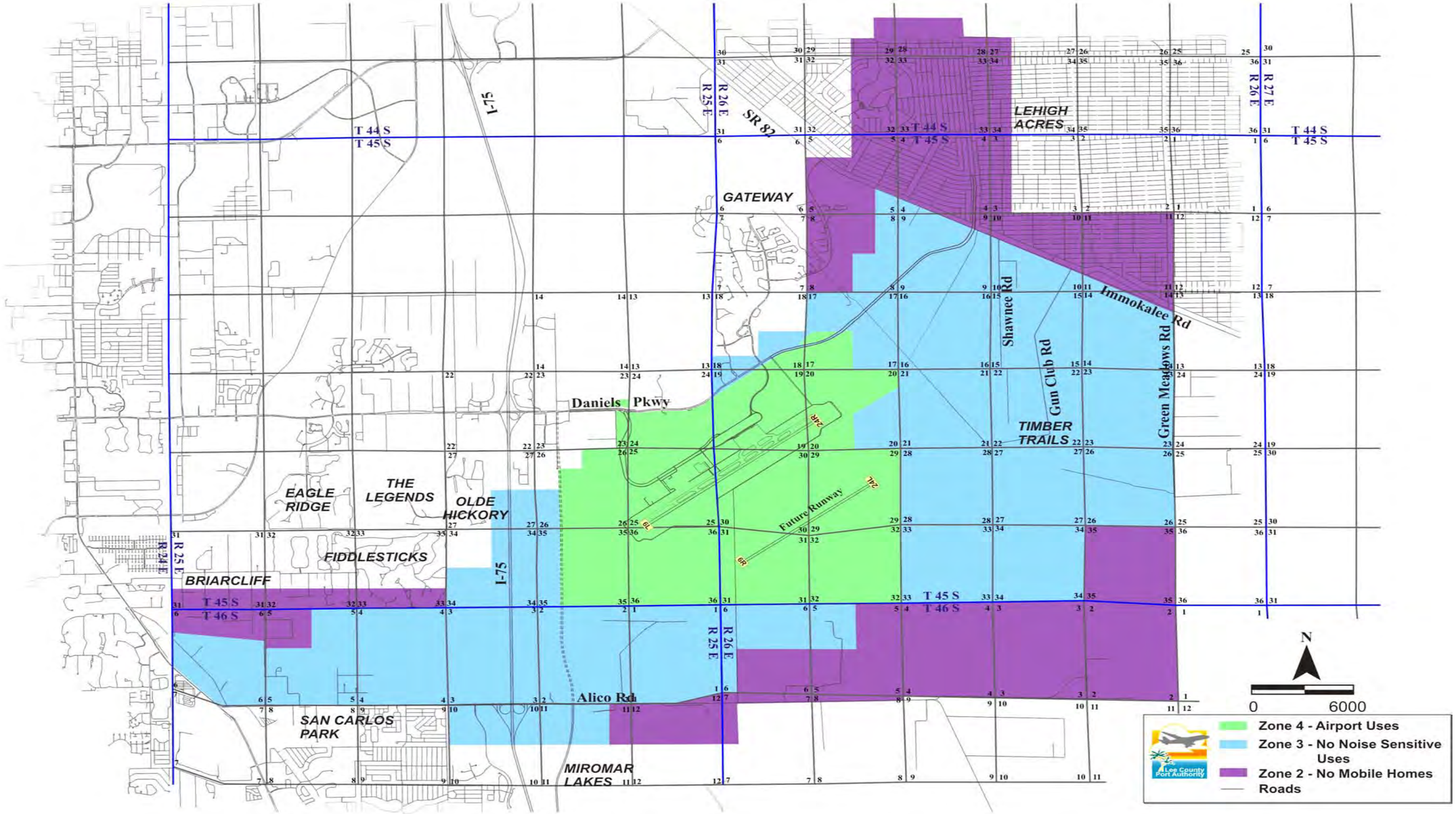
Exhibit 7-17

Existing Overlay Zone Limits

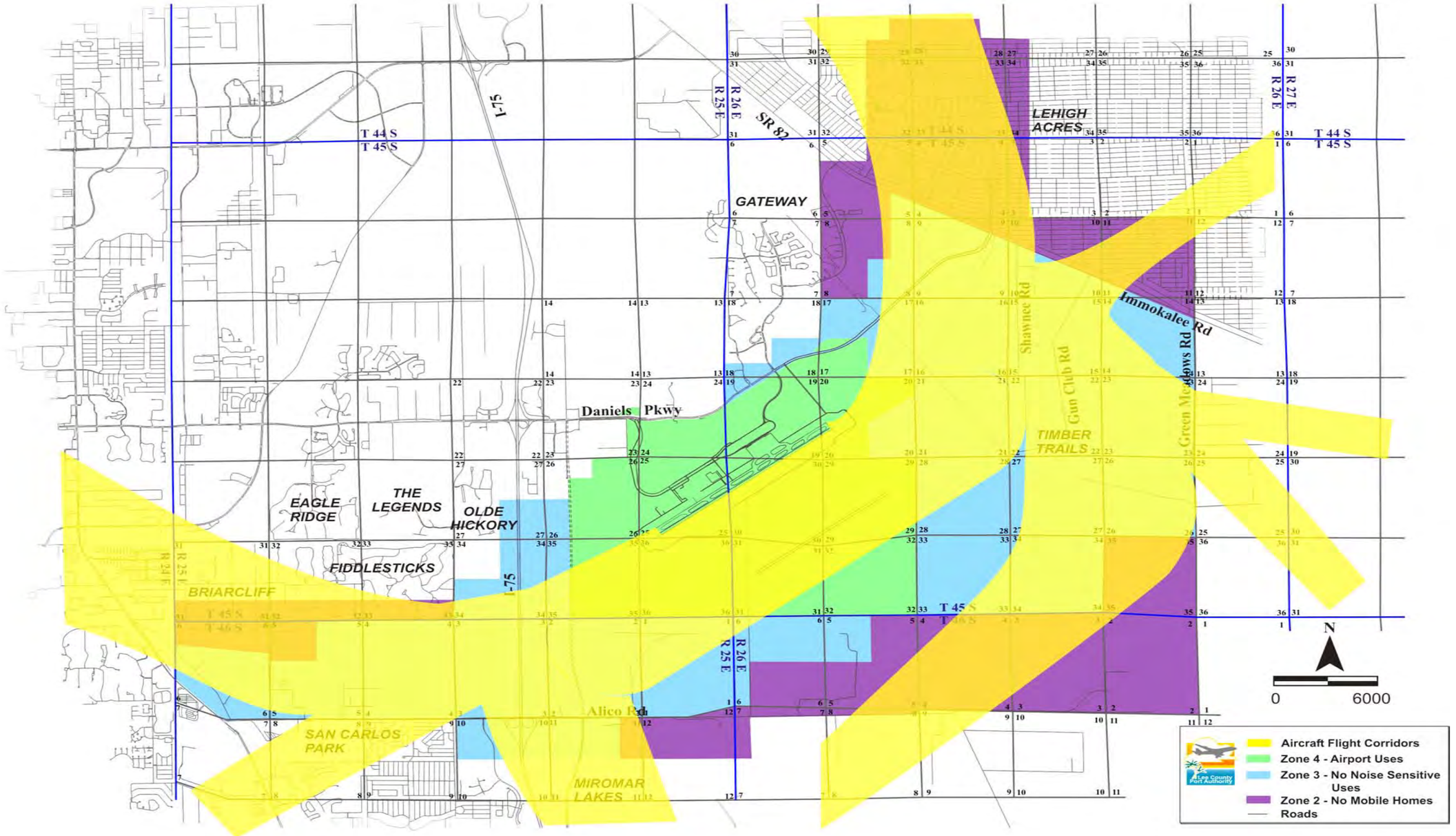


Source: Environmental Science Associates, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE EXISTING OVERLAY ZONE LIMITS	EXHIBIT 7-17

Exhibit 7-18

Flight Corridors



Source: Environmental Science Associates, 2002

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FORT MYERS, FLORIDA
MASTER PLAN UPDATE
AIRCRAFT FLIGHT CORRIDORS

EXHIBIT

7-18

As part of the Overlay Zoning approval process, the Lee County Commission, required that the limits of the Overlay Zone be re-evaluated by the Port Authority by the year 2006. A logical time to begin the re-evaluation would be following the opening of the midfield terminal complex scheduled for 2004. This re-evaluation would determine if the limits of the Zones should be increased due to increased operational activity at the Airport or should reduce in size due to the decreased number of noisier aircraft in the fleet.

Summary

The Off-Airport Noise Overlay Zones require development that is compatible with aircraft noise in areas surrounding RSW. This Overlay Zone has been fully incorporated in the Lee Plan and Lee County Land Development Code. In order to determine if adjustments to the Overlay Zone limits should be made (increase or reduction) a re-evaluation will begin following the opening of the midfield terminal scheduled for 2004. Although positive land use control has been established through overlay zoning, the most permanent form of land use control is property acquisition. Under each of the scenarios analyzed in this report, the 65 DNL contour extends off-airport property. The Airport should consider acquiring property within the 65 DNL for noise mitigation, safety enhancements and potential airport development uses.

7.5.2 Compatible Land Use

Compatible land use of existing and planned land uses in the vicinity of an airport is usually associated with the extent of noise impacts related to the airport and height restrictions outlined in local zoning ordinances for parcels of land in the immediate vicinity of the airport.

Guidelines for compatible land use areas impacted by aircraft noise are contained in FAR Part 150, *Airport Noise Compatibility Planning,* and FAA Advisory Circular 15015020-1 entitled, *Noise Control and Compatibility Planning for Airports.* These impacts have been discussed above in Section 5.5.1.

Guidelines for height limitations on land uses in the vicinity of an airport are contained in FAA Advisory Circular 150/51 *904A, A Model Zoning Ordinance to Limit Height of Objects Around Airports,* based on the obstruction surfaces described in FAR Part 77, *Objects Affecting Navigable Airspace.*

Guidelines to control land uses within the airport operation areas are contained in FAA Advisory Circular *150/5300-13, Airport Design,* and are based on the obstruction surfaces described in FAR Part 77. FAA AC 150l5300-13 establishes a Runway Protection Zone (RPZ) for all runways at an airport. The RPZ is a trapezoidal shaped area at the end of the runway. Within this area, development is limited to land uses that do not involve places of public assembly (i.e., schools, churches, hospitals, residential areas, etc.). Certain land uses are allowed in the RPZ, such as golf courses (but not clubhouses), agricultural operations and automobile parking facilities (located outside the object free area). The FAA recommends that the airport sponsor own all land within the RPZ. Advisory Circular 150/5300-13 outlines the following specific land uses, which are either limited or prohibited within the RPZ:

- Fuel handling and storage facilities.
- Smoke and dust generating activities.

- Misleading lights and those activities, which may create, glare or attract wildlife.
- Residence or places of public assembly.

As suggested above, the LCPA either owns the runway protection zone in fee simple or the area has been identified for future acquisition.

The FAA has also recently published Advisory Circular *15015200-23, Hazardous Wildlife Attractants On or Near Airports,* which provides guidance on locating certain land uses having the potential to attract hazardous wildlife to or in the vicinity of public-use airports. For airports serving turbine-powered aircraft, the FAA recommends against land use practices that attract or sustain populations of hazardous wildlife within 10,000 feet of the airport's movement areas, loading ramps or aircraft parking areas and within five statute miles of approach and departure airspace, where applicable. These land uses include any waste disposal site, wastewater treatment facilities and some wetland mitigation projects. The U.S. EPA requires any operator proposing a new or expanded waste disposal operation within five statute miles of a runway end to notify the appropriate FAA Airport District Office (ADO) and airport owner. The Lee Land Development Code section 34-1005(a)(5) specifically restricts the placement of landfills within the criteria mentioned above.

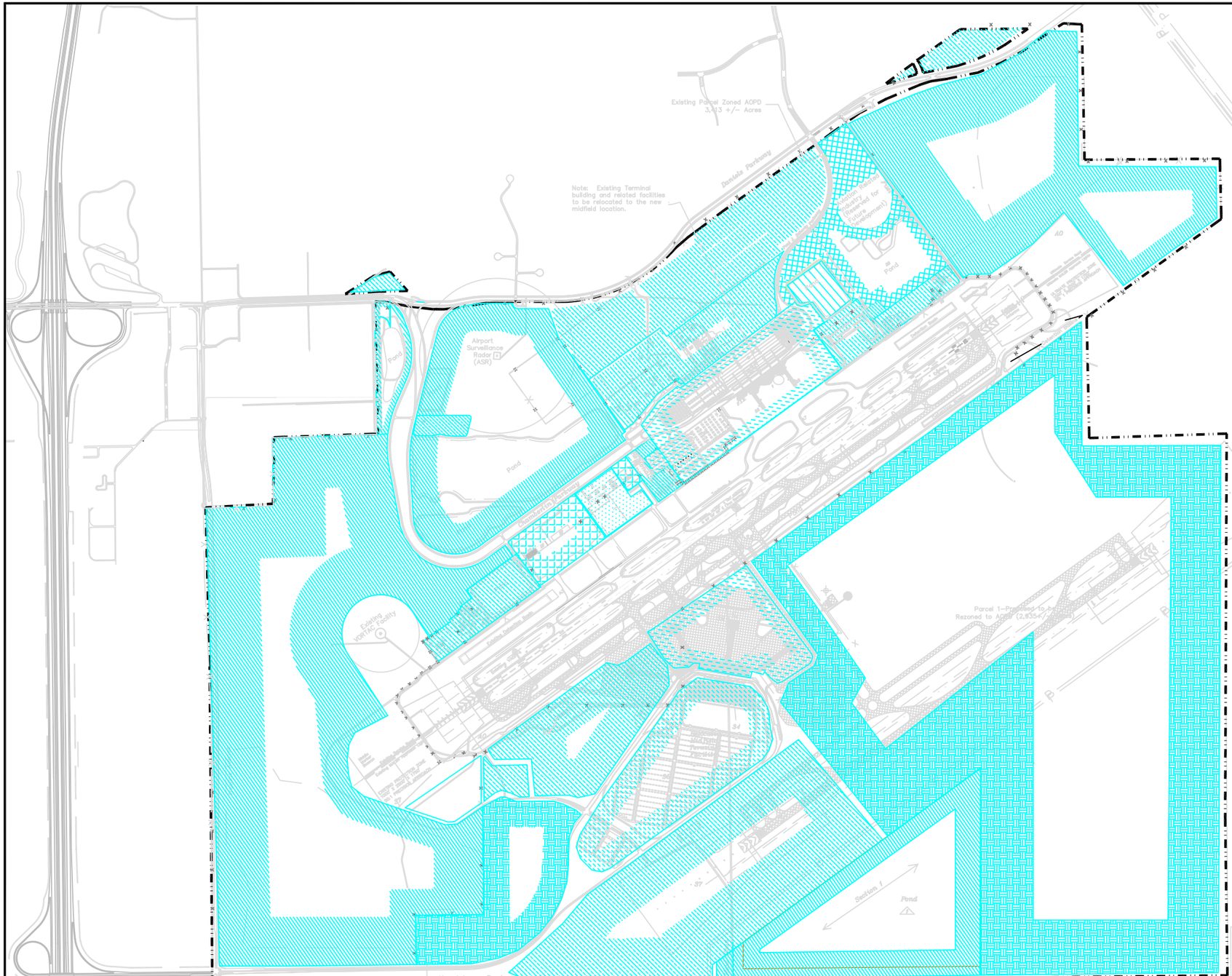
FAA Advisory Circular 150/5300-13 also states FAA policy to conduct studies of existing and proposed objects and activities, both off and on public-use airports, with respect to their effect on the safe and efficient use of airports and safety of persons and property on the ground. This particularly addresses the issues of towers in the vicinity of the airport, which can effect the safe operation of the facility. The Lee Land Development Code section 34-1008 addresses the procedure necessary to obtain a permit for tall structures within Lee County. Specifically, Lee County requires proposed structures over 125 feet MSL to submit a tall structures permit for review by the County and the LCPA. In addition, the FAA requires FAA Form 7460-1 to be completed and submitted to the FAA for any structures over 200 feet above ground level for an airspace review. Also, any proposed construction on airport property is coordinated through the LCPA and information is forwarded to the FAA Orlando District Office for final review and coordination.

On-Airport Land Use Analysis

On-airport land uses were also evaluated with a goal to achieve optimum utilization of land within the existing airport boundary and to promote compatibility between the airport and its environs. For the purposes of this analysis, a comparison will be made between the existing and approved Existing On-Airport Land Use Map and the proposed Future On-airport Land Use Map generated as part of this study and are shown in **Exhibit 7-19** and **Exhibit 7-20**. The most recent version of the Existing on-Airport Land Use Map was prepared and approved by the Lee County Port Authority and Lee County as part of an Airport rezoning process completed in 2001. The definitions of the eight categories of the on airport land use have been incorporated in the Lee County Land Development Code and are listed below:

Exhibit 7-19

Existing on-airport land use



EXISTING ON-AIRPORT LAND USE LEGEND

- AO-AIRFIELD OPERATIONS
- AT-AIRLINE TERMINAL
- AC-AIR CARGO
- GA-GENERAL AVIATION
- ARI-AVIATION-RELATED INDUSTRY
- AS-AIRPORT SUPPORT
- UA-UNDEVELOPED AREA
- E/CLU-ENVIRONMENTAL/ COMPATIBLE LAND USE BUFFER

NORTH

0 1000 2000 3000

SCALE IN FEET

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FORT MYERS, FLORIDA

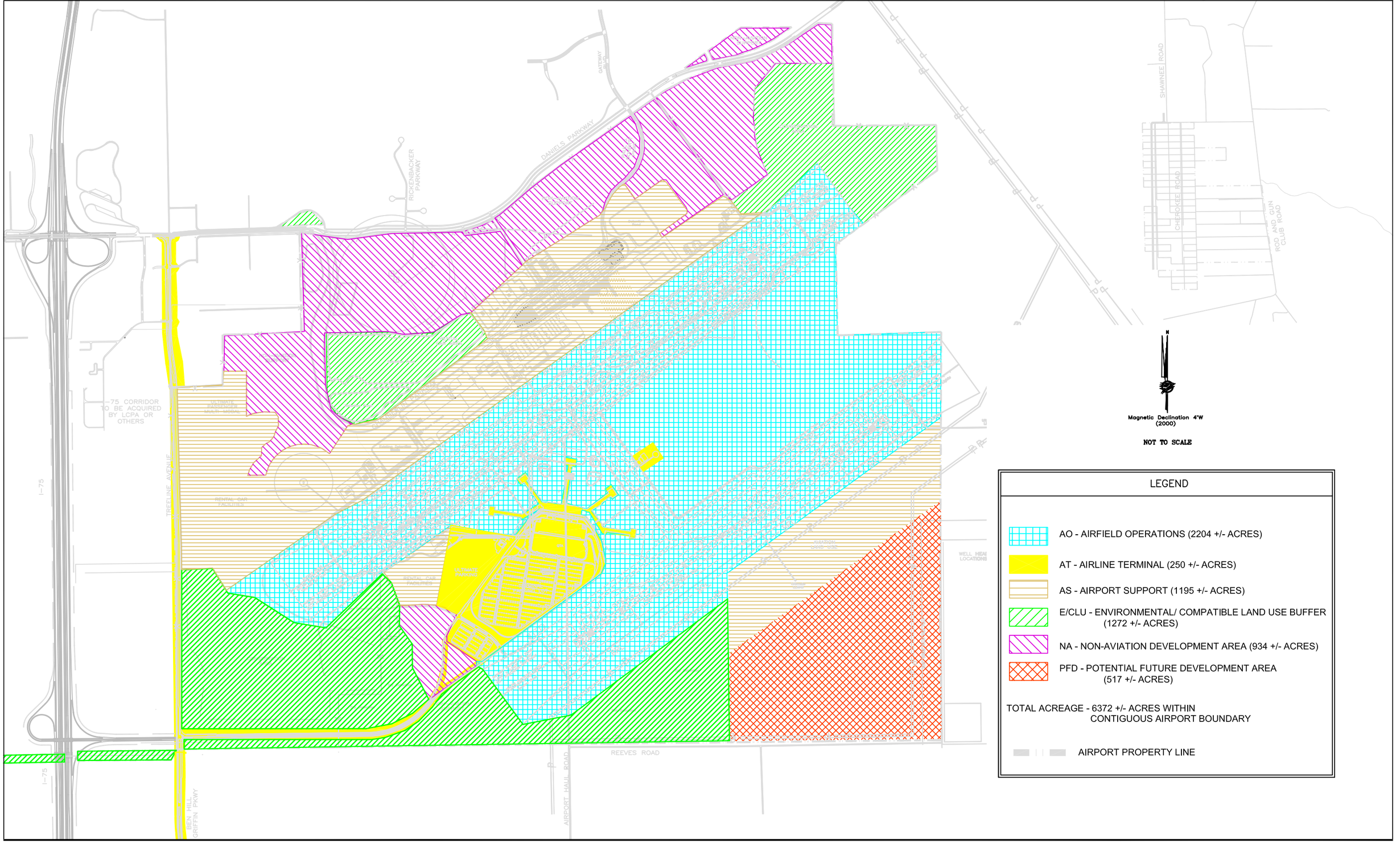
MASTER PLAN UPDATE
ON-AIRPORT EXISTING LAND USE MAP

EXHIBIT

7-19

Exhibit 7-20

Proposed on-airport land use



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FORT MYERS, FLORIDA

MASTER PLAN UPDATE

ON-AIRPORT PROPOSED LAND USE MAP

EXHIBIT

7-20

Existing On-Airport Land Use Definitions
Listed below of the proposed on-airport land use definitions for RSW:

AIRFIELD OPERATIONS
This category of land use includes all areas necessary for safe operation on the airside of the airport. Included in this area are runway and taxiway safety areas, runway approaches where clearance is not adequate to permit other uses, taxiways and taxiway exits, areas where NAVAIDs will be located, and areas within the building restriction lines (BRLs) and the runway protection zones.

AIRLINE TERMINAL
This land use category includes all facilities associated with the passenger terminal area. This involves the passenger terminal building, Federal Inspection Station (FIS)/customs, aircraft aprons, and terminal auto parking.

AIR CARGO
This category consists of aircraft apron, cargo buildings, auto parking and truck ramps for transshipping cargo between air and ground transportation.

GENERAL AVIATION
This category consists of aircraft apron, fixed base operator (FBO) offices and hangars, planned conventional hangars, and auto parking. This area is designed to store and service general aviation aircraft, with a planned expansion of the apron and hangar area westward to the air cargo apron.

AIRPORT SUPPORT
This category includes several land uses that provide support facilities to other airport operations. Support facilities include air traffic control tower (ATCT), airport rescue and firefighting (ARFF), airport maintenance, airport utilities, rental car service and storage, fuel farms, future aircraft maintenance, and airline in-flight catering kitchens. These facilities are grouped together wherever possible and are located to have reasonable access to the other functions on the airport that they are designed to save. Airport Support also provides lease areas for uses that serve other aviation-related uses but do not need direct access to the airfield. Examples of uses for this area would include, but not be limited to, aviation-related offices, transportation terminals, warehousing, hotels, restaurants, and motels that would benefit by close proximity to airport activities.

AVIATION-RELATED INDUSTRY
This land use includes manufacturing, fabrication, or assembly activities relating to aviation. Examples of uses for this area would include fuel storage and transfer facilities, aircraft parts/instrument manufacture, facilities for processing large air cargo shipments, and warehousing.

ENVIRONMENTAL/COMPATIBLE LAND USE BUFFER
This buffer provides a land use compatible with aircraft operations and includes areas to be used for surface water and wetlands management. Portions of this buffer have provided mitigation for past airport development and also include

upland or former crop areas that are available for either future wetland mitigation or other compatible airport development.

UNDEVELOPED AREA
This land use consists of area reserved for future direct or related aviation uses that will be defined at a future date and will be the result of a future land uses amendment.

The eight future on-airport land use definitions are recommended to be consolidated into six major categories for clarity and are listed below:

Proposed On-Airport Future Land Use Definitions
Listed below of the proposed on-airport land use definitions for RSW:

Airfield Operations
This designation consists of lands used for the operation of RSW, including but not limited to, the runway and taxiway areas, NAVAIDs, as well as those areas restricted for aviation safety (RPZs and Building Restriction lines, etc).

Airline Terminal
This land use includes the area necessary for scheduled air service operations. This land use would include items such as the terminal building, access roadway system, rental car areas, auto parking and utility infrastructure. This land use would also include the air traffic control tower and airport rescue and firefighting stations that are located in the vicinity.

Environmental/Compatible Land Use Buffer
This land use includes existing conservation easements, open space and storm water management lakes, which will promote compatibility between the airport and adjacent land uses.

Airport Support Areas
This designation consists of lands associated with the aviation related infrastructure but excluding the commercial service terminal area and those land uses defined in the Airline Terminal category. Land uses include aircraft apron areas for general aviation and air cargo aircraft, aircraft maintenance hangars and buildings, general aviation terminals, aircraft storage hangars, related auto parking and utility infrastructure. This land use also includes activities that have a direct connection with aviation related activities such as airport maintenance, airport utilities, rental car service and storage, fuel farms, airline in-flight catering kitchens and intermodal facilities. These facilities are grouped together wherever possible and are located to have reasonable access to the other functions on the airport that they are designed to serve

Airport Revenue Support/Non-Aviation Areas
This land use is for commercial industrial and related land leases to support the continued growth of the Airport and aid in the generation of additional revenue. These areas will include warehousing and distribution facilities, offices, hotels/motels, limited retail development and other similar related development.

Reserved for Future Development
The land use under this designation will include areas for future aviation-related activities that include airfield, landside or other use but is outside the 20-year development window for the airport. The ownership of this land use allows a buffer between the airport and adjoining property and prevents encroachment of development that could hinder the future expansion of the RSW.

The following changes are proposed between the existing on-airport land use and the proposed future on-airport land use:

- The Airfield Operations category definition has remained the same.
- The Airline Terminal category definition has remained the same
- The Air Cargo, General Aviation and Airport Support Categories have been combined and renamed Airport Support since the majority of these land uses are similar and a distinction between the three categories are not necessary.
- Aviation Related Industry category has been renamed Airport Revenue Support to better encompass all the land uses defined in this category which may or may not be totally aviation related.
- Environmental / Compatible Land Use Buffer category uses a similar but broader definition.
- Undeveloped Area category has been renamed Reserved for future development which better defines the proposed use of this category.

It is recommended that upon adoption of the Airport Master Plan by the Federal Aviation Administration and Florida Department of Transportation, the LCPA initiate the process to update the Lee County Comprehensive Plan, The Lee Land Development Code and the Master Concept Plan (rezoning) to bring the proposed future on-airport land use plan forward for formal approval by local government.

Local Land Use and Zoning

To promote land use compatibility, the Lee County Board of County Commissioners has established sections 34-1001 through 34-1008, which outline compatibility guidelines for public-use airports in Lee County. These sections of the Land Development Code address Airport Hazard Districts, Land use Restrictions, Airport Noise Zones and Permits for Tall Structures. The Lee Plan, as amended through December 2000, presents the local government comprehensive plan for the area. All units of local government in the State of Florida are required to adopt local comprehensive plans pursuant to Chapter 163 of the Florida Statutes. Within the Lee Plan, a vision for the year 2020 has been adopted by the Lee County Board of County Commissioners. Specifically, the vision of RSW is as follows; ".... RSW will be greatly expanded by 2020. The expanded airport will have a second parallel runway and a new terminal building which will more than double the capacity of the airport." The Lee Plan also includes a Ports, Aviation and Related section that outlines the goals and objectives for RSW.

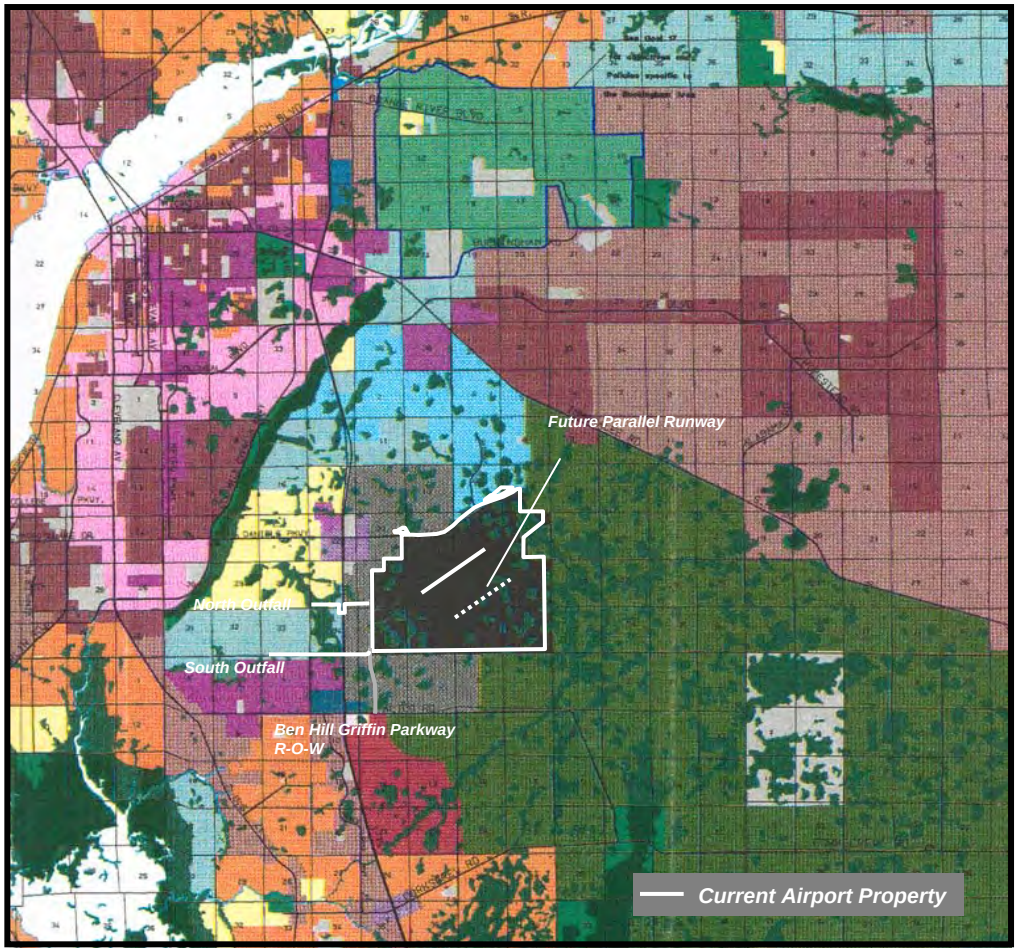
The Lee Plan also presents the future land use map for Lee County. The goal of the future land use map is to depict the location, type and density of future land uses in order to protect natural and manmade resources, provide essential services in a cost-effective manner and to discourage

urban sprawl. The future land use map of Lee County that includes Airport Property is shown in **Exhibit 7-21**. The future land use of airport property is classified as Airport. The Airport future land use category as defined in the Lee County Comprehensive Plan includes all land necessary to include the existing and future infrastructure needs of the airport through the year 2020. The definition goes on to say that any airport expansion will include extensive environmental buffer areas for the protection of groundwater resources and wildlife habitat. Any airport expansion beyond the present boundary will require appropriate modifications to the DRI Development Order and any necessary amendments to the Lee Plan. Future land uses surrounding the airport include Airport Commerce, Density Reduction/Groundwater Recharge Areas, Wetlands, and New Community (Gateway).

RSW is currently zoned as a Planned Development District as defined in Section 34-611 of the Lee Land Development Code. A planned development district is provided to implement the goals and objectives of the Lee Plan while providing some flexibility in planning and designing the developments. The Airport zoning within the planned development district is defined as an Airport Operations Planned Development District (AOPD) and the geographic boundary of the airport planned development district along with surrounding zoning is shown in **Exhibit 7-22**. Regulations for specific land uses allowed within AOPD designation are defined in section 34-934 of the Lee Land Development Code. The LCPA plans to submit a request to include additional land uses allowed within the AOPD designation as part of the master planning process after the master plan has been approved and adopted by the FAA and FDOT. Surrounding zoning includes agricultural (AG-2), Light Industrial (IL), Commercial Planned Development (CPD) District and scattered residential.

Exhibit 7-21

Lee County Future land use map



Future Urban Areas
- Intensive Development
- Central Urban
- Urban Community
- Suburban
- Outlying Suburban
- Industrial Development
- Public Facilities
- University Campus

Interchange Areas
- Industrial
- General
- General Commercial
- Industrial Commercial
- University Village
- Mixed Use

New Community
- New Community

Airport Areas
- Airport Commerce
- Airport

Non-Urban Areas
- Rural
- Rural Community Preserve
- Outer Islands
- Open Lands
- Density Reduction/ Groundwater Resource
- Upland Conservation Lands

Wetlands
- Wetlands
- Wetland Conservation Lands

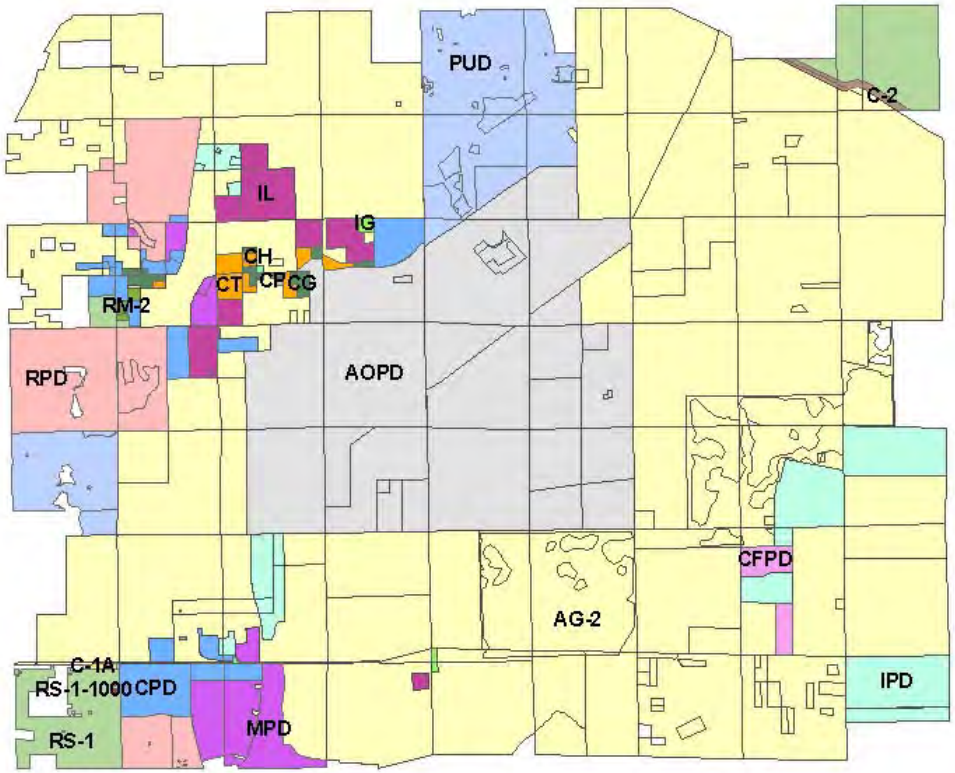
Source: Lee County GIS Department 2002

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
MASTER PLAN UPDATE
FUTURE LAND USE MAP

EXHIBIT
7-21

Exhibit 7-22

Lee County Zoning Map



North

Scale: NTS

Legend

AG-2	CG	CT	PUD
AOPD	CH	IG	RM-2
C-1A	CN-1	IL	RPD
C-2	CP	IPD	RS-1
CFPD	CPD	MPD	RS-1-1000

Source: Lee County Property Appraiser, December 2002

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
MASTER PLAN UPDATE
LEE COUNTY ZONING MAP

EXHIBIT
7-22

7.5.3 Social lmpacts

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

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

The continued development of RSW is not expected to have significant impacts on the population and demographics of Lee County and the Southwest Florida region as a whole. The majority of land identified as future acquisition is currently vacant so therefore there would be few residence or business relocations.

The LCPA, in conjunction with Lee County, has established land use controls that will help prevent incompatible development and therefore social impacts due to future expansion of the facility.

7.5.4 Induced Socioeconomic Impacts

For major airport development proposals, there is a potential for induced or secondary impacts on surrounding communities. These potential airport development impacts include the following:

- Shifts in population movement and growth;
- Changes in public service demands; and
- Changes in business or economic activities.

The continued expansion of RSW and its associated construction would provide additional jobs in the heavy construction sector of the local economy. The continued development of the airport will not cause shifts in population movements in the region. The expansion of the airport will require modest incremental increases in public service demands such as utilities and public transportation but will not be a significant impact. With the continued development of the airport there will come new opportunities to accommodate businesses, residents and tourists who require access to the national airport system.

7.5.5 Air Quality

Section 176(c) of the Clean Air Act (CAA) amendments of 1977, the amendments of 1990, and the General Conformity Rule of 1993, requires federally funded projects to demonstrate that a proposed project will not degrade air-quality in non-attainment areas. A non-attainment area is an area that does not meet EPA's established air quality standards. An attainment area is an area where air quality standards are met, but prevent deterioration beyond acceptable limits. Legal limitations on pollutant concentration levels allowed to occur in ambient air or ambient air quality

standards has been established by the U.S. EPA and Florida Department of Environmental Protection (DEP) for the following six pollutants:

- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO2)
- Sulfur Dioxide (SO2)
- Ozone (O3)
- Lead (Pb)
- 10-Micron Particulate Matter (PM)

Lee County has been designated by the EPA and Florida DEP as an attainment area. As a result, no additional air quality modeling is anticipated for future development.

7.5.6 Water Quality

The Federal Water Pollution Control Act, more widely known as the "Clean Water Act", provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop wastewater treatment management plans and practices, and issues permits for discharges of dredge and fill material. These water quality control requirements are handled at the federal, state, regional and local levels.

The U.S. EPA as mandated under the clean water act developed a National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in two phases. EPA is responsible for implementing the program, but has in most cases authorized individual states to administer the program. In October 2000, the Florida DEP was authorized to implement the program in the State of Florida with the exception of Indian-owned lands. Regulated Sources that would affect development at RSW include transportation facilities such as airports and construction activities, which would disturb more than five acres.

In order to obtain an NPDES stormwater permit, a Stormwater Pollution Prevention Plan (SWPPP) is required. The necessary components of a SWPPP includes a site plan for managing runoff, identification of stormwater controls, a description of planned inspections and maintenance and monitoring of activities. RSW is currently operating under a SWPPP for airport activities. In addition, many of the major tenants of the airport operate under their own SWPPP and tenants who operate their own fueling operation are required to prepare individual SWPPPs. Individual construction SWPPPs have also been prepared for the airport. The airport has also prepared a Spill Prevention Control and Countermeasures (SPCC) for the facility. The SPCC is required for fuel storage tanks to identify a means to contain spills if one should happen to occur.

It is recommended that the LCPA update their SWPPP and SPCC documents upon the opening of the midfield terminal complex to reflect necessary changes. It is also recommended that the airport prepare a Stormwater Master Plan that would also look at water quality issues.

7.5.7 Historical, Architectural, Archaeological and Cultural Resources

Two federal laws apply to this category: 1) The National Historic Preservation Act of 1966 and 2) The Archaeological and Historic Preservation Act of 1974. The National Historic Preservation

Act of 1966 requires an initial review to determine whether properties contained within the National Register of Historic Places or properties eligible for inclusion in the register are located in the vicinity of the project site. The Archaeological and Historic Preservation Act of 1974 requires a survey, recovery and preservation of significant and pre-historical data that may be destroyed or irreparably lost due to a federal, federally licensed or federally funded project.

Correspondence received from the Florida Department of State, Division of Historical Resources verified that no archaeological or historical resources are recorded within the boundaries of RSW.

7.5.8 Biotic Communities (including Flora and Fauna)

Biotic communities are defined as areas where plants (flora) and animals (fauna) share a mutual habitat necessary for sustenance and propagation. Consideration of this category is required by the Endangered Species Act of 1973 and the Fish and Wildlife Coordination Act (if water resources are impacted). The level of anticipated impacts determines the level of biotic assessment needed. Several (marginal) factors are examined to determine the anticipated impacts to biotic communities:

- If the proposed development would take or impact a publicly owned wildlife or waterfowl refuge of local, state, or national significance;
- If there are threatened and endangered species in the area of immediate impact;
- If the proposed development would affect water resources (i.e., wetlands, groundwater, impoundment, diversion, deepening, controlling, modifying, polluting, dredging or filling of any stream or body of water);
- If the proposed development would impact other than man-dominated areas of land; and
- If the proposed development causes a permanent altercation or a removal of a sizable amount of habitat.

Existing airport property as of August 2001 was mapped depicting major plant communities on recent rectified digital aerial photography using the January 1999 edition of the Florida Land use, Forms and Cover Classification System (FLUCFCS), Level III and is shown on **Exhibit 7-23**. A fourth level (Level IV) was included, where appropriate, to further identify specific habitat types. Any standard three-digit FLUCFCS code that has a nine added to the end indicates that the habitat was disturbed. Disturbances on airport property were due primarily to the presence of exotic vegetation. Extensive ground verification was conducted from August through October 2001 to insure the accuracy of this mapping effort. As part of the mapping process, the approximate levels of exotic/nuisance plant species infestations within each plant community were delineated.

Exhibit 7-23

FLUCS Map

A survey for threatened and endangered species was also conducted on-site in January, February, and March 2002 and May through September 2002 for a majority of the study area and is discussed later in this chapter. The listed species survey did not include the two existing conservation areas because these areas will not be impacted by the proposed potential future site development activities. Areas within the Aircraft Operations Area (AOA) was not intensively mapped or surveyed due to access restrictions and the fact that the majority of this land was previously cleared for aviation activity. The lands associated with the Midfield Terminal Complex facilities and an extension of Treeline Avenue/Ben Hill Griffin Parkway have been intensively reviewed and have recently received the required county, state and federal development permits; therefore, these areas were considered to be developed and were not mapped or surveyed as part of this study and are shown as the airport FLUCFCS code.

Based on analysis of work completed to date, the potential development activities described in the Master Plan update will not take or impact a publicly owned wildlife or waterfowl refuge of local, state, or national significance. The potential development activities may affect threatened and endangered species and will affect wetlands and wildlife habitats. The existing conditions on-site, potential impacts to listed species, and likely strategies to compensate for unavoidable wetland impacts are described in the sections below.

7.5.9 Endangered and Threatened Species

Federally listed threatened and endangered plant and animal species are protected by the Endangered Species Act of 1973 administered by United States Fish and Wildlife Service (FWS). State-listed animal species are protected by Sections 39-27.002 through 39-27.005 of the Florida Administrative Code (FAC) under the auspices of Florida Fish and Wildlife Conservation Commission (FWC). State-listed plant species are regulated by Sections 581.185 through 581.187 and 581.201 of the Preservation of Native Flora of Florida Act administrated by the Florida Department of Agriculture and Consumer Services (FDA). Legal protective status of state and federally listed plant and animal species are derived from Florida's Endangered Species, Threatened Species, and Species of Special Concern Official Lists published by the FWC August 1, 1997.

A request for information on listed species known to occur within or adjacent to the project have been submitted to the FWS, FWC, and Lee County Department of Community Development Division of Planning.

The National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service, responded to a request for information related to the proposed development. The response stated that since the project is to be accomplished wholly on land, there is no impact to any waterway known to contain species protected by the Endangered Species Act.

Numerous surveys for listed species have been conducted on LCPA property as a part of previous Master Planning and permitting activities. These surveys have confirmed the presence of listed wading birds, such as Florida sandhill crane, tricolor heron, little blue heron, reddish egret, and roseate spoonbill, and American alligator in the marshes and borrow lakes on-site. The Florida black bear has been suspected to occur given the potential habitat on-site and documented occurrences adjacent to the site, but has not been reported as being observed on-site. A Florida panther was struck by a car on Chamberlin Parkway on November 29, 1988 and panthers are

presumed to periodically pass through the area. Several potential Big Cypress fox squirrel nests have been identified. With the exception of these squirrel nests and one burrowing owl nest located within the AOA in 2000, no nesting by listed species has been documented. A summary of the listed animal and plant species reported from these previous surveys is presented in **Table 7-31**.

Pedestrian transects surveys for potential listed species habitat were conducted within the current project boundary in January, February, and March 2002. Surveys were conducted by qualified ecologists familiar with local flora and fauna. A list of animal and plant species by habitat type that could occur in the project area is presented in **Table 7-32**. This list was compiled based on Appendix H of the Lee County Land Development Code, Chapter 10, Article 3, Division 8 (Protection of Habitat) and local knowledge of the area. These surveys consisted of ecologists walking parallel transects looking for listed species or their sign (tracks, burrows, nests, etc.). At intervals the ecologists stopped, remained silent, and listened for wildlife vocalizations. Field surveys were only conducted on lands owned by the LCPA. The listed species survey methodology was approved by Lee County Department of Community Development Division of Planning on March 22, 2002. A copy of the survey methodology has also been submitted to the FWS for review and comment. The FWS replied on March 27th stating that they were unable to respond to this Technical Assistance request and therefore would not comment on the proposed survey methodology. Based on comments received from the FWC, the proposed methodology was revised to incorporate limited additional summer surveys. This consisted of monitoring the known RCW cavity trees for activity, surveying open fields for Southeastern American Kestrel, surveying suitable wetlands for bird rookeries, and evening audible surveys for gopher frogs. The revised methodology was approved by the FWC on April 30th. These additional surveys were conducted in May through September 2002. The FWC has requested that intensive listed species surveys be conducted for the long-term planning areas (i.e., those areas in which future develop is beyond the 20-year planning window of the current Master Plan). However, because a listed species survey is typically valid for no more than five-years, and the airport is not requesting authorization for specific development intensity authorizations (i.e., square-feet of commercial or industrial use, number of residential units, etc.), the LCPA has elected to conduct a less intensive survey of the long-term planning areas.

Spacing of the transects varied between near-term and long-term development areas and were based on the habitat type and the potential for listed species to occur. Within the near term development areas the spacing of the transects was adjusted as needed to insure a minimum of approximately 80 percent coverage of the area. This survey methodology was also used on those lands within the overall project boundary that were within 500 feet of the near-term development area. Within the long-term development areas the spacing of the transects was adjusted as needed based on the habitat type and the potential for listed species to occur.

Based on the listed species surveys conducted in January through September 2002, twelve species of birds, one reptile, one mammal, and six plant species that are listed by the FWS and/or the FWC/FDA have been observed on-site (**Table 7-32**). Only three of these species are federally listed. The majority of the bird species were wading birds that were observed foraging in the marshes, swamps, or borrow lakes that contained water at the time of the surveys. A cypress wetland, located north of the existing airport maintenance facility west of Chamberlin Parkway appears to be a roosting area for species such as white ibis, great egrets, and great blue herons. One active yellow crown night heron nest was present in August 2002. A second cypress area, located approximately 500 feet south of the future parallel runway and 500 feet west of the east

property line, contains an active wading bird rookery. Great blue heron, black-crown night-heron, and anhinga nests were observed within this wetland. Due to the presence of chicks in the nests, a thorough survey of the area to count all the nests and to confirm all of the species present was not conducted. An active Florida sandhill crane nest was observed in a large marsh located south of Daniels Parkway between Paul J. Doherty Parkway and Fuel Farm Road. Two additional old Florida sandhill crane nests were found in a marsh east of Fuel Farm Road and north of the Northeast Conservation Area. The red-cockaded woodpecker shown on **Table 7-32** consists of the abandon cavity trees previously identified on the site. These abandon cavities are located in the vicinity of the southeast corner of the Midfield Terminal project area. No RCW's have been observed on-site.

Table 7-31
Summary of Listed Animal and Plant Species Observed
Southwest Florida International Airport

Common Name	Scientific Name	1977 EIS	1990 DRI	1992 EA	1994 EA	2000 ERP	2002 DRI
Birds							
Bald eagle	*Haliautus leucocephalus*				✓	✓	✓
Burrowing owl	*Speotyto cunicularia*					✓	
Florida sandhill crane	*Grus canadensis*	✓		✓	✓	✓	✓
Least tern	*Sterna antillarum*		✓				
Limpkin	*Aramus guarauna*					✓	√
Little blue heron	*Egretta caerulea*		✓	✓	✓	✓	✓
Red-cockaded woodpecker*	*Picoides borealis*				✓	✓	✓
Reddish egret	*Egretta rufescens*			✓			
Roseate spoonbill	*Ajaia ajaja*	✓			✓		✓
Snowy egret	*Egretta thula*				✓	✓	✓
Southeastern Kestrel	*Felco sparverius paulus*						√
Tricolored heron	*Egretta tricolor*			✓	✓	✓	✓
White ibis	*Eudocimus albus*					✓	✓
Wood stork	*Mycteria americana*				✓	✓	✓
Mammals							
Big Cypress fox squirrel	*Sciurus niger avicennia*	✓		✓		✓	✓
Florida black bear	*Ursus americanus floridanus*	✓				✓	
Reptiles							
American Alligator	*Alligator mississippiensis*	✓	✓	✓	✓	✓	✓
Plants							
Common wild pine	*Tillandsia fasciculata*					✓	✓
Leafless beak orchid	*Stenoffynochos lanceolata*						√
Leather fern	*Acrostichum* spp.			✓			
Northern needle leaf	*Tillandsia balbisiana*						✓
Pine lily	*Lilium catesbaei*						✓
Pine pink	*Bletia purpurea*						✓
Wild coco	*Eulophia alta*						✓

** Abandoned red-cockaded woodpecker cavities observed on-site.*
Federally listed species are underlined. Species without underline are listed only by the state of Florida
Source: Kevin L. Erwin Consulting Ecologist, Inc.

Table 7-32
Listed Species Which Potentially Occur Onsite Based on Vegetation Communities (FLUCFCS)
Southwest Florida International Airport

FLUCFCS Code	Vegetation Description	Potential Listed Species
100	Urban and Built-Up	None
211	Improved Pasture	Florida Pine Snake
262	Low Pasture	Florida Panther
		Sherman's Fox Squirrel*
		Burrowing Owl*
		Audubon's Crested Caracara*
		Florida Sandhill Crane
261	Fallow Cropland	Least Tern
		Florida Panther*
321	Palmetto Prairie	Eastern Indigo Snake
3219	Palmetto Prairie, Disturbed	Florida Pine Snake*
		Gopher Tortoise
		Gopher Frog
		Southeastern American Kestrel
		Florida Sandhill Crane
		Audubon's Crested Caracara
		Florida Panther*
		Florida Black Bear
		Curtis' Milkweed
		Fakahatchee Burmannia
		Beautiful Paw-Paw
		Florida Coontie
411	Pine Flatwoods	Eastern Indigo Snake
4119	Pine Flatwoods, Disturbed	Florida Pine Snake*
414	Pine / Mesic Oak	Gopher Tortoise
		Gopher Frog
		American Bald Eagle*
		Southeastern American Kestrel
		Red-cockaded Woodpecker
		Florida Panther
		Big Cypress Fox Squirrel
		Sherman's Fox Squirrel*
		Florida Black Bear
		Common Wild Pine*
		Fakahatchee Burmannia
		Satin Leaf
		Beautiful Paw-Paw
		Florida Coontie
422	Brazilian Pepper	Florida Black Bear*

Table 7-32
Listed Species Which Potentially Occur Onsite Based on Vegetation Communities (FLUCFCS)
Southwest Florida International Airport

FLUCFCS Code	Vegetation Description	Potential Listed Species
427	Live Oak	Eastern Indigo Snake
428	Cabbage Palm	Gopher Tortoise
4289	Cabbage Palm, Disturbed	Audubon's Crested Caracara
		Florida Panther
		Florida Black Bear
		Simpson's Stopper
		Hand Adder's Tongue fern
		Twisted Air Plant
4291	Wax-Myrtle Willow, Hydric	Wading bird roosts/rookeries*
4299	Wax-Myrtle Willow, Hydric, Disturbed	**Limpkin***
514	Drainage Canal	**American Alligator**
742	Borrows Areas	Roseate Spoonbill
		Limpkin
		Little Blue Heron
		Reddish Egret
		Snowy Egret
		Tricolor Heron
		White Ibis*
		Wood Stork*
		Florida Sandhill Crane*
		Snail Kite*
		Least Tern*
		Everglades Mink
6179	Mixed Wetland Hardwoods, Disturbed Cypress	American Alligator
		Eastern Indigo Snake*
621	Cypress, Disturbed	Gopher Frog
6219	Cypress, Cut	Limpkin
621c	Cypress-Pine-Cabbage Palm, Disturbed	Little Blue Heron
6249		Snowy Egret
		Tricolored Heron
		White Ibis*
		Artic Peregrine Falcon
		Bald Eagle*
		Wood Stork
		Florida Panther
		Everglades Mink
		Big Cypress Fox Squirrel
		Florida Black Bear
		Common Wild Pine*

Table 7-32
Listed Species Which Potentially Occur Onsite Based on Vegetation Communities (FLUCFCS)
Southwest Florida International Airport

FLUCFCS Code	Vegetation Description	Potential Listed Species
619	Exotic Wetland Hardwoods	Big Cypress Fox Squirrel*
6192	Exotic Wetland Hardwoods, Brazilian Pepper	Florida Black Bear*
6193	Exotic Wetland Hardwoods, Melaleuca	
625	Hydric Pine Flatwoods	Eastern Indigo Snake*
6259	Hydric Pine Flatwoods, Disturbed	Gopher Frog*
		American Bald Eagle*
		Southeastern American Kestrel*
		Red-cockaded Woodpecker*
		Florida Panther*
		Big Cypress Fox Squirrel*
		Florida Black Bear*
		Common Wild Pine
		Fakahatchee Burmannia*
		Satin Leaf*
600	Created Wetland	**American Alligator**
641	Freshwater Marsh	Eastern Indigo Snake*
6419	Freshwater Marsh, Disturbed	**Limpkin**
643	Wet Prairie	**Little Blue Heron**
6439	Wet Prairie, Disturbed	**Reddish Egret**
		Snowy Egret
		Tricolored Heron
		White Ibis*
		Florida Sandhill Crane
		Wood Stork
		Snail Kite
		Everglades Mink
743	Spoil Areas	American Alligator*
748	Cleared Areas	Gopher Tortoise
		Burrowing Owl
		Little Blue Heron*
		Snowy Egret*
		Tricolored Heron*
		Florida Sandhill Crane*
		Least Tern
811	Airport	None
814	Roads and Highways	
818	Airport Parking	

** Species not specifically noted to occur in habitat by County Ordinance but known to utilize general habitat type based on literature and past survey experience.*

***Bold Font**: Species observed within Midfield Terminal Complex facility and access roads during previous surveys*

Source: Kevin L. Erwin Consulting Ecologist, Inc.

Potential impacts to listed bird species caused by the proposed development activities will likely consist of impacts to potential wading bird foraging habitat; however, those wetlands that are outside of development areas (i.e. not filled or excavated) will continue to provide foraging habitat post development. The compensation for loss of foraging habitat resulting from direct filling or excavating of wetlands is typically provided via the wetland mitigation required as part of the U.S. Army Corps of Engineers (USACE) and South Florida Water Management District (SFWMD) permitting process. Given the high quality of the wetlands containing the wading bird roost, wading bird rookery, and Florida sandhill crane nest it is unlikely that these wetlands will be filled for development. Setbacks may be required if these nesting and roosting areas are active at the time of future development.

One species of mammal, the Big Cypress fox squirrel, has been observed on-site. Scattered Big Cypress fox squirrel nests were observed in cypress and melaleuca trees in hydric pine flatwoods, cypress/pine, and cypress habitats located south of Daniels Parkway, east and west of Chamberlin Parkway, and within the footprint of the future parallel runway. As discussed above, there is potential habitat for both the Florida black bear and Florida panther on-site and on adjacent off-site lands. These wide ranging species could potentially use any of the forested upland or wetland habitats on-site.

Impacts to the Big Cypress fox squirrel caused by development activities will consist of a loss of habitat and potential loss of nest trees depending on the locations of active nests at the time of development. Areas that are not developed will continue to provide potential nesting habitat for these squirrels. As discussed for wading birds above, compensation for the direct loss of nesting habitat is typically provided via the wetland mitigation required as part of the USACE and SFWMD permitting process. The FWS prepared a Biological Opinion for the Midfield Terminal Complex facilities. In this document, the FWS also evaluated the potential future development of areas outside of the Midfield Terminal project limits, which includes the lands within this study area. Their findings confirm that the enhancement, preservation, and long-term management of the Mitigation Park (6,986± acres) established by the LCPA will insure that the proposed development within the Master Plan study area will not adversely affect the Florida panther. While the Florida Black bear was not included in the Biological Opinion (because the Florida Black bear is not federally listed), it is likely that potential impacts to the Florida black bear by proposed future development within the master plan study area will also be adequately compensated at the Mitigation Park.

One species of listed reptile, the American alligator, has been observed on-site. This species was typically observed within the borrow lakes and less commonly within the wetlands on-site. No nesting has been observed, however it is likely that alligators occasionally nest somewhere within the Master Plan study area. No eastern indigo snakes have been observed on-site. This snake is commonly associated with gopher tortoise burrows; however, given the habitat types present on-site it is likely that the eastern indigo snake may be present.

Unless a project proposes to take an active alligator nest, mitigation for impacts to potential alligator habitat is typically not required. The wetland mitigation program required by the USACE and SFWMD typically compensates for impacts to potential eastern indigo snake habitat.

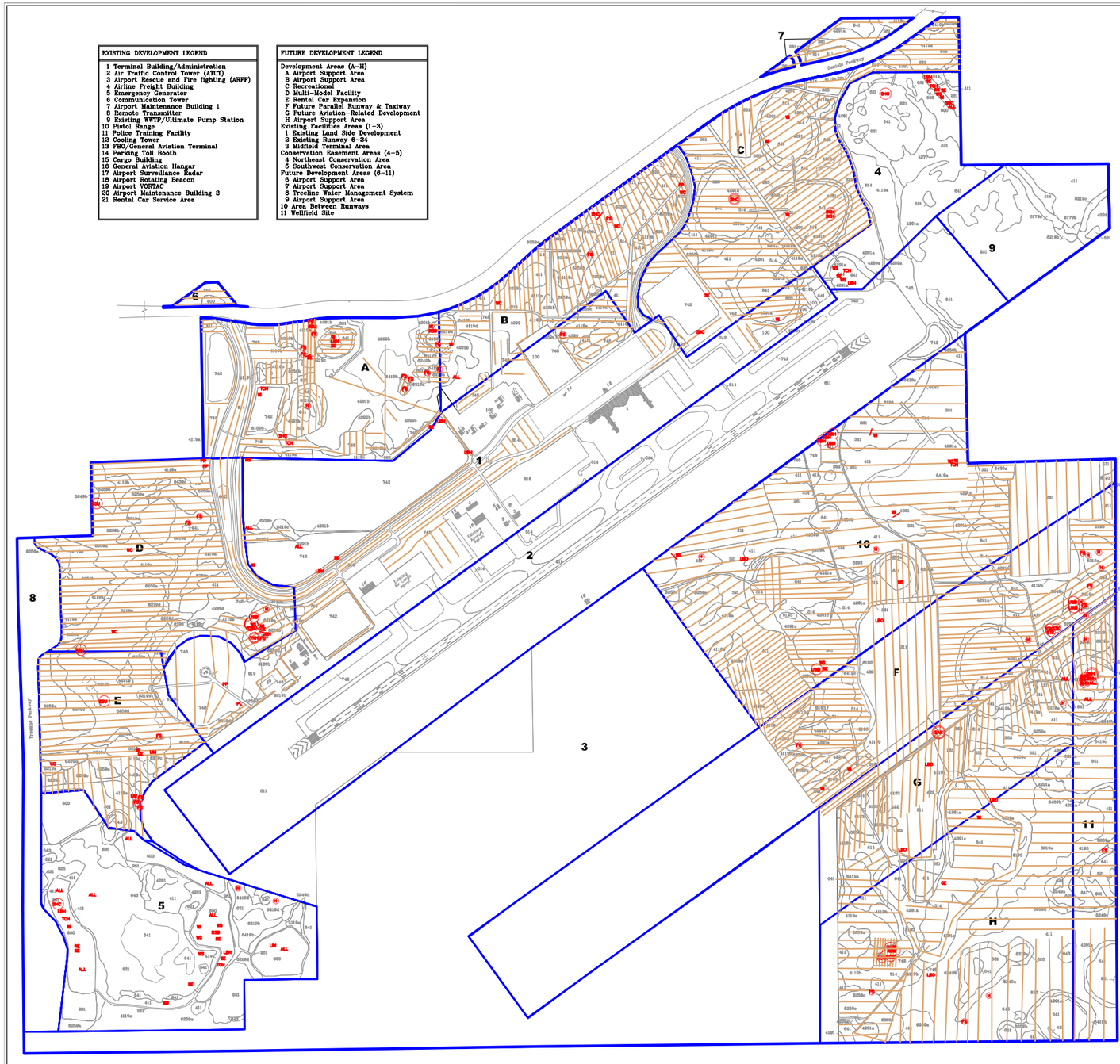
Six listed plant species have been observed on-site. None of these species are federally listed. State-listed plant species are regulated pursuant to the Preservation of Native Flora of Florida Act. The purpose of this rule is to prevent the wanton destruction of native plants and to

encourage propagation and salvage of plants being destroyed through property development. As such, there is no requirement for a landowner to preserve state listed plant species on-site or mitigate for potential impacts. Future development activities will likely result in impacts to state listed plant species; however, these species are also likely to occur in areas of the site that are not developed. In addition, the Mitigation Park provides potential habitat for these plants, and through proper management should continue to support healthy plant populations into the future.

In summary, as shown in **Exhibit 7-24** listed animal or plant species have been identified within the Master Plan study area project area. Careful site planning as part of future detailed site plan design can minimize impacts to these species. Remaining natural areas (upland and wetland) will continue to provide habitat for these species. Unavoidable impacts will be compensated at locations such as the Mitigation Park, in conjunction with the wetland mitigation required by the state and federal permitting agencies.

Exhibit 7-24

Listed Animal and Plant Species at RSW



EXISTING DEVELOPMENT LEGEND

1 Terminal Building/Administration
2 Air Traffic Control Tower (ATCT)
3 Airport Rescue and Fire fighting (ARFF)
4 Airline Freight Building
5 Emergency Generator
6 Communication Tower
7 Airport Maintenance Building 1
8 Remote Transmitter
9 Existing WWTP/Ultimate Pump Station
10 Pistol Range
11 Police Training Facility
12 Cooling Tower
13 FBO/General Aviation Terminal
14 Parking Toll Booth
15 Cargo Building
16 General Aviation Hangar
17 Airport Surveillance Radar
18 Airport Rotating Beacon
19 Airport VORTAC
20 Airport Maintenance Building 2
21 Rental Car Service Area

FUTURE DEVELOPMENT LEGEND

Development Areas (A-H)
A Airport Support Area
B Airport Support Area
C Recreational
D Multi-Model Facility
E Rental Car Expansion
F Future Parallel Runway & Taxiway
G Future Aviation-Related Development
H Airport Support Area
Existing Facilities Areas (1-3)
1 Existing Land Side Development
2 Existing Runway 6-24
3 Midfield Terminal Area
Conservation Easement Areas (4-5)
4 Northeast Conservation Area
5 Southwest Conservation Area
Future Development Areas (6-11)
6 Airport Support Area
7 Airport Support Area
8 Treeline Water Management System
9 Airport Support Area
10 Area Between Runways
11 Wellfield Site

FLUCFCS LEGEND

FLUCFCS CODE	HABITAT
100	Urban and Built-Up
211	Improved Pasture
261	Fallow Cropland
*262	Low Pasture
321	Palmetto Prairie
3219	Palmetto Prairie, Disturbed
411	Pine Flatwoods
4119	Pine Flatwoods, Disturbed
414	Pine/Mesic Oak
422	Brazilian Pepper
427	Live Oak
428	Cabbage Palm
4289	Cabbage Palm, Disturbed
*4291	Wax-Myrtle/Willow, Hydric
4299	Wax-Myrtle/Willow, Disturbed
**514	Drainage Canal
*600	Created Wetland
*6179	Mixed Wetland Hardwoods, Disturbed
*610	Exotic Wetland Hardwoods
*6192	Exotic Wetland Hardwoods, Brazilian Pepper
*6193	Exotic Wetland Hardwoods, Melaleuca
*621	Cypress
*621c	Cypress, Cut
*6219	Cypress, Disturbed
*6249	Cypress-Pine-Cabbage Palm, Disturbed
*625	Hydric Pine Flatwoods
*6259	Hydric Pine Flatwoods, Disturbed
*641	Freshwater Marsh
*6419	Freshwater Marsh, Disturbed
*643	Wet Prairie
*6439	Wet Prairie, Disturbed
**742	Borrow Areas
743	Spoil Areas
745	Cleared Areas
811	Airport
814	Roads & Highways
815	Airport Parking

* Potential Jurisdictional Wetland
** Potential Jurisdictional Other Waters

EXOTIC INFESTATION LEGEND

a = 5-24% Cover by Exotic/Nuisance Species
b = 25-49% Cover by Exotic/Nuisance Species
c = 50-75% Cover by Exotic/Nuisance Species
d = >75% Cover by Exotic/Nuisance Species

LISTED SPECIES LEGEND

SYMBOL	LISTED ANIMAL SPECIES
Reptiles	
ALL	Alligator
Birds	
BE	American Bald Eagle
BNH	Blackcrown Night Heron
GBH	Great Blue Heron
GE	Great Egret
H	Hawk
LBH	Little Blue Heron
LIM	Limpkin
RP	Roseate Spoonbill
SK	Scissor Skimmer
SNK	Southeastern American Kestrel
SNE	Snowy Egret
SHC	Florida Sandhill Crane
SWK	Swallow-Tailed Kite
TCH	Tricolor Heron
UWB	Unknown Wading Bird
WI	Wood Ibis
WE	White Ibis
YNH	Yellow Crowned Night Heron
Mammals	
BB	Florida Black Bear
FP	Florida Panther
FS	Big Cypress Fox Squirrel
SSU	Squirrel Nest, Species Unknown
WILDLIFE SYMBOL MODIFIERS	
	Potential/Old Nest
	Active Nest
	Flying
SYMBOL	**LISTED PLANT SPECIES**
LBO	Leafless Beak Orchid
PL	Pine Lily
PP	Pine Pink
WC	Wild Coco

Notes:
1. Mapping based on photo interpretation of aerial photographs provided digitally by RS&H and groundtruthing in August through October 2001.
2. Mapping of potential jurisdictional wetlands has not been field delineated, surveyed or approved by the appropriate agencies.
3. Property boundary based on digital file provided by RS&H, digital information provided by Johnson Engineering, Inc. (gathered from various sources) and Lee County Port Authority (information originally provided for another project) and transferred to the aerials based upon recognizable features (i.e., fence lines, roads, etc.)
4. Vegetation mapping is subject to field review and approval by all appropriate agencies and is intended for general planning purposes only.
5. Locations of canals and berms are approximate. and subject to field review and modification.
6. Listed species survey conducted January-March, 2002. Observations in Conservation Areas compiled from 1997-2002.
7. Locations of listed species sightings are approximate.

N W E S

800 400 0 400 800
SCALE

Kevin L. Erwin
Consulting Ecologist, Inc.
2077 Bayside Parkway Fort Myers Florida 33901 239-337-1505

Project: RSHEA101	File: VEGETATION	10-25-01	Drawn By: MGW
Lee County	Township	Range	Section(s)

Revision Date	Comments	Verified By:
10-25-01	veg-plant/n-10-24	CMS
1-30-02	minor tag/hatch/note revisions	CMS
3-18-02	minor veg., line revisions- ADD minimum pres, lines	CMS
4-12-02	add phases - hatch revisions	CMS
5-02	Wildlife information	CMS
8-11-02	Wildlife information	CMS

Southwest Florida International Airport Preliminary Vegetation and Listed Species Survey Transect Map

Lee County Port Authority

Birk Hillman
Orlando · Miami · Atlanta

DMJM Aviation

RS&H

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
MASTER PLAN UPDATE
AIRPORT WILDLIFE MAP

EXHIBIT
7-24

7.5.10 Wetland Overview

The discussion and analysis of wetlands and potential wetland impacts was a major element of the environmental overview chapter. This particular section is organized into four primary sections; an overview of the definitions of what is a wetland, an overview of previous wetland permitting at RSW, an analysis of potential wetland impacts as a result of the recommended twenty year development plan, and a brief mitigation strategy for the anticipated wetland impacts.

Wetland Overview

Wetland areas provide several functions: as a wildlife habitat to a variety of wildlife, as important water quality functions in an agricultural area, and provide flood attenuation benefits during the summer wet season. Development activities, such as dredging and filling, within wetlands are regulated by both the state and federal governments. They both use the following definition for wetlands:

> Those areas that are inundated or saturated by surface or ground water at a frequency and a duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The delineation of state jurisdictional wetlands and other surface waters is based on Chapter 62-340 FAC. The delineation of federal jurisdictional wetlands is based on the Clean Water Act (33 U.S.C. 1344), 33 CFR Part 328, and as described in Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 prepared by Department of the Army Waterways Experiment Station. Both regulations include the evaluation of vegetation, soils, and hydrology in the delineation of jurisdictional wetlands.

FAA Advisory Circular 1500/5200-23, Hazardous Wildlife Attractants On or Near Airports, recommends against land use practices that attract or sustain populations of hazardous wildlife within 10,000 feet of the Airport's movement areas, loading ramps or aircraft parking areas and within five statute miles of approach and departure airspace, where applicable.

In 1949, the Florida legislature created the Central and Southern Florida Flood Control District (FCD) to provide flood control to this portion of Florida. The Florida Water Resources Act of 1972, Chapter 373 Florida Statutes, created five water management districts with expanded regulatory authority in the state and in 1976 the name of the FCD and boundaries were changed to its current form. The SFWMD regulates the construction, alteration, operation, maintenance, repair, and abandonment of water management systems and requires that these activities are not harmful to the water resources of the District. Permits for these activities are reviewed and issued pursuant to Chapters 40-E4, 40-E40, and 4-E400, FAC. The USACE regulates wetlands pursuant to Section 404 of the Clean Water Act and the program's implementing regulations (33 CFR 320 – 330); therefore, many activities in wetlands require a dredge and fill Section 404 permit from the USACE; however, the January 9, 2001 Supreme Court ruling (commonly referred to as the SWANCC decision) confirmed that isolated wetlands, whose sole nexus to interstate commerce is potential use by migratory birds, is not subject to Section 404 regulatory authority.

Mitigation Park

The LCPA purchased 6,986 acres in eastern Lee County forming an almost contiguous preservation area extending from SR 82 to Corkscrew Rd. The intent of the purchase of the Mitigation Park is to provide mitigation for not only the Midfield Terminal Complex but for future airport projects identified in the Master Plan.

The Mitigation Park has provided compensation for impacts associated with both the USACE and SFWMD permits issued for the Midfield Terminal Complex project and will be utilized to offset wetland impacts for future RSW projects.

Since the early 1990s, the LCPA embarked on an ambitious project to acquire sufficient land for mitigation purposes sufficient for future development. **Exhibit 7-25** presents the 7,411 acre (6,986 acres owned by LCPA and 425 acres owned by Lee County) Mitigation Park for the airport, which provides connectivity to important environmental areas in southwest Florida. The LCPA has acquired approximately 6,986 acres in fee simple title adjacent to the 425-acre wellfield site. The Mitigation Park also provides connectivity to other offsite preservation areas. The Flint Pen Strand Addition connects to the Flint Pen Strand, which connects to the Corkscrew Swamp Sanctuary portion of the park, located in the southwest corner, which ties into Camp Keais Strand, Big Cypress National Preserve and Fakahatchee Strand, and ultimately to the Everglades National Park. Accumulation of these lands by LCPA over the last ten years has helped to protect them from possible commercial/residential development. The sheer magnitude of this land acquisition effort required a significant investment in both time and dollars. The LCPA's recent capital investment program has been dominated by this effort and has resulted in significantly delaying other needed expansion programs. The airport is currently working with the SFWMD to design and construct the mitigation areas within the Mitigation Park in conjunction with the permitting for the new Midfield Terminal Project. The current Master Plan and Environmental Assessment will evaluate the Mitigation Park for the ability to accommodate future projects identified in the 20-year Master Plan.

Previous Wetland Permitting

Wetlands within the boundaries of RSW are protected from unauthorized alteration by the USACE under Section 404 of the Clean Water Act and by the SFWMD under Chapter 373 Florida Statute and 40E-4 Florida Administrative Code. It is important to understand each agency evaluates wetlands different from each other and is explained below.

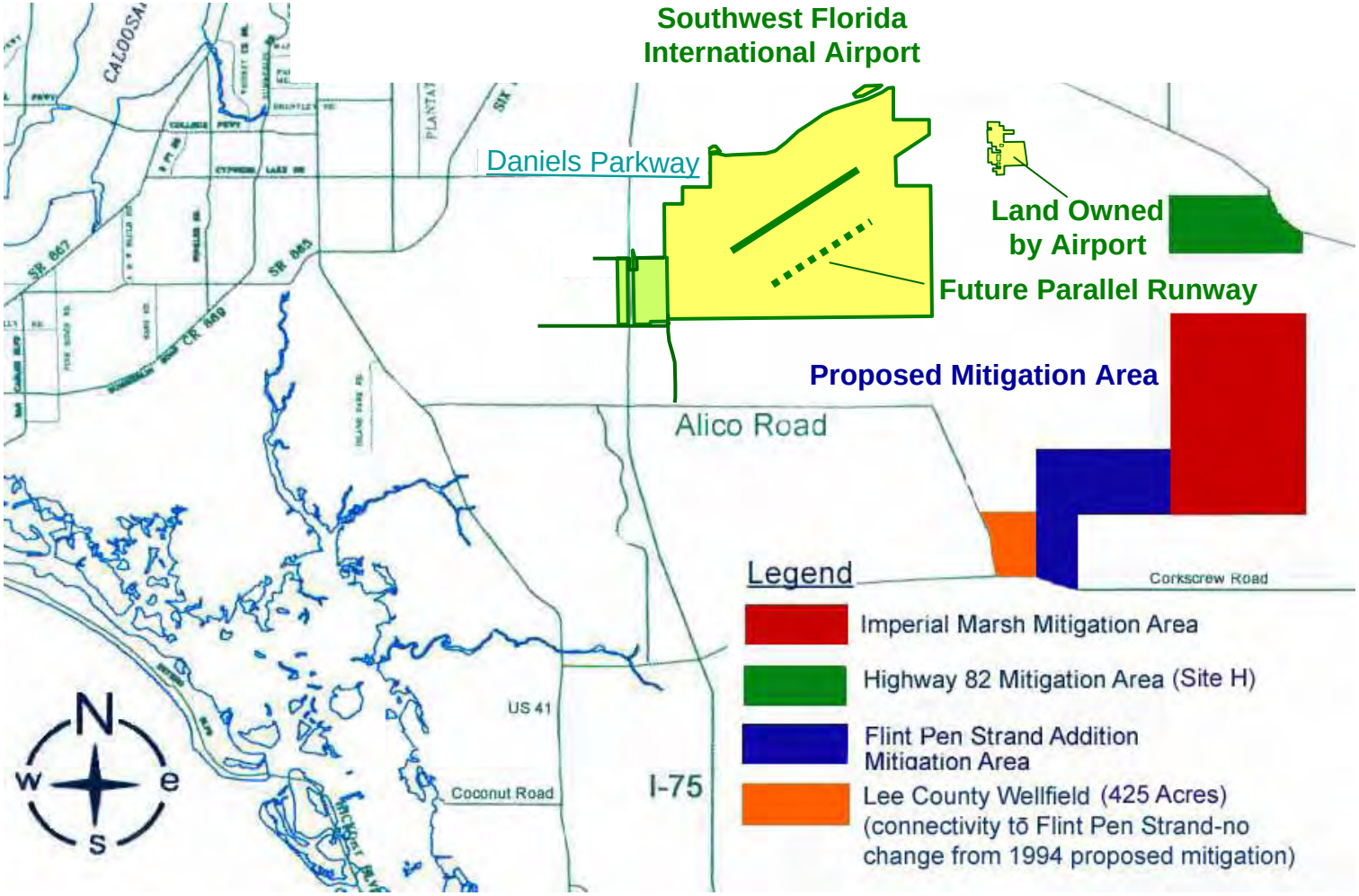
Wetland impacts for the USACE were evaluated by the Wetland Rapid Assessment Procedure (WRAP). WRAP variables that are analyzed include wildlife utilization, wetland overstory/shrub canopy, wetland vegetative ground cover, adjacent upland support/wetland buffer, field indicators of wetland hydrology, and water quality input and treatment systems. A WRAP analysis of all wetlands within the project area gives the baseline condition of all wetlands prior to construction. Another WRAP analysis of project area wetlands is conducted taking into account changes in the variables that will result from the construction of the project. A comparison of the post-construction and pre-construction WRAP scores indicates the anticipated impact of the proposed construction on the wetland functions and values. A lower post-construction score indicates a loss of wetland functions.

To determine an appropriate wetland mitigation to offset the loss in wetland function a similar pre- and post-WRAP analysis was done at the Mitigation Park. The pre-mitigation WRAP value at the Mitigation Park was determined and then a WRAP score was determined for the approved mitigation plan. The post-mitigation WRAP score at the Mitigation Park shows there are extra WRAP credits available to offset future LCPA projects for the USACE.

Wetland impacts for RSW projects under SFWMD jurisdiction are determined according to the criteria in 40E-4 F.A.C. and other applicable SFWMD criteria. For the Midfield Terminal Complex project the basis for the recently issued Environmental Resource Permit (ERP) was the 1996 Conceptual Permit issued to the LCPA.

Exhibit 7-25

Mitigation Park Location Map



Source: Reynolds, Smith and Hills, 2002

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE MITIGATION PARK LOCATION MAP	EXHIBIT 7-25

The USACE Midfield Terminal Complex permit authorized impacting 706 acres of wetlands and was mitigated for in the mitigation park previously discussed. As mitigation for these wetland impacts, as determined by the pre and post WRAP analysis, the LCPA provided 2,636 acres of upland enhancement and upland preservation; 3,710 acres of wetland enhancement and wetland preservation; and 56 acres of upland restoration. Using the pre and post WRAP scores indicates "excess" credits in the Mitigation Park of 237 units, not including a future WRAP evaluation of the 574 acres of wetlands created for the SFWMD ERP. This future evaluation will be conducted after these created wetlands have met the success criteria outlined in the SFWMD permit. Future SWFIA projects involving wetland impacts can be mitigated by determining the WRAP scores of these future wetland impacts and deducting this value from 237 units, the to be determined credits available from the SFWMD created wetlands, and the future mitigation development of the 505 acres in Site H.

The SFWMD ERP for the Midfield Terminal Complex authorized impacting 645 acres including consideration of secondary and cumulative impacts and listed species habitat impacts. As mitigation for these impacts the LCPA provided 1,664 acres of upland preservation; 953 acres of upland enhancement; 3,379 acres of wetland preservation; 361 acres of wetland enhancement; 574 acres of wetland creation; and 56 acres of upland restoration. There is 505 acres in Site H available for future mitigation. The LCPA placed the Mitigation Park under a Conservation Easement to the SFWMD and will also have the WMD be responsible for the long-term management of the Mitigation Park. The LCPA will provide the SFWMD with a one-time management endowment for their long-term management activities. The SFWMD will implement the CREW management plan within the Mitigation Park. The SFWMD states in their staff report for the Midfield Terminal Complex ERP that based on the difference between the impacts in the conceptual permit, 690 acres, and those in the ERP, 645 acres, that only approximately 45 acres of future impacts can be mitigated in the Mitigation Park using the 505 acres of available habitat in Site H.

Existing Wetland Analysis

The approximate extent of state and/or federal jurisdictional wetlands has been delineated within the project area. For the purposes of this study, the project area is defined as lands owned by the LCPA on August 1, 2001 that are contiguous with the existing RSW facility (with the exception of three small parcels separated from the contiguous ownership by the extension of Daniels Parkway) and a map depicting wetlands by quality is shown in **Exhibit 7-26**.

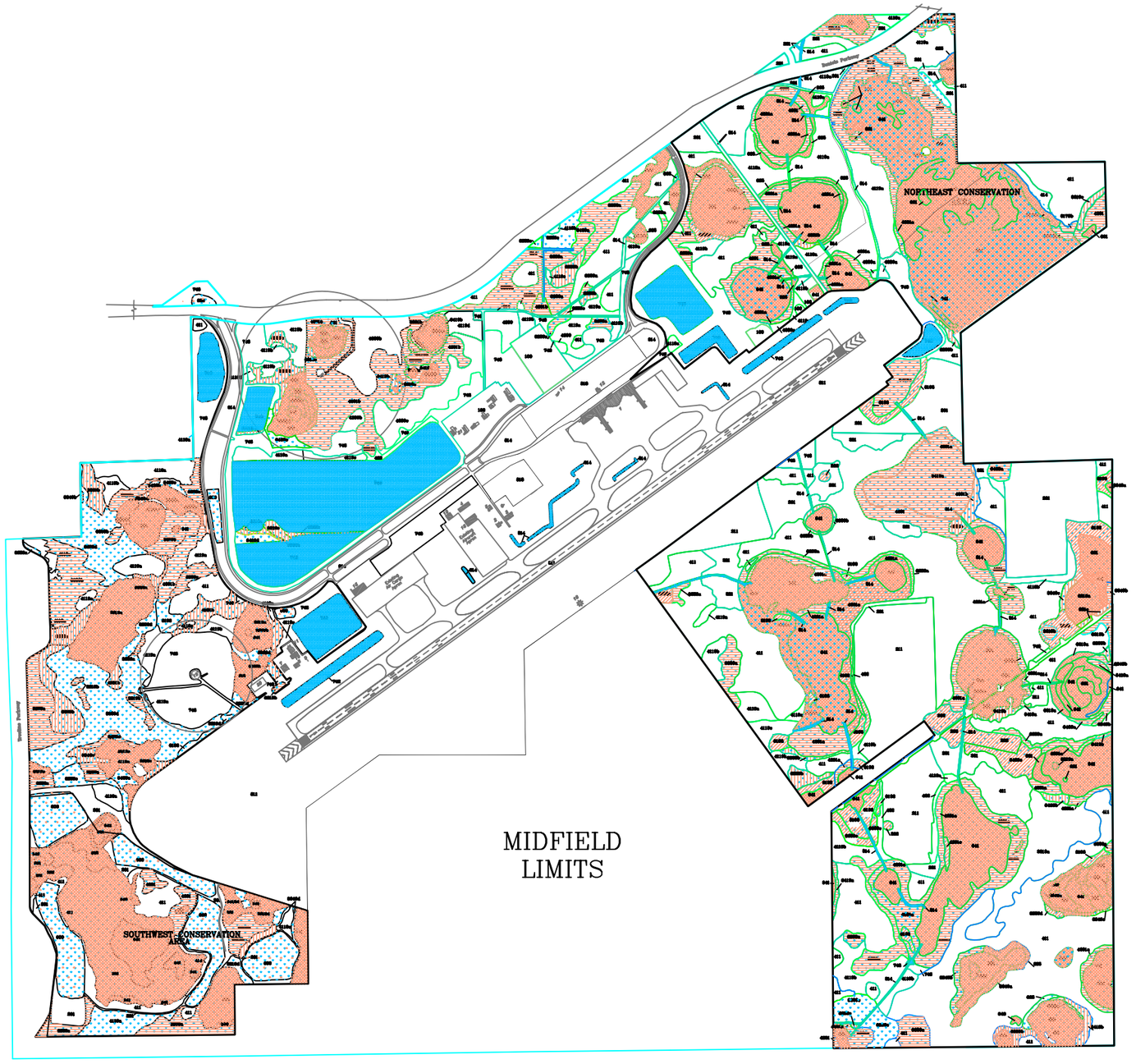
The project site consists of a mosaic of habitat types. A total of 35 plant communities have been delineated. Approximately 1,878.8 acres of jurisdictional wetlands and 237.9 acres of other surface waters have been identified within the site, exclusive of the existing Runway 6-24 and recently approved Midfield Terminal Complex areas (**Table 7-33**). The wetlands range from forested to non-forested systems and from relatively high quality to very low quality. Hydric pine flatwoods is the dominant forested wetland on-site. Much of this habitat type, particularly the areas south from Daniels Parkway to the existing Runway 6-24, has become invaded by melaleuca. This exotic species can form dense stands and thereby reduces the diversity of native plant species. Cypress and cypress/pine are the other dominant forested wetland type on-site. These areas are more deeply inundated by standing water during the wet season than the hydric flatwoods and typically contain lower levels of exotic vegetation. Several areas of shrub (wax myrtle) dominated wetlands occur onsite. This wetland type occurs on the fringes of herbaceous wetlands or in wet agricultural fields that have been fallow for many years. Non forested

wetlands consist primarily of freshwater marshes. These large marshes are a dominant feature of the landscape south of the existing Runway 6-24.

The other surface water category consists primarily of borrow areas excavated during the construction of the existing airport facilities. They were used both to provide fill material and surface water management. The littoral zones of the borrow areas range from approximately three to 20 feet in width.

Exhibit 7-26

Wetlands Map



N

W E

S

Not To Scale

HATCH LEGEND

- High Quality Wetland
- Moderate Quality Wetland
- Low Quality Wetland
- Very Low Quality Wetland
- Created Wetland
- Other Waters
- Upland

Source: Kevin L. Erwin Consulting Ecologist, Inc., 2002

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FORT MYERS, FLORIDA

MASTER PLAN UPDATE
WETLANDS MAP

EXHIBIT
7-26

Table 7-33
Summary of Existing Conditions (to be completed at a later date)
Southwest Florida International Airport

FLUCFCS CODE	Habitat	Percent Cover By Exotic/Nuisance Species					Total
		>5%	(a) 24%	(b) 25-49%	(c) 50-75%	(d) >75%	
100	Urban and Build-up					44.9	44.9
211	Improved Pasture					147.2	147.2
261	Fallow Cropland					196.0	196.0
*262	Low Pasture					16.0	16.0
321	Palmetto Prairie	30.7					30.7
3219	Palmetto Prairie, Disturbed		40.0				40.0
411	Pine Flatwoods	556.0					556.0
4119	Pine Flatwoods, Disturbed		186.8	67.1	9.6	5.7	269.2
414	Pine/Mesic Oak	5.9					5.9
422	Brazilian Pepper	10.4					10.4
427	Live Oak	0.5					0.5
4289	Cabbage Palm, Disturbed		1.1		0.9		2.0
*4291	Wax-myrtle/Willow, Hydric	78.7	152.7	81.4	11.3	8.8	332.9
4299	Wax-myrtle/Willow, Disturbed	10.2		21.6	23.4		55.2
**514	Drainage Canal					20.9	20.9
*600	Created Wetland	91.5					91.5
*6179	Mixed Wetland Hardwood, Disturbed		4.1	1.0			5.1
*6189	Willow and Elderberry, Disturbed		0.8	1.8			2.6
*619	Exotic Wetland Hardwoods					7.3	7.3
*6192	Exotic Wetland Hardwoods, Brazilian Pepper					1.0	1.0
*6193	Exotic Wetland Hardwoods, Melaleuca					45.5	45.5
*621	Cypress	276.5					276.5
*621c	Cypress, Cut					1.2	1.2
*6219	Cypress, Disturbed		96.0	27.9	7.1	4.3	135.3
*6249	Cypress-Pine-Cabbage Palm Disturbed		8.3	10.2	5.8	1.2	25.5
*625	Hydric Pine Flatwoods	43.0					43.0
*6259	Hydric Pine Flatwoods, Disturbed		142.2	68.5	33.9	94.7	339.3
*641	Freshwater Marsh	445.6					445.6
*6419	Freshwater Marsh, Disturbed		56.0	14.5	1.8	4.0	76.3
*643	Wet Prairie	8.7					8.7
*6439	Wet Prairie, Disturbed		9.9	3.1	12.5		25.5
**742	Borrow Areas					217.0	217.0
743	Spoil Areas					7.0	7.0
748	Cleared Areas					229.8	229.8
811	Airport					2407.4	2407.4
814	Roads and Highways					187.6	187.6
818	Airport Parking					51.2	51.2
	Totals						
	Upland Sub-Totals	613.7	227.9	88.7	33.9	3276.8	4241.0
	*Wetland Sub-Totals	944.0	470.0	208.4	72.4	184.0	1878.8
	** Other Surface Waters Sub-Totals	0.0	0.0	0.0	0.0	237.9	237.9
	Project Totals	**1557.7**	**697.9**	**297.1**	**106.3**	**3698.7**	**6357.7**

Source: Kevin L. Erwin Consulting Ecologist, Inc.

Agricultural drainage ditches comprise the remainder of the other surface water category on-site. These ditches vary in width and depth and were excavated to drain the wetlands on-site. The majority of the large freshwater marshes on the property have been interconnected by these ditches. This has resulted in a reduced hydroperiod, which, in turn, has facilitated the colonization of the transitional edges by wax myrtle and melaleuca.

As described above, the wetlands on-site have been affected by previous land use activities. Excavation of drainage canal and borrow lakes has altered the site's hydrology. The transitional edges of a majority of the freshwater marshes on the property have been used in the past to grow row crops such as tomatoes, peppers or melons. During the winter growing season for row crops in southwest Florida these transitional zones would retain sufficient moisture to grow crops without the need of supplemental irrigation. The furrows created by the farming can be seen on historical aerial photographs and are still noticeable on the ground today. All of the lands within the Master Plan study area south of the AOA were being utilized as pasture or rangeland for cattle at the time of the vegetation mapping in 2001. The altered hydrology and previous farming activity, in concert with fire suppression, has resulted in transitional areas becoming invaded by shrubs and exotics. Fallow agricultural fields have also become overgrown by exotics. In general the most disturbed lowest quality wetlands are found in the area located south of Daniels Parkway, east of Fuel Farm Road, north of the AOA / Southwest Conservation Area, and west of Treeline Avenue. The wetlands located within the conservation areas, east and northeast of Runway 6-24, and south of the AOA are generally in better condition. Wetlands that have longer hydroperiods (i.e. cypress and freshwater marsh) typically have lower levels of exotic vegetation.

Potential Wetland Impact Analysis

In order to more accurately analyze potential wetland impacts, the study area has been divided into 19 areas based on either existing land use, existing conservation status, or potential future land use as shown on **Exhibit 7-27**. The land uses have also been segregated by those lands required for aviation activities versus land that could be potentially leased to tenants. The approximate acreage of uplands, of high, moderate, low and very low quality wetlands, of other surface waters is summarized by area on **Table 7-34**. The general character of each area is discussed below.

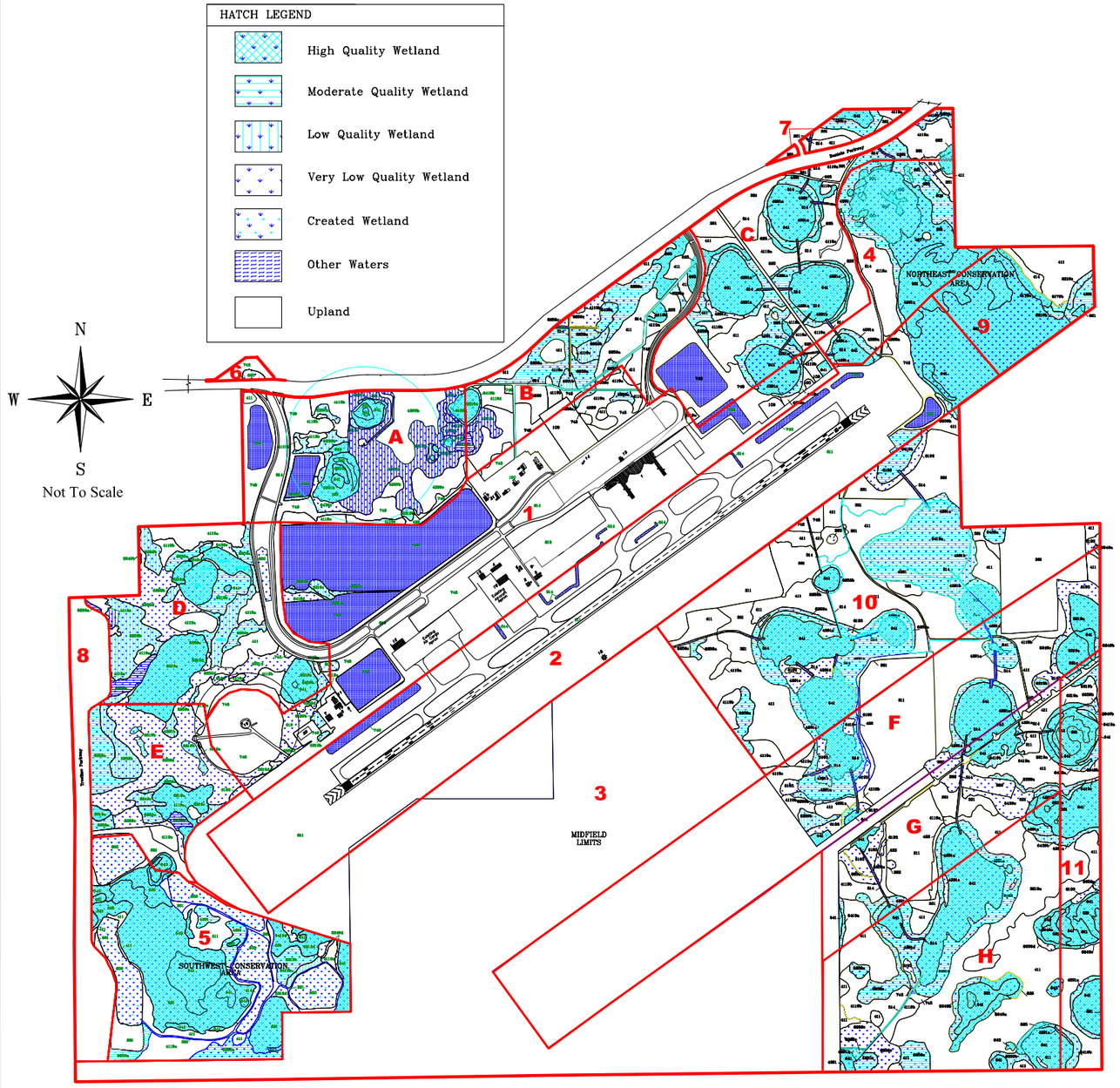
Development Area A (241.4± acres) is located in the southeast quadrant of the Daniels Parkway - Chamberlin Parkway intersection. The parcel consists of 121.6± acres of uplands, 99.4± acres of wetlands, and 20.4± acres of other surface waters (Table 7-34). The majority of the wetlands consist of low quality shrub dominated wetlands that are located within a fallow farm field. Several small isolated high quality cypress wetlands areas are also present. The other surface waters consist entirely of excavated lakes. Based on current projections, the development of this area is outside of the 20-year planning window; however, it is anticipated that future development plans would be designed to avoid impacts to the cypress dominated wetlands to the extent practicable.

Development Area B (182.8± acres) is located south of Daniels Parkway and east of development area A and north of the existing rental car facilities. The parcel consists of 102.1± acres of uplands and 79.1± acres of wetlands (**Table 7-34**). The majority of the wetlands consist of moderate quality hydric pine flatwoods. The presence of existing roadways to the north and east, and existing development to the south makes this area a logical location for future development activities.

Development Area C (299.5± acres) is located in the southeast quadrant of the Daniels Parkway - Paul J. Doherty Parkway intersection and is bisected by Fuel Farm Road. The parcel consists of 137.6± acres of uplands, 136.9± acres of wetlands, and 25.0± acres of other surface waters (**Table 7-34**). The majority of the wetlands consist of four large high quality freshwater marshes. A 21± acre excavated lake is also present in the southwest corner of the parcel. Given the high quality of the four marshes, it is anticipated that the majority of these areas will not be impacted by future development activities.

Exhibit 7-27

Wetland Grid Map/FLUCS



Source: Kevin L. Erwin Consulting Ecologist, Inc. and Reynolds, Smith and Hills, Inc., 2002

Wetland and Upland Acreage Summary by Identified Development Area

Development Areas (A-H)	Wetland					Other Surface Waters	Uplands	Area Total
	High Quality	Moderate Quality	Low Quality	Very Low Quality	Total			
A-Airport Support Area	25.3	4.2	66.4	3.5	99.4	20.4	121.6	241.4
B-Airport Support Area	13.9	43.2	14.6	7.4	79.1	1.6	102.1	182.8
C-Recreational	85.0	47.5	2.2	2.2	136.9	25.0	137.6	299.5
D-Multi-Modal Facility	62.6	31.2	45.2	41.6	180.6	0.2	87.1	267.9
E-Rental Car Expansion	23.3	30.3	14.7	65.3	133.6	0.0	21.0	154.6
F-Future Parallel Runway & Taxiway	60.8	26.1	8.5	25.3	120.7	2.5	436.2	559.4
G-Future Aviation-Related Development	30.8	18.0	2.8	35.6	87.2	2.4	134.8	224.4
H-Airport Support Area	96.2	61.1	4.6	17.3	179.2	2.0	210.5	391.7
Existing Facilities Areas (1-3)								
1-Existing Land Side Development	10.4	5.4	6.7	17.4	39.9	157.1	465.6	662.6
2-Existing Runway 6-24	47.7	4.3	1.1	0.1	53.2	21.1	665.0	739.3
3-Midfield Terminal Area	0.0	0.0	0.0	0.0	0.0	0.0	1212.9	1212.9
Conservation Easement Areas (4-5)								
4-Northeast Conservation Area	87.2	29.7	0.0	0.0	116.9	0.5	38.1	155.5
5-Southwest Conservation Area	221.9	28.8	2.1	5.4	258.2	0.0	61.3	319.5
Future Development Areas (6-11)								
6-Airport Support Area	1.6	0.0	0.0	0.0	1.6	0.0	5.6	7.2
7-Airport Support Area	3.8	0.0	5.6	0.0	9.4	0.4	12.4	22.2
8-Treeline Water Management System	0.0	0.0	0.0	0.0	0.0	0.0	102.4	102.4
9-Airport Support Area	76.0	7.5	2.2	0.0	85.7	0.0	27.6	113.3
10-Area Between Runways	65.6	120.3	7.0	18.8	211.7	4.7	345.8	562.2
11-Wellfield Site	61.6	16.2	5.3	2.4	85.5	0.0	53.4	138.9
Total	973.7	473.8	189.0	242.3	1878.8	237.9	4241.0	6357.7

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SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
MASTER PLAN UPDATE
AIRPORT WETLANDS GRID ANALYSIS

EXHIBIT
7-27

Table 7-34
Wetland and Upland Acreage Summary by Identified Development Area
Southwest Florida International Airport

Development Areas (A-H)	Wetland					Other Surface Waters	Uplands	Area Total
	High Quality	Moderate Quality	Low Quality	Very Low Quality	Total			
A-Airport Support Area	25.3	4.2	66.4	3.5	99.4	20.4	121.6	241.4
B-Airport Support Area	13.9	43.2	14.6	7.4	79.1	1.6	102.1	182.8
C-Recreational	85.0	47.5	2.2	2.2	136.9	25.0	137.6	299.5
D-Multi-Modal Facility	62.6	31.2	45.2	41.6	180.6	0.2	87.1	267.9
E-Rental Car Expansion	23.3	30.3	14.7	65.3	133.6	0.0	21.0	154.6
F-Future Parallel Runway & Taxiway	60.8	26.1	8.5	25.3	120.7	2.5	436.2	559.4
G-Future Aviation-Related Development	30.8	18.0	2.8	35.6	87.2	2.4	134.8	224.4
H-Airport Support Area	96.2	61.1	4.6	17.3	179.2	2.0	210.5	391.7
Existing Facilities Areas (1-3)								
1-Existing Land Side Development	10.4	5.4	6.7	17.4	39.9	157.1	465.6	662.6
2-Existing Runway 6-24	47.7	4.3	1.1	0.1	53.2	21.1	665.0	739.3
3-Midfield Terminal Area	0.0	0.0	0.0	0.0	0.0	0.0	1212.9	1212.9
Conservation Easement Areas (4-5)								
4-Northeast Conservation Area	87.2	29.7	0.0	0.0	116.9	0.5	38.1	155.5
5-Southwest Conservation Area	221.9	28.8	2.1	5.4	258.2	0.0	61.3	319.5
Future Development Areas (6-11)								
6-Airport Support Area	1.6	0.0	0.0	0.0	1.6	0.0	5.6	7.2
7-Airport Support Area	3.8	0.0	5.6	0.0	9.4	0.4	12.4	22.2
8-Treeline Water Management System	0.0	0.0	0.0	0.0	0.0	0.0	102.4	102.4
9-Airport Support Area	76.0	7.5	2.2	0.0	85.7	0.0	27.6	113.3
10-Area Between Runways	65.6	120.3	7.0	18.8	211.7	4.7	345.8	562.2
11-Wellfield Site	61.6	16.2	5.3	2.4	85.5	0.0	53.4	138.9
Total	**973.7**	**473.8**	**189.0**	**242.3**	**1878.8**	**237.9**	**4241.0**	**6357.7**

Source: Kevin L. Erwin Consulting Ecologist, Inc. and Reynolds, Smith and Hills, Inc.

Development Area D (267.9± acres) is located west of Chamberlin Parkway and east of Treeline Avenue. The parcel consists of 87.1± acres of uplands and 180.6± acres of wetlands (Table 7-34). The majority of the wetlands consist of moderate to very low quality hydric pine flatwoods. Significant infestations of melaleuca occur in these wetlands. Three large cypress dominated wetlands are also present in this parcel. These high quality wetlands contain low levels of exotics, primarily Brazilian pepper. Detailed site planning will insure that unavoidable wetland impacts occur in the lowest quality wetlands to the extent practicable.

Development Area E (154.6± acres) is located east of Treeline Avenue and south of development area D. This parcel consists of 21.0± acres of uplands and 133.6± acres of wetlands (**Table 7-34**). The majority of the wetlands consist of very low quality hydric pine flatwoods that has become dominated by melaleuca. Two areas of high quality cypress wetland and one area of high quality hydric pine flatwoods wetland are also present within the parcel. Detailed site planning will insure that unavoidable wetland impacts occur in the lowest quality wetlands to the extent practicable.

Development Area F (559.4± acres) is the future parallel runway and is located approximately 4,500 feet south of the existing Runway 6-24. The parcel consists of 436.2± acres of uplands, 120.7± acres of wetlands, and 2.5± acres of other surface waters (**Table 7-34**). Approximately half of the area is within the permitted project limit of the Midfield Terminal Complex facilities and as such is considered to be uplands as part of this review. The majority of the wetlands consist of either high quality freshwater marsh or high quality cypress. The fringes of these wetlands are dominated by wax myrtle or melaleuca. The location of the future runway and associated taxiways are fixed by FAA requirements; therefore, all of the wetlands within this area will be filled as part of the facility construction. Impacts to these wetlands were reviewed as part of the 1994 FONSI.

Development Area G (224.4± acres) is located south of the future parallel runway. The parcel consists of 134.8± acres of uplands, 87.2± acres of wetlands, and 2.4± acres of other surface waters (**Table 7-34**). The majority of the wetlands consist of lower quality wax myrtle or melaleuca dominated areas. Portions of several high quality freshwater marshes also occur within the parcel. The other surface waters consist of agricultural drainage ditches. The westerly 18.4± acres of the parcel is within the permitted boundary of the Midfield Terminal Complex facilities and as such is considered to be uplands as part of this review. Based on current projections, the development of this area is outside of the 20-year planning window; however, it is anticipated that future development plans would be designed to avoid impacts to the higher quality freshwater marsh wetlands to the extent practicable.

Development area H (391.7 acres) is located in the southeast corner of the Airport. The parcel consists of 210.5± acres of uplands, 179.2± acres of wetlands, and 2.01± acres of other surface waters (Table 7-34). The majority of the wetlands consist of either high quality freshwater marsh or high quality cypress. The fringes of these wetlands are dominated by wax myrtle or melaleuca. The other surface waters consist of agricultural drainage ditches. The westerly 16.1± acres of the parcel is within the permitted boundary of the Midfield Terminal Complex facilities and as such is considered to be uplands as part of this review. Based on current projections, the development of this area is outside of the 20-year planning window; however, it is anticipated that future development plans would be designed to avoid impacts to the higher quality freshwater marsh and cypress wetlands to the extent practicable.

Existing Facilities Area 1 (662.6± acres) is the existing terminal, general aviation, passenger parking, and rental car facilities. The majority of this parcel (465.6± acres) consists of cleared and/or developed uplands. Approximately 39.9 acres of wetlands and 157.1± acres of other surface waters are also present (**Table 7-34**). The wetlands consist of a high-quality freshwater marsh located at the northeast end of the parcel and exotic dominated wetlands located at the southwest end of the parcel. Based on current projections, future development activities that could potentially impact wetlands, will be located at the northeast end of this area.

Existing Facilities Area 2 (739.3± acres) is the existing Runway 6-24 and it's protection zones. The majority of this parcel consists of cleared and filled uplands. For the purposes of this evaluation all of the areas within the AOA were considered to be uplands. Approximately 53.2 acres of predominately high-quality wetlands are present at the northeast end of this parcel within the runway protection zone (**Table 7-34**). No additional wetland impacts are proposed for this area as part of the 20 year Master Plan.

Existing Facilities Area 3 (1,212.9± acres) is the recently permitted project limits of the Midfield Terminal Complex facilities and as such is considered to be uplands as part of this review (Table 7-33); therefore, no additional wetland impacts will occur in this area.

Conservation Easement Area 4 (155.5± acres) is the Northeast Conservation Area located at the northeast end of Runway 6-24. The parcel consists of 38.1± acres of uplands, 114.9± acres of wetlands, 2.0± acres of created wetlands, and 0.5± acres of other surface waters (**Table 7-34**). The majority of the wetlands consist of high quality freshwater marsh and cypress habitat. The wetland creation, enhancement of the native wetlands via exotic control, and long-term management of both the wetlands and uplands was required by the state and federal permits issued for the Runway 6-24 extension. No development activities are proposed to occur within this area.

Conservation Easement Area 5 (319.5± acres) is the Southwest Conservation Area located at the southwest end of Runway 6-24. The parcel consists of 61.3± acres of uplands, 176.6± acres of native wetlands, and 81.6± acres of created wetlands (**Table 7-34**). The majority of the wetlands consist of high-quality freshwater marsh and cypress habitat. The wetland creation, enhancement of the native wetlands via exotic control, and long term management of both the wetlands and uplands was required by the state and federal permits issued for the Runway 6-24 extension. No development activities are proposed to occur within this area.

Future Development Area 6 (7.2± acres) is located north of the Daniels Parkway - Chamberlin Parkway intersection. The parcel consists of 5.6± acres of uplands and 1.6± acres of wetlands (**Table 7-34**). The wetland within this area appears to have been created from improved pasture as part of the surface water management system for Daniels Parkway. No development activities are proposed for this area at this time.

Future Development Area 7 (22.2± acres) is located north of Daniels Parkway in the northeast corner of the Master Plan study area. The parcel consists of 12.4± acres of uplands, 9.4± acres of wetlands, and 0.41± acres of other surface waters (**Table 7-34**). The wetlands consist of high-quality freshwater marsh with a fringe of wax myrtle and melaleuca. The majority of the marsh extends off-site to the north. Based on the location of the wetlands on the parcel and the proposed future land use, it is anticipated that future wetland impacts will be primarily to a portion of the transitional wax myrtle and melaleuca fringe of the freshwater marsh.

Future development area 8 (102.4± acres) is the permitted portion of the Treeline Avenue alignment within the Master Plan study area boundary. For the purposes of this study, the area is considered to be entirely upland (**Table 7-34**). No additional development of this area is proposed at this time.

Future development area 9 (113.3± acres) is located northeast of the runway protection zone at the northeast end of Runway 6-24. The parcel consists of 27.6± acres of uplands and 85.7± acres of wetlands (**Table 7-34**). The majority of the wetlands consist of high quality cypress and freshwater marsh habitat. Development activities are proposed not to occur within 20 planning horizon.

Future development area 10 (562.2± acres) is located south of the existing Runway 6-24 and north of the proposed future parallel runway. The parcel consists of 345.8± acres of uplands, 211.7± acres of wetlands, and 4.75± acres of other surface waters (**Table 7-34**). The majority of the wetlands consist of large- high- or moderate-quality freshwater wetlands. Future development activities within this area will be limited to placement of navigational aides and access roads to those facilities. It is anticipated that the majority of these development features will be located either within uplands or the lower quality wetlands.

Future development area 11 (138.9± acres) is located south of the proposed future parallel runway along the east edge of the Master Plan study area. The parcel consists of 53.4± acres of uplands and 85.56± acres of wetlands (**Table 7-34**). The majority of the wetlands consist of high-quality cypress and freshwater marsh habitat. Development activities are proposed not to occur within 20 planning horizon.

Based on the proposed 20-year Master Plan it is anticipated that approximately 297 acres of wetlands will be impacted (excavated, filled or cleared of native vegetation) as part of development activities over the next 20 years. This represents less than 16 percent of the wetlands that are currently estimated to occur on-site. Approximately 148 +/- acres of wetlands will be impacted for aviation related activities and 149 +/-acres of wetlands will be impacted for airport support related land uses and would carry a long term lease. State and federal permits will be required for the future development of the parcels described above. The LCPA will be required to obtain the necessary permits for aviation related activities while each individual tenant would be required to obtain their own individual permits including mitigation for the airport support related land use impacts. This permitting process will include the stepwise sequence of wetland impact avoidance, wetland impact minimization, and wetland impact mitigation. Through this process it is anticipated that site specific designs of each development site, with the exception of the future parallel runway, will result in minimal impacts to the high quality wetlands with the remaining unavoidable impacts occurring within lower quality disturbed wetlands. The location of the future parallel runway and associated taxiways are fixed by the location of the existing Runway 6-24, the location of the Midfield Terminal Complex, and FAA requirements; therefore, this portion of the proposed future development will have unavoidable impacts to high quality wetlands.

Mitigation Strategy

Wetland mitigation will be required for unavoidable wetland impacts. Previous wetland impacts associated with RSW have been mitigated for on-site (the southwest and northeast conservation

areas) and off-site (the 6,986± acre Mitigation Park). The FAA currently discourages placing perpetual conservation easements over property contiguous with an airport. Therefore, on-site wetland mitigation, which will require conservation easements be placed over the mitigation areas, is not a viable alternative for the unavoidable wetland impacts described above.

As discussed above, the USACE and SFWMD use differing procedures to evaluate the amount of mitigation required to compensate for unavoidable wetland impacts. The USACE uses the WRAP analysis. In order to estimate the number of WRAP credits required to compensate for the 148 +/- acres of anticipated aviation related wetland impacts, the WRAP scores previously approved by the agencies for a representative sample of high, moderate, low, and very low quality wetlands at the Midfield Terminal Complex was used to calculated an average WRAP score for each relative wetland category. These average WRAP scores were then applied to the anticipated wetland impacts resulting in an estimated USACE wetland mitigation requirement of 97 +/- WRAP credits. The SFWMD used a 10:1 ratio (10 acres of mitigation : 1 acre of wetland impact) to calculate the state wetland mitigation requirement. This would equate to 1480 +/- acres of either wetland preservation, enhancement, restoration, or creation, upland preservation or restoration, or a combination of all of these activities.

The permitting of the Midfield Terminal Complex established the 6,986± acre Mitigation Park for RSW. Wetland impacts authorized by that permit did not use all of the wetland mitigation available at the Mitigation Park. It is estimated that 237± WRAP credits plus the future potential credits derived from the 574± acres of wetlands created for the SFWMD and the 505 acre Site H are available to mitigate the anticipated impacts under the USACE permitting process. This exceeds the estimated 197 +/- WRAP credits required to compensate for the 148 +/- acres of aviation related wetland impacts. However, pursuant to the current SFWMD permit, the Mitigation Park can provide mitigation for only 45± acres of additional wetland impact. The remaining 103 +/- acres of anticipated aviation related wetland impacts will need to mitigated at another location.

Three general potential mitigation strategies have been identified to address the anticipated mitigation shortfall with the SFWMD. Depending upon mitigation availability and wetland mitigation requirements the LCPA may pursue options to purchase and enhance additional properties adjacent to the Mitigation Park or other publicly owned conservation lands. Lee County has also initiated discussions with the regulatory agencies to evaluate the potential of using enhancement of lands purchased under the Conservation 2020 program as wetland mitigation for County sponsored projects. The second option is to participate in FDOT's wetland mitigation program. Through this program the LCPA would pay into a fund which the DEP and SFWMD would use in turn to undertake mitigation strategies. The third potential strategy is to purchase credits from mitigation banks permitted pursuant to the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (Federal Register Vol. 60 No. 228) and the Establishment and Operation of Mitigation Banks (Chapter 373.4136, Florida Statutes). The existing wetland mitigation banks that could potentially supply mitigation credits also use WRAP. Presuming the Mitigation Park is used to mitigate for 45± acres of aviation related impacts to high quality wetlands, approximately 61 mitigation bank credits would be require to compensate for the remaining anticipated aviation related wetland impacts. The ultimate decision on the type of wetland mitigation to be provided (i.e. newly purchased off-site lands, Conservation 2020 lands, FDOT mitigation program or mitigation bank credits) will be dependant on site specific conditions, current rules and regulations (including wetland evaluation procedures), and regulatory agency negotiations at the time of permitting for each proposed

development area that contains wetland impacts. It is anticipated that a series of the required state and federal wetland permits will be obtained over a period of years as the development plans for each area become finalized. It is also recommended that the LCPA initiate discussions with the SFWMD concerning the amount of credits given to the mitigation park which could ultimately increase the number of credits available for future mitigation.

As stated above, individual tenants of airport support land uses will be required to provide their own wetland mitigation to compensate for unavoidable wetland impacts. On-site mitigation is not a practical mitigation alternative. Therefore, all required mitigation for the anticipated 149 +/- acres of impacts of airport support related land uses will occur off-site. This may take the form of land purchase, enhancement and preservation, or the purchase of mitigation credits from a wetland mitigation bank. Based upon the average WRAP scores described above, the 149 +/- acres of airport support wetland impacts would require the purchase of 86 +/- mitigation bank credits.

Recommendations

In order to facilitate the environmental permitting of future phases of projects at RSW it is recommended that the LCPA undertake the following actions.

- The LCPA should seek to confirm with the USACE that the 6,986± acre Mitigation Park contains 237 credits plus addition potential credits from 574 acres of wetlands created for the SFWMD, which were not required as mitigation for the Midfield Terminal Project in addition to the mitigation available in site H. The permit issued by the USACE does not clearly state that these additional credits are in fact available for use for future RSW expansion. The USACE Statement of Findings document should be carefully reviewed to determine if this critical item is well defined. The goal of these discussions would be written confirmation from the USACE that the Mitigation Park does in fact contain additional wetland mitigation credits that can be used by the LCPA for future RSW expansion projects.

- Discussions should be initiated with the SFWMD to re-evaluate the amount of wetland mitigation credits assigned to the Mitigation Park by the SFWMD during the previous conceptual and Midfield Terminal Project construction permitting processes. The ratios used during those permit reviews appear to under estimate the ecological benefits that will be realized from this 6,986± acre enhancement and preservation project. The LCPA should consider re-evaluating the project using the state wide Unified Mitigation Assessment Method (when finally adopted) to determine if that evaluation process will result in additional mitigation credits being available.

- In order to facilitate the favorable review of future proposed wetland impacts and the potential assignment of additional mitigation credits to the Mitigation Park, the LCPA should strive to meet or exceed all permit requirements and/or mitigation success criteria for existing LCPA mitigation areas. This will require a commitment to a rigorous exotic/nuisance species control program for the first several years of each project and objective oversight so that potential problems can be identified and corrected.

- The LCPA should continue evaluating other potential wetland mitigation options (i.e. purchase of additional lands, Conservation 2020, FDOT mitigation program, and mitigation banks) in the event that the SFWMD does not agree to favorably re-evaluate the Mitigation Park.

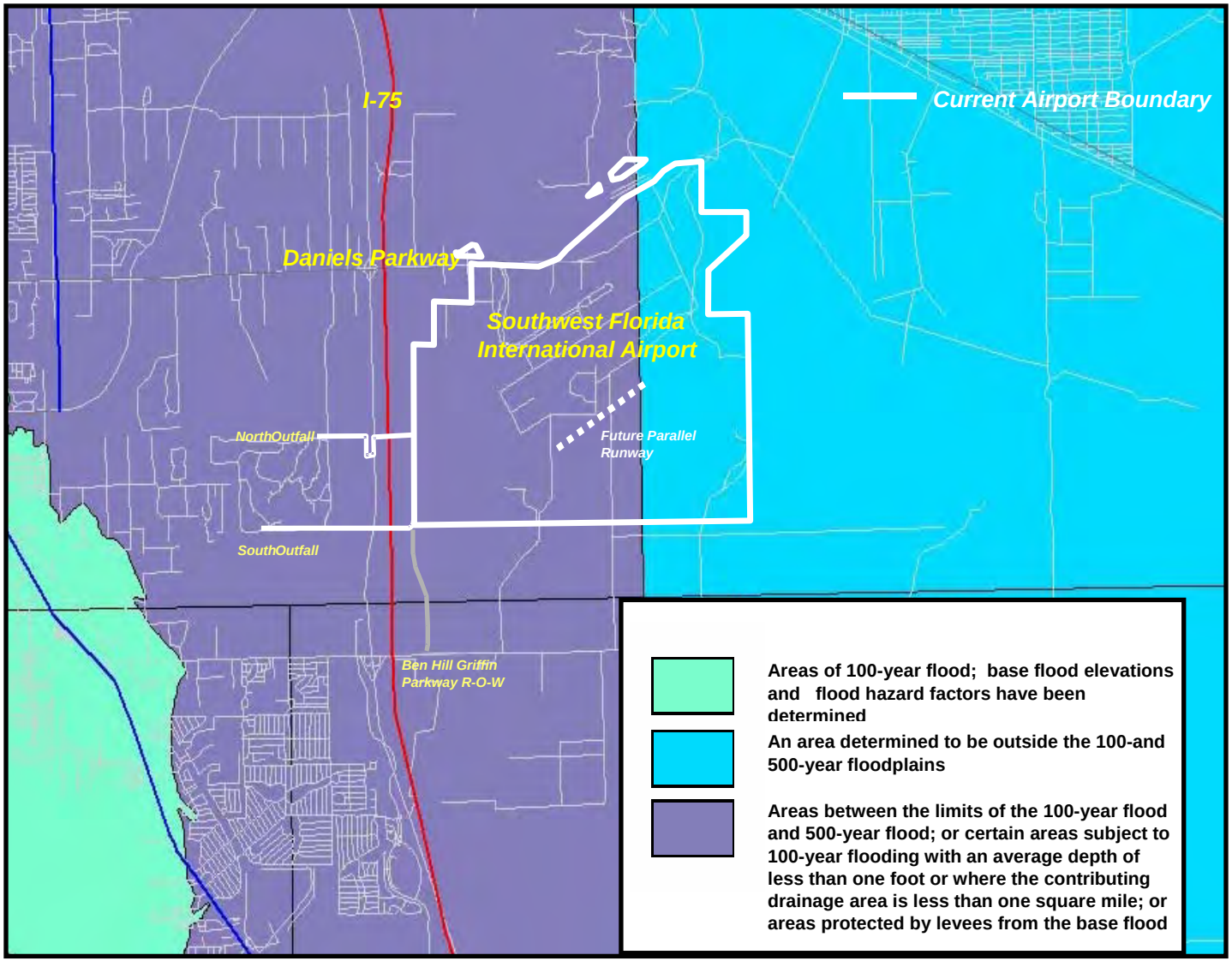
- The two cypress wetlands that contained active nests of colonial nesting wading birds should be inspected annually. This will be required to determine if these areas are established nesting sites used each year or if the nesting observed in 2002 was an atypical event.

7.5.11 Floodplains

Floodplains are defined by Executive Order 11988 as "the lowland and relatively flat areas adjoining inland and coastal waters." At a minimum, floodplains include areas that are subject to a one percent or greater chance of flooding in any given year (i.e., the area that would be inundated by a 100-year flood). **Exhibit 7-28** represents the known areas of inundation during a 100-year flood event in the vicinity of the proposed airport as shown on the FEMA Flood Insurance Rate Map. All proposed development is outside the 100-year flood plain.

Exhibit 7-28

Flood Plains Map



Source: Reynolds, Smith and Hills, 2001

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
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FLOODPLAINS MAP

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7.5.12 Coastal-Zone Management Program

The Coastal Zone Management Program Act of 1977 requires federal agencies to review activities with regard to direct effects to coastal zones. Florida has the nation's second longest coastline with approximately 8,400 miles of tidally influenced shoreline. Any activities which directly effect the state coastline are subject to determination of consistency with Florida's Coastal Zone Management Program. Activities which are likely to require consistency determinations include:

- Any project subject to state or federal dredge and filling permitting review;
- Any point or non-point source discharge to surface waters, and;
- Major industrial expansion or development projects.

The coordination with the Florida State Clearinghouse indicated that the proposed development is consistent with the Florida Coastal Management Program (FCMP).

7.5.13 Coastal Barriers

The Coastal Barriers Resource Act of 1982, PL 97-348 (CBRA) prohibits, with some exception, federal financial assistance for development within the Coastal Barriers Resources System. CBRA maps were reviewed to determined potential impacts to coastal barriers due to the proposed airport development.

RSW is not located in areas designated for coastal barrier review.

7.5.14 Wild and Scenic Rivers

The Wild and Scenic Rivers Act (PL 90-542) protects rivers that are described as free-flowing and possessing "outstandingly remarkable, scenic, recreational, geological, fish and wildlife, historic, cultural, and other similar values." According to the 1982 National Rivers Inventory, there are no rivers within close proximity of RSW that are protected by the Wild and Scenic Rivers Act.

The Caloosahatchee National Wildlife Refuge and the Koreshan State Historic Site are designated as Outstanding Florida Waters, defined as "water worthy of special protection due to its natural attributes". Outstanding Florida Waters are protected by Section 403.061, Florida Statutes, and 62-302.700, Florida Administrative Code.

None of the rivers defined above are located within the vicinity of RSW and no impact to these river systems is expected as a result of the airport development; therefore, there would be no impacts to the wild and scenic rivers, nor Outstanding Florida Waters.

7.5.15 Prime and Unique Farmland

The Farm Protection Policy Act (FPPA), PL 97-98, which became effective August 6, 1984, authorizes the United States Department of Agriculture to establish evaluation criteria to identify

impacts associated with federally funded projects converting agricultural land to non-agricultural land. Prime and unique farmland is considered to be available land that is best suited for producing food, feed, forage, and other type of crops. In addition, prime and unique farmland has the soil quality and moisture supply needed to produce and sustain high yields of crops when treated and managed according to modern farming methods.

Some of the existing and future land uses in the vicinity of the airport are agricultural and industrial. The majority of adjacent agricultural land identified for future acquisition is not currently being farmed and therefore would not be impacted by future airport development.

7.5.16 Energy Supply and Natural Resources

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

- Stationary sources (i.e. terminal building, other facilities, airfield lighting); and
- Mobile sources (i.e. aircraft and automobiles).

Development of airport facilities, including the development of additional terminal space and gates, increased apron area, new parallel runway and associated taxiway system would be the primary sources of increased stationary energy consumption.

Mobile energy consumption is primarily from the consumption of aircraft fuel. As discussed previously in the airport facility demand section of this report, it is anticipated that the existing single runway will reach 63 percent of the runway's capacity by the year 2005 and 76 percent of the runway's capacity by the year 2010. The additional planned parallel will actually help reduce fuel consumption by minimizing aircraft delays due to capacity issues.

7.5.17 Light Emissions

Airport lighting systems are generally located in the airfield, apron, terminal, parking lots and access roadways. FAA Order 5050.4A states that the airport sponsor shall consider the extent to which lighting associated with an airport action will create an annoyance among people in the vicinity of an installation. Several factors are considered to determine if annoyance may exist:

- Site location of lights or lighting systems.
- Purpose of the light system, either pole or ground mounted, beam angle, intensity, color, flashing frequency and other pertinent characteristics.
- Possible measures, including shielding or angular adjustments, available to lessen any annoyance.

Light emissions which may create an annoyance to residents in the vicinity of the airport must be taken into account. Possible lighting projects to occur at the Airport include the construction of an approach lighting system for the proposed parallel runway, lighting for the parallel runway, taxiway lighting and visual navigation aids.

Only in unusual circumstances, such as the effect of high intensity strobe lights shining directly into a residence, would the impact of light emissions be considered sufficient to warrant special study. The majority of property surrounding the airport is sparsely populated with very few residential structures; therefore, lighting at RSW would not generate any significant impacts to surrounding property owners.

7.5.18 Solid Waste Impact

Solid waste is typically affected by commercial, industrial and major terminal development as opposed to airfield development such as runways and taxiways. Current solid waste produced by the airport is handled by a private contractor. The waste is hauled off site to an incinerator operated by Lee County. Although the master plan is recommending additional terminal expansion, it is anticipated that the additional demand can be accommodated by private contractors and the Lee County incinerator.

Generally, landfills near airports are considered to be a potential impact due to a landfill's tendency to attract birds, possibly creating strike hazards with approaching and departing aircraft. FAA Order 5200.5A, *Waste Disposal On or Near Airports,* provides guidance regarding the location of sanitary landfills on or near airports. Landfills located within 10,000 feet of any point of a runway are considered as incompatible land uses. There are no landfills within 10,000 feet of RSW.

7.5.19 Construction Impacts

Potential construction impacts include noise generated by construction equipment, dust from delivery of materials and denuded earth, creation of borrow pits and disposal of soil, air pollution from burning debris, and water pollution from erosion and sedimentation. These types of potential impacts are described below:

- Noise-Heavy construction equipment will generate noise; however, it is expected that this noise will occur only during the daylight hours. During construction of any new facilities, it is expected that temporary noise impacts could occur but not near any residential areas. This impact will not be permanent in nature.

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

- Air Emissions-Air emission impacts from construction activity could occur. Construction activity would produce emissions from vehicular equipment, burning of debris, and other construction activity associated with the project. A temporary increase in emissions could occur due to the presence of constantly running internal combustion engines. While these activities would produce a temporary increase of emissions, they are typical of large construction projects and would not pose any lasting impacts.

- Erosion-Some erosion and sedimentation in the vicinity of the proposed development may occur during major construction activities. Erosion control measures required by the FAA, FDEP, SFWMD, and other agencies would be incorporated into the project design plans and specifications. The potential amount of erosion is determined by the area of denuded earth, the duration of exposure, and meteorological season that construction occurs. FAA Advisory Circular 15015370-1 OA, *Standards for Specifying Construction of Airports*, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control provides effective pollution prevention practices that will be implemented during construction.

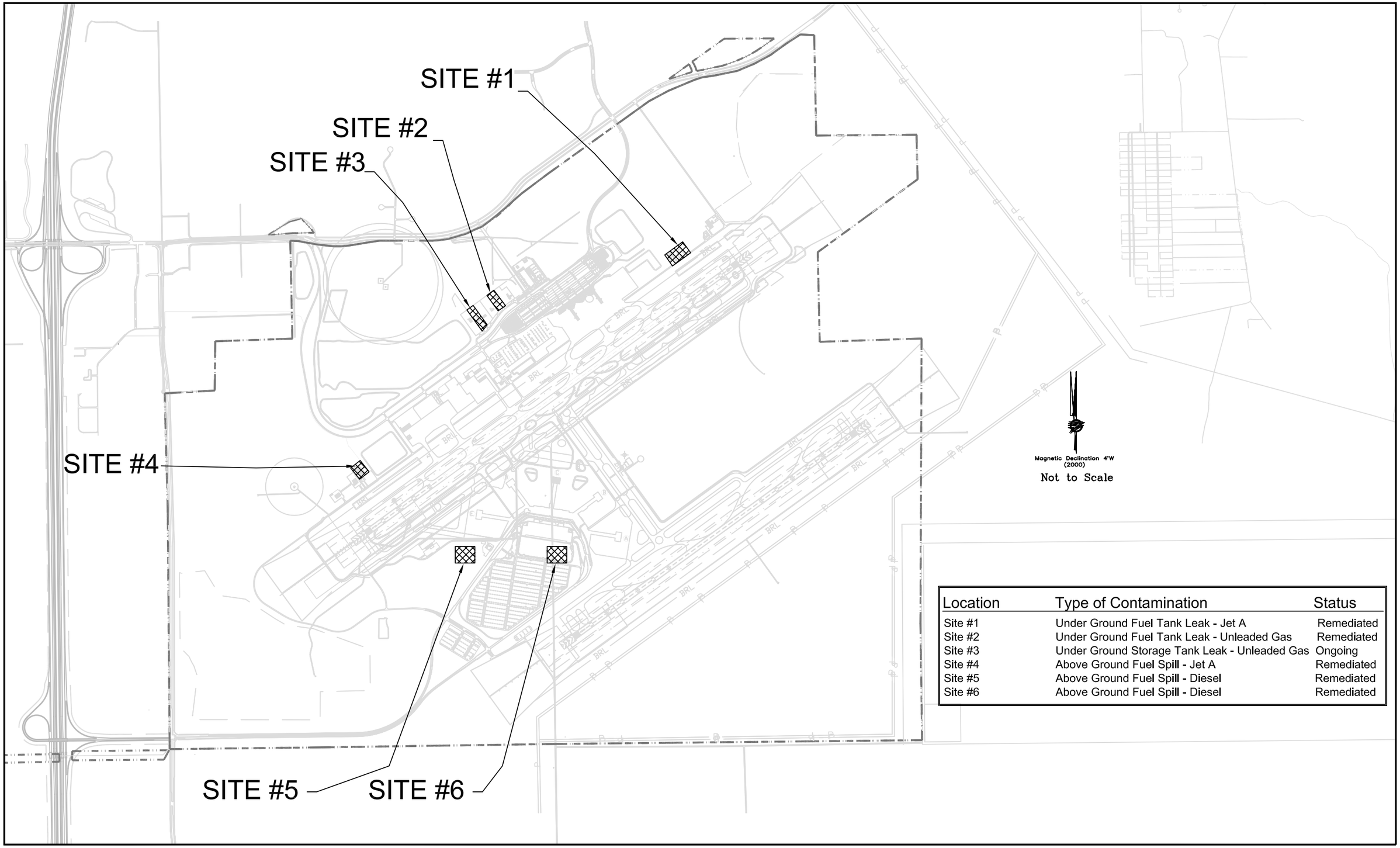
Potential impacts are associated with this category; however, they are the types of impacts that effective construction techniques can minimize.

7.5.20 Potential Contaminated Sites

A cursory review of available information in Airport records indicated four sites on Airport property that have subjected to contamination as a result of fuel spills. Three of the four sites have since been remediated and the forth is currently underway. **Exhibit 7-29** presents the general location of the four sites on airport property.

Exhibit 7-29

Contamination Sites



Location	Type of Contamination	Status
Site #1	Under Ground Fuel Tank Leak - Jet A	Remediated
Site #2	Under Ground Fuel Tank Leak - Unleaded Gas	Remediated
Site #3	Under Ground Storage Tank Leak - Unleaded Gas	Ongoing
Site #4	Above Ground Fuel Spill - Jet A	Remediated
Site #5	Above Ground Fuel Spill - Diesel	Remediated
Site #6	Above Ground Fuel Spill - Diesel	Remediated

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MASTER PLAN UPDATE

AIRPORT CONTAMINATION SITES MAP

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7.5.21 Airport Drainage

Hydrologically, the SWFIA is predominantly located within the Six Mile Cypress Watershed Basin. Generally, all surface water within this basin travels in a westerly direction toward the Six Mile Cypress Strand, the Ten Mile Canal, and then out into the Gulf of Mexico.

Historically, the flow of stormwater runoff within the area of the Airport has been predominantly dispersed over the land surface and a drainage map of the airport is shown in **Exhibit 7-30**. With the construction of I-75 directly west of the Airport property, this flow was channeled through two separate box culverts (one north and one south of the northerly section line for Section 34, Range 25 E, Township 45S) and underneath a 145-foot-long bridge on the south end of Section 34. Flow from the interstate box culverts then runs west under Fiddlesticks Boulevard and, ultimately, into the Six Mile Cypress Strand. Flow from the 145-foot-long bridge runs both west to Ten Mile Canal and northwest into Six Mile Cypress Strand, the Ten Mile Canal, and then out into the Gulf of Mexico.

The SFWMD and the Lee County Commissioners have each adopted regulations that limit the surface water outfall for developed properties in the Six Mile Cypress Watershed to 37 cubic feet per second per square mile (csm). Outfalls of greater than 37 csm may result in downstream flooding and create a drought effect for onsite ecological systems. A 37 csm outfall would also result in a beneficial hydroperiod for the downstream Six Mile Cypress Strand.

Lee County includes the 37 csm requirement in its Development Standards Ordinance (DSO). The DSO allow the use of a variety of mitigative efforts, such as onsite water detention in swales and basins, and other structural methods of regulating flow, to reduce the overall discharge into the Ten Mile Canal.

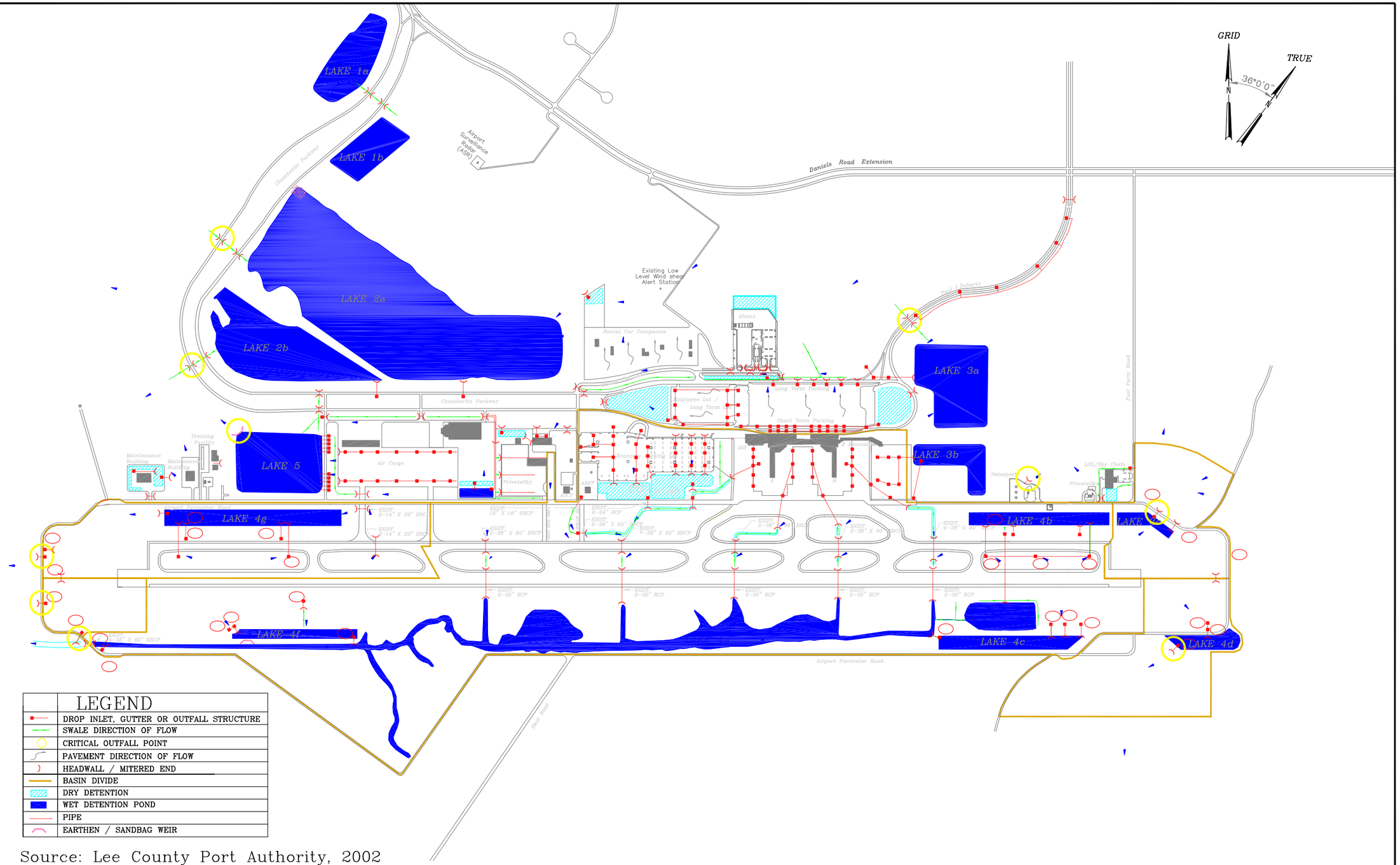
Implementation of the midfield terminal relocation added approximately 623.5 acres of additional impervious surfaces and required an expanded surface water management system at SWFIA. This additional impervious surface also includes the future parallel runway.

The basic concept is a self-contained watershed system for the Airport. The watershed boundary is Shown in **Exhibit 7-30**, generally Daniels Parkway and its proposed Northeast extension on the North; FPL easement on the east and south; the south line of sections 31,34,35 and 36 on the south; and future Treeline Avenue on the west. Since sheetflow is predominantly from northeast to southwest, the future Treeline Avenue acts as the control for surface flow coming off the west side of the Airport Property. From Treeline Avenue, it will be routed through two conveyances to positive outfalls.

The plan for surface water runoff near the south side of the existing runway is to perpetuate existing flow to the west. The existing perimeter road will separate the surface water runoff of the existing facilities from that of the proposed facilities. There will be two primary detention areas. The northwesterly detention area will serve the existing terminal facilities and the proposed taxiway and will provide pretreatment and water quality treatment. The southerly detention area will provide pretreatment, water quality and water quantity control for the Midfield Terminal facilities currently under construction. The facilities will discharge to the southerly detention area then over a weir to the westerly flowway. The entire area is and will be held to the 37csm allowable discharge for 25-year storm event by the system design. Control at Treeline Avenue is provided by weirs. Weir gates are used to preempt storrmwater runoff or hold water back to protect previously flooded downstream areas.

Exhibit 7-30

Airport Drainage Map



Source: Lee County Port Authority, 2002

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MASTER PLAN UPDATE
AIRPORT DRAINAGE MAP

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All future development will be designed similarly to the Midfield Terminal project with a self contained watershed system and will be designed for the 37 csm requirement outlines by the South Florida Water Management District. As recommended previously, a master stormwater plan is recommended during the early phases of the planning period to guide the LCPA with the overall drainage plan for the airport and to help with permitting with individual projects.

7.6 ENVIRONMENTAL OVERVIEW-SUMMARY

As mentioned earlier in this chapter, the purpose of this environmental overview is to provide a generalized analysis of some of the environmental issues facing RSW. Detailed summary and recommendations for each specific section have been included where appropriate. Highlighted Suggested action items include:

- Preparation of a stormwater drainage master plan that would develop a long-term drainage solution for the airport to accommodate the 20-year development plan.
- Update the current SWPPP and SPCC plan for the airport.
- Initiate discussions with the SFWMD to re-evaluate the amount of mitigation credits assigned to the mitigation park during the previous conceptual and midfield terminal permitting process.
- Develop a long-term wetland mitigation plan to address impacts resulting from the development of the facility which include evaluating the three alternatives listed in this section only after completing discussions with the SFWMD mentioned above.
- Confirm with the USACE that the additional credits remaining in the mitigation park are available for future projects.
- Work cooperatively with federal, state and local agencies to minimize the environmental impacts of the 20-year development plan.
- LCPA should anticipate working cooperatively with the FAA and FDOT to ensure adequacy of FAA finding of no significant impact for future development.
- Prepare an update to the noise overlay zone by 2006.

8 FINANCIAL PLAN

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, intermediate, 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.

In general, the financial plan for the Master Plan Update was conducted as follows:

- A overview of the Airport's financial structure was prepared to present the current accounting practices, financial operating environment, and key provisions of the Airport's Airline Agreement.

- Potential funding sources were identified including the FAA's Airport Improvement Program (AIP), Florida Department of Transportation (FDOT) funding, and other funding sources. Project costs not funded by these sources are expected to be funded by some combination of Airport funds and general airport revenue bonds.

- The Airport's existing financial operating results were examined to determine its primary revenue generating sources, as well as its major expenses.

This chapter, which presents the results of the financial analysis, is organized as follows:

- Financial Structure Overview
- Capital Improvement Program
- Sources of Funding for the Capital Improvement Program
- Airport Revenue Sources
- Operating Expenses

8.1 FINANCIAL STRUCTURE OVERVIEW

This section discusses Authority accounting practices, including the cost center structure utilized for airline rate-setting purposes, the requirements and provisions of the Bond Resolution, and the status of the business and operating relationship between the Authority and the Participating Airlines.

8.1.1 Airport Accounting

The accounting and financial reporting policies of the County conform to generally accepted accounting principles for local government units set forth by the Government Accounting Standards Board. Enterprise funds are used to account for operations that are financed and operated in a manner similar to private business enterprises where the intent of the governing body is that the costs of providing goods and services to the general public be financed or recovered primarily through user charges. As such, the Airport is established as an Enterprise Fund of the County.

Operating Expenses and Operating Revenues of the Authority are categorized into Cost Centers. Cost Centers include those areas or functional activities used for the purposes of accounting for the financial performance of the Airport. There are four Cost Centers included in the Airport's financial structure. The Cost Centers included in the Airport's financial structure are described in greater detail below:

- **Airfield** – Pursuant to the Authority's residual airport rate-setting methodology, the Airfield Cost Center includes all areas of the Airport, excluding those elements included in the Terminal, Cargo Building, and Fueling System cost centers.

- **Terminal** – The Terminal includes the passenger terminal complex on the Airport, including the aircraft parking apron immediately adjoining the terminal building, but excluding all parking lots, roads and service facilities beyond the pedestrian sidewalk in front of the landside terminal building and the Cargo Building and its adjoining aprons, ramps, and parking areas.

- **Cargo Building** – The Cargo Building Cost Center includes Investment Service, Operating Expenses, and Operating Revenues associated with the operation of the airline cargo building. The Cargo Building Cost Center does not include costs or revenues associated with operations of all-cargo carriers or the cargo ramp.

- **Fueling System** – The Fueling System Cost Center includes Investment Service and Operating Expenses associated with the hydrant fueling system. The annual fuel system payments from the airlines to the Authority are based upon a combination of debt service, land rent, and insurance costs. Other costs may be billed to the Fuel System Cost Center if directly related to the operation and maintenance of the hydrant fueling system. For rate-setting purposes, revenues and expenses for the Fueling System Cost Center are included in the Airfield Cost Center.

8.1.2 Airline Agreement

The term of the Airline Agreement between the Authority and the Participating Airlines expires December 31, 2008. Participating Airlines are required to pay landing fees, fees for the use of Exclusive Space in the Terminal and for the use of Cargo Building Space, Gate Area Charges, and Baggage Claim Area Charges, through the term of the Airline Agreement.

As presented in the Airline Agreement, the following key elements are included in the rate-setting methodology:

- "Residual" terminal rental rates for the Terminal Building using total Airline and Authority leased square feet as the divisor.
- An Airport "residual" landing fee rate using airline landed weight as the divisor. Miscellaneous and cargo landing fee revenues are credited to the airline landing fee requirement.
- A debt service coverage rebate to the Participating Airlines. In general, this rebate is equal to the net of 25 percent of Debt Service payable in the Fiscal Year, less the amount required to be transferred into the various Airport funds (i.e., Discretionary Fund [2], Working Capital Account, etc.).

8.2 CAPITAL IMPROVEMENT PROGRAM

The following sections detail the 20-year Capital Improvement Program (CIP) for the short-, intermediate-, and long-term development periods.

8.2.1 Short Term Improvements – 2003 Through 2005

Midfield Terminal Expansion (Phase 1)
This expansion includes the currently on-going construction of a 28-gate Midfield Terminal, a new freight facility, cargo road improvements from Chamberlin Parkway, Fuel Farm expansion, and all associated automobile parking.

Rehabilitate Runway 6-24 and Parallel Taxiway
Based on the inspection of the runway pavement and the input of LCPA operations and maintenance representatives of LCPA, the runway needs to be rehabilitated during the short-term development program. This project will include the complete rehabilitation of the runway with reconstruction of those areas exhibiting extreme deterioration. Subsequently, a runway rehabilitation report was completed by DMJM Aviation in 2002. Once the paving is completed the 12,000-foot long, 150-foot wide runway will need to be re-striped for a precision approach and the touchdown zones will need to be grooved. Additionally, this project will include an overlay of Taxiway A and all connecting taxiways.

[2] The amount transferred into the Authority's Discretionary Account equals 12.5 percent of the Debt Service payable in the Fiscal Year, up to a maximum of $2.5 million.

Rehabilitate Air Cargo Ramp
This project consists of the rehabilitation of the air cargo apron and reconstruction of the aircraft apron where the pavement has failed. The total area of the cargo pavement project is approximately 70,000 square yards. Additionally, this project will include a number of drainage improvements.

General Aviation Hangar
This project is the first of four hangar projects during the 20-year development period required to increase the capacity for covered aircraft storage at the airport. It consists of a 12,500 square foot hangar constructed adjacent to the existing GA terminal building and apron.

Maintenance Facility Access Road
A new maintenance road is necessary to connect the existing maintenance building to the new maintenance building located to the west. The two-lane roadway will extend approximately 585 linear feet.

Aircraft Maintenance Facility
In order to construct the aircraft maintenance facility a number of infrastructure improvements will be required. A dual-lane access road for automobiles stemming off of Chamberlin Parkway's southern access road, approximately 2,015 feet in length, will be necessary. The 175,000 square foot detention pond with an approximate depth of 6 feet will also need to be drained and filled to allow for the full build out of the facility. The drainage pond will have to be relocated to a suitable area and an automobile parking area must be added. Parking can generally be accommodated on the eastern portion of the existing terminal parking lot but will have to be reconfigured to suit the facility's parking demand.

Land Acquisition – Phase I
In order to provide the necessary future access capabilities to the Airport and to ensure environmental compatibility, land acquisition in four areas will be required. These areas include the area south of the Airport west of the approach end of Runway 6R to mitigate the anticipate noise associated with the new parallel runway (approximately 88 acres); the area east of Runway 24L to accommodate the construction the parallel runway and its associated requirements, RPZ and aircraft noise (approximately 139 acres); and the approach to Runway 6L, west of Treeline Avenue for noise, environmental compatibility and the future I-75 access (approximately 460 acres).

Storm Water Master Plan
Currently no storm water management plan exists. In order to efficiently plan for immediate and long-term future drainage and storm water issues, a comprehensive storm water management plan should be developed.

Cargo Road Improvements
This project includes converting approximately 5,800 linear feet of an airside perimeter service roadway to a public road connecting the Midfield Terminal Complex to Chamberlin Parkway. This portion of the road will be a joint use public/perimeter road

with modern security access control points to separate the public from the airport operating area.

Midfield Terminal Security Requirements
Due to heightened security measures at airports throughout the country expansion of the Midfield terminal building will be necessary at both levels. Modifications to the associated baggage system to accommodate TSA baggage inspection system also will be necessary.

Existing Terminal Security Requirements
This project includes any necessary enhancements to the existing terminal building in order to accommodate the baggage inspection system and comply with the new security measures outlined by TSA for passenger and baggage screening.

Roadway Signage Modifications
Once the airline operations are transferred to the Midfield Terminal Complex the existing informational roadway signs must be removed, modified or replaced on Chamberlin and Paul J. Doherty Parkway directing the public to the new terminal and support facilities.

Part 150 Noise Study
Part 150 Environmental Studies are typically updated when necessary depending on the validity of the prior analysis and assumptions. Changes occurring in aircraft activity levels, types of aircraft, the local business and residential community, the profile of users, etc. will help determine the need to revisit and update the study. By revisiting the assumptions, projections and development accomplished to date, the existing study can be modified and refocused to better address a continued strategy of environmental compliance.

8.2.2 Intermediate Term Improvements – 2006 Through 2010

ARFF Vehicle
The purchase of a new fire truck will increase fire response effectiveness and keep RSW in compliance with FAA regulations. The truck will be a Class 2 ARFF vehicle with a three-person cab, 1,200 gallon per minute pump, 1,500-gallon water tank, 200-gallon foam tank, and a 500-pound halotron fire fighting system.

Existing Terminal Parking Lot Rehabilitation
This project requires the rehabilitation of the existing 4,291 space automobile parking lot. The rehabilitation is required to extend the service life through the opening of the Midfield Terminal Complex and allow for this parking area to be used as a remote parking facility with the opening of the new Midfield Terminal.

GIS Purchase and Setup
This project includes the purchase of the software and hardware to run a geographic information system for the airport and provide system training and support for the system set up is necessary. The set up includes utilizing either a client server system or web-based system.

Design/Construct Infrastructure
Utility improvements include all those improvements related to electric, water, and sewage services. These improvements include the establishment of utility lines connecting to the Airport facilities from the north along Daniels Parkway or the south along Alico Road. A general upgrade of Airport facilities will be required to maintain an efficient operation. These improvements are a continuation of the improvements performed in the previous phase.

Hold Bay and By-Pass for Runway 6/24
Based on anticipated operational demand and a recommendation by the air traffic controllers a by pass taxiway should be constructed at the approach end of Runway 6L on the south parallel taxiway, and hold bay at the approach end of Runway 24R. This project will assist air traffic controllers in queuing aircraft at the runways, thus potentially decreasing airside delay.

Repairs to North Ramp
Many portions of the existing terminal apron, and parallel associated taxilanes on the north side of the airport are considered to be somewhat aged and in poor condition upon inspection during the inventory process. With the demolition of the existing terminal the terminal apron area should receive resurfacing treatment. The 1,580-foot long taxilane 'B' should be resurfaced according to the proposed use for the existing terminal complex, and the concourse demolition area should be replaced with concrete pavement.

New Parallel Runway 6R/24L
The project requires the construction of a new runway and full-length parallel taxiway to maximize RSW's long-range flexibility in serving the growing demand for air service in the Southwest Florida Region. Runway 6R-24L will be 9,100 feet in length and 150 feet wide with a 5,385-foot separation from the existing runway. This project includes expansion of the existing perimeter road system, new perimeter fencing, and all associated lighting and runway navigational aids.

Cross-Field Connector Taxiway (Phase 1)
With the addition of the new parallel runway south of the existing runway and the new Midfield Terminal Complex, this project is phase 1 of a dual cross-field connector taxiway system to provide an easy transition for aircraft taxiing in and out of the terminal area. The taxiways, configured to satisfy NLA spacing requirements, will both ultimately be 100 feet wide and are both approximately 4,040 feet in length. The taxiway closest to the Midfield Terminal Complex will be built in this phase.

Relocate ATCT
This project will require the construction of a new ATCT facility located on the eastern side of the dual cross-field taxiways and across from the Midfield Terminal Complex. The control tower will need to meet Level 3 tower requirements and should have a cab size greater than 350 square feet. However, it is anticipated that the height of this tower will be at least 260 feet agl. Exact location and tower height will depend on further analysis and coordination with the FAA.

New ARFF Facility
This project will consist of the construction of full-size ARFF facility to be located directly east of the Midfield Terminal Complex in close proximity of the relocated ATCT facility. The Index E facility will encompass approximately 14,000 square feet of building space, with a 10,000 square foot paved automobile parking area, 5,000 square feet of ARFF vehicle (5 bays) and equipment space, and a 5,000 square foot ramp for ARFF administration vehicles.

Existing Terminal Demolition
This project requires the demolition of the existing terminal building to create an area for other future aviation facilities. The two-story building has a footprint of approximately 231,000 square feet with a total building area of roughly 381,000 square feet. This includes the two-story international arrivals building (IAB) and the eastern Concourse B wing which account for 41,000 square feet of the building footprint.

Midfield Terminal Expansion (Phase 2)
This consists of the addition of 7 to 8 gates through the extension of Concourse C. This 95,000 square foot building expansion will include the construction of 61,400 square yards of apron space to accommodate aircraft parking and maneuvering.

Rehabilitate Chamberlin Parkway
This project involves the rehabilitation of Chamberlin Parkway from the entrance at Daniels Parkway to the entrance road of the multi-modal facility located north of the existing terminal. The road will be a single a two-lane road. As such, the outer road (western road) that runs parallel will be decommissioned. The length of the rehabilitation will be approximately 11,400 linear feet.

Land Acquisition – I-75 Access/Noise
These areas include the area southwest of the Airport to accommodate the planned I-75 interchange (approximately 395 acres).

Rehab Perimeter, Service, and Fuel Farm Roads
This project includes the rehabilitation of the existing two-lane perimeter, service, and fuel farm roads. The perimeter road has a total length of approximately 76,500 linear feet; service roads and the fuel farm road total approximately 15,000 linear feet.

Expand Midfield Entrance Road to 6 Lanes and Landscape
This project serves to provide additional capacity to the Midfield Terminal entrance road by increasing the lane total to 6 lanes. This project includes the roadway plus any curbs and gutters associated with the expansion.

Midfield Terminal Surface Parking Expansion
This project includes the expansion of the surface parking, the construction of additional wings for the parking garage, and expansion of the parking tollbooth. The total additional parking spaces required for this phase is 719 spaces.

Relocation of High-Voltage Power Lines
This project requires the relocation of the high voltage power lines located on the southeastern portion of the airfield to accommodate the construction of the new parallel

Runway 6R-24L. There are three rows of 230kv power lines. The length of the relocation is estimated at 25,000 linear feet.

Develop Freight Multi-Modal Center
This project includes the construction of a multi-modal freight center that will be located in the area that is currently the existing terminal automobile parking area. It will interface with cargo and freight operations situated directly south of the facility and will encompass approximately 15 million square feet of area.

Fuel Farm Improvements
Based on the terminal expansion anticipated at the Midfield during phase 2 additional fuel hydrants will need to be added and additional fuel farm improvements may be necessary to meet the demand. Among the improvements includes modifications to the containment facility and improvements to the tank farm circulation roadway, off loading facility and may require an increase in the fuel storage capacity.

8.2.3 Long Term Improvements – 2011 Through 2020

Runway 6L/24R CAT II ILS and ALS
This project serves to enhance overall airport capacity and safety during adverse weather conditions. Requirements to upgrade the current Cat I ILS to a Cat II ILS include additional Runway Visual Range (RVR) equipment, an increase in the size of the ILS critical area, an upgraded approach lighting system (ALSF-2) and runway centerline and touchdown zone lighting systems. This project should be accomplished during the rehabilitation of the existing runway.

General Aviation Multi-Use Hangar (Phase 2)
This project is the second of four hangar projects over the planning period required to increase the capacity for covered aircraft storage at the airport. In the mid-term development program, a 12,500 square foot hangar is anticipated to meet the expected demand for these types of facilities. The second hangar will be located adjacent to the automobile parking lot of the existing FBO facility.

I-75 Airport Access Improvements
This project consists of the upgrade of access to RSW from Interstate Highway 75. The project will provide a new direct access interchange and limited access roadway to tie into the Midfield terminal access road. This project includes a fly-over bridge structure at Ben Hill Griffin Parkway.

Relocate of Rental Car Service Facilities
This project involves provisions for the eventual relocation of rental car facilities from the existing location north of the existing terminal to an area either northwest of the Runway 6L end or northwest of the midfield terminal. The project consists of providing basic infrastructure to support facility development at the new site.

Helipad
A helipad will be constructed on the existing cargo apron to accommodate any future helicopter demand. The designated area will encompass approximately 11,000 square

feet. Improvements to the existing apron will include the addition of lighting, striping, windsock, and related facilities.

Relocate Airport Rotating Beacon
Based on constructing of a portion of the second south parallel taxiway and the expansion of the terminal apron, the airport's rotating beacon will need to be relocated. With the ATCT being located to an area at Midfield it is recommended that the beacon be also located in at Midfield in the vicinity of the ATCT.

Improvements to Gun Range
Based on the condition of the airport police pistol range a number of improvements must be done to bring the level of safety up to standard. This project involves upgrading and refurbishing the 120' x 60' pistol range located adjacent the police training facility, west of the existing air cargo building.

Cross Field Connector Taxiway to Midfield Ramp
With the addition of the new parallel runway south of the existing runway and the new Midfield Terminal Complex, this project is phase 2 of a dual cross-field connector taxiway system to provide an easy transition for aircraft taxiing in and out of the terminal area. The taxiways, configured to satisfy NLA spacing requirements, will both be 100 feet wide and approximately 4,040 feet in length. This project supplements the phase 1 cross-field taxiway with a second parallel taxiway constructed to the east. This project also includes constructing the taxiway connector stubs between the cross-field taxiway and the phase 1 Midfield apron. This includes a partial apron expansion adjacent to concourse B and at least three taxiway connectors for adequate circulation of aircraft in the terminal area.

Midfield Terminal Expansion – Additional Gates (11-14)
This expansion will include the addition of a new concourse designated as Concourse 'A' on the southern side of the Midfield Terminal Complex. This will allow for an additional 11-14 gates. This expansion includes 157,000 square yards of ramp area to allow for the parking and maneuvering of aircraft.

Surface Parking and Garage Expansion
This project will add two levels to the parking garage in addition to expanding surface parking. The total amount of vehicle parking spaces required for this phase is 4,557.

Master Plan Update
Airport Master Plans are typically updated every five to ten years depending on the validity of the prior planning analysis and assumptions. This project provides for the update of the existing plan and airport layout plan set. 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.

8.3 SOURCES OF FUNDING FOR THE CAPITAL IMPROVEMENT PROGRAM

The Master Plan Update CIP will be funded through a combination of FAA AIP entitlement grants, FAA Letter of Intent (LOI), AIP Discretionary Funds, Federal Highway grants, State of Florida grants, Passenger Facility Charges (PFCs), other funds (such as third party funds or rental car customer facility charges), and local funds. **Table 8-1** presents a summary of the projects, ROM costs, and estimated funding sources for the Airport's CIP.

The following sections describe the anticipated funding sources for the Airport's CIP in greater detail.

8.3.1 Federal Grants

One of the main sources for the funding of airport improvements is the Federal 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.

Insert Table 8-1
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Development Costs and Funding by Phase

TABLE 8-1
(Page 1 of 3)

Short Term - 2003 through 2005 (in 2002 Dollars)

Project Description	Total Cost	Maximum Possible Federal Grants	Maximum Possible State Grants	Other [2]	PFC/Local Share
Midfield Terminal [1]	$386,000,000	$46,132,810	$76,316,856	$0	$263,550,334
Other Midfield Terminal [1]	64,000,000	5,011,964	4,709,873	7,500,000	46,778,163
Rehabilitate RW 6/24	30,000,000	22,500,000	3,750,000	0	3,750,000
Rehabilitate Air Cargo Ramp	2,000,000	0	1,000,000	0	1,000,000
General Aviation Hangar	1,000,000	0	0	1,000,000	0
Maintenance Facility Access Road	250,000	0	125,000	0	125,000
Aircraft Maintenance Facility	5,000,000	0	0	5,000,000	0
Land Acquisition - Phase I	20,000,000	15,000,000	2,500,000	0	2,500,000
Storm Water Master Plan	300,000	225,000	37,500	0	37,500
Cargo Road Improvements	2,000,000		1,000,000	0	1,000,000
Midfield Terminal Security Requirements	25,000,000	18,750,000	3,125,000	0	3,125,000
Existing Terminal Security Requirements	5,000,000	0	0	5,000,000	0
Roadway Signage Modifications	500,000	0	250,000	0	250,000
Part 150 Noise Study	250,000	187,500	31,250	0	31,250
TOTAL - SHORT TERM	$541,300,000	$107,619,774	$92,814,229	$18,500,000	$322,115,997

[1] Funding sources for the Midfield Terminal and Other Midfield Terminal projects represent actual funding sources rather than maximum possible funding sources.

[2] Other funding sources consist of rental car Customer Facility Charges (CFCs), third party funding, and Transportation Security Administration (TSA) funding sources.

Note: Funding schedule assumes full federal and state participation for all eligible projects. Any funds not received by LCPA would cause the local share to increase. These increases may cause the project(s) to be delayed or cancelled.

Insert Table 8-1
Page 2 of 3

Development Costs and Funding by Phas

TABLE 8-1
(Page 2 of 3)

Intermediate Term - 2006 through 2010 (in 2002 Dollars

Project Description	Total Cost	Maximum Possible Federal Grants	Maximum Possible State Grants	Other [2]	PFC/Local Share
ARFF Vehicle	$950,000	$712,500	$118,750	$0	$118,750
Existing Terminal Parking Lot Rehabilitation	10,800,000	0	0	0	10,800,000
GIS Purchase and Setup	230,000	0	0	0	230,000
Design/Const. Infrastructure	6,000,000	0	0	6,000,000	0
Hold Bay and By-Pass for RW 6/24	1,500,000	1,125,000	187,500	0	187,500
Repairs to North Ramp	7,500,000	5,625,000	937,500	0	937,500
New Parallel Runway 6R/24L	120,000,000	90,000,000	15,000,000	0	15,000,000
Cross Field Connector Taxiway (Phase 1)	7,000,000	5,250,000	875,000	0	875,000
Relocate ATCT	30,000,000	22,500,000	3,750,000	0	3,750,000
New ARFF Facility	4,500,000	3,375,000	562,500	0	562,500
Existing Terminal Demolition	4,000,000	0	0	0	4,000,000
Midfield Terminal Expansion - Phase 2	32,960,000	12,225,000	10,367,500	0	10,367,500
Rehabilitate Chamberlin Parkway	3,000,000	0	1,500,000	0	1,500,000
Land Acquisition - I-75 Access	35,900,000	13,470,000	11,215,000	0	11,215,000
Rehab Perimeter, Service and Fuel Farm Rds	4,000,000	1,000,000	1,500,000	0	1,500,000
Expand Entrance Rd to 6 lanes and landscape	3,300,000	2,475,000	412,500	0	412,500
Midfield Terminal Surface Parking expansion	3,000,000	0	1,500,000	0	1,500,000
Relocation of High-Voltage Power Lines	18,000,000	13,500,000	2,250,000	0	2,250,000
Develop Freight Multi-Modal Center	7,000,000	0	3,500,000	0	3,500,000
Fuel Farm Improvements	6,000,000	0	0	0	6,000,000
TOTAL - INTERMEDIATE TERM	$305,640,000	$171,257,500	$53,676,250	$6,000,000	$74,706,250

[2] Other funding sources consist of rental car Customer Facility Charges (CFCs), third party funding, and Transportation Security Administration (TSA) funding sources.

Note: Funding schedule assumes full federal and state participation for all eligible projects. Any funds not received by LCPA would cause the local share to increase. These increases may cause the project(s) to be delayed or cancelled.

Insert Table 8-1
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Development Costs and Funding by Phase

TABLE 8-1
(Page 3 of 3)

Long Term - 2011 through 2020 (in 2002 Dollars)

Project Description	Total Cost	Maximum Possible Federal Grants	Maximum Possible State Grants	Other [2]	PFC/Local Share
Runway 6/24 CAT II ILS and ALS	$7,000,000	$5,250,000	$875,000	$0	$875,000
General Aviation Multi Use Hangar Ph 2	1,000,000	0	0	1,000,000	-
I-75 Airport Access Improvements	75,000,000	28,125,000	23,437,500	0	23,437,500
Relocate Rental Car Service Facilities	7,500,000	0	0	7,500,000	-
Helipad	350,000	0	175,000	0	175,000
Airport Rotating Beacon	150,000	112,500	18,750	0	18,750
Improvements to Gun Range	720,000	0	0	0	720,000
Connector Cross Field TW to Midfield ramp	2,500,000	1,875,000	312,500	0	312,500
2nd Cross Field Connector TW	7,000,000	5,250,000	875,000	0	875,000
Midfield Terminal - Additional Gates (11-14)	50,000,000	18,750,000	15,625,000	0	15,625,000
Surface Parking and Garage Expansion	13,000,000	0	6,500,000	0	6,500,000
Master Plan Update	500,000	375,000	62,500	0	62,500
TOTAL - LONG TERM	$164,720,000	$59,737,500	$47,881,250	$8,500,000	$48,601,250
TOTAL CIP - ALL PHASES	**$1,011,660,000**	**$338,614,774**	**$194,371,729**	**$33,000,000**	**$445,423,497**

[2] Other funding sources consist of rental car Customer Facility Charges (CFCs), third party funding, and Transportation Security Administration (TSA) funding sources.

Note: Funding schedule assumes full federal and state participation for all eligible projects. Any funds not received by LCPA would cause the local share to increase. These increases may cause the project(s) to be delayed or cancelled.

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):

- 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.
- The project sponsorship requirements must have been met.
- 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.
- 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.)
- The project will be completed without undue delay.
- The airport location is included in the current version of the National Plan of Integrated Airport Systems (NPIAS).
- 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.
- 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 percent for medium and large hub commercial airports such as Southwest Florida International Airport. 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 non-eligible for FAA AIP funding assistance include the following:

- 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 percent 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.
- 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 the Airport will depend directly on the priority and the funding availability for medium hub airports. The Authority expects to use a combination of discretionary, entitlement, and LOI grants for eligible Airport projects. Since 1998, the Airport has received approximately $8,288,339 million in FAA AIP entitlement funds and $9,830,000 million in AIP discretionary funds. In addition, on November 10, 1998, the FAA issued a 10-year LOI to fund $35 million of the Midfield Terminal Project, of which the Authority has received $12 million.

In addition to funding available through the FAA AIP, federal grants are also assumed to be available from the Federal Highway Administration (FHWA) for the acquisition of property and construction associated with various I-75 access improvements. FHWA grants are estimated to fund approximately 37.5 percent of the I-75 land acquisition and construction costs.

As shown in **Table 8-1**, approximately $339 million (34 percent) of the Airport's CIP is anticipated to be eligible for Federal funding. It is important to note that the estimated funding shown in **Table 8-1** assumes full federal participation for all eligible projects. Any funds not received by the Authority would cause the local share to increase. These increases may cause the project(s) to be delayed or cancelled.

8.3.2 State Funds

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 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.

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. In other words, the 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 eligible 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:

- **Federally Funded Projects**. The State's share will be up to one-half of the non-Federal share.

- **Non-federally Funded Airside Projects** – Priority Order
  - Safety or security of the travelling public.
  - Preserve existing airfield infrastructure.
  - Increase capacity of Florida's airports.
  - 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.

- **Non-Federally Funded** – Other
  - Airport planning projects.
  - Land acquisition for airfield infrastructure.
  - Airport terminal projects.
  - Airport access projects, if Department intermodal funds are not available.
  - Navigational Aids (Navaids) projects under certain criteria.

- Economic Development Projects

Currently, approximately $81 million in funding is committed and under contract through Joint Participation Agreements (JPA) with the State of Florida for the design and construction of the Midfield Terminal Project and access roads. Under the terms of the grant, proceeds are distributed as reimbursement to the Authority for funds actually expended by the Authority.

As shown in **Table 8-1**, approximately $194 million (19 percent) of the Airport's CIP is anticipated to be eligible for FDOT funding. It is important to note that the estimated funding shown in **Table 8-1** assumes full FDOT participation for all eligible projects. Any funds not received by the Authority would cause the local share to increase, and may cause the project(s) to be delayed or cancelled.

8.3.3 Other Funds

Other funding sources for the Airport's CIP consist of the following:

- Rental car customer facility charges.
- Transportation Security Administration.
- Third-Party (private) sources.

Rental Car Customer Facility Charges (CFCs) - On October 1, 2002, the Authority began collecting a rental car CFC at the Airport to pay for certain rental car facilities being constructed as part of the new Midfield Terminal project. This CFC is assessed at $1.00 per transaction-day for rental car patrons at the Airport. The CFC is charged and

collected by the various rental car companies operating at the Airport, and then remitted to the Airport on a monthly basis.

It is estimated that the Airport will collect approximately $2.8 million to $3.5 million per year in rental car CFCs to support the construction of rental car facilities. As such, future rental car projects included in the Airport's CIP are assumed to be funded through rental car CFCs.

Transportation Security Administration (TSA) – At present, there is not a funding program in place through the TSA to fund security initiatives at commercial service airports. For this analysis however, it was assumed that funding would be made available through the TSA and/or FAA to fund the existing terminal security requirements.

Third-Party (Private) Sources – For certain projects that would support the development of private tenants on the Airport such as fixed base operators, hangar tenants, or other non-aviation commercial tenants, third-party, or private funding sources were assumed. Tenants typically invest directly in the construction of facilities such as hangars. This approach limits sponsor revenue to the nominal rents for the underlying land, but avoids the need for the sponsor to raise funds for hangar or other private development.

As shown in **Table 8-1**, other funds for the Airport are estimated to fund approximately $33 million of the total CIP costs.

8.3.4 Local Funds

The balance of project costs (i.e., after consideration of grants and other funding sources) must be funded through the local sponsor. As such, 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:

- Passenger Facility Charges (PFCs)
- Issuance of general airport revenue bonds (GARBs)
- Airport earnings and reserves

As shown in **Table 8-1**, approximately $445 million in project costs are estimated to be funded by local and PFC funds. Of this total, however, approximately $310 million has already been committed toward the development of the Midfield Terminal project (primarily through the issuance of the Series 2000 Bonds). The remaining $135 million in local share would be required to be funded from PFCs, GARBs, or Airport reserves.

In accordance with the Aviation Safety and Capacity Expansion Act of 1990, as amended by the Aviation Investment and Reform Act for the 21st Century, the Authority is currently imposing a $3.00 PFC at the Airport. PFCs may be used by the Airport to fund the local share of eligible project costs (PFC eligibility for projects generally follows the same general guidelines for determining AIP grant eligibility outlined earlier). In 1998, the Authority issued PFC-backed debt (the Series 1998 Bonds), which was used to fund approximately $46.0 million for the acquisition of land for the development of the Midfield Terminal Project and environmental

mitigation. As such, PFC collections are currently being used to pay the outstanding debt service on the Series 1998 Bonds. In addition, the Authority is currently in the process of submitting an application to increase the PFC collection level to $4.50 per enplaned passenger. Excess PFC collections, after payment of debt service on the Series 1998 Bonds, will be used to fund a portion of the Midfield Terminal project during construction and to pay a portion of debt service on the Series 2000 Bonds which were issued to finance the construction of the new Midfield Terminal. The charge effective date for the $4.50 PFC level is estimated to be toward the end of FY 2003. Beyond the payment of debt service on the Series 1998 and Series 2000 Bonds, it is estimated that an additional $78 million in PFC funds will also be available through the year 2020 to pay for the local share of other project costs.

As established by the Airport's existing Airline Agreement, the Airport is provided with a Discretionary Fund that it can use towards capital projects at its sole discretion. The Discretionary Fund is funded from any remaining airport earnings after the payment of operating expenses, outstanding debt service, funding of other reserves, and payment of Airline Rebates. As of the end of September 2002, the Discretionary Fund was provided with a balance of approximately $1.0 million that could be used to fund CIP projects. Any additional local funding, beyond what can be funded with PFCs or from the Airport's Discretionary Fund, would require the issuance of GARBs.

8.4 AIRPORT REVENUE SOURCES

As a result of the Airport's commercial airline service, the Airport is provided with a diverse revenue stream, from a number of different sources. These revenue sources include revenues from the airlines (landing fees, terminal rent, and cargo fees), concessions (food & beverage and retail merchandise), parking, rental car contracts, miscellaneous and cargo landing fees, general aviation, cargo, and other miscellaneous revenues. In FY 2002, the Airport's revenue sources generated a total of approximately $41 million in revenues.

These major revenue sources are described in greater detail in the following sections.

8.4.1 Airline Revenues

The majority of the revenues generated at the airport is comprised of terminal rentals, cargo building, and landing fees payable by the airlines. In general, the items included in the total requirement for the terminal rental rate, cargo building use fee, and landing fee include the following components:

- **Investment Service** - Includes the portion of Investment Service allocated to the specific rate-setting area.
- **Operating Expenses** - Includes the Operating Expenses (direct and allocated indirect) attributable to the specific rate-setting area.
- **R&R Expenses** - Includes amounts budgeted for R&R Expenses (i.e., unanticipated or emergency replacements and repairs) within the specific rate-setting area.

- **Capital Improvement Expenses** - Includes amounts budgeted for Capital Improvement Expenses within the specific rate-setting area.

Terminal rental rates at the airport are established based on a "residual" formula, which results in the airlines covering the net remaining requirement attributable to the terminal cost center. The net requirement for the Terminal Building is equal to the sum of the previously described components for the Terminal, reduced by all Nonairline Revenue derived from the Terminal. The average Terminal rental rate is derived by dividing the net requirement by the Airline and Authority leased square feet in the Terminal. In FY 2002, the terminal rental rate was $38.84 per square foot, which generated approximately $13.3 million in terminal rental revenue.

A residual calculation is also used to establish the cargo building use fee at the Airport. In FY 2002, the cargo building use fee was $10.44 per square foot, which generated approximately $112,000 in cargo building revenue.

Landing fees at the Airport are established based on a residual Airport landing fee calculation. The landing fee is calculated by combining the items described above for the entire Airport in order to determine the Airport's total requirement. The total requirement is then reduced by all other Airport Revenues (i.e., terminal rental revenue, cargo building revenue, fuel system revenue, total nonairline revenues, and investment income). The landing fee is then calculated by dividing the net requirement by passenger Airline landed weight per thousand pounds. In FY 2002, the cargo building use fee was $0.894 per thousand pounds landed weight, which generated approximately $2.5 million in landing fee revenue.

8.4.2 Rental Car Revenues

Rental car fees are privilege fees assessed to the rental car operators for the right to provide services to users of the airport. There are currently six on-Airport and two off-Airport rental car operators at the Airport. The on-Airport rental car operators are assessed a minimum guarantee of 80 percent of the average of the prior two years' fees or 10 percent of gross revenues, whichever is greater, while off-Airport operators pay the Authority eight percent of gross receipts. In addition, the off-Airport rental car operators are assessed a monthly courtesy vehicle fee of between $15.00 and $50.00 per vehicle, depending on its size. In FY 2002, rental car revenues at the Airport were approximately $10.1 million. With the opening of the new Midfield Terminal, the rental car operators will be relocated to the new facility, which will provide:

Airport include the development of the following:

- 1,100 ready/return spaces located within the first level of the parking garage
- 1,600 uncovered ready/return spaces
- Exterior rental car customer service building
- Quick Turn Around (QTA) facility

The capital costs for the new Midfield rental car facilities are anticipated to be recovered through a combination of facility rentals and CFCs (as discussed previously). In general, it is anticipated that capital costs associated with the Customer Service Building will be recovered through the form of a space rental rate, while the capital costs for the ready/return spaces and QTA facility will be recovered through CFC revenues. Furthermore, space rental rates are expected be

assessed to recover: 1) annual operating expenses associated with each rental car facility; and 2) a $0.20 per square foot ground rental.

8.4.3 Parking Revenues

The parking lot at the Airport is operated by APCOA, a parking management company, under a management contract. On-Airport parking fees are generated by the hourly short-term, daily long-term, and economy parking lots. Existing parking rates at the Airport, which were changed on December 18th, 2002 are $1.00 every 20 minutes up to a maximum of $18.00 per day for short-term, $10.00 per day for long-term, and $6.00 per day for the economy lot. In FY 2002, the parking lots at the Airport generated approximately $6.9 million in revenue. As part of the Midfield Terminal Project, 9,500 public surface parking spaces, 1,300 surface employee spaces, and a three-story, 3,800 stall, parking garage will be constructed. Future parking revenues should be expected to increase based on increased parking rates as well as the re-capturing of some off-Airport parking patrons.

8.4.4 Terminal Concession Revenues

Terminal concession revenues are generated from a number of terminal tenants including restaurant, news and gift, advertising, pay phones, and others. Future revenue from these sources is expected to increase due to the implementation of a new concessions program in the development of the new Midfield Terminal complex. These terminal concession revenue sources are discussed below:

Restaurant
The restaurant operator in the terminal is Host International. In general, Host International pays the Airport the greater of 85 percent of the previous year's fees or a percentage of gross revenues, which range from 12 to 14 percent of gross revenues depending on the type of merchandise. In FY 2002, restaurant revenues were approximately $1.2 million.

News and Gift
News and gift operators at the Airport consist of Paradies and Star Gifts. The current leases with these news and gift operators provides for a base rent plus the greater of its percentage of gross sales or a per enplaned passenger fee. In FY 2002, news and gift revenues were approximately $1.3 million.

Advertising
Interspace Airport Advertising, Inc. operates the advertising concession at the Airport. Interspace is responsible for installing and maintaining the advertising displays located in the public areas of the terminal. Under the current agreement, Interspace pays the Airport between 48 percent and 58 percent of gross revenue depending on their reported gross receipts. In FY 2002, advertising revenues were approximately $275,000.

Commercial Space Revenues

Commercial space rental revenue at the Airport is derived from space rent charged to the rental car operators, concessionaires, and other nonairline terminal tenants. In FY 2002, terminal space rent from commercial operators generated approximately $611,000.

Pay Phones

Pay phones at the Airport are provided by Sprint. Under its lease, Sprint is required to pay the Airport 38 percent of gross revenues or $0.046 per passenger, whichever is greater. Pay phone revenues were approximately $235,000 in FY 2002.

Ground Transportation Revenues

Ground transportation at the Airport is currently provided by a number of operators including, limousine, charter bus, and various commercial courtesy vehicle operators. In general, limousine operators are assessed a $150 per month vehicle fee plus a fee of $1.00 per departure; charter bus operators are charged a fee of $20.00 per trip; and commercial courtesy vehicles are charged a monthly fee of $15 to $50 per vehicle fee based on the size and type of vehicle plus a fee of $1.00 per departure. Combined, ground transportation revenues for the various operators at the Airport were approximately $273,000 in FY 2002.

Land Rental Revenues

Land rental revenues consist of revenues generated from ground rental fees assessed to various tenants located on the Airport such as the Airport's FBO, cargo tenants, etc. These revenues are generally charged to tenants based on a per square foot basis for the land contained within their leasehold for which their facilities occupy. In FY 2002, land rental revenues from these various Airport tenants was approximately $400,000. Future development opportunities associated with the infrastructure improvements proposed along Daniels Parkway, as well as the construction of future general aviation hangars, aircraft maintenance facilities, and a freight multi-modal center should present opportunities for increasing land rental revenues in the future.

Other

Other revenues include miscellaneous revenues for use of airport facilities, etc. Revenues from miscellaneous sources were approximately $793,000 in FY 2002.

8.5 OPERATING EXPENSES

Operating Expenses at the Airport are assigned to various organizations including Executive, Administration, Development/Facilities, Operations/Safety, and County Services. Within each organization, Operating Expenses are classified by various expense categories, including salaries and fringe, materials and supplies, contract maintenance, insurance, utilities, other, and capital outlay. These expenses for each organization are then allocated to the various Airport cost centers for rate-setting purposes. Historically, the Authority's Operating Expenses for the Airport increased from $15.6 million in FY 1994 to $25.6 million in FY 2002, representing an annual compounded growth rate of 6.2 percent.

Details of the Operating Expense projections by organization are described below.

8.5.1 Executive

Operating Expenses for the Executive organization include expenses associated with the Port Board, Director, and Legal Services departments. In FY 2002, operating expenses for the Executive organization were approximately $518,000.

8.5.2 Administration

The Administration organization includes operating expenses associated with Aviation Marketing, Finance and Accounting, General Services, Human Resources, Property Management, and Public Relations departments. In FY 2002, operating expenses for the Administrative organization were approximately $5.7 million.

8.5.3 Development

The Development organization includes Operating Expenses associated with the Development, Construction Management, Planning, Government Affairs, and Engineering departments. In FY 2002, operating expenses for the Development organization were approximately $2.7 million.

8.5.4 Aviation Services

The Aviation Services organization includes the Aircraft Rescue, Facilities, Operations, Police, and Police Communications departments. In FY 2002, operating expenses for the Aviation Services organization were approximately $24.9 million.

8.5.5 County Services

County Services includes Operating Expenses associated with services provided by Lee County, including legal counsel, annual audit, and bill payment services. In FY 2002, operating expenses for County Services were approximately $200,000.

9 AIRPORT LAYOUT PLAN SET

9.1 GENERAL OVERVIEW

An update to the Airport Layout Plan (ALP) drawing set for the Southwest Florida International Airport (RSW) is included and discussed in this chapter. The ALP set is required by the Federal Aviation Administration (FAA) as a part of the Master Plan process. This drawing set provides input required to determine the eligibility of proposed airport improvement projects. Generally, the FAA will not provide financial assistance for projects that are not depicted on the ALP. The drawings comprising the updated ALP illustrate the current (2003) facilities at RSW and the proposed improvements resulting from the analyses contained in the previous sections of the Master Plan Study for the short, intermediate, and long term planning periods.

The ALP set has been prepared in conformity with the criteria established by the Federal Aviation Administration (FAA) in **Advisory Circular (AC) 150/5070-6A, "Airport Master Plans"** and **AC 150/5300-13 Change 7, "Airport Design"** and supporting circulars and orders.

The ALP set includes the following individual drawing sheets:

- Cover Sheet (Sheet 1)
- Airport Layout Plan (Sheet 2)
- ALP Data Tables (Sheet 3)
- Terminal Area Plan (Sheet 4)
- FAR Part 77 Approach Surfaces (Sheet 5)
- FAR Part 77 Inner Surfaces (Sheet 6)
- Runway 6 (6L) Protection Zone Plans (Sheet 7)
- Runway 24 (24R) Protection Zone Plans (Sheet 8)
- Runway 6R Protection Zone Plans (Sheet 9)
- Runway 24L Protection Zone Plans (Sheet 10)
- Runway 6-24 (6L-24R) Approach Zone Plans (Sheet 11)
- Runway 6R-24L Approach Zone Plans (Sheet 12)
- Land Use Plan (Sheet 13)
- Property Map (Sheet 14)
- Property Map (Overview) (Sheet 15)

Additionally, both a location and a vicinity map for the airport are incorporated onto the cover sheet (**Sheet 1**), which also provides an index of individual drawing sheets. A reduced scale version of the ALP set has been included at the end of this chapter.

9.2 AIRPORT LAYOUT PLAN DRAWING

The ALP (**Sheet 2**) depicts all existing facilities as well as those proposed for development over the course of the master plan (2000-2020) for RSW. These facilities include, but are not limited

to: the runway and taxiway system, taxilanes, hold aprons, lighting, navaids, terminal facilities, hangars, other airport buildings, aircraft parking areas, automobile parking, and airport access elements. Key dimensional criteria are included for the airfield geometry. This includes, but is not limited to, the size of the runways and various taxiways; runway safety and runway object free areas; building restriction lines; and navigational aid critical areas. Phasing for various Airport improvements are also depicted on the ALP. Airport coordinates, airport elevations, general airport data, basic runway data, declared distances, a building/facilities table, a runway safety area determination table, a modification approval block, wind rose data, and all necessary abbreviations and legends are included on the separate ALP Data Sheet (**Sheet 3**).

The Airport Layout Plan includes the future 9,100-foot runway 6L-24R. Other key improvements depicted on the ALP include the midfield terminal complex, additional full-parallel taxiway associated with the current single runway, and the cross-field taxiways that integrate the new parallel runway with the existing airside facilities and new terminal area. The criteria that were applied in the development of the runway and taxiway system as well as those associated with mandatory FAA safety and object clearance criteria are defined in **Table 9-1.**

TABLE 9-1
AIRFIELD DESIGN STANDARDS FOR RSW

Airfield Design Criteria	Runway 06-24 (6L-24R)	Proposed Runway 6R-24L
Airport Reference Code (ARC)	D-V	D-V
Runway Safety Area Length beyond Runway End	1,000 feet	1,000 feet
Runway Safety Area Width	500 feet	500 feet
Runway Width	150 feet	150 feet
Runway Object Free Area Length beyond Runway End	1,000 feet	1,000 feet
Runway Object Free Area Width	800 feet	800 feet
Runway/Taxiway Separation	400 feet	600 feet
Taxiway Width	75 feet	75 feet
Taxiway Safety Area Width	118 feet	118 feet
Taxiway Object Free Area Width	186 feet	186 feet
Taxiway Lighting	MITL	MITL
Runway Lighting	HIRL, REIL	HIRL, REIL, TDZ
Pavement Strength Rating	30,000 SWL 190,000 DWL 430,000 DTWL 840,000 DDTWL	30,000 SWL 190,000 DWL 430,000 DTWL 840,000 DDTWL

Source: FAA AC 150/5300-13 Change 7.

9.3 TERMINAL AREA PLAN

The Terminal Area Plan (TAP) (**Sheet 4**) depicts the same configuration and dimensional information shown on the ALP, but provides a larger scale version so that certain additional features and greater detail of the terminal area improvement can be discerned. The TAP displays the Midfield terminal complex currently under construction. The existing terminal is planned to

be removed and is therefore not depicted. Rooftop elevations above ground level (AGL) are also provided for the buildings and facilities in the plan.

9.4 FAR PART 77 APPROACH SURFACES

To enhance the safe operation of aircraft in the airspace around airports, the FAA has adopted **Federal Aviation Regulations (FAR) Part 77 "Obstructions Affecting Navigable Airspace."** Subpart C of FAR Part 77 establishes standards for determining obstructions to air navigation. These regulations enable the establishment of "imaginary surfaces," which no object, manmade or natural, should penetrate. FAR Part 77 surfaces are utilized in zoning and land use planning adjacent to the airport to protect the navigable airspace from encroachment by hazards, which would potentially affect the safety of airport operations.

The FAR Part 77 Imaginary Surfaces Plan (**Sheets 5** and **6**) depicts the physical features of the area around the airport including existing obstructions that penetrate the surfaces. The specific imaginary surfaces that should be protected from obstructions include:

Primary Surface - A rectangular area symmetrically located about each runway centerline and extending a distance of 200 feet beyond each runway threshold. Width of the Primary Surface is based on the type of approach a particular runway has, while the elevation is the same as that of the runway centerline at all points. The width of the primary surface for Runway 6-24 and the proposed Runway 6R-24L is 1,000 feet.

Horizontal Surface – A level oval-shaped plane situated 150 feet above the airport elevation, extending 5,000 or 10,000 feet outward, depending on the runway category and approach procedure available. The horizontal surface for RSW resembles the floor of a stadium. Its edge extends 10,000 feet from each point on both the existing and proposed runway centerlines.

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

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

Transitional Surface - A sloping area beginning at the edges of the Primary and Approach Surfaces and sloping upward and outward at a ratio of 7:1 until it intersects the Horizontal Surface.

9.5 RUNWAY PROTECTION ZONE PLANS

The Runway Protection Zone (RPZ) Plans illustrate in detail the approach area immediately beyond the ends of the existing and proposed runways at RSW. The primary purpose of the RPZ

is protection of people and property on the ground. Therefore, the areas within the RPZs should be kept free of obstacles that could constitute a hazard to aircraft approaching or departing the Airport. These drawings depict the location of roadways, structures, natural ground elevations, and other man-made or natural features within the limits of the RPZs. The drawings also detail objects that penetrate the approach surfaces or violate the Object Free Area criteria. These obstructions are listed numerically in an obstruction table with data describing the obstruction, obstruction elevation, affected Part 77 surface, surface elevation, amount of penetration, and proposed manner in which the obstruction will be addressed. Additionally, the drawings depict the configuration of the required Runway Safety Areas for each runway end.

The RPZ for Runway 6(6L) is shown in plan and profile on **Sheet 7**. The existing 50:1 precision approach slope is shown. As indicated on the drawing the approach to Runway 06 has no obstruction issues. The RPZ for Runway 24(24R) is shown in plan and profile on **Sheet 8**. The existing 34:1 non-precision approach and future 50:1 approach slopes are shown. A tree creates the only obstruction to both the existing and future approach slopes. There are a few obstructions located within the primary surface. Most of these obstructions noted in the Obstruction Table on the drawing are fixed by their aviation related function. These include two rods associated with the RVR, and the windsock. In all, the noted obstructions are limited in nature and do not pose a significant impact on the existing or proposed approaches to either end of Runway 6-24.

Sheet 9 displays the RPZ for Runway 6R, which has future 50:1 precision approach slope. Runway 24L also has a future 50:1 precision approach slope, which is depicted on **Sheet 10** along with the RPZ. No obstacles to either runway end approach surface have been determined. Additional information should be collected via survey regarding the approach surface obstacles prior to the construction of the new Runway.

9.6 APPROACH ZONE PROFILES

The Approach Zone Profiles depicted on **Sheet 11** (Runway 6-24 (06L-24R)) and **Sheet 12** (Runway 06R-24L) display the full profile view of the existing and ultimate approach surfaces without the use of match lines or truncated depictions. Potential obstructions in the approach zones include vertical clearances required over roadways as well as incursions by power poles, trees, buildings, etc. for both the existing and ultimate approaches. As depicted in the approach zone plan for Runway 6-24 there are no obstacles that penetrate the approach slope beyond those already noted in the discussion of Runway Protection Zones.

9.7 AIRPORT LAND USE PLAN

The Airport Land Use Plan (**Sheet 13**) shows the proposed utilization of property within the existing and future boundary of RSW. This drawing identifies various land use designations for airport owned property ranging from Airport Operations Areas covering portions of the airport utilized by aircraft or those areas required to meet FAA design and safety requirements, to non-aviation revenue support development areas.

9.8 PROPERTY MAP

An Airport Property Map features the tracts of land owned by the Airport and provides informative detail on those tracts such as the date of acquisition, the acreage, the purposeful interest in which the property was acquired, and the federal project number if paid for with federal aid. The property map also reveals the Airport's proposed property acquisition and informative detail on those tracts as well. The RSW Airport Property Map is presented on **Sheets 14** and **15**.

9.9 SUMMARY

The ALP set is a basic planning tool generated by the master plan process. It provides an informative basis to guide future planning and expansion efforts at RSW while maintaining and protecting the long-term viability of the airport. Implications of development to operations, expansion, land use compatibility, etc., can be readily identified and explored to ensure that airport growth occurs in a deliberate and efficient manner. To achieve full benefit of the ALP set and ensure project funding eligibility, it should be continually updated to reflect current conditions.

10 APPENDICES

10.1 Appendix A – Terminal Disposition

APPENDIX A – TERMINAL DISPOSITION

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT

TERMINAL DISPOSITION EVALUATION

EXECUTIVE SUMMARY

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November 2002

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT

TERMINAL DISPOSITION EVALUATION EXECUTIVE SUMMARY

INTRODUCTION

TKW Consulting Engineers, Inc. was retained by DMJM Aviation Inc. to conduct a disposition analysis of the existing passenger terminal at Southwest Florida International Airport (RSW) for the Lee County Port Authority (LCPA). The purpose of this evaluation is to examine the existing Southwest Florida International Airport Airside and Landside terminal A and B structures and systems and to provide recommendations related to its future use once air carrier and passenger operations transition to the new midfield terminal (estimated in 2005). This analysis includes demolition and potential re-use options and a determination of order of magnitude costs and practicability of bringing the structure into compliance with the current State of Florida Building Code and Fire and Life Safety Codes.

The existing terminal facility is located in Lee County, Florida at approximate latitude 026°32'10.2"N and longitude 081°45'18.6"W. This facility is situated between Runway 6-24 to the south and the Chamberlin Parkway loop road to the north. The terminal includes approximately 380,000 square feet of enclosed space on two levels.

The RSW terminal, as it is now constructed, has been completed in three different phases:

- Main Terminal including Concourses A and B - The Main Terminal including Concourses A and B were completed in May of 1983.
- International Arrivals Building (IAB) – The International Arrivals Building (IAB) was added to the west end of the main terminal for processing of international passengers in 1993.
- Concourse B Extension - Concourse B Extension is a three-gate addition to the existing terminal and was completed in 1999.

The current utilization of the terminal is inherently the greatest challenge when projecting other possible uses for the building. The building is a specialty use structure with a unique design attributable to the specified use. Any reuse or modification to the building, or portions thereof, will require extensive design and construction planning not covered by this document. This evaluation provides an order of magnitude for cost estimation.

Many modifications may be necessary to bring the building, or portions thereof, up to existing code for reuse. A general assessment of the conditions of the buildings and mechanical and electrical systems was performed. This assessment of the terminal included:

- Evaluation of accessible building areas including exterior walls, interior walls, ceiling, roof, slab, foundations, concrete and asphalt areas.
- Evaluation of mechanical and plumbing systems.
- Assessment of electrical systems.
- Review of drawings of underground utilities.
- Interviews with multiple LCPA personnel.
- Review of the Draft Master Plan Update prepared by Birk Hillman.
- Review of tarmac area and hydrant piping system.
- Analysis of pertinent life safety and fire issues.
- An assessment of potential environmental hazards present in the building.

In order to supplant the in-house expertise of TKW and to properly consider the potentialities and costs for reuse of the terminal or portions thereof, TKW enlisted the services of professionals in the fields of architecture, mechanical/electrical/plumbing engineering, roofing structure and analysis, asbestos and lead paint investigation, and cost analysis. The team of experts assembled for this project includes the following firms:

Architecture One, Inc.
Teco/BGA, Inc.
Scott Bonk and Associates, Inc.
Castech, Inc.
Asbestech/EnviroHome, Inc.

Individual reports from these various professional specialties were prepared for reference purposes. Portions of each report have been incorporated throughout the evaluation and this document to provide a cohesive composite for analysis and review.

Based upon the inspections and subsequent meetings and reports from the team of experts, four options were selected for terminal disposition evaluation. These four options are:

- **Option 1** - Reutilization of the entire existing terminal facility for various uses.

- **Option 2** - Remove the Main Terminal and Concourses A and B, and leave the Concourse B Extension and the International Arrivals Building (IAB).

- **Option 3** - Remove the Main Terminal, Concourses A and B, and Concourse B Extension, and leave the IAB.

- **Option 4** – Remove the entire existing terminal facility to grade.

LIMITATIONS OF DISPOSITION

Existing Airline and Port Authority Agreements

As part of the 1998 Amended and Restated Airport Use Agreement between the Lee County Port Authority Board of Port Commissioners and the participating RSW airlines, Section 34 of this agreement states that "Unless the Port Authority and an MII (Majority-In-Interest vote by the airlines) otherwise agree prior to the Midfield Terminal Project Operational Date, Port Authority agrees that it shall, promptly after such date, commence and then complete the demolition of the existing Terminal at the Airport." The entire demolition of the existing terminal is also included as part of the 1999 Majority-In-Interest approval as a condition of the participating RSW airlines support and funding for the Midfield Terminal Project. Any conclusions of this study that result in keeping all or a portion of the existing terminal building would require MII approval by the RSW airlines and ratification by the Board or Port Commissioners.

Security

Any analysis of potential reuse options for the terminal facility must consider security issues. Given the location of the terminal building and the general access from this area to all airside areas of the airport, security considerations for any reuse are a mandatory component of potential tenant occupation of the area.

Landside utilization of the terminal facility would require a commitment of security resources to any proposed conceptual development. Essentially, the terminal building would have to become a totally independent landside component of the airport. This type of arrangement would negate the potential utilization of ramp space and the balance of the existing area for airside applications. For security reasons and for the potential of using the terminal area for airside purposes, the utilization of the terminal area for airside and not landside purposes is preferred.

FAA Grant Issues

In order to facilitate the financing of projects at RSW, grants from the Florida Department of Transportation (FDOT) and the Federal Aviation Administration (FAA) were applied for, secured and utilized for the purchase, design and construction of various terminal projects. The utilization of these grant dollars by the LCPA involved the commitment to maintain the project and/or equipment for a prescribed period of time. Grant investments that are made for the design and construction of buildings or renovations have a useful life of 20 years. Equipment purchases are designated as having a useful life of approximately 10 years. The majority of funded equipment purchases will either be fully depreciated at the time of actual terminal disposition or the reselling of the equipment may offset the remaining costs. For these reasons, equipment purchases are not evaluated in this

report. The Port Authority will coordinate the issue of grant reimbursement with the FDOT and the FAA. However, for the purposes of this study, no grant reimbursement is assumed for any option.

Costs to Maintain Building Without Tenants

The current operation of the terminal building has a specific cost associated with repair, maintenance, and utilities. Indirect costs including insurance, taxes, etc. are potential ongoing cost liabilities. Upon modification of the existing building, or demolition of a portion of the building, there will still be a repair, maintenance, utility cost, and indirect cost component. For purposes of this analysis, these costs have been estimated based upon the use of the building and size and complexity of the modification.

Hurricane Shelter Options

The evaluation of the terminal building for re-use should include an analysis of the potential to use all, or part, of the building as a hurricane shelter. Lee County currently has a shortage of accessible hurricane shelter space. In order to qualify as an appropriate shelter option, a number of factors, as outlined by Lee County Emergency Management, must be met. These factors are outlined below. Adequacy of the terminal building in meeting these guidelines is italicized in response.

- SLOSH Flooding Zone: The building's lowest floor elevation above the Category 3 hurricane storm surge flooding level as defined by the most recent data from the Charlotte Harbor SLOSH model, or two feet above the highest point of the road adjacent to the building, whichever is higher.
  All floor elevations of the terminal building are above the storm surge SLOSH zones for Category 3 hurricanes.

- FIRM Flooding Zone: B or X (post 1987), with at least one access route designed for the 1 in 25 year flood event.
  The terminal building is located in a B FIRM flooding zone.

- Elevation: Shelter spaces 0-3 feet above the Base Flood Elevation (BFE).
  Shelter space would be above this BFE.

- Wind Design Certification: Design to the 150 mph peak gust wind speed using ASCE-7 procedures with no importance factors considered, certification by a structural engineer or architect.
  The existing facilities were not originally designed to this criteria. Wind design to 150 mph peak gust wind speed cannot be certified without additional review, analysis, and design. Modifications to the

existing construction (i.e. structural improvements, protection of openings, etc.) may be required for certification.

- Wall Envelope: Reinforced concrete or masonry exterior walls, with vertical rebars spaced at 4 - 8 feet on center.
  Wind design to 150 mph peak gust wind speed cannot be certified without additional review, analysis, and design. Modifications to the existing construction may be required for certification.

- Roof Envelope: Sufficiently anchored to exterior walls to meet specified internal wind pressure loads, prevent fluttering and racking, and to avoid progressive collapse. Solid skin design of a heavy gauge metal type or equivalent roof covering. Roof mounted mechanical equipment sufficiently anchored to meet wind design certification. No skylights or roof turbines.
  Wind design to 150 mph peak gust wind speed cannot be certified without additional review, analysis, and design. Modifications to the existing construction may be required for certification.

- Roof Drainage: Scuppers required for roofs and enclosing parapets. Designed to facilitate cleaning of roof drains and scuppers.
  Existing roof drainage conditions are adequate.

- Aperture Protection: Limited apertures, full aperture protection of lowest ten stories from penetration from windblown debris by strengthened glazing, baffles, window and door protection meeting Miami-Dade County missile impact protection criteria, or equivalent.
  Aperture protection is not provided per the current construction. This feature could be added but at significant cost.

- Fire/General Safety: Meets all applicable codes and standards with battery emergency access lights.
  Fire and safety standards can be met.

- Handicap Accessibility: Meets minimum applicable codes and standards.
  Handicapped accessibility meet code.

- Electrical: Pre-wired for portable emergency generator hook-up connection to lighting (including emergency lighting) air circulation system (not cooling, only air movement), cooler/freezer (if present), building intercom (if present), fire alarm and all life safety items, telephone and elevator (if present and part of shelter).
  Electrical standards would require significant modification and cost.

- Water Source: Potable water storage and/or delivery of 5 - 7 gallons per person sheltered per day.
  This standard could be accommodated.

- Sanitary Capabilities: A minimum of one toilet, and storage and/or delivery of additional toilet unit at the rate of one each per 40 persons sheltered.
  This standard could be accommodated.

A review of Lee County hurricane shelter standards indicates that the terminal building, or portions of the building, may have limited adequacy as a hurricane shelter, but not without significant modification and cost. Concourses A and B, and Concourse B Extension present concerns regarding potential conversion due to the number of building openings.

Any consideration of utilizing the facility as a hurricane shelter must account for a number of logistical factors in addition to these standard guidelines. Airports are designated for ingress and egress and it may actually be detrimental to the community to stress the resource by having the Airport be considered a destination area in the event of a hurricane. Additionally, the value to the community of the existing terminal building may be more readily realized by using this area for staging of recovery equipment and personnel.

RE-USE ANALYSIS OF TERMINAL AT PAGE FIELD GENERAL AVIATION AIRPORT

In order to fully assess the potential reuse options for the existing RSW terminal facility it is beneficial to evaluate the re-use success or lack thereof, at a similar abandoned terminal facility at Page Field General Aviation Airport (FMY). The LCPA moved out of the North side FMY Terminal in 1981. This facility remained unoccupied for approximately 17 years. During this time costs were incurred for the upkeep of this facility.

After the period of building dormancy, leasing of the facility was initiated. Currently, three state administration offices occupy 40,243 square feet of the 63,000 square foot airport terminal.

- **Florida Department of Law Enforcement** (FDLE) was first tenant at FMY, beginning in 1998. FDLE utilizes 24,223 sq. ft in office space. LCPA costs included $149,030 to design (includes design and construction analysis) and $2,776,998 to construct the space. Construction costs included total building interior demolition, overlay of parking lot and access roads, replacement of parking lot light poles, new lift station to accommodate total build out and site utility improvements to accommodate total build out.

- **Florida Highway Patrol** (FHP) utilizes 5,686 sq. ft. in office space with LCPA cost of $59,000 to design and $533,768 to construct.

- **On Call** utilizes 10,334 sq. ft. in office space with LCPA cost of $357,138 to construct (this is an estimate derived from tenants construction performance bond and additional construction components provided by Page Field). Design costs are not available

The Lee County Port Authority has spent a total of $3,875,934 in design and construction costs with estimated build out costs of approximately $9 million. Estimated time to recover renovation/demolition costs is expected to be approximately 25 years. The effort to maintain, renovate, and lease the FMY terminal building has proven to be an overall costly proposition with average costs well over $100 per square foot. It is anticipated that renovations to RSW facilities would approximate this average cost.

ANALYSIS OF EXISTING RSW FACILITY SYSTEMS

The evaluation of the RSW terminal facility and potential reuses of this facility must consider the types and adaptability of existing systems for potential alteration. Mechanical, electrical, and plumbing (MEP), of the existing terminal were examined for code compliance and assessment of condition and remaining useful life. The hydrant piping system, communications system, roofing components, environmental conditions of the building and the existing terminal parking areas were examined as well. The assessment of these systems and the costs associated with the modifications of these systems were compiled and formatted to reflect various options for reuse. Details of MEP configuration and potential modification are presented within the full report text. Costs for modifications of existing systems are included with this summary.

ANALYSIS OF RE-USE OPTIONS

In order to evaluate potential reuse of the terminal building, or portions thereof, specific reuses or the building were examined. The following potential options for reuse of the terminal building were evaluated:

- Office Space
- Warehouse Space
- Industrial Space

There are several areas of the building code that will impact the cost and suitability of conversion to the above uses. These include the type of construction of the various parts of the terminal building, fire separation of upper and lower levels, exiting requirements, enclosure of stairs and sprinkler requirements.

Several different utilization classifications for the existing terminal building were examined extensively with the following conclusions.

- Industrial use of the building would present numerous problems. Typical industrial uses require ceilings heights not available in this facility. In addition most industrial uses require grade level access for receiving of materials and shipping of finished products. This could be provided on the lower floor only and would require controlled secure vehicular access points to the surrounding apron. The upper floors of the building would have limited use except possibly for auxiliary office space.
- Warehouse use also presents difficulties. As with industrial uses most storage occupancies require high ceiling heights and grade level access. In this use also the upper levels would be of limited use except as office areas that are typically of minimal area in storage uses.
- Office use is the most compatible with the current building configuration. The available ceiling heights are adequate for most office areas. The depth of the building will dictate that some areas of the main terminal and international arrivals building will not have access to day lighting. Windows for most offices are easily achievable in the concourse areas. Exiting is adequate for the anticipated occupant loads and the required distances to exits can be provided with additional enclosed stairways as discussed above.

Given this analysis, areas of the building have been compared by looking at re-utilization as office space. Four different options for conversion to office space with associated costs are presented.

Option 1 - Reutilization of the Existing Terminal Facility

In this option the entire existing terminal facility would be prepared for reuse as office space. Reuse of all or portions of the building would require that the interior finishes, systems and partitions be removed to provide “shell space” for later division and improvements for multiple tenants. New interior exit corridors would be added to facilitate movement of people from the current terminal curb to the upper and lower floors of the main terminal and concourses. The existing six enclosed exit stars along the south side of the main terminal would be utilized for emergency exiting. New enclosed stairways would be added to the ends of concourses A and B and the concourse B extension. MEP systems would require extensive modification.

- Costs to Convert Entire 380,000 Square Feet to Office Space

Interior Demolition/Modification	$11,050,000
Mechanical Renovation	$ 5,715,000
Electrical Renovation	$ 5,715,000
Plumbing Renovation	$ 1,905,000
Fire Sprinkler Renovations	$ 762,000
MEP Demolition	$ 381,000
Ongoing Direct/Indirect Costs	$ 1,723,000
Roof Repairs	$ 1,696,000
TOTAL	$28,947,000

The above cost equates to a cost of approximately $76 per square foot for renovation. Similar new construction would cost approximately $100 per square foot for office space of this size.

Option 2 - Remove Main Terminal and Concourses A and B

In this scenario the Main Terminal and Concourses A and B would be demolished, leaving the Concourse B Extension and International Arrivals Building as stand-alone buildings for office space. Some exterior finish work would be required where the buildings currently abut the Main Terminal. Additional enclosed stairways would need to be provided at each end of the Concourse B Extension, as well as the northeast corner of the International Arrivals Building. MEP systems would require conversion.

- Costs to Demolish 300,000 Square Feet and Convert 80,000 Square Feet to Office Space

Demolition	$ 2,100,000
Construction Modification	$ 1,600,000
Mechanical Renovation	$ 1,200,000
Electrical Renovation	$ 1,200,000
Plumbing Renovation	$ 400,000
Fire Sprinkler Renovations	$ 160,000
MEP Demolition	$ 80,000
Roof Repairs	$ 372,000
Ongoing Direct/Indirect Costs	$ 861,461
TOTAL	$ 7,973,461

The above cost equates to a cost of approximately $100 per square foot for renovation. Similar new construction would cost approximately $120 per square foot for office space of this size.

Option 3 - Remove the Main Terminal, Concourses A and B, and Concourse B Extension

This option includes demolition of the Main Terminal, Concourses A and B, and the Concourse B Extension, leaving the IAB for use as office space. The IAB is potentially the most suitable portion of the existing facility for re-use as office space. This area is relatively new and the configuration works well for office use. As above, a new enclosed stair would need to be provided at the northeast corner of the IAB. MEP systems would require conversion.

- Costs to Demolish 332,000 Square Feet and Convert 48,000 Square Feet to Office Space

Demolition	$ 2,324,000
Construction Modification	$ 960,000
Mechanical Renovation	$ 720,000
Electrical Renovation	$ 720,000
Plumbing Renovation	$ 240,000
Fire Sprinkler Renovations	$ 96,000
MEP Demolition	$ 48,000
Roof Repairs	$ 372,000
Ongoing Direct/Indirect Costs	$ 430,730
TOTAL	$ 5,910,730

The above cost equates to a cost of approximately $123 per square foot for renovation. Similar new construction would cost approximately $130 per square foot for office space of this size

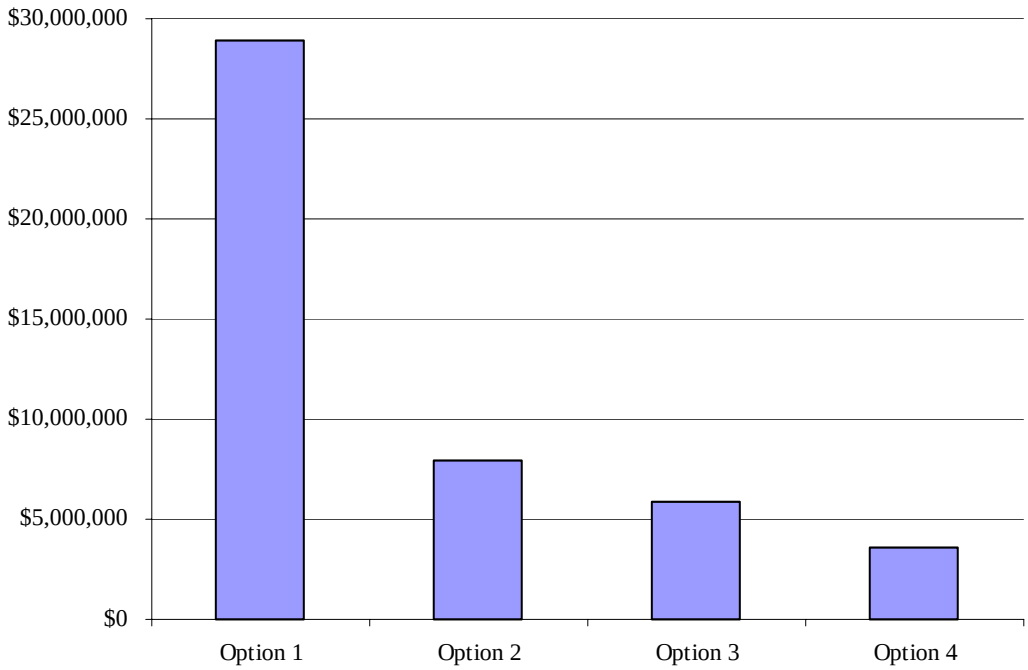
Option 4 – Remove the Entire Existing Terminal Facility to Grade

In this option the entire existing terminal facility would be demolished or deconstructed and the area prepared for other airside uses.

- Demolish 380,000 Square Feet

Demolition	$ 2,660,000
MEP	$ 381,000
TOTAL	$ 3,041,000

A synopsis of costs for the four options is presented in the following chart:



By considering the potential order of magnitude costs for terminal modification, it is apparent that reuse of the existing facility, Option 1, may be cost prohibitive on the front end. These costs may be recouped over time, as the building, or portions thereof, are leased to tenants, but the timing and sufficiency of lease income to offset costs cannot be guaranteed. Options 2 and 3 involve significant modifications to buildings and related systems, and again require tenant participation for long-term success and financial remuneration. Option 4, the removal of the facility to grade, allows for the least amount of expenditure initially and the maximum amount of flexibility as far as re-use.

EVALUATION CONCLUSIONS

This evaluation of terminal disposition options concludes that it is consistent, from a cost standpoint, to support the recommendations of the Draft Master Plan. Option 4, the demolition of the existing terminal facility, presents the opportunity to conform with the Draft Master Plan at the least potential initial cost to the LCPA and is the recommended option. The removal of the existing terminal provides flexibility for secure, airside reutilization of this area while maintaining consistency with the 1998 Amended and Restated Airport Use Agreement between the Lee County Port Authority Board of Port Commissioners and the participating RSW airlines.

10.2 Appendix B – Florida Clearing House Letters

APPENDIX B – FLORIDA STATE CLEARING HOUSE LETTERS

STATE OF FLORIDA

DEPARTMENT OF COMMUNITY AFFAIRS

"Dedicated to making Florida a better place to call home"

JEB BUSH
Governor

STEVEN M. SEIBERT
Secretary

April 12, 2002

Mr. Jeffrey W. Breeden
Reynolds, Smith and Hills, Inc.
4651 Salisbury Road
Jacksonville, Florida 32256

RE: Lee County Port Authority - Preliminary Review - Development of Regional Impact (DRI) Substantial Deviation and Airport Master Plan Update for the Southwest Florida International Airport - Ft. Myers, Lee County, Florida
SAI: FL200202061483C

Dear Mr. Breeden:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4231, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

The Florida Department of Transportation (DOT) has determined that the proposed improvements will impact the surrounding transportation network, and should be addressed as a Substantial Deviation within the DRI process. A detailed traffic analysis study must be provided by the applicant as part of this process. Issues such as drainage and driveway/access permits are already being coordinated with DOT, and the DOT Aviation Office reports that the airport's development plans are consistent with DOT's Work Program as well as the Lee County Port Authority's Airport Master Plan. The applicant's proposal to construct a new interchange on Interstate 75 between the existing I-75 interchanges at Alico Road and Daniels Parkway would not be in conformance with DOT's three-mile Interchange Spacing Standard or consistent with the I-75 Master Plan. DOT has been working with the airport and Lee County officials to develop other, more cost-effective alternatives to the direct-access proposal. Please refer to the enclosed DOT comments for further details.

2555 SHUMARD OAK BOULEVARD • TALLAHASSEE, FLORIDA 32399-2100
Phone: 850.488.8466/Suncom 278.8466 FAX: 850.921.0781/Suncom 291.0781
Internet address: http://www.dca.state.fl.us

CRITICAL STATE CONCERN FIELD OFFICE
2796 Overseas Highway, Suite 212
Marathon, FL 33050-2227
(305) 289-2402

COMMUNITY PLANNING
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 488-2356

EMERGENCY MANAGEMENT
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 413-9969

HOUSING & COMMUNITY DEVELOPMENT
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 488-7956

The Fish and Wildlife Conservation Commission (FWC) notes that previous comments on this project remain applicable. The new project components will also require additional wildlife surveys. To compensate for the additional impacts associated with this proposal, the existing mitigation plans for the Southwest Florida International Airport will need to be expanded. Please refer to the enclosed FWC comments for further details.

The South Florida Water Management District (SFWMD) notes that most of the proposed activities identified in this proposal have been previously approved by the SFWMD under a Conceptual Environmental Resource Permit (ERP) or a Construction and Operation ERP. Issues to be resolved include additional details concerning the new access road from Daniels Parkway, the relocated ASR facility, and the associated preservation mitigation activities. The Southwest Florida Regional Planning Council has provided the Substantial Deviation Questionnaire Checklist for DRI ADA Submission. Please refer to the enclosed comments from these agencies for further details.

Based on the information contained in the project proposal and the enclosed comments provided by our reviewing agencies, the state has determined that, at this stage, the above-referenced action is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Jasmin Raffington at (850) 922-5438.

Sincerely,

Shirley W. Collins, Acting Administrator
Florida Coastal Management Program

SWC/dc

Enclosures

cc: Larry G. Slayback, Florida Department of Transportation
Bradley J. Hartman, Florida Fish and Wildlife Conservation Commission
Nicole Gwinnett, Southwest Florida Regional Planning Council

SAI Routing Sheet

DATE: 02/06/2002

COUNTY: LEE

SAI#: FL200202061483C

Message:

PROJECT TO BE REVIEWED BY: (Div/Program)	ASSIGNED REVIEWERS (Print Last Name)	IS PROJECT LOCATED IN APPROVED DRI? (Circle Yes/No) YES: Is Project Consistent with DO?	IS PROJECT LOCATED IN APPROVED DRI? (Circle Yes/No) NO: Is Project DRI Scale?	Is Project CONSISTENT w/ COMPLAN?	Is Project CONSISTENT w/ FCMP?	Do you have any COMMENTS on project?	DATE REVIEW COMPLETED	RVWR/ SUPV INIT
DCP 2/7/02 Date Rec'd	RWD	YES / NO Monitoring Letter? YES / NO	YES / NO Monitoring Letter? YES / NO	NA YES / NO	YES / NO	YES / NO	2/10/02	DN
Complete and forward to Div/Prog Below no later than: 3/8/02								
DEM 2/11/02 Date Rec'd	Hampton					✓	2/14/02	JM
Complete and forward to Div/Prog Below no later than: 3/8/02								
CMP 2/19/02 Date Rec'd	Clayton	Wetlands? YES / NO	Stormwater? YES / NO			✓	2-20-02	DC
Complete and forward to ACC Coordinator no later than: 3/8/02								

COUNTY: LEE

DATE: 2/6/02
COMMENTS DUE DATE: 3/8/02
CLEARANCE DUE DATE: 4/7/02
SAI#: FL200202061483C

Message:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNITS
AGRICULTURE OTTED COMMUNITY AFFAIRS FISH and WILDLIFE COMMISSION X HEALTH STATE TRANSPORTATION ENVIRONMENTAL PROTECTION	SOUTH FLORIDA WMD	ENVIRONMENTAL POLICY UNIT

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

— Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

— Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

— Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

The Lee County Port Authority is proposing future development/improvements to the Southwest Florida International Airport. As a preliminary step to preparation of a DRI and Airport Master Plan Update, the Port Authority's consultant - Reynolds, Smith and Hills, Inc. is submitting documents on proposed development items and their locations relative to existing airport facilities, to allow a full statewide agency review to be conducted and enable any identified concerns to be mitigated by Port Authority decision makers as early in the process as possible.

To: Florida State Clearinghouse
AGENCY CONTACT AND COORDINATOR (SCH)
2555 SHUMARD OAK BLVD
TALLAHASSEE, FLORIDA 32399-2100
(850) 414-6580 (SC 994-6580)
(850) 414-0479

EO. 12372/NEPA

- ☐ No Comment
- ☐ Comment Attached
- ☐ Not Applicable

Federal Consistency

- ☒ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:

Division/Bureau: HSES

Reviewer: Brad Craft

Date: 2-26-02

COUNTY: LEE

DATE: 2/6/02
COMMENTS DUE DATE: 3/8/02
CLEARANCE DUE DATE: 4/7/02
SAI#: FL200202061483C

Message:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNITS
AGRICULTURE X OTTED COMMUNITY AFFAIRS FISH and WILDLIFE COMMISSION HEALTH STATE TRANSPORTATION ENVIRONMENTAL PROTECTION	SOUTH FLORIDA WMD	ENVIRONMENTAL POLICY UNIT

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FEB 14 2002
State of Florida Clearinghouse

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EO. 12372/NEPA
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- ☐ Comment Attached
- ☐ Not Applicable

Federal Consistency
- ☒ ~~No~~ Comment/~~Consistent~~
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

● From:
Division/Bureau: OTTED
Reviewer: Mblakeslee
Date: 2/9/02

COUNTY: LEE

DATE: 2/6/02
COMMENTS DUE DATE: 3/8/02
CLEARANCE DUE DATE: 4/7/02
SAI#: FL200202061483C

Message:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNITS
AGRICULTURE OTTED COMMUNITY AFFAIRS FISH and WILDLIFE COMMISSION HEALTH X STATE TRANSPORTATION ENVIRONMENTAL PROTECTION	SOUTH FLORIDA WMD ORAT-97-5693	ENVIRONMENTAL POLICY UNIT Lee DRI SAI - [redacted] 2002-1693

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02 FEB -8 AM 11:18

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- — Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
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EO. 12372/NEPA

- ☒ No Comment
- ☐ Comment Attached
- ☐ Not Applicable

Federal Consistency

- ☒ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From: Division of Historical Resources
Bureau of Historic Preservation
Division/Bureau:

Reviewer: Douglas Lewis Frederick P. Gaske
Date: 3/8/2002 Deputy SHPO

Question No.	Subject	Regionally Significant	Answer Required	Special Note
PART VI.	SPECIFIC DRI INFORMATION			
31. A-F	AIRPORTS	Y	Y	
32. A-C	ATTRACTIONS & RECREATION FACILITIES	N/A	N/A	
33. A-C	HOSPITALS	N/A	N/A	
34. A-D	INDUSTRIAL PLANTS & PARKS	N/A	N/A	
35. A-J	MINING OPERATIONS	N/A	N/A	
36. A-D	PETROLEUM STORAGE FACILITIES	Y	Y	
37. A-H	PORT & MARINA FACILITIES	N/A	N/A	
38. A-C	SCHOOLS	N/A	N/A	

Question No.	Subject	Regionally Significant	Answer Required	Special Note
16. A-D	FLOODPLAINS	Y	Y	
17. A-H	WATER SUPPLY	Y	Y	
18. A-E	WASTEWATER MANAGEMENT	Y	Y	
19. A-E	STORMWATER MANAGEMENT (Also see FGFWFC Guidelines)	Y	Y Y	
20. A-C	SOLID WASTE/HAZARDOUS MATERAILS	Y	Y	
PART IV.	TRANSPORTATION RESOUCE IMPACTS			
21. A-I SWFRPC.A-I	TRANSPORTATION	Y	Y Y	
22. A-E SWFRPC	AIR	Y	Y Y	
23. A-C SWFRPC. 1-5,	HURRICANE PREPAREDNESS If Onsite Shelters 1-3.	Y	Y	(as applicable)
PART V.	HUMAN RESOURCE IMPACTS			
24. A-C	HOUSING	Y	N	(affordable housing possibly based on employment)
25. A-B	POLICE & FIRE	N	Y	
26. A-E	RECREATION & OPEN SPACE	N	Y	
27. A-C	EDUCATION	N	N	
28. A	HEALTH CARE	N	N	
29. A-D SWFRPC. A-R	ENERGY	Y	Y Y	
30. A-B	HISTORICAL & ARCHAEOLOGICAL	N	Y	(as in preapp. package)

QUESTIONNAIRE CHECKLIST FOR DRI-ADA SUBMISSION

Question No.	Subject	Regionally Significant	Answer Required	Special Note
PART I.	APPLICANT INFORMATION		Y	
PART II.	GENERAL SECTION			
9.	MAPS	Y	Y	
	A. Site Location		Y	
	B. Aerials		Y	
	C. Topography		Y	
	D. Existing Land Use		Y	
	E. Soils		Y	
	F. Vegetation		Y	
	G. Transects (Plants/Animals)		Y	
	H. Master Development Plan		Y	
	I. Master Drainage Plan		Y	
	J. Transportation		Y	
10.	GENERAL PROJECT DESCRIPTION	Y	Y	
Part 1, A-E	Specific Project Description	Y	Y	
Part 2, A-C	Consistency with Comp. Plan	Y	Y	
Part 3, A.	Demographic & Employment Info.	Y	Y	
Part 4, A-B	Impact Summary	Y	Y	
11. A.	REVENUE GENERATION SUMMARY	Y	Y	
PART III.	ENVIRONMENTAL RESOURCE IMPACTS			
12. A-E	VEGETATION & WILDLIFE	Y	Y	
	(Also see FGFWFC Guidelines)		Y	
13. A-B	WETLANDS	Y	Y	
	(Also see FGFWFC Guidelines)		Y	
	SWFRPC 13.B.1		Y	
14. A-C	WATER	Y	Y	
15. A-D	SOILS	Y	Y	

Parallel Taxiway

The parallel runway will have a parallel taxiway system associated with it along with numerous connector taxiways.

Aircraft Apron Expansion

The Midfield Terminal apron will be expanded on the east and west sides, and will include a taxiway connector to the end of Runway 6.

Construction of Utility Service Corridors

Construction of the additional expansion will spur the need for utility services to the new location, including water, sewer, electrical, gas and communication.

Construction of Surface and Structural Auto Parking

Continued expansion of both surface and structural parking is anticipated throughout the 20-year planning period. The exact number of spaces and phasing will be determined in the Master Plan Update.

Direct Access Connection to I-75

A direct connection from Interstate 75 to the new terminal via the access roadway is under analysis as part of the Master Plan Update. The selected configuration will be included in the ADA.

Cargo Area Expansion

The current air cargo building is expected to expand and the addition of a second air cargo building on the northeast side of the airport is anticipated.

General Aviation Expansion

The current general aviation apron is expected to expand to the southwest along with associated buildings.

Navigational Aids

The addition of aircraft navigational aids such as an Instrument Landing System for the future parallel runway will be necessary. In some cases, the relocation of navigational aids will be needed. For example; due to the construction of the south parallel taxiway, the glide slope on the end of Runway 6 will need to be moved from the south side to the north side of the runway. All navigational aids are being evaluated as part of the Master Plan process.

Reuse/Demolition of Existing Terminal

As mentioned previously, the current Development Order requires that the existing terminal building be closed upon receipt of the Certificate of Occupancy for the new Midfield Terminal. The Master Plan Update will analyze alternative uses/demolition of the abandoned terminal building and the final recommendation will be included in the ADA.

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT SUBSTANTIAL DEVIATION QUESTIONNAIRE CHECKLIST FOR DRI ADA SUBMISSION

Background

On June 20, 2001, a preapplication meeting was held for the proposed Southwest Florida International Airport Substantial Deviation DRI. The Southwest Florida International Airport (RSW) is located approximately ten miles southeast of the city of Ft. Myers (see attached Exhibit 1). Attending this meeting were the applicant Lee County Port Authority, consultants for the project, Lee County Development Review staff, Florida Department of Transportation and SWFRPC staff. Other review agencies were unable to attend; however, they have received background information on the project and will be providing input throughout the review process.

Project Description

In addition to preparing a Substantial Deviation to the Development of Regional Impact, a Master Plan Update and an Environmental Assessment are concurrently underway for the Airport. All three projects were initiated by the Lee County Port Authority (LCPA) in January 2001. The Master Plan Team has conducted an inventory of the site and has also produced a twenty-year activity forecast for the Airport through the year 2020, which will be used for the traffic analysis. These forecasts estimate enplanement and operational levels for the facility. In addition, the anticipated aircraft fleet mix for the airport has been identified. These forecasts have been approved by the LCPA and will be forwarded to FDOT and the FAA for review and approval. The Master Plan Team anticipates approval of the forecasts by July 2001. The Master Plan Team anticipates conducting and finalizing the facility requirements, alternative analysis and final facility recommendations and phasing for RSW by November 2001. These recommendations and analysis will be incorporated into the ADA for submission to the appropriate agencies. Projects anticipated to be included in the Master Plan Update are listed below.

Commercial Passenger Terminal Building Expansion

A new terminal building is currently under design for a midfield location. The existing terminal building has seventeen gates with approval for twenty-eight gates and the new terminal complex will include a total of twenty-eight gates. The existing terminal will be closed upon the receipt of the Certificate of Occupancy for the new Midfield Terminal Complex and operations will be shifted to the new facility. It is anticipated that the Midfield Terminal will be expanded again during the 20-year planning period to approximately 55 gates and 1,000,000 S.F. The exact phasing and total gates are currently being analyzed as part of the Master Plan Update process.

Parallel Runway

A future 9,100-foot parallel runway is being evaluated and is proposed to be located south of the existing runway and Midfield Terminal. This runway has been anticipated since the 1991 Master Plan and will be refined further during the master planning process.

RPC INTERGOVERNMENTAL COORDINATION AND RESPONSE SHEET

SAI FL200202061483C DATE: 2/6/02

COMMENTS DUE TO CLEARINGHOUSE: 2/6/02

AREA OF PROPOSED ACTIVITY: COUNTY: LEE CITY: Ft. Myers

[X] FEDERAL ASSISTANCE [ ] DIRECT FEDERAL ACTIVITY [ ] FEDERAL LICENSE OR PERMIT [ ] OCS

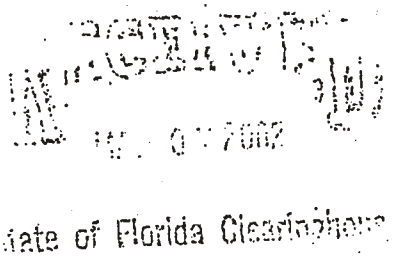
PROJECT DESCRIPTION

The Lee County Port Authority is proposing future development/improvements to the Southwest Florida International Airport. As a preliminary step to preparation of a DRI and Airport Master Plan Update, the Port Authority's consultant - Reynolds, Smith and Hills, Inc. is submitting documents on proposed development items and their locations relative to existing airport facilities, to

ROUTING:

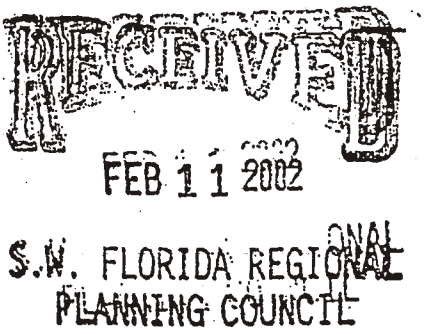
RPC

X SW FLORIDA RPC



PLEASE CHECK ALL THE LOCAL GOVERNMENTS BELOW FROM WHICH COMMENTS HAVE BEEN RECEIVED; ALL COMMENTS RECEIVED SHOULD BE INCLUDED IN THE RPC'S CLEARINGHOUSE RESPONSE PACKAGE. IF NO COMMENTS WERE RECEIVED, PLEASE CHECK "NO COMMENT" BOX AND RETURN TO CLEARINGHOUSE.

COMMENTS DUE TO RPC: 2/6/02



NO COMMENTS: ____

(IF THE RPC DOES NOT RECEIVE COMMENTS BY THE DEADLINE DATE, THE RPC SHOULD CONTACT THE LOCAL GOVERNMENT TO DETERMINE THE STATUS OF THE PROJECT REVIEW PRIOR TO FORWARDING THE RESPONSE PACKAGE TO THE CLEARINGHOUSE.)

NOTES: See attached comments.

ANY CONCERNS OR COMMENTS REGARDING THE ATTACHED PROJECT (INCLUDING ANY RPC COMMENTS) SHOULD BE SENT IN WRITING BY THE DUE DATE TO THE CLEARINGHOUSE. PLEASE ATTACH THIS RESPONSE FORM AND REFER TO THE SAI # IN ALL CORRESPONDENCE.

IF YOU HAVE ANY QUESTIONS REGARDING THE ATTACHED PROJECT, PLEASE CONTACT THE STATE CLEARINGHOUSE AT (850) 414-6580 OR SUNCOM 994-6580.

Fort Myers, Florida 33913-8899

Mr. Craig Smith
Kevin L. Erwin Consulting Ecologist, Inc
207 Bayside Parkway
Fort Myers, Florida 33901

Ms. Kim Dryden
U.S. Fish and Wildlife Service
Office of Ecological Services
Southwest Florida Suboffice
3860 Tollgate Boulevard, Suite 300
Naples, Florida 34114

Mr. Dave Burr
DRI Coordinator
Southwest Florida Regional Planning Council
4980 Bayline Drive, 4th Floor
North Ft. Myers, Florida 33917-3909

Ms. Kim Trebatoski
Lee County
Division of Planning
P.O. Box 398
Fort Myers, Florida 33902-0398

proposal is inadequate for DRI review since the SWFIA will be requesting authorization for impacts to long term areas in the absence of a sufficient wildlife survey. We recommend that all proposed development impact areas be accorded a complete and rigorous survey if those areas are intended to be approved for development in this DRI review. Alternatively, the SWFIA could withdraw the long term areas from development consideration until they are prepared to complete full surveys.

3) The described listed species field survey is of a cursory form and does not include all the necessary species-specific methods necessary for a complete and thorough listed species survey. Pedestrian surveys at only one time of the year will not locate many listed species occurrences. Survey methods need to be species specific, seasonally timed, and follow time of day, weather condition, and replication protocols. We recommend use of the protocols we have previously provided for listed species surveys at the SWFIA. This will involve surveys through the year to address species specific nesting and foraging seasons.

4) For wide-ranging species, it is not sufficient to confine wildlife surveys only to properties owned by the SWFIA. Wildlife surveys should be performed on properties not owned by the SWFIA that the SWFIA has permission to enter. If any properties not owned by SWFIA are included in the DRI, permission must be obtained for surveying these sites or they should be excluded from the DRI.

The level of rigor of wildlife surveys for the SWFIA DRI should be of equivalent breadth and rigor as the surveys implemented for the mid-field terminal expansion. We have previously provided Kevin L. Erwin and Associates (KLECE) with comprehensive survey methods for the species of concern, and expect the same methods to be applied to the DRI review.

We will assist in providing needed background information and current wildlife sightings for the wildlife survey review and report.

If you would like to meet with me or if you have any questions, please contact me at (941) 575-5765.

Sincerely,

James W. Beever III

James W. Beever III
Biological Scientist IV

JWB/jwb
ENV 1-11-3
swfiawildlifemethod2.wpd
CC: Ms. Jami McCormick
Lee County Port Authority
16000 Chamberlin Parkway - Suite 8671

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

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RODNEY BARRETO, Miami
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March 14, 2002

Mr. Jeffrey W. Breeden
Reynolds, Smith and Hills, Inc.
4651 Salisbury Road
Jacksonville, Florida 32256-0901

RE: Lee County, Southwest Florida International Airport, Listed Species Survey Methods

Dear Mr. Breeden:

We have reviewed the material provided in your letter of January 8, 2002, concerning the proposed wildlife survey methods for the twenty-year Master Plan and Development of Regional Impact (DRI) application for the Southwest Florida International Airport (SWFIA). We have the following comments and recommendations.

The project has the potential to impact a variety of listed species, including the Florida panther, Florida black bear, Big Cypress fox squirrel, wood stork, red-cockaded woodpecker, Florida sandhill crane, little blue heron, snowy egret, tricolored heron, roseate spoonbill, white ibis, southeastern American kestrel, burrowing owl, eastern indigo snake, gopher tortoise, gopher frog and American alligator.

Based on the material provided, the proposed wildlife surveys for the proposed project are not sufficient, nor consistent with FWC's "Wildlife Methodology Guidelines for Section 18.D of the application for Development Approval" (Office of Environmental Services, Florida Game and Fresh Water Fish Commission, 15 January 1988).

The following items are the problem areas in your proposed wildlife survey methodology.

1) The method specifies use of the August 1, 1997 listed species lists. This project will span multiple years during which the lists will be updated and revised. The method should specify use of the most current listed species lists and not be tied to the August 1, 1997 list alone.

2) The method divides the areas of species survey into three categories: short term, long term, and conservation easement areas. It further states that the standard intensive surveys will be performed in short term areas. Less rigorous and less intensive surveys are proposed to occur in the long term areas, to be followed by intensive surveys prior to development. No new surveys will be performed in the conservation easement areas and noted observations will come from incidental observations related to other activities. This

Ms. Kim Dryden
U.S. Fish and Wildlife Service
Office of Ecological Services
Southwest Florida Suboffice
3860 Tollgate Boulevard, Suite 300
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Mr. Daniel L. Trescott
DRI Coordinator
Southwest Florida Regional Planning Council
4980 Bayline Drive, 4th Floor
North Ft. Myers, Florida 33917-3909

Mr. Steve Sullivan
Army Corps of Engineers
Fort Myers Regulatory Office
2301 McGregor Blvd., Suite 300
Fort Myers, Florida 33901

Mr. John H. Hankinson, Jr.
Regional Administrator
United States Environmental Protection Agency
Region 4
Water Management Division
South Florida Office
400 North Congress Avenue, Suite 120
West Palm Beach, Florida 33401

Mr. Rick Joyce and Ms. Kim Trebatoski
Lee County
Division of Planning
P.O. Box 398
Fort Myers, Florida 33902-0398

Ms. Heather Stafford
Estero Bay State Preserve
700 Fisherman's Wharf
Fort Myers Beach, Florida 33931

In the past month, we have resolved the location and size (4' high x 20' wide and 4' high x 6' wide) of two wildlife undercrossings that will be installed in Treeline Boulevard with associated wildlife fencing. These were matters we discussed at the beginning of the permitting process, and should be included in project design and permit specific conditions.

The proposed project is located within the feeding radius of wood storks in the Corkscrew colony. The maintenance of natural hydro-periods in foraging grounds around the Corkscrew colony is vital to the recovery of wood storks in South Florida. The required increased fill of wetlands adjacent to the operating airport will destroy stork foraging areas. How will the project offset this loss? Will the remaining lake designs include draw-down pool features in littoral shelf slopes to favor use by wood storks and other wading birds? What additional mitigation will be provided to offsite the loss of seasonal wetlands for wood stork foraging?

The project site is suitable habitat for the eastern indigo snake. We recommend that the applicant follow the Standard U.S. Fish and Wildlife Service Protection Measures for the Eastern Indigo Snake and prepare an Eastern Indigo Snake Protection Plan.

The permit should specify the entity responsible for the management of the proposed preserves, and a condition that specifies the establishment of an adaptive management review of the initial preserve management plan and annual reviews by regulatory permitting entities, including the FWC.

We will continue interagency coordination on these issues. Please contact me, or Mr. Jim Beever at (941) 575-5765, if you have any questions.

Sincerely,

Bradley J. Hartman, Director
Office of Environmental Services

BJH/JWB
ENV 1-12-2
a:\midfieldtreelinewmd.wpd
cc: Mr. Church Roberts
Johnson Engineering, Inc.
2158 Johnson Street
Fort Myers, Florida 33902-1550

A maintenance program will be implemented in the preserved, enhanced, and created wetlands and upland areas to insure the integrity and viability of the mitigation activities. The maintenance shall be conducted in perpetuity to insure no more than 5% total coverage of exotic and nuisance plant species. Torpedo grass will be maintained at no more than 25% coverage (current coverage is approximately 31%). Mitigation areas will be exotic-free immediately following treatment. After the five-year monitoring period, a final environmental compliance inspection will be scheduled with the South Florida Water Management District. In addition, periodic assessments of the site will be conducted no less than quarterly to identify any potential infestations that will require the attention of the maintenance crew; and periodic maintenance will be performed on a quarterly, semiannual, or annual basis, as appropriate for the species in question, to treat any exotic or nuisance plant species.

Limited authorized access to the site will be controlled in an effort to preserve and maintain the functional habitat value of the site. Passive use will be allowed for Site H.

Regular and periodic observations of wildlife will be made during all monitoring events and other site visits by qualified ecologists. This will consist of recording evidence and sign of wildlife (i.e., direct sightings, vocalizations, burrows, nests, tracks, droppings, etc.). The vegetation, wildlife, photographic, and hydrological data collected during the baseline monitoring will be summarized and presented in the baseline monitoring report. Each wetland will be described and discussed in terms of these parameters. Upland preserves will be assessed for the presence of exotic plants. This report will be submitted to the agencies within sixty days of data collection.

The prescribed fire plan for the Mitigation Park will be a program that mimics the natural fire cycle for the various habitat types identified within the Park. Prescribed burning will be carried out by licensed fire crews. Mesic flatwoods will be burned every three to five years, and wet flatwoods will be burned every three to eight years. Fire maintenance of hydric hammocks will be done primarily by burning the adjacent flatwoods and marshes, reducing the fuel needed to ignite the hammock.

Because the airport project has the potential to adversely affect wide ranging species and sever the connections between coastal preserve lands and eastern large-scale landscape preserves, we have recommended the conservation plan involving the Mitigation Park preserve lands to address the impacts to the habitat value of the sites impacted. However, the original plan we reviewed did not include the new segment of Treeline Avenue, access roads to Interstate 75 signs, or the additional fill of wetlands now required by the Federal Aviation Administration to reduce and avoid bird/airplane collisions. These newly proposed impacts should be assessed in terms of the type and function of the habitat subject to alteration, and the potential for habitat fragmentation as a result of development. The mitigation required for these impacts should be determined, and included in the evaluation of the Mitigation Park benefits.

In general, upland and wetland habitats within the Mitigation Park are of high quality. Human disturbance to vegetation and wildlife is negligible due to limited access to these lands. A total of sixty-nine different native vegetation communities have been identified within the Mitigation Park, from the predominant pine flatwoods, pine with cypress, and freshwater marshes to the to the rare tropical hardwood hammock.

Wildlife surveys conducted within the Mitigation Park have been limited to pedestrian transects and observations recorded during other field work. A total of eleven listed species were confirmed on-site. Large congregations of roseate spoonbills were observed foraging in the Park in late winter, as were sandhill cranes. A sandhill crane nest was found in Section 8 of the Imperial Marsh. A great egret rookery was found in Section 6 of the Imperial Marsh. Two alligator dens were found within the Park, one in Section 5 of the Imperial Marsh and the other in Section 13 of the Flint Pen Strand. A burrowing owl and its burrow was found in Section 29 of Site H. While not directly observed in this survey, Florida panther and Florida black bear have been historically documented within the Park lands. The Park also contains suitable habitat for red-cockaded woodpeckers and eastern indigo snakes. Because the Park allows for a regional wildlife corridor, preservation of these lands will compliment the Department of Interior's Florida Panther Recovery Plan.

A total of 35.56 acres of cypress, 179.28 acres of freshwater marsh, 111.02 acres of pine/cypress, 28.24 acres of wet prairie, and 31.01 acres of hydric shrub are proposed to be created from agricultural fields at Site H. In order to provide for additional wading bird foraging habitat, in particular wood storks, deeper pools are proposed within creation areas. The deep pools are delineated as created open water on the cross-sections and wood stork habitat on the plan views. The deeper pools allow for fish to become concentrated during periods of falling water. A total of 21.25 acres of created wood stork habitat are proposed in Site H. In addition, 37.20 acres of fallow fields will be restored to upland plant communities. All freshwater marshes will be graded one-half foot below final grade, and then backfilled with mulch material from the impact site.

The total proposed creation areas within the Imperial Marsh are 41.82 acres of freshwater marsh, 66.86 acres of pine/cypress, 140.86 acres of restored wetlands, 56.32 acres of restored uplands, and 5.29 acres of created wood stork habitat.

Mitigation totals for the Flint Pen Strand are 106.30 of cypress creation, 45.65 acres of freshwater marsh creation, 82.75 acres of pine/cypress creation, 9.37 acres of newly created wood stork habitat, and 7.00 acres of hydric shrub creation. Other mitigation activities within the Mitigation Park include 236.18 acres of upland enhancement (exotic removal), 1,584.10 acres of upland preservation, 3,232.60 acres of wetland preservation, and 484.67 acres of wetland enhancement. All of the mitigation activities will be completed by June 30, 2003.

the Florida Panther Habitat Protection Plan. The Mitigation Park also provides connectivity to other offsite preservation areas. The Flint Pen Strand portion of the park, located in the southwest corner, connects to Corkscrew Swamp Sanctuary, which ties into Camp Keais Strand, Big Cypress National Preserve and Fakahatchee Strand, and finally to the Everglades National Park.

Habitat types within the Park resemble those found within the Midfield Terminal Complex. These lands are located within an area containing little residential development, with the majority of adjacent activities being rock mining and agriculture. The Mitigation Park extends from SR 82 on the north to Corkscrew Road and the upper limits of the CREW lands on the south. The SR 82 lands and the Imperial Marsh lands are separated by lands within Sections 31 and 32, Township 45 South, Range 27 East, which are currently proposed for mining by Florida Rock. A large portion of Florida Rock's proposed mitigation occurs within Section 32, which provides a connection between the northern portion of the Park and the Imperial Marsh. The Florida Rock permit application is currently undergoing review by the Florida Department of Environmental Protection.

The Mitigation Park is composed of three different areas. The northern portion of the Park, Sections 29 and 30, Township 45 South, Range 27 East, is called the Highway 82 Mitigation Area, commonly known as Site H. Prior to 1960, the land primarily consisted of freshwater marsh, hydric pine flatwoods, and some cypress domes. Both sections have been extensively cleared for row crop and pasture farming. Extensive ditching of the area has lowered the water table and resulted in hydrologically stressed wetlands.

The central part of the Mitigation Park is known as the Imperial Marsh. This area is found in Sections 5, 6, 7, 8, 17, and 18, Township 46 South, Range 27 East. The two northern-most sections (5 and 6) contain the single largest freshwater marsh in Lee County. In addition to this marsh, this area contains mature cypress domes that show no signs of logging activity. The remaining four sections provide a variety of habitat types, including cypress ponds and forests, pine flatwoods, wet prairies and marshes, and fallow agricultural fields. The wetlands within the Imperial Marsh represent a significant groundwater recharge area for Lee County.

The south area of the Park is the Flint Pen Strand Addition, consisting of all or portions of Sections 13, 14, 22, and 23,Township 46 South, Range 26 East. The Flint Pen Strand Addition abuts 415 acres owned by Lee County that is utilized as a wellfield and connects to Flint Pen Strand, which connects to the Corkscrew Swamp Sanctuary to the south. Although the wellfield area will not be altered from its current purpose as a potable water source for Lee County, it will remain in a natural state that allows the Mitigation Park a contiguous connection to the adjacent preserves. Also, there is a fenced wildlife underpass under Corkscrew Road that provides a wildlife connection between the Mitigation Park and adjacent preservation areas. The Flint Pen Strand Addition contains cypress and cypress/pine forest, pine flatwoods, and fallow agricultural fields.

forest, 26 acres of mixed cypress and pine forest, 260 acres of freshwater marsh, and 56 acres of wet prairies. As compensation for wetland impacts, the applicant proposes to utilize the 6,989.69-acre Mitigation Park preserve established during the conceptual permit review for the original midfield terminal plans.

Currently, the site consists of 289.85 acres of improved pasture; 10.22 acres of abandoned agriculture; 26.8 acres of fallow farm field; 27.63 acres of herbaceous field; 55.25 acres of palmetto prairie; 269.39 acres of slash pine flatwoods; 2.19 acres of pine and mesic oak; 437.29 acres of pine flatwoods with exotics; 158.78 acres of mixed hydric slash pine, cypress, and melaleuca forest; 151.76 acres of melaleuca forest; 81.92 acres of Brazilian pepper forest; 255.23 acres of wax myrtle/willow wetlands; 106.09 acres of ditches; 354.24 acres of cypress swamp; 422.65 acres of freshwater marsh; 105.97 acres of wet prairie; 24.3 acres of disturbed ground; 349.1 acres of existing airport; 88.28 acres of roads; 18.54 acres of power line easement; and 4.63 acres of dirt trails. The proposed midfield terminal expansion landscape will consist of no native upland forest and no wetlands. The Treeline Boulevard right-of-way and Briarcliff Ditch portion of the project will retain some residual native landscape.

The project site is documented for the occurrence of the Florida panther, Florida black bear, Big Cypress fox squirrel, wood stork, red-cockaded woodpecker, Florida sandhill crane, little blue heron, snowy egret, tricolored heron, roseate spoonbill, white ibis, southeastern American kestrel, burrowing owl, eastern indigo snake, gopher tortoise, gopher frog, and American alligator. The project area has been used as an important travel way for black bears and panthers in southern Lee County. Bears have been documented east of Interstate 75, since 1989 to as recent as 2000, on the proposed alignment of the new Treeline Avenue/Ben Hill Griffin Boulevard extension and east to the greater Corkscrew Swamp system. Wildlife surveys for the project site were performed by the applicant in 1999-2000. Based on the material provided, the wildlife surveys for the proposed project are sufficient, and consistent with FWC's "Wildlife Methodology Guidelines for Section 18.D of the application for Development Approval" (Office of Environmental Services, Florida Game and Fresh Water Fish Commission, 15 January 1988).

Mitigation will be accomplished in 6,985.69 acres of lands previously identified in the South Florida Water Management District (SFWMD) conceptual permit. This area is referred to as the Mitigation Park. The Mitigation Park was identified, in coordination with the FWC, as a preferable alternative to onsite mitigation for the Airport Expansion, because it is less likely to have conflicting goals. Wetlands near airports become a safety issue because of bird strikes, as documented in the FAA Advisory Circular "Hazardous Wildlife Attractants on or Near Airports" (AC 150/5200-33 dated May 1, 1997).

Portions of the property within the Mitigation Park area have been previously identified as high priority in various environmental conservation and preservation programs, including Save Our Rivers, Preservation 2000, Lee County Sensitive Lands, regional wildlife corridor plans, and

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BRADLEY J. HARTMAN, DIRECT
(850)488-6661 TDD (850)488-
FAX (850)922-

May 14, 2001

Ms. Dawn Underwood
South Florida Water Management District
2301 McGregor Boulevard
Fort Myers, Florida 33901

RE: SFWMD Applic. # 000403-6, USACOE # 199301156 (IP-SR), DRI #2000-134, Lee County, Southwest Florida International Airport, Midfield Terminal Complex and Treeline Avenue/Ben Hill Griffin Parkway extension between Daniels Road and Alico Road

Dear Ms. Underwood:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission (FWC) has reviewed this application, and has the following comments and requests for additional information. Our response to this application was coordinated with interagency staff, including the South Florida Water Management District and the U. S. Fish and Wildlife Service staff. A copy of this letter will be provided directly to the applicant and the applicant's consultant.

The applicant proposes to construct a new mid-field terminal complex including: a new roadway segment of Treeline Avenue/Ben Hill Griffin Parkway between Daniels Road and Alico Road, a new Terminal Access Road that connects to the new Treeline Avenue, a new parallel taxiway and ramp, a new terminal parking lot, south detention and westerly detention areas, associated water conveyance systems (including lakes, channels, ditches, culverts and weirs, and outfall conveyance to Briarcliff Channel at the southwest corner of the Fiddlesticks development), access roads to signs on Interstate 75, and presumably a new midfield terminal building.

The project site consists of 3,286.28 acres, including 710 acres of wetlands located primarily south of Daniels Road and the Southwest Florida International Airport and north of Alico Road, east of Interstate 75. The applicant proposes to impact 690 acres of ERP wetlands, including 203 acres of hydric pine flatwoods, 72 acres of shrub wetlands, 73 acres of cypress

We will continue interagency coordination on these issues. Please contact me, or Mr. Jim Beever at (941)575-5765, if you have any questions.

Sincerely,

Bradley J. Hartman, Director
Office of Environmental Services

BJH/JWB
ENV 1-3-2
swfiasubdevsai.wpd
Enclosures
CC: Mr. Mark R. Fisher, AAE
Director, Department of Development
Lee County Port Authority
16000 Chamberlin Parkway, Suite 8671
Fort Myers, Florida 33913

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

DAVID K. MEEHAN, St. Petersburg
H.A. "HERKY" HUFFMAN, Deltona
JOHN D. ROOD, Jacksonville
QUINTON L. HEDGEPETH, DDS, Miami
EDWIN P. ROBERTS, DC, Pensacola
RODNEY BARRETO, Miami
SANDRA T. KAUPE, Palm Beach

ALLAN L. EGBERT, Ph.D., Executive Director
VICTOR J. HELLER, Assistant Executive Director

BRADLEY J. HARTMAN, DIRECTO
OFFICE OF ENVIRONMENTAL SERVICE
(850)488-6661 TDD (850)488-95
FAX (850)922-56

March 22, 2002

Ms. Cindy Cranick
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Re: FL200202061483C, DRI #2000-134, Lee County, Southwest Florida International Airport Substantial Deviation

Dear Ms. Cranick:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission (FWC) has reviewed the referenced document, and provides the following comments.

We have previously commented on an earlier, smaller version of this project (see enclosed letter dated May 14, 2001), and these comments remain applicable. New additions to this proposal beyond project components that we have previously reviewed include a new intermodal transportation facility for transfer of freight, a new approximately 300-room hotel, a potential golf course near Daniels Road at the northeast side of the site, and a commercial/office park development along Daniels Parkway.

Additional wildlife surveys will be needed to address these new project components. Please see the attached letter dated March 14, 2002. To compensate for the additional impacts associated with the proposed new project components, the existing mitigation plans for the Southwest Florida International Airport will need to be expanded.

To determine these impacts, and appropriate mitigation requirements, a detailed traffic analysis study will need to be provided by the Applicant as part of that process. The district's DRI Coordinator is John Czerepak. He may be contacted in Bartow at (863) 519-2343.

3. Issues such as drainage and driveway/access permits are already being coordinated with the Department, with no major issues anticipated, pending the outcome of the upcoming DRI review. In addition, the District Aviation Office reports that the airport's development plans are consistent with the Department's Work Program (FM #2065701 and #2066051), as well as the Lee County Port Authority's Airport Master Plan.

Thank you for allowing us the opportunity to review this document. Should you have any questions, please contact Larry Slayback, District ICAR Coordinator, at Suncom 741-4300 or (941) 461-4300.

Sincerely,

Larry G. Slayback
District ICAR Coordinator

LGS/ls
LS-L03-02

Attachment

cc:
Sandra Whitmire, MS 28
Ricky Langley, MS 1-3
Mike Rippe, MS 1-98
Dick Combs, MS 1-40
Mark Schulz, MS 1-40
Charles Bleam, MS 1-40
Debra Snyder, MS 1-8
Mike Tako, MS 1-36
Tony Russo, MS 1-8
Marcelle Zakhary, MS 1-98
John Starling, MS 1-39
Wayne Chewning, MS 1-39
John Czerepak, MS 1-36
Jim Baxter, MS 1-36
Joseph Philips, MS 1-98
Sarah Clarke, MS 1-98
Thomas Garcia, MS 1-93
Johnny Limbaugh, MS 1-98
Donald Barrett, MS 1-98
Glenn Ahlert, MPO

Florida Department of Transportation

JEB BUSH
GOVERNOR

THOMAS F. BARRY, JR.
SECRETARY

March 14, 2002

Ms. Jasmin Raffington
State Clearinghouse
Florida Coastal Management Program
Department of Community Affairs
2555 Shumard Oak Boulevard, Suite 325
Tallahassee, Florida 32399-2100

RE: ICAR REVIEW (SAI# FL200202061483C)
SOUTHWEST FLORIDA INTERNATIONAL AIRPORT (LEE COUNTY)

Dear Ms. Raffington:

District One, Florida Department of Transportation, has reviewed the above-referenced Intergovernmental Coordination and Review (ICAR) documents, and offers the following comments:

1. The Applicant's documentation proposes construction of a new interchange on Interstate 75 between the existing I-75 interchanges at Alico Road and Daniels Parkway. Because such a proposal would not be in conformance with the Department's three-mile Interchange Spacing Standard or consistent with the I-75 Master Plan, the Department has been working closely with airport and Lee County officials to develop other, more cost-effective alternatives to the airport's direct-access proposal.

   One such alternative, referred to as "Concept F", proposes a north-south collector-distributor system parallel to Interstate 75, which would connect to the existing interchanges at I-75/Daniels Road and I-75/Alico Road. The Department and airport staff tentatively favor this concept, subject to concurrence by an I-75 Project Development and Environment (PD&E) Study and subsequent FHWA design/location approval. It is critical that the Applicant continue its close coordination with the Department through completion of the PD&E Study (FM #4062251). The study's Project Manager is Charles Bleam, who may be contacted in Bartow at (863) 519-2758. Local district contacts include: Mike Rippe, Director of the Southwest Area Office in Fort Myers, Don Barrett, I-75 Corridor Coordinator, and John Limbaugh, Community Liaison, all of which may be reached at (941) 461-4300.

2. Irrespective of the I-75 access issue above, the proposed improvements to Southwest Florida International Airport will impact the surrounding transportation network, and will need to be addressed as a Substantial Deviation within the Development of Regional Impact (DRI) process.

District One Planning Office, Modal Development Department
District One Southwest Area Office * Post Office Box 1030 * Fort Myers, FL 33902-1030
(941) 461-4300 * (941) 338-2353 (Fax) * MS 1-98

10.3 Appendix C – Public Meeting Minutes

APPENDIX C – PUBLIC MEETING MINUTES

MARCH 06, 2003

The Joint Meeting of the Board of Port Commissioners of the Lee County Port Authority, with the Airports Special Management Committee, was held on this date in the Training Facility at the Southwest Florida International Airport (SWFIA), with the following members present:

LEE COUNTY PORT AUTHORITY	**AIRPORTS SPECIAL MANAGEMENT COMMITTEE**
Ray Judah, Chairman	Gateley Daniel, Chairman
John E. Albion, Vice-Chairman	Fran Myers, Vice-Chairman
Douglas R. St. Cerny	Hugh Thimlar
Robert P. Janes	Michael Geml
	REGIONAL MEMBER(S)
	Representing Collier County, Jeffrey D. Fridkin

THE CHAIRMAN ANNOUNCED THAT COMMISSIONER ANDREW COY WAS ABSENT BECAUSE OF A SCHEDULING CONFLICT. COMMITTEE MEMBER ROBERT TAYLOR AND CHARLOTTE COUNTY REPRESENTATIVE RUFUS LAZZELL WERE ABSENT FOR THE ENTIRE MEETING.

The Chairman called the meeting to order at 9:32 a.m. The Invocation was given by Pastor David Comer, Christian Life Fellowship, followed by the Pledge of Allegiance to the Flag.

PRESENTATIONS

Commissioner Judah read and presented a 25th Year Anniversary Resolution noting that the Airport Police Department was established on March 15, 1978; stating that it was the first Airport Police Agency to be accredited by the Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA); and proclaiming the week of March 15 to March 22, 2003 as the Lee County Port Authority Police Department's 25th Anniversary Week. Chief of Police Richard Severson, on behalf of the Airport Police Department, accepted the Resolution; and introduced Administrative Coordinator Ray Landon and Lieutenant John Tuttle (retired), who assisted with originating the Department on March 14, 1978. Chief Severson read the list of names of the Police Department employees who were present at the meeting. Major Daniel W. Sizemore reviewed the Department's accomplishments over the last twenty-five years. An anniversary celebration was held following the meeting.

Executive Director Robert M. Ball stated that recently, he had been presented with the Federal Aviation Administration Southern Region 2002 Air Carrier Airport Safety award, which is the prestigious award given when an airport has the ability to consistently meet and exceed requirements for safe operations; and informed the Board that this airport has achieved 100% compliance for seven consecutive years on its annual certification inspections. He clarified that this achievement does not happen very often, and stated that the credit goes to the men and women of the airport, and requested the following employees to come forward, for them and their fellow employees to join in this honor: Operations Agent Richard Keane, Ground Crew Equipment Operator Dave Hayes, Lead Tradesworker Airfield Mike Cook, Airport Police Officer Eric Burton, and Aircraft Rescue & Fire Fighting Technician

Federal Security Director Douglas M. Perkins presented a Letter of Appreciation to Executive Director Robert M. Ball and Staff for their excellent cooperation and partnering efforts at the airport, which has led to success in completing and meeting the Congressional Mandates created as a result of the Bill that originated the Transportation Security Administration (TSA). He stated that war has been declared on terrorism; and reported that SWFIA's new equipment to help secure the sky is definitely ready to assist in this war. Mr. Perkins thanked the Lee County Port Authority Commissioners, and with the aid of Chairman Judah, presented an award inscribed with the words, "Partners in Security", recognizing the Authority's contribution in achieving world-class security at SWFIA. Chairman Judah thanked Mr. Perkins for the smooth transition that occurred at the airport.

9:30 A.M. AGENDA ITEM - Public Comment on Agenda Items
Consent (C) and Administrative (A)

No one came forward to offer comment.

There were no requests for Consent Agenda items to be pulled for discussion by the individual Commissioners.

CONSENT AGENDA

1. COMMUNICATIONS

(a) Request Board approve the following Minutes of the Board of Port Commissioners meetings:

May 14, 2001
November 14, 2001
February 12, 2002
September 05, 2002 (Budget)
September 19, 2002 (Budget
December 10, 2002
December 17, 2002

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

2. COMMITTEES AND BOARDS

No requests received.

3. LEGISLATION

(a) Request Board adopt, by resolution, revisions to the Lee County Port Authority Policy Manual and Appendices and Purchasing Policy Manual. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent. RESOLUTION NO. PA03-03-01

4. BUDGETING, PURCHASES, CONTRACTS AND AGREEMENTS

(a) Request Board approve the First Extension to the Service Provider Agreement for Mechanical Systems Service and Maintenance of Passenger Loading Bridges, Baggage Conveyor Systems, 400 Hertz Power Systems and Aircraft Air Conditioning Systems at Southwest Florida International Airport, with Oxford Electronics, Inc., to extend Contract No. 1247 for an additional two-years, with options for two additional one-year terms, among other contract modifications, for a total annual contract amount of $212,039.00, plus parts and additional labor charges, as authorized. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(b) Request Board amend the 457(b) Deferred Compensation Program to provide participants the ability to borrow their money through a loan program. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent. RESOLUTION NO. PA03-03-07

(c) Request Board consent to assignment of a lease of offices in the GAC Building at Page Field from Beaver Aviation Service, Inc. to Beaver Aviation South, Inc. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(d) Request Board approve a Nonparticipating Airline Airport Use Permit agreement with Hyannis Air Service, Inc., d/b/a Cape Air. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(e) Request Board approve an amendment to FAA Lease No. DTFA06-01-L-00865, dated November 14, 2001, for construction and operation of a new Airport Surveillance Radar (ASR-11) system at Southwest Florida International Airport. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(f) Request Board approve a Car Rental Concession Agreement for Page Field General Aviation Airport with B and D Transportation Services, Inc., d/b/a Budget Rent-A-Car. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(g) Request Board approve a Car Rental Concession Agreement for Page Field General Aviation Airport with Enterprise Leasing Corporation. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(h) Request Board approve an Access Agreement Allowing for Continuation of Remedial Work Upon National Car Rental's Vacating Airport Location with Remediation and Liability Management Company, Inc. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(i) Request Board approve the purchase of one (1) Backhoe Loader Model 310G, with accessories, from Nortrax Equipment Company, utilizing the Florida Sheriff's Association Contract #02-10-0826, in the amount of $65,246.44. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(j) Request Board authorize execution of a contract between the Lee County Port Authority and Johnson Engineering, Inc., for General Environmental and Planning Management and Related Consulting Services, in the amount of $383,730.00. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(k) Request Board authorize execution of Supplemental Agreement No. 1 between the Lee County Port Authority and Hole Montes, in the amount of $60,800.00, to provide construction administration services for the Page Field Phase III Ramp and T-Hangar Buildings. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(l) Request Board authorize execution of Supplemental Agreement No. 2 between the Lee County Port Authority and Hole Montes, in the amount of $33,000.00, to provide construction administration services for the Page Field Multi-Use Hangar Building. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(m) Request Board authorize execution of Supplemental Agreement No. 47 between the Lee County Port Authority and Owen-Ames-Kimball Company, in the amount of $659,270.00, to provide construction related services for the Page Field Multi-Use Hangar; and approve a Total Project Budget in the amount of $864,100.00. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(n) Request Board authorize execution of Supplemental Agreement No. 48 between the Lee County Port Authority and Owen-Ames-Kimball Company, in the amount of $1,683,525.00, to provide construction related services for the Page Field Phase III Ramp/T-hangar Buildings; and approve a Total Project

Budget in the amount of $2,109,333.00. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(o) Request Board approve Supplemental Agreement No. 1 to the Professional Services Agreement between Ricondo and Associates, Inc. and the Lee County Port Authority. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(p) Request Board approve a Nonparticipating Airline Airport Use Permit agreement with MN Airlines, LLC, d/b/a Sun Country Airlines. The Airports Special Management Committee and Staff recommend approval.

Commissioner Albion moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

5. DEPARTMENTAL MATTERS

No requests received.

6. EXECUTIVE DIRECTOR

No requests received.

7. PORT ATTORNEY

No requests received.

ADMINISTRATIVE AGENDA

1. COMMUNICATIONS

No requests received.

2. COMMITTEES AND BOARDS

No requests received.

3. LEGISLATION

No requests received.

4. BUDGETING, PURCHASES, CONTRACTS AND AGREEMENTS

(a) Request Board award PAB 03-01, SWFIA Midfield Terminal Complex - Parking Garage Package, to D.H. Griffin Construction Company LLC, the lowest, most responsive, responsible bidder for the Base Bid and Alternate 1, in the amount of $34,088,430.81. The Airports Special Management Committee and Staff recommend approval.

Commissioner Janes moved the item, seconded by Commissioner Albion. Commissioner Albion expressed appreciation, noting that this figure came in approximately $5/$6 million under what was anticipated in the bid process, and commended Development Director Mark Fisher and staff for a job well done. The motion was called and carried with Commissioner Coy absent.

THE CHAIRMAN ANNOUNCED THAT ITEM A4b HAS BEEN DEFERRED UNTIL AFTER CONSIDERATION OF THE APPEALS AGENDA. SEE THAT PORTION OF THE MEETING.

(b) Request Board award PAB 02-22, SWFIA Midfield Terminal Complex – Passenger Boarding Bridges, to INET Airport Systems, Inc., the lowest, most responsive, responsible bidder for the Base Bid and

Alternates A-1, A-2, A-3 and A-4, in the amount of $10,376,624.00. The Airports Special Management Committee and Staff recommend approval.

DIRECTLY AFTER CONSIDERATION OF THE APPEALS AGENDA ITEM:
The Chairman entertained a motion to move the item, consistent with the Appeals Bid Protest motion. Commissioner Albion so moved, seconded by Commissioner Janes, called and carried with Commissioner Coy absent.

(c) Request Board adopt the Southwest Florida International Airport Master Plan Update as presented, subject to review and approval by the Federal Aviation Administration (FAA) and the Florida Department of Transportation (FDOT). The Airports Special Management Committee and Staff recommend approval.

Development Director Mark Fisher briefly reviewed the January status report on the development of the SWFIA Master Plan Update; and noted that the plan depicts the airport's planned development over the next 20 years, and enables airport projects to be eligible for state and federal grant funding. He stated that for this presentation, a 20-year airport layout plan, an environment overview and a financial plan have been developed. Birk Hillman and Associates representative Steve Ritter, and by Reynolds, Smith and Hills Consultants representative Jeff Breeden, and with the use of Powerpoint slides, which followed their handout (copy is on file in the Minutes Office), presented the Master Plan Update and reviewed the following issues:

An overview subsequent to ASMC Workshop
Master Planning overview containing the environmental overview, airport access, and financial plan
Comparison of the enplanement projections
The activity forecast
Facility requirements – basic assumptions
Facility requirements for 2005, 2010 and 2020
Composite and refined alternatives
Environmental overview – consequences categories
Noise and Land Use analysis
Aircraft flight corridor and Wetlands Map
Airport access – "Concept 2FMR" preferred
CIP – Summary by phase and major component and funding sources

Mr. Breeden stated that, in the Master Plan, it is recommended that the Port Authority should work cooperatively with FDOT and Lee County DOT to secure the necessary right-of-way between Treeline Avenue and I-75. Mr. Ritter noted that the total CIP consisted of approximately $1.01 billion in improvements. He stated that the requested action today was to approve the Draft Master Plan Document including the refined alternative; and to authorize the Lee County Port Authority staff to submit the 2003 Master Plan Update to the FAA and FDOT for review and approval. The Chairman entertained a motion to support the recommendations. Commissioner St. Cerny so moved, seconded by Commissioner Janes, called and carried with Commissioner Coy absent.

(d) Request Board endorse submittal of a Comprehensive Plan Amendment to incorporate the 2002 SWFIA Master Plan Update into the Lee County Comprehensive Plan. The Airports Special Management Committee and Staff recommend approval.

Development Director Mark Fisher reported that the Legislature adopted language which allows airports to utilize information within an airport's Master Plan to fulfill the Development of Regional Impact (DRI) Comprehensive (Comp) Plan requirements; Lee County and the Port Authority entered into a Memorandum of Understanding (MOU) whereby procedures were established on how to satisfy the DRI requirements. He stated the Airport Development Committee consisted of various Lee County staff that advised the airport during the preparation of the Comp Plan Amendment. Reynolds, Smith and Hills Consultants representative Jeff Breeden, with the use of Powerpoint slides, which followed their handout (copy is on file in the Minutes Office), gave a brief overview of the Comp Plan; and stated that the goals for this presentation were: review of recent changes in Florida Statutes regarding Airport DRI's, the MOU between Lee County and Lee County Port Authority, and a Draft Lee Plan application update summary; and explained that the local Master Plan must be incorporated into the local Comprehensive Plan. He reviewed the following maps: the refined alternative; Future Land Use Map; future airport land use; and the non-aviation related development, calling attention to the five uses: hotel/motel, office use, gas station/convenience store, warehouse/distribution, and light manufacturing/assembly (the maps are contained in the Comprehensive Plan Amendment). He stated that he was requesting approval to submit the draft Lee Plan Application, with the recognition that it is a draft, as outlined in the MOU. He recognized Community Development Planner Matt Noble, who stated that Lee County Staff wished it known that this is the start of the process; the Lee Plan Amendment language will be modified over the course of the upcoming review; noted there are still issues that County Staff wishes to discuss with the Airport Staff and Consultants to achieve the desired results to incorporate the Airport into

the County's Comp Plan and, in time, to abandon the DRI. Commissioner Janes thanked everyone for holding the gas station/convenience stores to only 3,500 square feet. The Chairman entertained a motion to move forward with the recommendation. Commissioner Janes so moved, seconded by Commissioner St. Cerny. The Chairman thanked everyone involved in this difficult endeavor. The motion was called and carried with Commissioner Coy absent.

(e) Request Board award PAP 03-04, Request for Proposals for a Disadvantaged Business Enterprise (DBE) firm to operate an On-Airport Rental Car Concession at Southwest Florida International Airport, to Nitelines USA, Inc.; and authorize staff to begin contractual negotiations. The Airports Special Management Committee and Staff recommend approval.

Commissioner St. Cerny moved 4(e), seconded by Commissioner Albion. Finance Department Director Benjamin Siegel was available to respond to questions. The motion was called and carried with Commissioner Coy absent.

CONVENE AS BOARD OF COUNTY COMMISSIONERS

(f) Request Board of County Commissioners hold a public hearing to approve a resolution to allow Aero Fort Myers, LLC and the Capital Trust Agency to issue tax-exempt bonds for the acquisition and rehabilitation of the cargo building at Southwest Florida International Airport. The Airports Special Management Committee and Staff recommend approval. (Affidavit)

FOR ACTION TAKEN, REFER TO THE MEETING OF THE BOARD OF COUNTY COMMISSIONERS.

(g) Request Board of County Commissioners approve an interlocal agreement, with the Capital Trust Agency, to allow the Agency to issue tax-exempt bonds for the acquisition and rehabilitation of the cargo building at Southwest Florida International Airport, on behalf of the lessee Aero Fort Myers, LLC. The Airports Special Management Committee and Staff recommend approval.

FOR ACTION TAKEN, REFER TO THE MEETING OF THE BOARD OF COUNTY COMMISSIONERS.

RECONVENE AS BOARD OF PORT COMMISSIONERS

(h) Request Board approve leasehold mortgage between Aero Fort Myers, LLC and Bank One, National Association, as trustee; and authorize the chairman to execute the required documents upon closing of the transaction. The Airports Special Management Committee and Staff recommend approval.

Commissioner St. Cerny moved 4(h), seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

5. DEPARTMENTAL MATTERS

No requests received.

6. EXECUTIVE DIRECTOR

No requests received.

7. PORT ATTORNEY

No requests received.

APPEALS AGENDA
BID PROTEST

4. BUDGETING, PURCHASES, CONTRACTS AND AGREEMENTS

(a) Package; and consider Bid Dispute Committee's recommendation to deny the protest and award the contract to INET Airport Systems, Inc.

Assistant Port Authority Attorney Gregory S. Hagen reminded the Board of his letter dated February 21, 2003, which detailed the protest procedures (copy is on file in the Minutes Office). The Chairman called for Jetway Systems, Inc. to present their protest; however, no one came forward. INET Airport Systems was available with their handout and ready to proceed (copy is on file in the Minutes Office). The Chairman inquired if the Commissioners had questions; no one responded. The Chairman entertained a motion to support the recommendation from the Bid Dispute

Committee, who had voted unanimously (4-0) to deny Jetway's bid protest and award the contract to INET, and the Airports Special Management Committee, who recommended the Board of Port Commissioners award the bid to INET, contingent on the outcome of the bid protest. Commissioner Albion so moved, seconded by Commissioner St. Cerny. In response to the Chairman's inquiry, Attorney Hagen stated that Jetway Systems had been given the opportunity to appear. Commissioner St. Cerny stated that the backup is complete, and was comfortable going ahead with the motion. The motion was called and carried with Commissioner Coy absent.
AT THIS TIME, ADMINISTRATIVE AGENDA ITEM 4(b) WAS HEARD. SEE THAT ITEM FOR THE MOTION.
AT THE END OF THE EXECUTIVE DIRECTOR ITEMS: Attorney Hagen further confirmed that he had notified Jetway Systems about today's hearing on at least three separate occasions; that a copy of his letter is on file with the Clerk of Courts Minutes Office, and added that the firm's representative was present at the ASMC meeting on February 24, 2003.

COMMISSIONER ITEMS

DOUBLE THANK-YOU - Commissioner Albion thanked Staff for the excellent job they have done with moving the airline passengers throughout the terminal concourse, particularly since the new security procedures coincided at the busiest time of the year for the traveling public; noted that a lot of great planning has produced great results; and expressed his appreciation - not only as a Commissioner, but as a passenger.

PLANNING PLUS WORK CREATES A SUPERIOR PRODUCT- Commissioner Janes agreed with Commissioner Albion's statement; and also wanted Federal Security Director Douglas M. Perkins to know that the Board appreciates the tremendous amount of work that he and his staff have done in planning and operating the new checkpoint security system. He believed, after visiting other airports, that SWFIA is handled far more efficiently.

COMMITTEE APPOINTMENTS

Chairman Judah entertained a motion to reappoint both Mr. Jeffrey Fridkin and General Rufus Lazzell as Regional Members on the ASMC for another two years. Commissioner St. Cerny so moved, seconded by Commissioner Albion, called and carried with Commissioner Coy absent. General Lazzell was absent; however, Mr. Fridkin responded that he was grateful for the opportunity because it is an exciting group to work with, along with exciting projects to work on. The motion was called and carried with Commissioner Coy absent.

COMMENTS FROM THE CHAIRMAN OF THE AIRPORTS SPECIAL MANAGEMENT COMMITTEE

Chairman Daniel stated he had nothing to discuss at this time.

FRAN'S HOT LIST - Ms. Myers presented her handout entitled Fran's Hot List, January 2003 (copy is on file in the Minutes Office); and reported that, this past week, the Visitor Convention Bureau (VCB) and the Tourist Development Council (TDC) have started to closely monitor the tourist industry for any changes in reservations and cancellations due to the uncertain conditions with Iraq.

EXECUTIVE DIRECTOR ITEMS
EXECUTIVE DIRECTOR'S MONTHLY REPORT - Executive Director Robert M. Ball presented the following items of interest, which are contained in his update "Executive Director's Comments, Joint Meeting, March 6, 2003", (copy is on file in the Minutes Office):

ANNOUNCEMENTS

The Port Authority, in close cooperation with Lee County staff, is once again leading the way for other Florida airports. Incorporation of an Airport Master Plan into the local Comprehensive Plan is an allowable substitution for the Development of Regional Impact process, due to the new regulations. SWFIA is the first airport to apply the new rules and are proud to serve as the test case. This change has the promise of streamlining development reviews and minimizing FAA conflicts – a benefit for Lee County and all airports across Florida. Port Authority and County staff have been working closely over the last few months educating each other on airport and county planning. SWFIA appreciates the assistance from numerous county employees who have contributed to this effort through meetings, reviews and recommendations. Mr. Ball recognized those present: Assistant County Attorney Dawn E. Lehnert, Transportation Department Engineer Andy Getch, Development Services Planner Bryan Kelner, Community Development Planner Matt Noble, and Senior Environmental Planner Kim Trebatoski. The Port Authority thanked them for their efforts.

Condor will offer nonstop service between Frankfurt and SWFIA beginning this summer, and a Sunday flight will be offered starting May 4th and continuing through October 19th.

Air Tran inaugurated one daily nonstop flight to Philadelphia on February 5th.

Spirit Airlines added additional service to Detroit and Chicago-O'Hare this month.

US Airways began year-round daily nonstop service to Washington Regan National Airport on February 9th.

The Transportation Security Administration certified Corporal Eric Runge and Officer Keith Francis, along with their canine partners Barry and Nero, for completing the TSA's explosives-detection program.

Development Director Mark Fisher has been named Chairman of the Southwest Florida Steering Committee for the Continuing Florida Aviation Systems Planning process (FASP), one of nine regional committees, that together with a statewide committee, will review aviation activity forecasts, community air transportation demand projects, and other data used to update the Florida Aviation Systems Plan.

STATISTICES:

January passenger volume set a record increase of 12.96% compared to 2002; fiscal year volume increased 14.44%; making this the second consecutive month that passengers exceeded FY2001/2002 levels. January International traffic increased 35.45%. January Airmail increased 38.62%; airfreight decreased 12.08%; total landed weight increased 42,000 units and 99,000 units above budgeted projections. On-airport rental car sales increased 24.40%; off-airport rental increased 45.97% for the month, and 53.94% for the year. December parking lot revenues increased 37.77% compared to the same period last year. Retail shops combined sales increased 10.75% compared to December 2001. Total food concessions sales increased 23.69% for the month.

AT THIS TIME, ASSISTANT PORT AUTHORITY ATTORNEY GREGORY S. HAGEN MADE AN ADDITIONAL STATEMENT REGARDING THE BID PROTEST. SEE THAT PORTION OF THE MEETING.

EXTRA ITEM -- Presentation on the Southwest Florida International Airport Midfield Terminal Complex Progress Report, March 2003

DMJM Aviation Program Manager Dan L. Schultz, gave a presentation and presented a handout that described the progress that has been made on the Terminal and site (copy is on file in the Minutes Office). Mr. Schultz reviewed that the:

Terminal building construction is now vertical - see handout cover and pages 8 thru 10
First floor columns and second level floor beams are being poured
Underground electrical duck banks have begun
Chiller building foundation walls are completed
Piling work for the terminal building is completed
Site development continues, with the creation of wet and dry detention areas
Sizeable drainage structures have been built; and lime rock put in place on the service roads
Airside components are underway with the assemblage of 5000 feet of hydrant fueling pipe
Installation of 1000 feet of electrical duck banks is in place
Notice to Proceed was issued for landside work in January
Perimeter road has been paved linking current terminal area to the Midfield construction site
Construction on Ben Hill Griffin Parkway/Treeline Avenue extension is progressing
Mitigation Park Development: nuisance trees/plants are being eradicated
Site H parcel is fenced; surface road from Corkscrew has been constructed

Mr. Schultz reported that the construction program is on schedule and 5% under budget; and noted that page 22 indicates the construction schedule. On page 23, an update is provided on impending Transportation Security Administration (TSA) changes, and identifies potential opportunities for airport system upgrades and airline tenant improvements. He stated that moving forward will require additional program funding, especially for the TSA improvements; and noted that Executive Director Robert M. Ball and advisors are presently putting the finishing touches on a plan which will address the funding issues. Mr. Schultz stated his staff is working with the Port Authority's Development Department identifying ways and means to incorporate the impending changes and minimize impacts to the Midfield completion date; and added that this proposal will be presented in the near future. In response to Mr. Geml's question, Mr. Schultz concurred that the progress at the Midfield site is setting the blueprint for future airport designs and construction - as far as TSA and airport security goes; and when opened, the terminal will be state of the art. The Chairman opined that Mr. Schultz, Mr. Ball and staff need to be commended.

The Chairman adjourned the meeting at 10:45 a.m.

ATTEST:
CHARLIE GREEN, CLERK

_____ _____

Deputy Clerk Chairman, Lee County Port Authority

FEBRUARY 24, 2003

A Meeting of the Airports Special Management Committee was held this date in the Training Facility at the Southwest Florida International Airport (SWFIA), with the following Members present:

Gateley Daniel, Chairman
Fran Myers, Vice-Chairman
Robert Taylor
Hugh Thimlar
REGIONAL MEMBER(S):
Representing Charlotte County,
Brigadier General Rufus Lazzell (U.S. Army Retired)

MR. MICHAEL GEML AND COLLLIER COUNTY REPRESENTATIVE JEFFREY FRIDKIN WERE ABSENT FOR THE ENTIRE MEETING.

The Chairman called the meeting to order at 1:32 p.m., followed by the Pledge of Allegiance to the Flag.

PRESENTATIONS

Executive Director Robert M. Ball, General Aviation Services Director Peter Modys, Public Relations Director Susan Sanders, Operations Manager Thomas Nicholas and Chairman Daniel presented Length of Service Awards to the following Port Authority employees:

TEN YEAR SERVICE AWARD

Laska L. Ryan, Aviation Marketing Communications Senior Manager – February 15, 2003

FIFTEEN YEAR SERVICE AWARD

Mark Fisher, Development Division Director – February 28, 2003

TWENTY YEAR SERVICE AWARD

Bobby Orick, Operations Manager – February 03, 2003
Rodney Jacobson, Maintenance Supervisor – February 10, 2003

PUBLIC AGENDA - Public Comment on Agenda Items
Consent (C) and Administrative (A)

A(a) - Anthony B. Torres, representing FMC-Jetway, a bidder for PAB 02-22, SWFIA Passenger Boarding Bridges, spoke on the Buy American Act; opposed the bid award to INET Airport Systems; and stated that INET has not presented the full information requested by SWFIA.

A(a) – Edward J. Gill, representing INET and Dewbridge Airport Systems, stated that INET had certified compliance with the Buy American requirements; and has provided information to the Committee detailing compliance.

There were no requests for Consent Agenda items to be pulled for discussion by the individual Commissioners.

CONSENT AGENDA

(a) Request Board consent to assignment of a lease of offices in the GAC Building at Page Field from Beaver Aviation Service, Inc. to Beaver Aviation South, Inc. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(b) Request Board approve a Nonparticipating Airline Airport Use Permit agreement with Hyannis Air Service, Inc., d/b/a Cape Air. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(c) Request Board adopt, by resolution, revisions to the Lee County Port Authority Policy Manual and Appendices and Purchasing Policy Manual. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(d) Request Board approve an amendment to FAA Lease No. DTFA06-01-L-00865, dated November 14, 2001, for construction and operation of a new Airport Surveillance Radar (ASR-11) system at Southwest Florida International Airport. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(e) Request Board approve a Car Rental Concession Agreement for Page Field General Aviation Airport with B and D Transportation Services, Inc., d/b/a Budget Rent-A-Car. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(f) Request Board approve a Car Rental Concession Agreement for Page Field General Aviation Airport with Enterprise Leasing Company. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(g) Request Board approve an Access Agreement Allowing for Continuation of Remedial Work Upon National Car Rental's Vacating Airport Location with Remediation and Liability Management Company, Inc. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(h) Request Board approve the purchase of one (1) Backhoe Loader Model 310G, with accessories, from Nortrax Equipment Company, utilizing the Florida Sheriff's Association Contract #02-10-0826, in the amount of $65,246.44. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(i) Request Board authorize execution of a contract between the Lee County Port Authority and Johnson Engineering, Inc., for General Environmental and Planning Management and Related Consulting Services, in the amount of $383,730.00. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(j) Request Board authorize execution of Supplemental Agreement No. 1 between the Lee County Port Authority and Hole Montes, in the amount of $60,800.00, to provide construction administration services for the Page Field Phase III Ramp and T-Hangar Buildings. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(k) Request Board authorize execution of Supplemental Agreement No. 2 between the Lee County Port Authority and Hole Montes, in the amount of $33,000.00, to provide construction administration services for the Page Field Multi-Use Hangar Building. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(l) Request Board authorize execution of Supplemental Agreement No. 47 between the Lee County Port Authority and Owen-Ames-Kimball Company, in the amount of $659,270.00, to provide construction related services for the Page Field Multi-use Hangar; and approve a Total Project Budget in the amount of $864,100.00. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(m) Request Board authorize execution of Supplemental Agreement No. 48 between the Lee County Port Authority and Owen-Ames-Kimball Company, in the amount of $1,683,525.00, to provide construction related services for the Page Field Phase III Ramp/T-hangar Buildings; and approve a Total Project Budget in the amount of $2,109,333.00. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(n) Request Board approve Supplemental Agreement #1 to the Professional Services Agreement between Ricondo and Associates, Inc. and the Lee County Port Authority. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(o) Request Board approve a Nonparticipating Airline Airport Use Permit agreement with MN Airlines, LLC, d/b/a Sun Country Airlines. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(p) Request approval of the following Minutes of the Airports Special Management Committee Meetings: October 30, 2002, November 25, 2002 and December 18, 2002. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

ADMINISTRATIVE AGENDA

(a) Request Board award PAB 02-22, SWFIA Midfield Terminal Complex – Passenger Boarding Bridges, to INET Airport Systems, Inc., the lowest, most responsive, responsible bidder for the Base Bid and Alternates A-1, A-2, A-3 and A-4, in the amount of $10,376,624.00. Staff recommends approval.

Development Director Mark Fisher stated that this was the eighth bid award associated with the Midfield complex; advised that it was related to 27 passenger boarding bridges; noted that three bids were received, and the low bid was submitted by INET Airport Systems. He informed the Committee that a bid protest was received from FMC-Jetway; and that presentations were heard by the Port Authority's Bid Dispute Committee, who unanimously concurred with DMJM Aviation and Staff's recommendation. In response to Mr. Lazzell's question regarding Mr. Torres and Mr. Gill's comments regarding the percentage of the components being made in America, Mr. Fisher reviewed the bidding procedures and noted that all bidders must meet the Buy American requirement. He stated that as a result of the bid protest, additional information was requested, and the response submitted satisfied the Buy American requirement certification to the Committee's satisfaction. Assistant Port Authority Attorney Gregory S. Hagen stated that this issue is contingent upon the Board hearing of March 06, 2003; that the bid protest is on-going; and that this Committee does not have a direct role in that process. He added that the motion would be contingent upon the outcome of the bid protest. Attorney Hagen explained that the Buy American provisions are not straight forward; and that there are a number of ways a firm can certify and demonstrate compliance. He added that the Port Authority Board would get a full presentation at the bid protest hearing. After further discussion, Ms. Myers moved the item, seconded by Mr. Taylor. Mr. Taylor stated his understanding was that the Committee, one member being ASMC Member Michael Geml, listened to the facts and that everyone had concurred. The motion was called and carried with Mr. Geml and Mr. Fridkin absent.

(b) Request Board adopt the Southwest Florida International Airport Master Plan Update as presented, subject to review and approval by the Federal Aviation Administration (FAA) and the Florida Department of Transportation (FDOT). Staff recommends approval.

Development Director Mark Fisher briefly reviewed the January status report on the development of the SWFIA Master Plan Update; and noted that the plan depicts the airport's planned development over the next 20 years, and enables airport projects to be eligible for state and grant funding. He reviewed the previously presented issues; and stated that, for this presentation, a 20-year airport layout plan, an environment overview and a financial plan have been developed. Birk Hillman and Associates representative Steve Ritter, assisted by Garfield Eden, and with the aid of overhead projections which followed their handout (copy is on file in the Minutes Office), presented the Master Plan Update and reviewed the following issues:

An overview subsequent to ASMC Workshop
Master Planning overview containing the environmental overview, airport access, and financial plan
Comparison of the enplanement projections
The activity forecast
Facility requirements – basic assumptions
Facility requirements for 2005, 2010 and 2020
Composite and refined alternatives
Environmental overview – consequences categories
Noise and Land Use analysis
Aircraft flight corridor and Wetlands Map
Airport access – "Concept 2FMR" preferred
Capital Improvement Program (CIP) – Summary by phase and major component,

CIP funding sources

Mr. Eden stated the Port Authority should work with FDOT and Lee County DOT to secure the necessary right-of-way to I-75. Mr. Ritter stated that the total CIP consisted of approximately $1.01 billion in improvements, and the breakdown can be found on the tenth page of the handout; and noted that in funding sources, Federal grants accounted for approximately 33%, State grants for 19%, and other funds for 3%. Mr. Ritter stated that the requested action today was to approve the Draft Master Plan Document including the refined alternative; and to authorize the Lee County Port Authority staff to submit the 2003 Master Plan Update to the FAA and FDOT for review and approval. Ms. Myers moved the item, seconded by Mr. Taylor. After further discussion between the presenters, staff, and the Committee, the motion was called and carried with Mr. Geml and Mr. Fridkin absent.

(c) Request Board endorse submittal of a Comprehensive Plan Amendment to incorporate the 2002 SWFIA Master Plan Update into the Lee County Comprehensive Plan. Staff recommends approval.

Development Director Mark Fisher reported that the Legislature adopted language which allows airports to utilize information within an airport's Master Plan to fulfill Development of Regional Impact (DRI) in Comprehensive (Comp) Plan requirements; Lee County and the Port Authority entered into a Memorandum of Understanding (MOU) whereby procedures were established on how to satisfy the DRI requirements. He stated the Airport Development Committee consisted of various Lee County staff that advised the airport and have given expert knowledge during the preparation of the Comp Plan Amendment. Reynolds, Smith and Hills Consultants representative Jeff Breeden , with the aid of overhead projections which followed their handout (copy is on file in the Minutes Office), gave a brief overview of the Comp Plan; and stated that the goals for this presentation were: review of recent changes in Florida Statutes regarding Airport DRI's, the MOU between Lee County and Lee County Port Authority, and a Draft Lee Plan application update summary and requested action; and explained that the local Master Plan must be incorporated into the local Comprehensive Plan. He reviewed the following maps: the refined alternative; Future Land Use Map; future airport land use; and the non-aviation related development, calling attention to the five uses: hotel/motel, office use, gas station/convenience store, warehouse/distribution, and light manufacturing/assembly (maps are on file in the Minutes Office). He stated that the desired action requested today is to endorse submittal of a Comprehensive Plan Amendment Application to incorporate the 2020 SWFIA Master Plan Update into the Lee County Comprehensive Plan. Mr. Lazzell moved approval, seconded by Ms. Myers, called and carried with Mr. Geml and Mr. Fridkin absent.

(d) Request Board award PAP 03-04, Request for Proposals for a Disadvantaged Business Enterprise (DBE) firm to operate an On-Airport Rental Car Concession at Southwest Florida International Airport, to Nitelines USA, Inc.; and authorize staff to begin contractual negotiations. Staff recommends approval.

Finance Department Director Benjamin Siegel reviewed the history of the item, and stated that during the presentations in January 2003, AKI Holdings withdrew their proposal; and noted that, after hearing the Nitelines USA presentation, the Committee requested additional information, and the item was rescheduled. Mr. Siegel reported that, at this time, staff recommends Nitelines USA, Inc. be awarded the contract; and requested staff be allowed to commence contract negotiations with the firm. Mr. Lazzell moved approval, seconded by Mr. Thimlar. In response to Mr. Taylor's query, Mr. Siegel affirmed that after the contract has been negotiated, it will be brought back before the Committee and the Board. The motion was called and carried with Mr. Geml and Mr. Fridkin absent.

(e) Request Board of County Commissioners hold a public hearing to approve a resolution to allow Aero Fort Myers, LLC and the Capital Trust Agency to issue tax-exempt bonds for the acquisition and rehabilitation of the cargo building at Southwest Florida International Airport. Staff recommends approval.

Finance Department Director Benjamin Siegel reviewed the issues and stated this hearing is required under Federal law. Ms. Myers moved the item, seconded by Mr. Taylor, called and carried with Mr. Geml and Mr. Fridkin absent.

(f) Request Board of County Commissioners approve an interlocal agreement, with the Capital Trust Agency, to allow the Agency to issue tax-exempt bonds for the acquisition and rehabilitation of the cargo building at Southwest Florida International Airport, on behalf of the lessee Aero Fort Myers, LLC. Staff recommends approval.

Finance Department Director Benjamin Siegel briefly reviewed the request. Mr. Taylor moved the item, seconded by Mr. Lazzell, called and carried with Mr. Geml and Mr. Fridkin absent.

(g) Request Board approve leasehold mortgage between Aero Fort Myers, LLC and Bank One, National Association, as trustee; and authorize the chairman to execute the required documents upon closing of the transaction. Staff recommends approval.

Finance Department Director Benjamin Siegel briefly reviewed the request. Ms. Myers moved the item, seconded by Mr. Taylor, called and carried with Mr. Geml and Mr. Fridkin absent.

EXECUTIVE DIRECTOR ITEMS

EXECUTIVE DIRECTOR MONTHLY REPORT - Executive Director Robert M. Ball stated he would forego his usual report until the Joint Meeting.

THANK YOU – Mr. Ball thanked the County Staff for their hard work and know how in helping the airport with their Comprehensive Plan and planning efforts; and added that he believed the airport is heading toward a very good Plan for Lee County. In response to Mr. Taylor, Mr. Ball stated that he believed SWFIA will be one of the first airports in Florida to attempt and bring about this endeavor.

ALSO PROVIDED**:** (copies are on file in the Minutes Office)

February 2003 SWFIA and Page Field Monthly Project Summary
February 17, 2002 Status on Bids/Quotes/LOQs Procurement Status
December 2002 SWFIA Statistical Reports

AIRPORT SPECIAL MANAGEMENT COMMITTEE ITEMS

AIR SHOW - Mr. Lazzell reminded everyone that Charlotte County would be having an International Air Show on March 22/23 with the Blue Angels as one of the attractions; and invited one and all to attend.

The Chairman adjourned the meeting at 2:40 p.m.

ATTEST:
CHARLIE GREEN, CLERK

_____ _____

Deputy Clerk

Chairman, Lee County Airports
Special Management Committee

JANUARY 28, 2002

A Meeting of the Airports Special Management Committee was held this date in the Training Facility at the Southwest Florida International Airport (SWFIA), with the following Members present:

Hugh Thimlar, Chairman
Robert Taylor, Vice-Chairman
Gateley Daniel
Michael Geml
Fran Myers
REGIONAL MEMBER(S):
Representing Charlotte County,
Brigadier General Rufus Lazzell (U.S. Army Retired)
Representing Collier County, Jeffrey D. Fridkin

The Chairman called the meeting to order at 1:30 p.m., followed by the Pledge of Allegiance to the Flag.

REORGANIZATION OF THE AIRPORTS SPECIAL MANAGEMENT COMMITTEE

Chairman Thimlar thanked the Committee members for their assistance during the past year; and commended Executive Director Robert M. Ball, General Services Director Pamela L. Conner, and staff for their work. He then called for nominations for the new Chairman. Mr. Taylor nominated Michael Geml to serve, and the Committee approved unanimously. After Mr. Geml assumed the chair and thanked the Committee members for the opportunity to serve as Chairman for a third term, he nominated Robert Taylor to serve as Vice-Chairman, to return to the same cycle the Committee had been in for a few years. He requested that Hugh Thimlar continue as ASMC representative on the Horizon Council, and that Fran Myers continue with the Tourist Development Council. After Mr. Thimlar and Ms. Myers agreed, Chairman Geml's recommendations were unanimously approved.

PRESENTATIONS

General Aviation Services Director Peter Modys, Assistant Executive Director Edmunde J. Henke, and Chairman Geml presented Length of Service Awards to the following Port Authority employees:

FIFTEEN YEAR SERVICE AWARD

Thomas J. Nichols, Senior Manager, Operations Department - December 4, 2001

TEN YEAR SERVICE AWARD

Benjamin R. Siegel, Department Director, Finance - January 16, 2002

PUBLIC AGENDA - Public Comment on Agenda Items
Consent (CA) and Administrative (AA)

C(d) - Cliff Berry Inc. (CBI) representative Jeff Smith explained CBI's position that the bid process was fair; commented on the high cost to rebid; and requested that PAB 02-03 be awarded to CBI as the lowest responsive bidder.

The following are the Consent Agenda items that each Committee member wished to have discussed:

Mr. Lazzell - None
Mr. Daniel - None
Ms. Myers - None
Mr. Thimlar - None
Mr. Taylor - C(d)
Mr. Fridkin - C(d)
Mr. Geml - None

CONSENT AGENDA

(a) Request Board approve a transfer of funds, between the Lee County Port Authority and the Lee County Department of Transportation, in order to provide Alico Road improvements necessary for the

construction of the Southwest Florida International Airport Midfield Terminal Project. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Mr. Daniel, called and carried.

(b) Request Board approve an Airport Provider Permit agreement, with Superior Aircraft Services, Inc., to allow provision of skycap and security screening services for airlines at Southwest Florida International Airport. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Mr. Daniel, called and carried.

(c) Request Board approve an amended and restated lease of offices, in the GAC Building at Page Field, to Beaver Aviation Service, Inc. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Mr. Daniel, called and carried.

(d) Request Board reject bids received for PAB 02-03, pursuant to the recommendation of the Bid Dispute Committee; and direct staff to re-advertise for this project. Staff recommends approval.

PULLED FOR DISCUSSION

In response to Mr. Taylor's question, Development Director Mark Fisher confirmed that the Bid Dispute Committee had reviewed the specifications for the bid and found them to be unclear in specifying the type of bid that was acceptable. Mr. Fisher explained that presentations had been made to the Bid Dispute Committee by TKW, the consulting engineer; by Florida Environmental Compliance Corporation (FECC), the bid protestor; and by Cliff Berry Inc. (CBI), the affected party. Mr. Fridkin stated that he would abstain from voting on this request, because one of his current clients is included on the bid list. Mr. Fisher responded to Mr. Geml's inquiries by stating that the rebid would be done in the most economical way possible after TKW reformats the bid documents to clarify the acceptable procedures and methodologies; that the only costs would be for staff time; and that all bid prices become public record upon opening of the bids. Mr. Thimlar remarked that he was on the Bid Dispute Committee; and opined that the request to rebid was a matter of fairness, regardless of the cost. Mr. Taylor moved approval, seconded by Ms. Myers. Mr. Taylor opined that the cost of a long dispute on the issue would exceed the cost to rebid. TKW representative John Barker confirmed that there would be no additional cost for preparation of the new bid documents. Mr. Taylor asked whether the delay would cause problems in completing the project; and Mr. Fisher stated that, because there are no grant, compliance, or other deadlines, there is no timeline associated with this project. The motion was called and carried with Mr. Fridkin abstaining.

(e) Request Board approve budget amendments in Funds 41200 - Operating Fund, in the amount of $1,850,000.00; and 41250 - PFC Revenue Fund, in the amount of $9,300,000.00, for Fiscal Year 2001, to reflect additional reimbursement to the Airport Discretionary - 41231. Staff recommends approval.

Mr. Lazzell moved approval, seconded by Mr. Daniel, called and carried.

ADMINISTRATIVE AGENDA

(a) Request Board approve an agreement between the Lee County Port Authority and the U.S. Department of Transportation, Transportation Security Administration (TSA). The agreement defines the operating requirements for TSA training certification of the Port Authority's three existing canine explosive detection teams, and provides for the reimbursement of canine team expenses up to $40,000.00 per year per team. Staff recommends approval.

General Aviation Services Director Peter Modys briefly described the request, and remarked that up to $120,000.00 per year could be authorized for reimbursement. Mr. Lazzell moved approval, seconded by Mr. Daniel. In response to Ms. Myers' question, Mr. Modys explained that the recent drug bust was a U.S. Customs operation that did not involve the Port Authority. The motion was called and carried.

(b) Presentation on information comprising the draft Southwest Florida International Airport Master Plan Update.

Development Director Mark Fisher commented that this item is a result of the Committee's request for a more in-depth explanation of the analyses and assumptions involved in the Master Plan Update. He added that, although no specific action is requested, any comments, guidance, or direction from Committee members would be incorporated in the final Master Plan documents. Birk Hillman Project Manager Mike Arnold reviewed and explained the information contained in a PowerPoint slide presentation (printed copy on file in the Minutes Office); and responded to questions

from Committee members throughout the program. He noted that the SWFIA Master Plan is different from others only in that utility mapping was included as part of the inventory process; and that the focus of this presentation would be the forecasts and the alternatives, which make up the heart of the Master Plan. After briefly summarizing the slides dealing with the Overview, Goals, and Objectives, Mr. Arnold responded to questions from Mr. Taylor regarding the correct projections of future demands and the fleet mix as the bases for the remainder of the Master Plan (slides 1 thru 5). Ricondo representative Garfield Eaton pointed out that the five-county Air Trade Area, which drives the area's activities, involves economic factors such as population, retail sales, and employment (slides 6 thru 8). He explained the use and significance of historical enplanement figures, enplanement projection methodologies, market share forecasts, socioeconomic regression and trend forecasts, and the possible effects of a new low-fare entrant or an economic downturn; and described how these factors were incorporated and analyzed to obtain the recommended projections of 3.8% annual growth over the next 20 years for a total of 5.6 million enplanements by 2020 (slides 9 thru 12). During his description of the factors contributing to fleet mix and total airport operations, Mr. Eaton commented on SWFIA's increased market share of domestic and international air carrier operations; increases in air carrier load factors and average seats per aircraft; changes in aircraft types; and increases in regional/commuter and general aviation operations (slides 13 thru 18). After briefly reviewing information on increases in air cargo volume, Mr. Eaton explained the translation of enplanement and operational projections into "peak month/average day/peak hour" enplanement projections to allow for the planning of various airport facilities (slides 19 thru 24). Following a brief description of the local and national effects of the September 11 attacks and the economic recession, Mr. Eaton noted that enplanements at SWFIA are nearly back to the 1999-2000 levels after dropping drastically in September (slides 25 thru 26). Mr. Arnold described slides 27 thru 31, which include information regarding projected runway system demand vs. capacity, effects of the extreme seasonal peak, facility requirements, and factors influencing site and facility layout. After pointing out that a Facility Requirements Summary Table is included at the back of the handout, he reviewed slides 32 thru 44, which illustrate each of the three options considered for various facilities; and explained the rationale for selection of specific options (highlighted in yellow) included in the Composite Alternative on slide 45. Mr. Arnold concluded the presentation by reviewing the timetables for the Environmental Assessment/DRI and the "Next Steps" (slides 46 & 47), which indicate that the DRI is to be submitted to the agencies by August 2002 and that the Draft Final Report should be ready in Early Summer 2002. In response to members' questions during the presentation, Mr. Eaton stated that census population figures are utilized separately from seasonal population peaks; that the possibility of SWFIA becoming an alternate hub for Miami or some other city had not been considered in these forecasts due to the high level of speculation involved; that the increased activity level in airports with new low-fare carriers also benefited the existing carriers; that the Federal Aviation Administration (FAA) requires a valid explanation if Master Plan projections are not within 10% of the FAA Terminal Area Forecast (TAF); and that airline ordering trends and current orders for aircraft provide fairly reliable data for aircraft type projections. Following the presentation, Mr. Arnold answered questions from Executive Director Robert M. Ball as to the timing of repair projects and the options selected for the Composite Alternative.

EXECUTIVE DIRECTOR ITEMS

Executive Director Robert M. Ball utilized the second page of the Executive Director's Update "From the Top", dated January 28, 2002 (copy is on file in the Minutes Office) to summarize some of the statistics brought to light during the presentation:

STATISTICS

Total passengers for the month of December 2001 were 424,483, a decrease of 10.98%. America West, ATA, Continental, jetBlue, and Midwest Express all had increased passenger activity for the month.

Commuter traffic was down 29.46% and international traffic was down over 43%. Air Canada had a significant increase over prior year, up 283%, because it flew 30 flights compared to 19 last year.

Total passengers for calendar year ending December 31, 2001 were 5,277,708, an increase of 1.35% over prior year.

Total airfreight was 2,958,843 pounds, an increase of 3.62%

Total rental car revenue for November was $7,338,540.00, a decrease of 18%. Total parking for November was $479,742, a 14.78 decrease from prior year.

Total retail concessions were down 16.96% for November, with Paradies News, the PGA Golf Shop and Smarte Carte showing increased sales for the month and Florida Pantry and Star Gifts having decreased sales.

Food concessions were up for the month, with an increase of 6.28% over the previous month, up 2.65% for the year.

Total landed weight for December was 306,226 units, down approximately 28,800 units from last year.

ALSO INCLUDED IN "FROM THE TOP":

Aircraft Rescue and Fire Fighting (ARFF) Training Classes

In January, the ARFF department began offering training classes on fire extinguisher handling and safety, CPR, and Automatic External Defibrillators (AED) to airport employees and tenants. The department's four newly state-certified instructors teach the classes; and, upon completion, participants are given a certificate. CPR/AED participants will receive a certificate from the American Heart Association.

Another class, called Aircraft Crash, Fire, and Rescue for First Responders, is scheduled for the near future. The instructor, Captain Robert Roper, is a licensed Airline Transport Pilot with over 22 years of fire fighting experience. The course is offered to all airport employees, tenants, and emergency services personnel in Lee and Collier counties.

The ARFF department has also provided opportunities for staff members to attend various anti-terrorism classes, in an ongoing effort to remain prepared in the event of a bio-terrorism incident. Staff members attending the classes bring the information back and share it with department members.

AIRPORT SPECIAL MANAGEMENT COMMITTEE ITEMS

Request for Figures on Cargo Decreases - Mr. Lazzell inquired as to the decreases in cargo for September and October 2001, and whether there was as much of a decrease as in the passenger numbers. Finance Department Director Benjamin Siegel stated that the total freight for the year was up approximately 2%, and indicated that he would provide the requested monthly data.

Southwest Florida International Airport Calendar - Mr. Thimlar pointed out that SWFIA has put out a beautiful post-card calendar and congratulated whoever was responsible. He noted that there are four postcards from Charlotte Harbor, four from Naples, one each from Sanibel and Captiva Islands, and two from Lee County; but that there are none from the most beautiful beach in Southwest Florida, Fort Myers Beach, where he lives.

The Chairman adjourned the meeting at 3:00 p.m.

ATTEST:
CHARLIE GREEN, CLERK

_____
Deputy Clerk

_____
Chairman, Lee County Airports
Special Management Committee

JANUARY 14, 2002

The Joint Meeting of the Board of Port Commissioners of the Lee County Port Authority, with the Airports Special Management Committee, was held on this date in the Training Facility at the Southwest Florida International Airport (SWFIA), with the following members present:

LEE COUNTY PORT AUTHORITY	**AIRPORTS SPECIAL MANAGEMENT COMMITTEE**
Douglas R. St. Cerny, Chairman	Hugh Thimlar, Chairman
Ray Judah	Robert Taylor, Vice-Chairman
John E. Albion	Michael Geml
Robert P. Janes	Gateley Daniel
	REGIONAL MEMBER(S)
	Representing Charlotte County, Brigadier General Rufus Lazzell (U.S. Army Retired)
	Representing Collier County, Jeffrey D. Fridkin

COMMISSIONER COY AND COMMITTEE MEMBER MYERS WERE ABSENT FOR THE ENTIRE MEETING.

The Chairman called the meeting to order at 9:30 a.m. The Invocation was given by Dr. Norman Hutchinson, Buckingham Presbyterian Church, followed by the Pledge of Allegiance to the Flag.

REORGANIZATION OF BOARD OF PORT COMMISSIONERS

After expressing appreciation to Executive Director Robert M. Ball and his Staff, and to the Airports Special Management Committee, Commissioner St. Cerny announced that he was passing the gavel to Commissioner Janes, who would be the new Port Commission Chairman. Commissioner Janes thanked Commissioner St. Cerny, and suggested that Commissioner Judah serve as the Vice-Chairman. Commissioner St. Cerny so moved, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

9:30 A.M. AGENDA ITEM - Public Comment on Agenda Items
Consent (C) and Administrative (A)

No one came forward to offer comment.

The following are the Consent Agenda items that each Board member wished to have discussed:

Commissioner Judah -None
Commissioner Albion - C4(g)
Commissioner St. Cerny - None
Commissioner Janes - None

CONSENT AGENDA

1. COMMUNICATIONS

(a) Request Board approve the Minutes of the following meetings of the Board of Port Commissioners:

May 8, 2000	September 5, 2001
November 13, 2000	September 10, 2001
May 29, 2001	September 19, 2001

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

2. COMMITTEES AND BOARDS

No requests received.

3. LEGISLATION

(a) Request Board approve the revised Lee County Port Authority Personnel Policies and Procedures Manual. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

4. BUDGETING, PURCHASES, CONTRACTS AND AGREEMENTS

(a) Request Board approve a permit agreement, with Jet Aircraft Maintenance, Inc., for ground service and airliner maintenance and repair. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(b) Request Board approve an Airport Provider Permit agreement, allowing Frank R. Burrelli to conduct aircraft flight instruction at Page Field. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(c) Request Board approve an amendment to the lease agreement with PrivateSky Aviation Realty, LLC. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(d) Request Board approve an agreement, with PrivateSky Aviation Realty, LLC, to amend the Fixed Base Operator (FBO) lease purchased by PrivateSky from Jet South, Inc. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(e) Request Board approve a permit agreement with, Diamond Air Freight, Inc. for ground service at Southwest Florida International Airport. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(f) Request Board approve an Assumption Agreement, with Aero Ft. Myers, LLC, relating to the cargo building site at Southwest Florida International Airport. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(g) Request Board accept a state grant by adopting a Resolution authorizing the execution of a Joint Participation Agreement, between the Florida Department of Transportation and the Lee County Port Authority, for $1,540,980.00, towards design and construction of T-hangars at Page Field. The Airports Special Management Committee and Staff recommend approval.

In response to Commissioner Albion's inquiries, General Aviation Services Director Peter Modys explained that the average waiting list for the T-hangers at Page Field contains about 100 names of persons who want hangars; that the list will become smaller as more hangars are built; and that the pricing structure will be reviewed in the near future. Commissioner Albion noted that, although increased hangar prices could assist in continuing improvements the Page Field facilities, costs should be low enough to encourage demand. He then moved approval of the item, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent. RESOLUTION NO. PA02-01-18

(h) Request Board accept a state grant by adopting a Resolution authorizing the execution of a Joint Participation Agreement, between the Florida Department of Transportation and the Lee County Port Authority, for $544,500.00, towards design and construction of multi-use hangars at Page Field. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent. RESOLUTION NO. PA02-01-19

(i) Request Board approve a retainer agreement, with the law firm of Foley and Lardner, to provide outside counsel services, on an as-needed basis, related to construction of the Midfield Terminal Complex at Southwest Florida International Airport. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(j) Request Board approve a Nonparticipating Airline Airport Use Permit agreement with Comair, Inc. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

(k) Request Board accept a state grant by adopting a Resolution authorizing the execution of Joint Participation Agreement 40578819401, between the Florida Department of Transportation and the Lee County Port Authority, providing for $1,112,000.00 of state participation for design and construction of a general aviation terminal building, with associated landside and airside support facilities, at Page Field. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent. RESOLUTION NO. PA02-01-20

(l) Request Board authorize the execution of Supplemental Agreement No. 27, between the Lee County Port Authority and DMJM Aviation, Inc., for construction administration, construction management, and project management services related to the expansion of the Southwest Florida International Airport, in the amount of $18,696,896.00. Funds are available. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

5. DEPARTMENTAL MATTERS

No requests received.

6. EXECUTIVE DIRECTOR

No requests received.

7. PORT ATTORNEY

No requests received.

ADMINISTRATIVE AGENDA

1. COMMUNICATIONS

No requests received.

2. COMMITTEES AND BOARDS

No requests received.

3. LEGISLATION

No requests received.

4. BUDGETING, PURCHASES, CONTRACTS AND AGREEMENTS

(a) Request Board approve an increase in the maximum 24-hour parking rates at the Southwest Florida International Airport. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner St. Cerny, called and carried with Commissioner Coy absent.

(b) Request Board award PAB 02-02, Southwest Florida International Airport Midfield Terminal Complex Site Preparation, to Phoenix Construction Services, Inc., the lowest, most responsive, responsible bidder, in the amount of $29,702,852.30; and authorize Notice to Proceed after final permits are received. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent.

CONVENE AS BOARD OF COUNTY COMMISSIONERS

(c) Request Board authorize the execution of a conservation easement, to the South Florida Water Management District, on the Airport Mitigation lands formerly known as Site H and the Stairstep Parcels.

FOR ACTION TAKEN, REFER TO THE MINUTES OF THE BOARD OF COUNTY COMMISSIONERS.

(d) Request Board approve an amendment to Resolution #01-09-54, to extend the authorization date until May 31, 2002 to refund the $36,995,000.00 Lee County, Florida Airport Revenue Bonds, Series 1992A, utilizing a forward delivery purchase contract.

FOR ACTION TAKEN, REFER TO THE MINUTES OF THE BOARD OF COUNTY COMMISSIONERS.

RECONVENE AS BOARD OF PORT COMMISSIONERS

(e) Request Board approve an amendment to the concurring Resolution #PA01-09-55, to extend the authorization date until May 31, 2002 to refund the $36,995,000.00 Lee County, Florida Airport Revenue Bonds, Series 1992A, utilizing a forward delivery purchase contract. The Airports Special Management Committee and Staff recommend approval.

Commissioner Judah moved approval, seconded by Commissioner Albion, called and carried with Commissioner Coy absent. RESOLUTION NO. PA02-01-22

(f) Request Board approve the status of the Southwest Florida International Airport Master Plan Update, as presented by the DMJM Aviation/Birk Hillman/Ricondo team. The Airports Special Management Committee and Staff recommend approval.

Development Director Mark Fisher briefly described the purpose of the presentation, and noted that the Airports Special Management Committee will receive a more detailed report at their meeting later this month. Birk Hillman Project Manager Mike Arnold and Ricondo representative Garfield Eaton reviewed and summarized the information contained in a PowerPoint slide presentation (printed copy on file in Minutes Office). Among the topics reviewed were: enplanement projections up to 5.6 million by 2020, aircraft operations projections up to 139,700 in 2020, impacts on the airlines from the events of September 11 and the national recession, historical monthly enplanements, airfield demand/capacity assessment, facility requirements, alternatives, land use strategies, and current status of the master plan process. Steps to be taken in the next six months include completion of the I-75 access analyses, refinement of the selected alternative, development of capital program costs and phasing, identification of the recommended implementation plan, and continued work on the Environmental Analysis and the Development of Regional Impact. After Commissioner Janes thanked Mr. Arnold and Mr. Eaton for an informative presentation, Commissioner Judah moved approval of the request, seconded by Commissioner St. Cerny. In response to Commissioner Judah's question regarding the original plan for four runways, Mr. Fisher explained that the Federal Aviation Administration (FAA) mandates a 20-year plan; that the consultants always keep in mind the 30-, 40-, and 50-year plans; and that there is room for a third parallel runway and for a fourth if it is ever needed. Executive Director Robert M. Ball remarked that getting to a fourth runway would mean getting to the size of Atlanta; and replied to Commissioner Albion's question by stating that permit paperwork is being processed by the US Army Corps of Engineers. The motion was called and carried with Commissioner Coy absent.

5. DEPARTMENTAL MATTERS

No requests received.

6. EXECUTIVE DIRECTOR

No requests received.

7. PORT ATTORNEY

No requests received.

COMMISSIONER ITEMS

POSSIBLE SECURITY MEASURES AT PAGE FIELD - Commissioner Judah asked whether staff is investigating enhancements and improvements in security measures, such as a "Club" in the propellers of general aviation aircraft. Executive Director Robert M. Ball pointed out that, although the Authority cannot require such a measure, staff is meeting with the Florida Department of Law Enforcement (FDLE) and with the Federal Aviation Administration (FAA) to discuss various means to improve security; and added that Page Field has better security than most general aviation airports.

STATE REDISTRICTING AND OTHER CONCERNS - Commissioner Albion emphasized the need to closely monitor redistricting proposals; and noted that one of the proposed state redistricting maps shows I-75 as the dividing line, placing the Southwest Florida International Airport, which serves all of Southwest Florida, with an east coast congressperson. He suggested that officials and staff need to lobby to ensure that the airport and the university remain with a west coast district. Commissioner Janes added that it is important to work with the legislature to protect what has already been promised by the state in terms of money for road-building; and that the redistricting and budget shortfall will result in a chaotic legislative session. Commissioner Albion requested a staff report, no later than February 1, regarding items of concern that may come up in the legislative session, so that anyone in Tallahassee for a meeting or convention will be able to lobby for County interests. After Commissioner Janes commented that lobbying is more effective when there is early warning of potential actions, Commissioner Albion pointed out that the County's lobbying firm should be on the alert for any matters affecting the airlines, airports, and other areas of concern to the County.

COMMITTEE APPOINTMENTS

There were no appointments offered by the individual Commissioners.

COMMENTS FROM THE CHAIRMAN OF THE AIRPORTS SPECIAL MANAGEMENT COMMITTEE

On behalf of the Committee, Chairman Hugh Thimlar commended Executive Director Robert M. Ball and staff for the smooth and efficient operation of the Southwest Florida International Airport and Page Field; and wished a happy, prosperous, and safe New Year for everybody.

In the absence of Committee member Myers, Commissioner St. Cerny distributed copies of "Fran's Lee Island Coast VCB HOT LIST" to the Board and Committee members (copy is on file in the Minutes Office).

EXECUTIVE DIRECTOR ITEMS

CONGRATULATIONS TO ED FINK - Referring to a one-page report entitled "Executive Director's Comments" (copy is on file in the Minutes Office), Executive Director Robert M. Ball offered congratulations to Page Field Flight and Ground Instructor Ed Fink, who recently renewed his Master Instructor designation and is the first Florida Certificated Flight Instructor to earn the designation three times.

AVIATION SECURITY UPDATE -Mr. Ball provided an update regarding passage by Congress of an Aviation Security bill to implement changes in aviation security, including the creation of a Transportation Safety Administration (TSA) which will federalize all functions currently performed at screening checkpoints, along with other functions related to airport security. He noted that, before January 15, airlines are required to initiate a new form of baggage screening and positive match; that electronic explosive detection equipment will be required before the end of 2002; and that the 300-foot rule has required screening of vehicles entering the parking lot and elimination of parking in front of the terminal building. Mr. Ball reported that a blast analysis has been initiated to meet some of the structural criteria established by the new regulations, with the possibility that modification to the terminal building can be provided in lieu of the screening requirements; and that building modifications may be needed to install the explosive detection equipment. After noting that the legislation would also attempt to quicken the screening process, which could also require building changes, Mr. Ball stated that the consultants have been requested to make the new Midfield Terminal among the most secure in the country; and reviewed possible plan modifications to meet the new

criteria. He stated that staff will meet next week with the Federal Aviation Administration (FAA) and come back to the Board with any modifications that might need to be made.

REPRESENTATIVE KYLE TO TOUR AIRPORT - Mr. Lazzell asked whether Representative Bruce Kyle was "on board" regarding the aviation fuel tax, and Mr. Ball reported that Representative Kyle will be touring the airport this afternoon. Mr. Ball added that he would call Mr. Lazzell later in the day with a report on the results.

DEPARTURE OF NATIONAL GUARDSMEN - In response to Commissioner Albion's question, Mr. Ball commented that twelve National Guard representatives will remain on duty at the airport until April 1; and that the two who left on January 5 were additional Guardsmen provided for the busy holiday season.

The Chairman adjourned the meeting at 10:15 a.m.

ATTEST:
CHARLIE GREEN, CLERK

_____ _____

Deputy Clerk Chairman, Lee County Port Authority

10.4 Appendix D – FAA Comments and Responses

Exhibit 2: Comparison of TAF and RSW Master Plan Enplanement Forecasts

Year	Annual Enplanements			Percent Difference
	Actual [1]	Master Plan (M.P.)	TAF (Updated Since 9.11.01)	M.P. and updated TAF
2000	2,632,088	2,632,088	2,496,956	-5.13%
2001	2,665,387	2,789,300	2,688,420	-3.62%
2002	2,618,297	2,924,100	2,456,179	-16.00%
2003	2,894,932	3,046,400	2,827,534	-7.18%
2004		3,169,500	2,930,527	-7.54%
2005		3,294,000	3,051,186	-7.37%
2006		3,421,200	3,171,846	-7.29%
2007		3,551,400	3,292,507	-7.29%
2008		3,686,700	3,413,168	-7.42%
2009		3,829,700	3,533,828	-7.73%
2010		3,978,800	3,654,489	-8.15%
2011		4,130,200	3,775,150	-8.60%
2012		4,286,800	3,895,811	-9.12%
2013		4,446,600	4,016,471	-9.67%
2014		4,609,500	4,137,132	-10.25%
2015		4,775,800	4,257,793	-10.85%

[1] Year 2003 total estimated from January to June, 2003 actual and historical trends

Sources: Lee County Port Authority
FAA Terminal Area Forecast

Prepared by: Ricondo & Associates, Inc.

In conclusion, we believe that the activity forecasts prepared in conjunction with the Southwest Florida International Airport Master Plan still adequately projects the activity levels expected to occur over the next 20 years. Furthermore, the differences that exist between the forecasts are minimal and can be partly explained by non-revenue passengers not included in the TAF.

Exhibit 1: Annual Percent Difference Between Original TAF and Updated TAF

Year	Terminal Area Forecast (FAA)		Percent Difference Between Original TAF and Updated TAF
	(Forecast prior to 9.11.01)	(Updated Since 9.11.01)	
2003	2,880,015	2,827,534	-1.8%
2004	2,999,046	2,930,527	-2.3%
2005	3,118,077	3,051,186	-2.2%
2006	3,237,108	3,171,846	-2.0%
2007	3,356,140	3,292,507	-1.9%
2008	3,475,171	3,413,168	-1.8%
2009	3,594,202	3,533,828	-1.7%
2010	3,713,233	3,654,489	-1.6%
2011	3,832,264	3,775,150	-1.5%
2012	3,951,295	3,895,811	-1.4%
2013	4,070,327	4,016,471	-1.3%
2014	4,189,358	4,137,132	-1.3%
2015	4,308,391	4,257,793	-1.2%
Average Annual Difference			-1.6%

3. The Master Plan forecast is still wthin 10 percent of the updated RSW TAF

Exhibit 2 below compares actual enplanements at RSW provided by the Lee County Port Authority with the updated TAF and Master Plan forecast. The difference between the updated TAF and the Master Plan forecast varies from approximately 7 percent in 2003 to just over 10 percent in 2015.

Another caveat that should be noted is that the TAF does not include non-revenue passengers. Non-revenue passengers include those that are flying on passes (such as travel agents), reduced rate tickets and airline employees. These passenger counts can be significant in a destination market such as Ft. Myers, Florida. This is the main reasoning behind using actual Southwest Florida International Airport Enplanements in the Master Plan forecast, as opposed to TAF base year enplanements. The phenomena detailed above can be seen in the 2000 base year enplanements found in Exhibit 2.

The actual enplanements reported by the Lee County Port Authority and those provided in the TAF are significantly different in 2000 (135,000 enplanement difference). When taking into account non-revenue passengers, the difference between the two forecasts would be significantly smaller.

RESPONSE TO COMMENTS ON SOUTHWEST FLORIDA INTERNATIONAL AIRPORT MASTER PLAN

The following provides a response to comments provided by the Florida Department of Transportation (FDOT) and the Federal Aviation Administration (FAA) in their review of the Southwest Florida International Airport (RSW) Master Plan. Specifically, we address the concern that the passenger enplanement forecast used in the Master Planning process had not been updated to include the impact of the September 11, 2001 terrorist attacks. In addition, the FAA's updated Terminal Area Forecast (TAF) is cited as the necessary comparison tool when testing the validity of the Master Plan enplanement forecast.

Due to the fact that the Master Plan forecast was prepared in the year 2000, the forecast does not take into account the impacts of the September 11, 2001 terrorist attacks. Despite this fact, however, we believe that the Master Plan forecasts still adequately projects the Airport's activity levels, as described in the following paragraphs.

1. ***RSW's Enplanement Levels Have Rebounded Following September 11th, 2001***

As a result of the September 11th terrorist attacks, enplanements at RSW decreased by only 1.8 percent in 2002 over 2001 levels, and by 0.5 percent over 2000 levels. Furthermore, based on actual figures available through June 2003 and historical monthly trends, enplanements are estimated to be approximately 2.9 million in 2003, which is an increase of over 10 percent over 2002 levels. As a result of the region's strong leisure and O&D market, RSW has recovered much better than most airports in the U.S. As a result of this rebound in 2003, RSW's estimated 2003 enplanements are expected to be only 5 percent lower than what was projected in the Master Plan forecast, and 2 percent higher than the FAA's updated TAF.

2. ***The RSW TAF does not change significantly once updated for the effects of September 11, 2001.***

Since the Master Plan forecast was prepared, the FAA's TAF for RSW has been updated to take into account potential changes in the demand for air travel following the September 11th terrorist attacks. However, over the forecast horizon, the annual percent difference in the enplanement forecast between the original TAF and updated TAF (i.e. updated for the effects of September 11, 2001) is only about 1.6 percent. An annual comparison between the original and updated TAF's for RSW is shown in Exhibit 1 below.

FDOT RESPONSE TO COMMENTS

Comment
1. Chapter 1 - Introduction, 1.3 Previous Studies: Top of the third paragraph states "The airport has also been included in the Continuing Florida Aviation System Plan (CFASP). The latest CFASP, complied in 1992, is currently in the process of being updated". Please replace CFASP with the Florida Aviation System Plan (FASP).
Response
The comment was addressed and CFASP was changed to FASP.

Comment
2. Chapter 3 – Aviation System forecasts: This chapter (working paper No. 1) was written before September 11, 2001, and the chapter remains unchanged in the final draft. Market share methodology was chosen as the preferred enplanement forecast for the airport and the FAA Aerospace Forecasts were used as the basis for market share analysis. FAA forecasts have been changed as well as most major commercial airports in Florida have changed their forecasts in response to the impacts following the events of September 11, 2001. We recommend that this master plan analyze the impacts following the events of September 11, 2001, and address the reason for not changing the forecast.
Response
See attachment titled "Response to comments on Southwest Florida International Airport Master Plan.

Comment
3. Chapter 6 – Alternatives, 6.1 Introduction: Typing error in third paragraph "The will not only change the operational characteristics of the airport,……" needs to be corrected.
Response
This was corrected in the text.

Comment
4. Public Participation: Documents related to public participation in this master plan updating process needs to be part of this master plan update.
Response
The public meeting minutes are now included as part of Appendix C.

FAA RESPONSE TO COMMENTS

Master Plan

Comment

1. The forecast should include the impact of the terrorists' events of September 11, 2001 and the recent economic downturn resulting from these events.

Response

See attachment titled "Response to comments on Southwest Florida International Airport Master Plan.

Comment

2. The base year data utilized in the forecast should be consistent with the actual data used in the Terminal Area Forecast (TAF). Activity data from 2001 or 2002is recommended.

Response

See attachment titled "Response to comments on Southwest Florida International Airport Master Plan.

Airport Layout Plan

Comment

1. Wind Rose – Include allowable crosswind conditions up to 20 knots. Note that 20 knots is the allowable crosswind for ARC D-V.

Response

The 20 knot crosswind conditions are now included on the ALP sheet.

Comment

2. Scale – Stay within the range of 1"=200' to 1"=600' and provide scale bar.

Response

This was corrected on the drawing.

Comment

3. Show holding position signs and markings. Use dimension lines to depict the distance from the runway centerline.

Response

This was added to the ALP drawing.

Comment

4. Once the location of the new runway is completely defined, provide the coordinates, threshold elevation and TDZ so that the approach areas are protected from encroachment.

Response

This was noted.

Land Use Map

Comment

1. Include property line in legend

Response

Done – See Drawing

Comment

2. Drawing should be scaled within the range of 1"=200' to 1"=600'

Response

Done – See Drawing

Comment

3. Land uses should be depicted by general use categories (e.g. agriculture, recreational, industrial, aviation, commercial, etc.)

Response

The land uses prepared for this study are more specific to the local Land Development Code and local Comprehensive Plan in lieu of general land use categories typically found in master planning documents. These more specific land uses will allow the land use sheet to be a more effective tool in coordinating on-airport land uses between the airport owner and the local government. We therefore suggest maintaining the land uses as depicted.

Property Map

Comment

1. Drawing should be scaled within the range of 1"=200' to 1"=600'

Response

Done – See Drawing