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and review of local, regional, state and federal governmental requirements and a review of previous studies and historical documents for RSW.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)

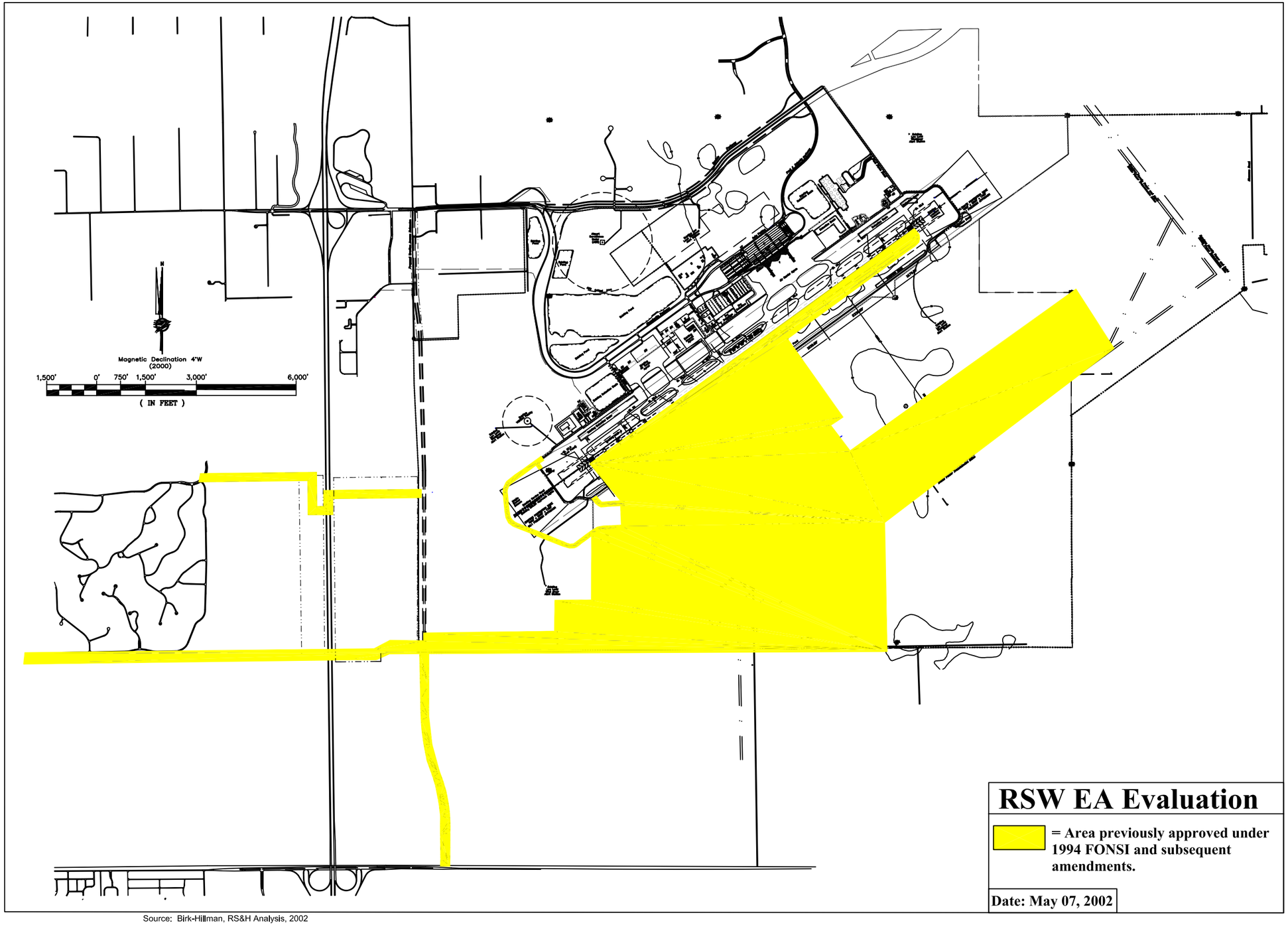
An EA examines potential impacts to determine whether they exceed predefined thresholds of significance or create sufficient controversy to require FAA to prepare a full EIS, or if the FAA can provide a Finding of No Significant Impact (FONSI). The FAA will either issue a FONSI as a result of the EA 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



RSW EA Evaluation

= Area previously approved under 1994 FONSI and subsequent amendments.

Date: May 07, 2002

Source: Birk-Hillman, RS&H Analysis, 2002

Lee County Port Authority

Birk Hillman
Orlando · Miami · Atlanta

DMJM Aviation

RS&H

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:

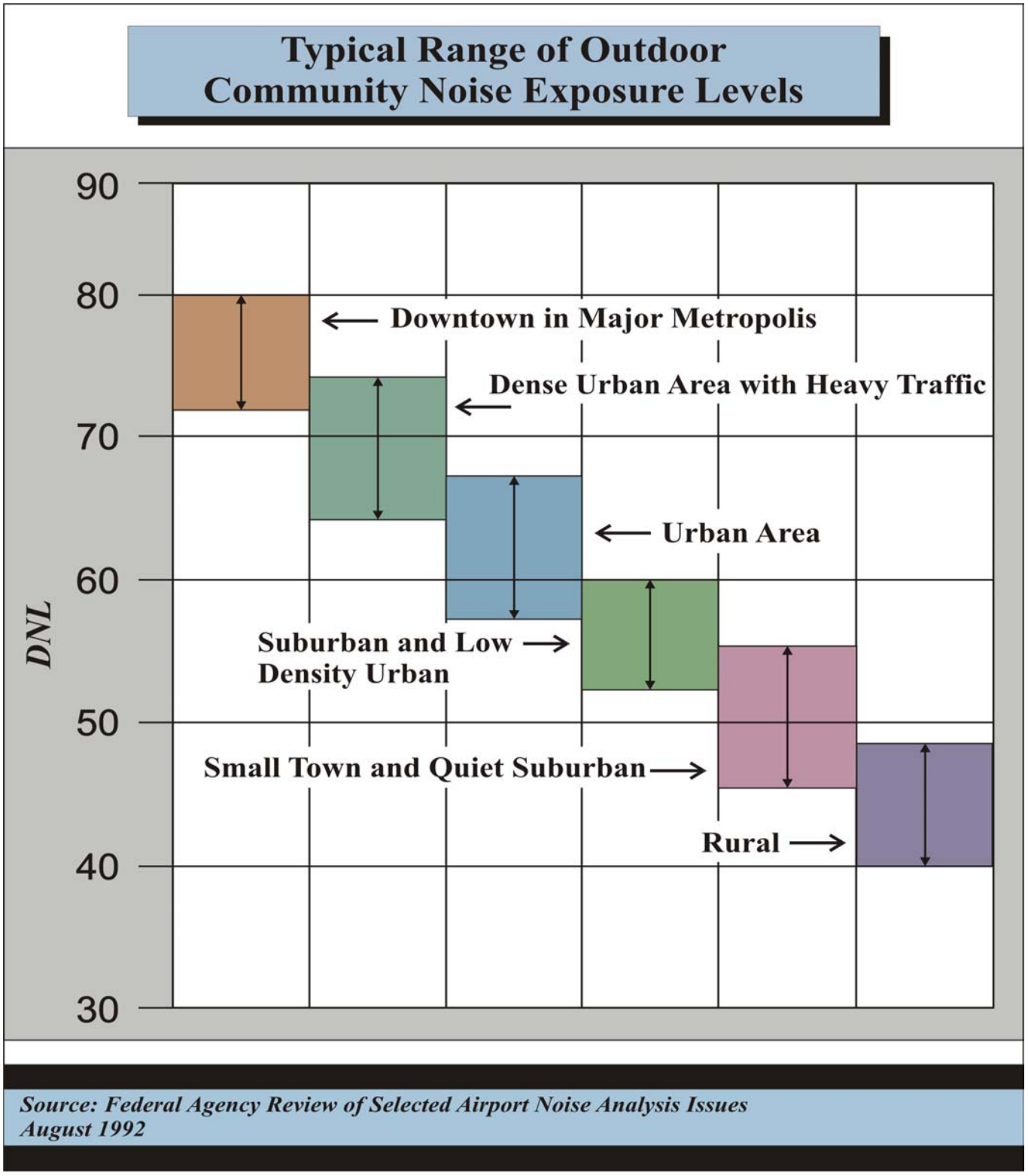
- Frequency Weighting - Use of the standard A-weighting which most closely reflects the response to the human ear.
- Time-of-Day Weighting - The 10 dB nighttime penalty accounts for greater sensitivity to noise and/or lower background levels at night.
- Energy Averaging - The energy-mean is the best 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

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTL. AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE	EXHIBIT 7-2

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

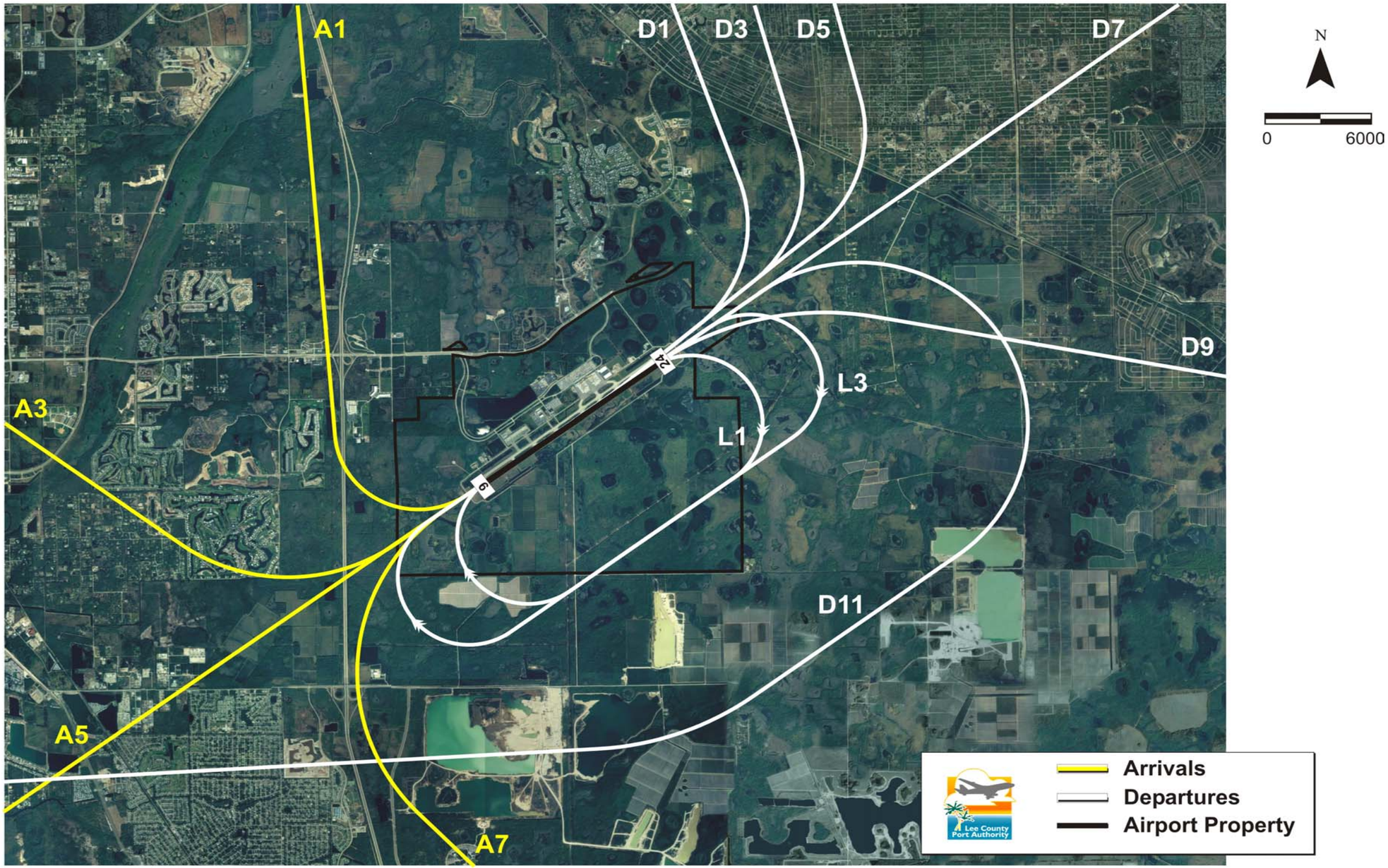
Flight Tracks

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

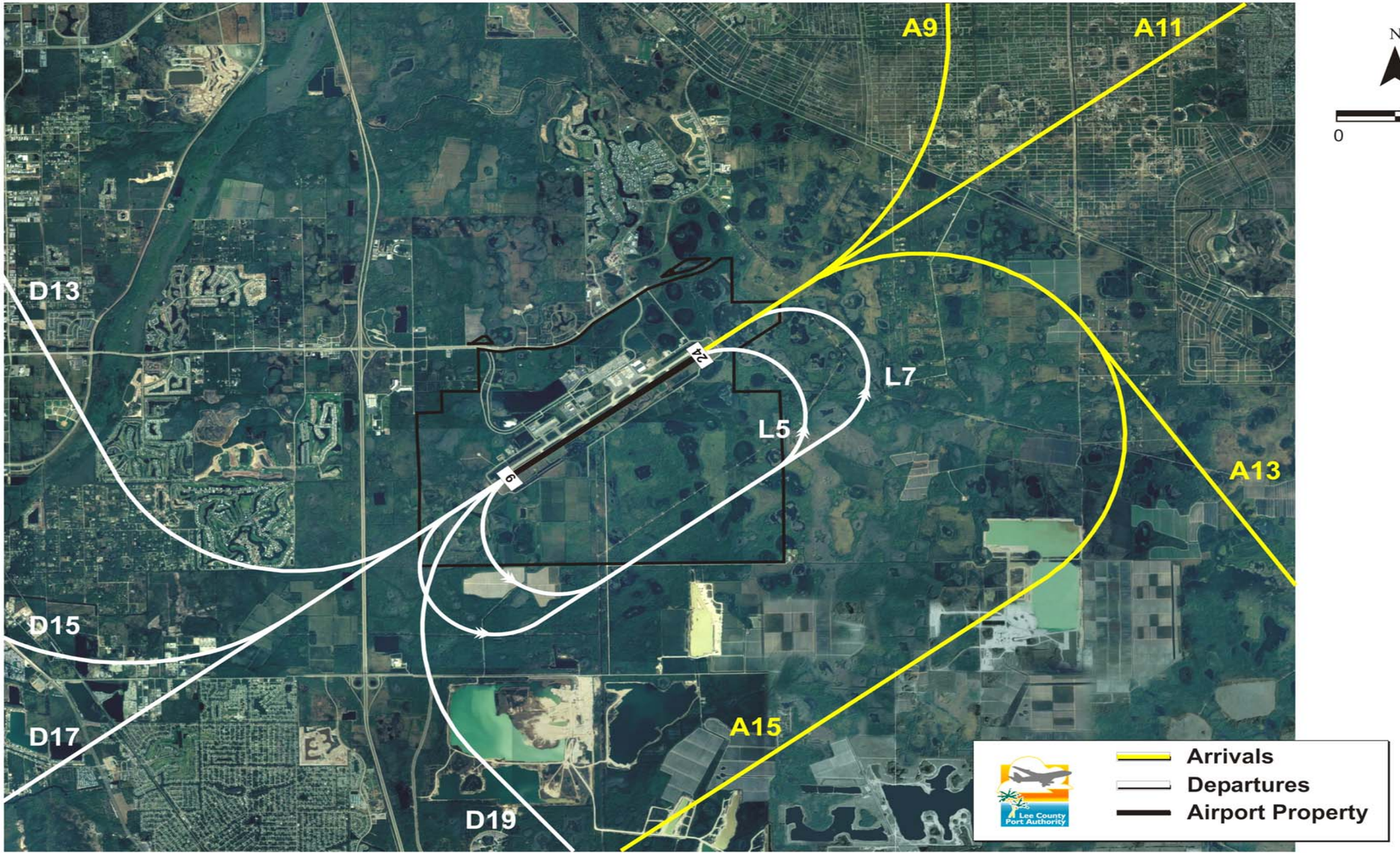


Source: Environmental Science Associates, 2002

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

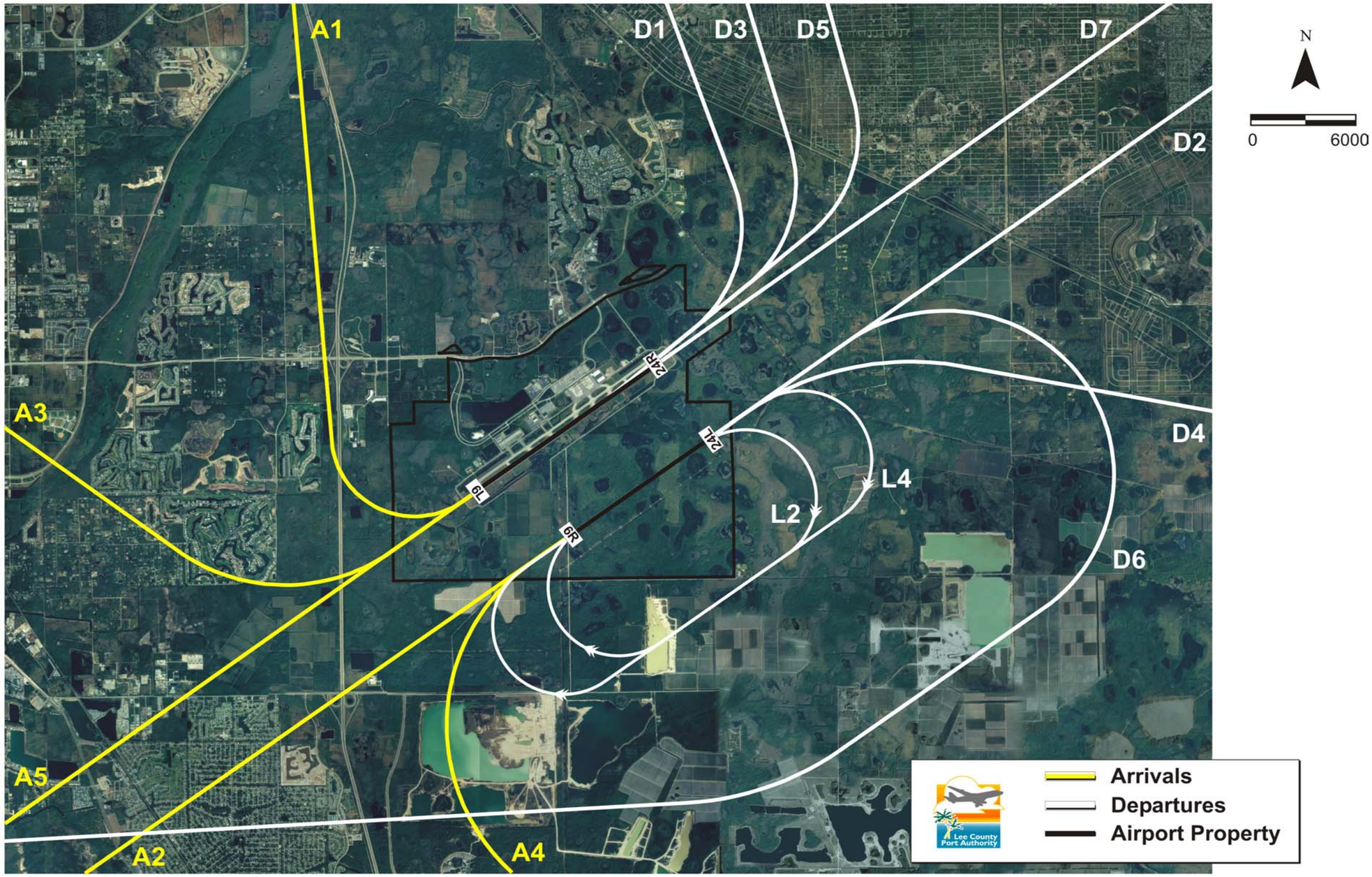
Table 7-14 Local Pattern Percentages – Single Runway System Southwest Florida International Airport					
Flow	**Runway**	**Track**	**Local Prop/Turboprop**	**Local Jet**	**Local Military**
NE	6	L1	85		
		L3		85	85
SW	24	L5	15		
		L7		15	15
Total			**100.00**	**100.00**	**100.00**

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

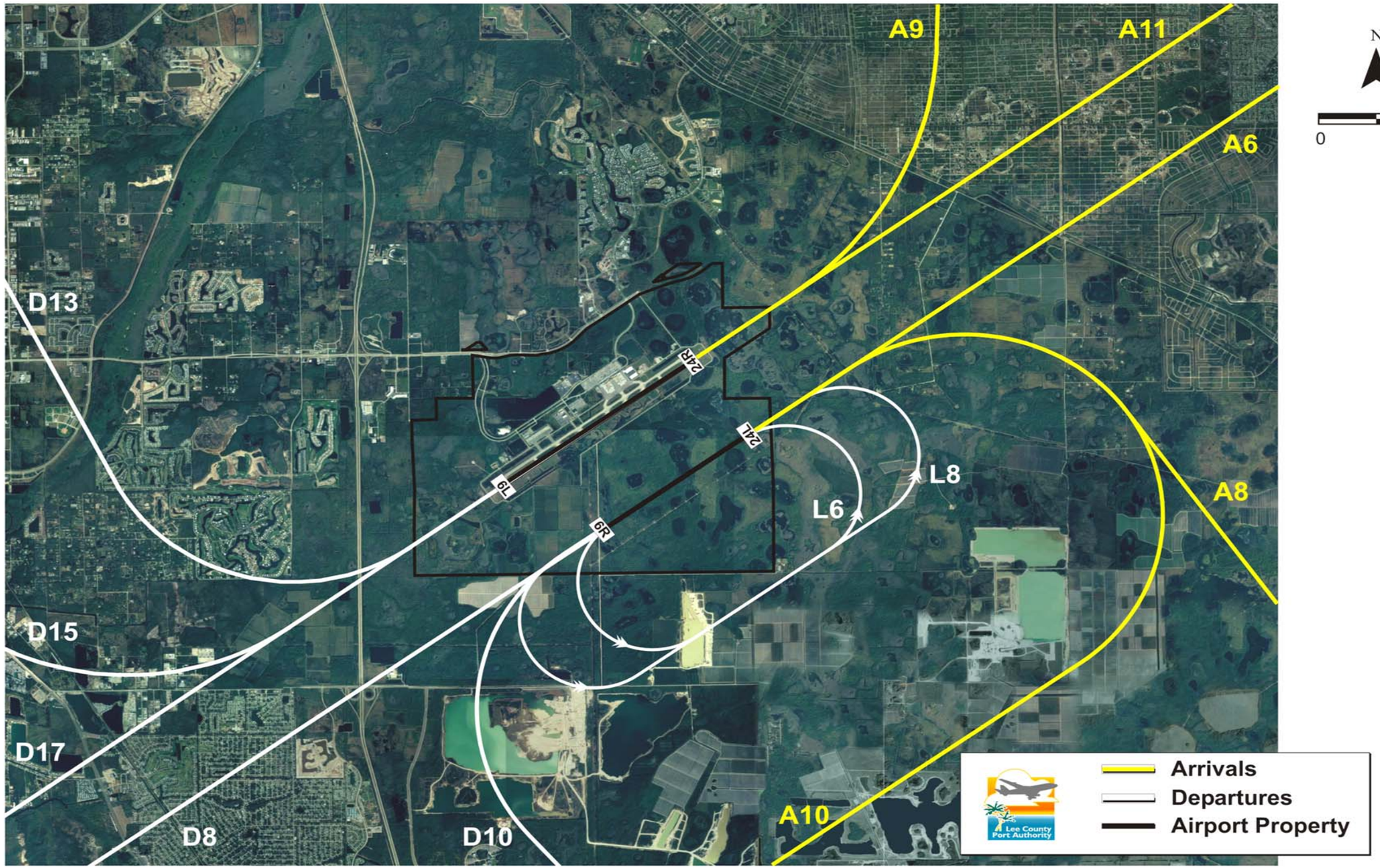


Source: Environmental Science Associates, 2002

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

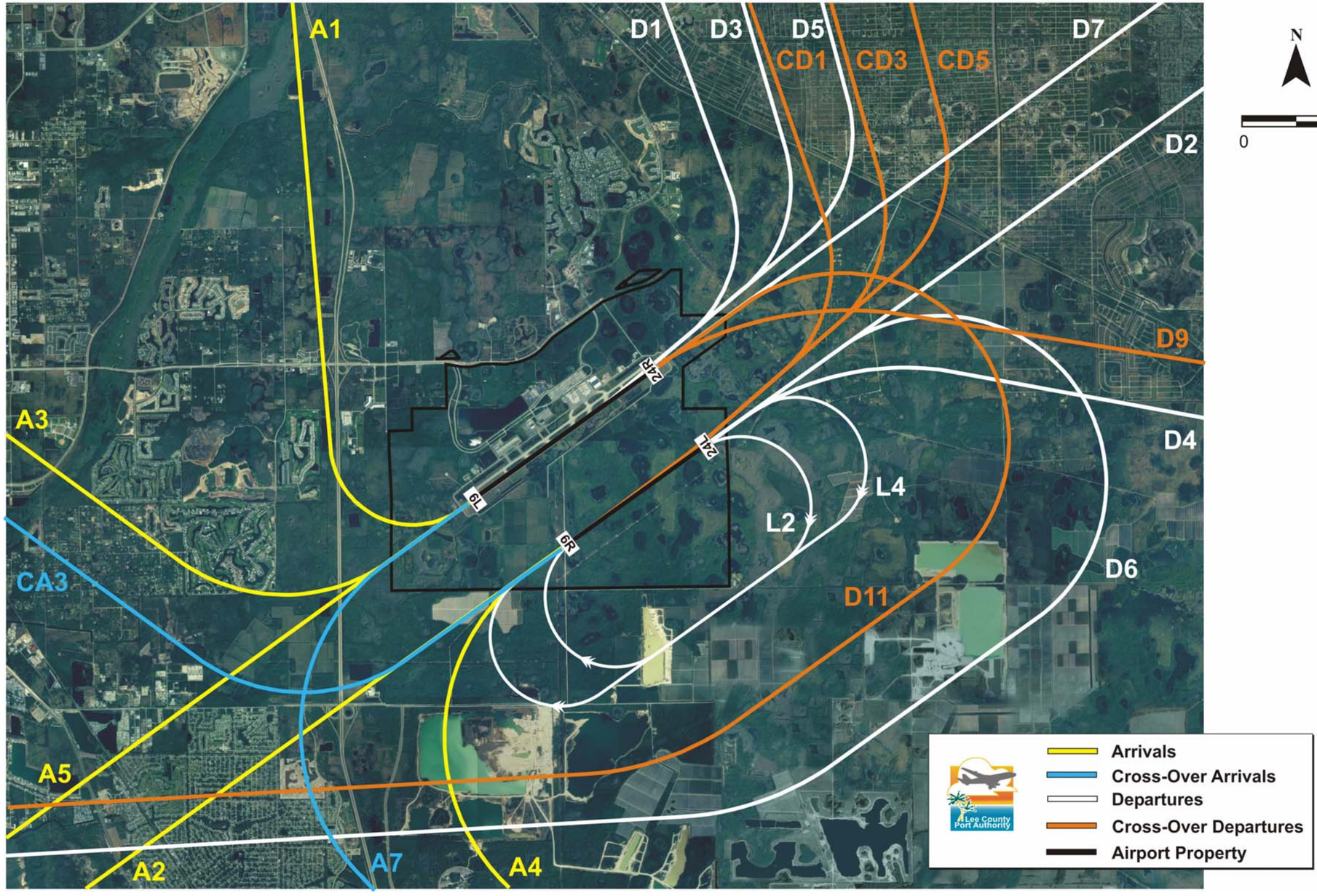
Table 7-17 Local Pattern Percentages – Parallel Runway System Southwest Florida International Airport					
Flow	**Runway**	**Track**	**Local Prop/Turboprop**	**Local Jet**	**Local Military**
NE	6R	L2	85%		
		L4		85%	85%
SW	24L	L6	15%		
		L8		15%	15%
Total			**100.00**	**100.00**	**100.00**

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



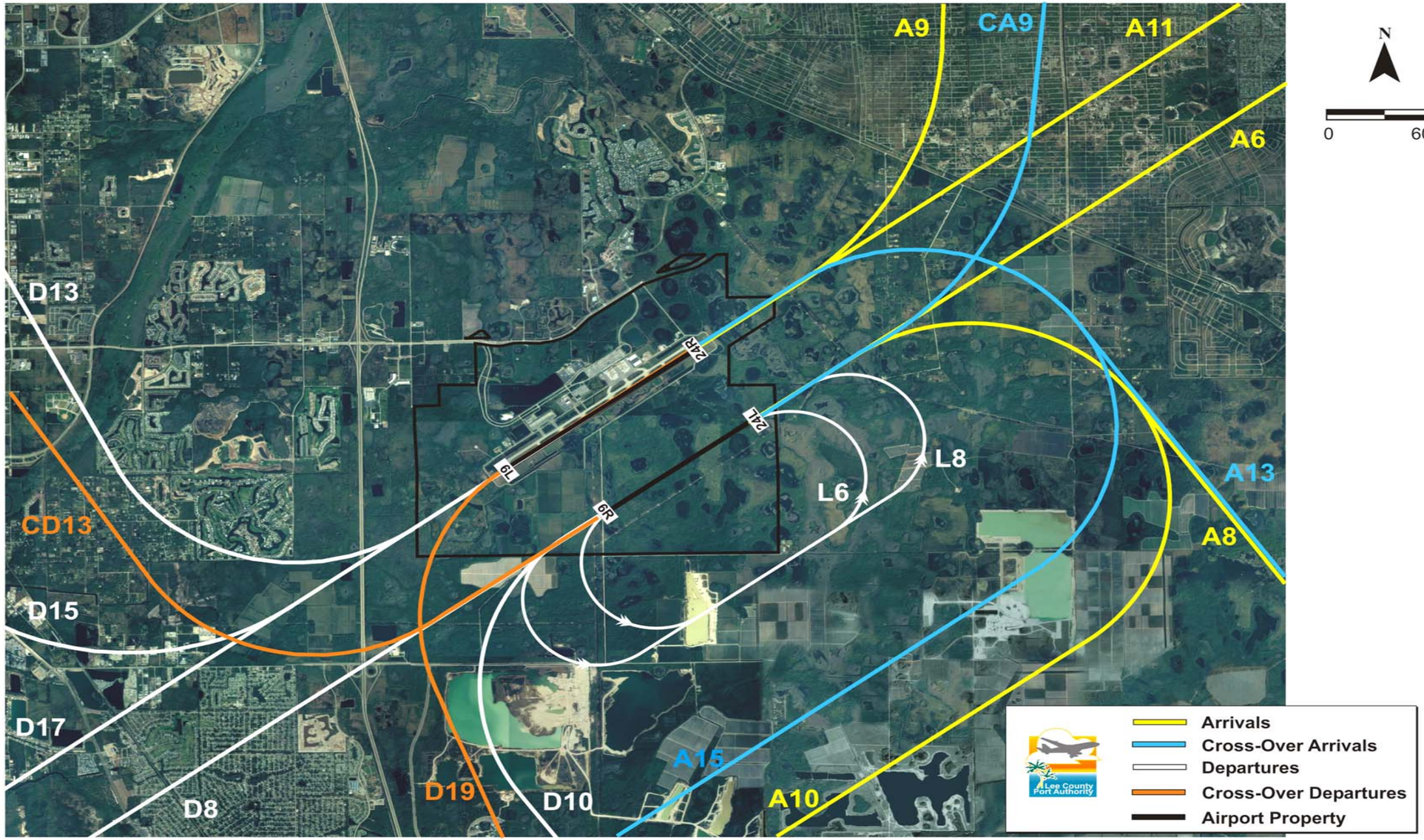
Source: Environmental Science Associates, 2002

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

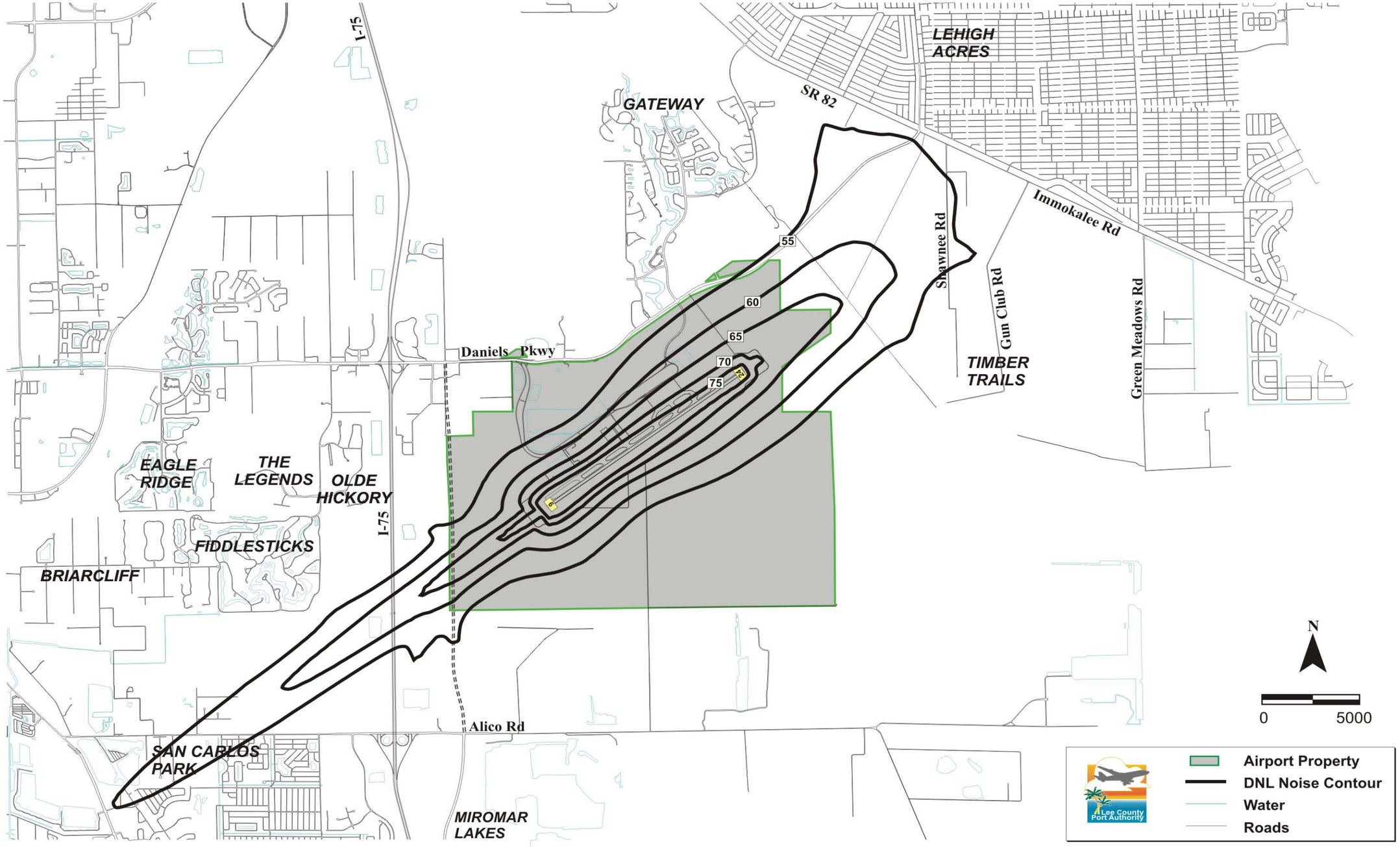
Noise Contours

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

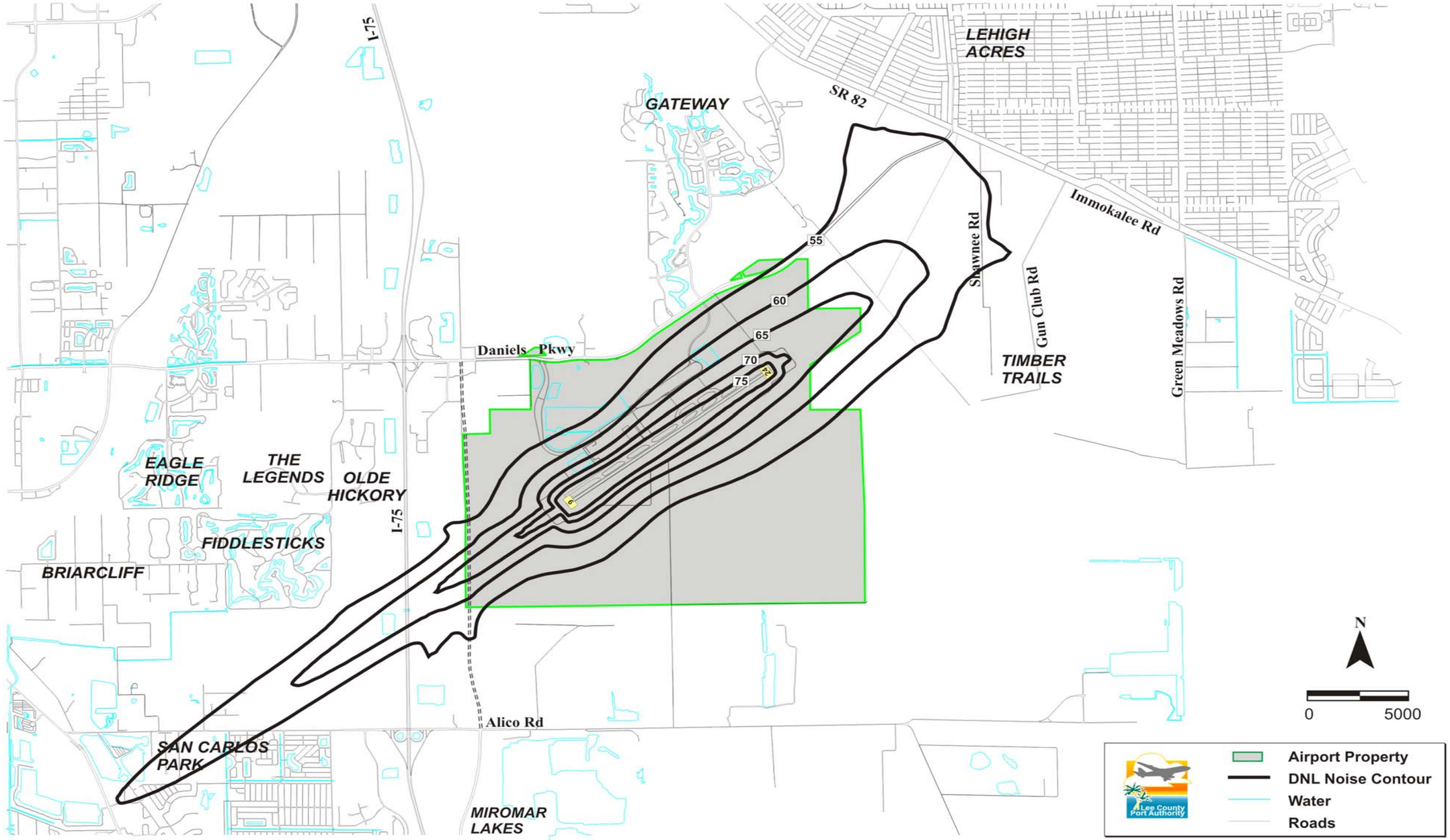


Source: Environmental Science Associates, 2002

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

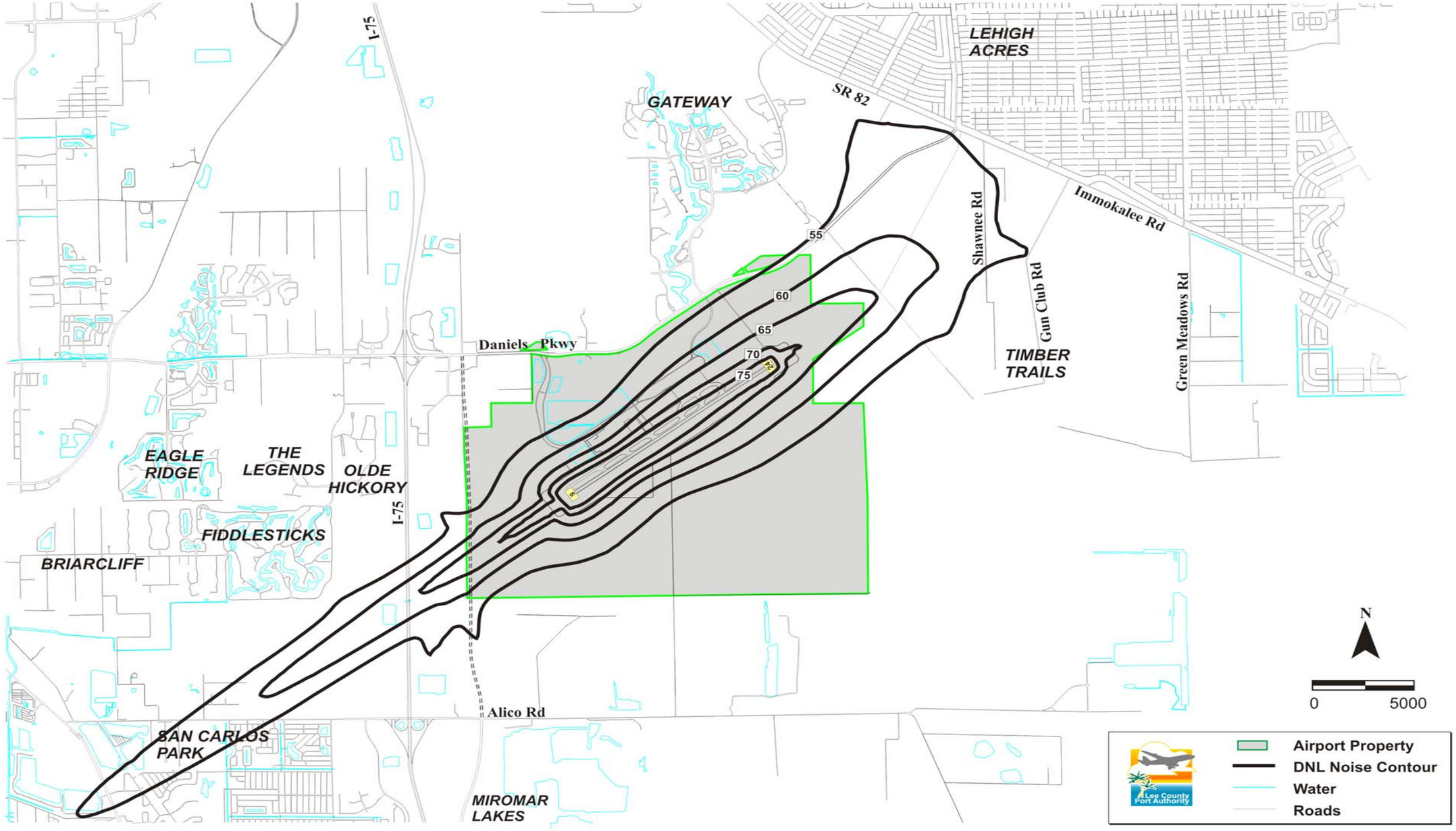


Source: Environmental Science Associates, 2002

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

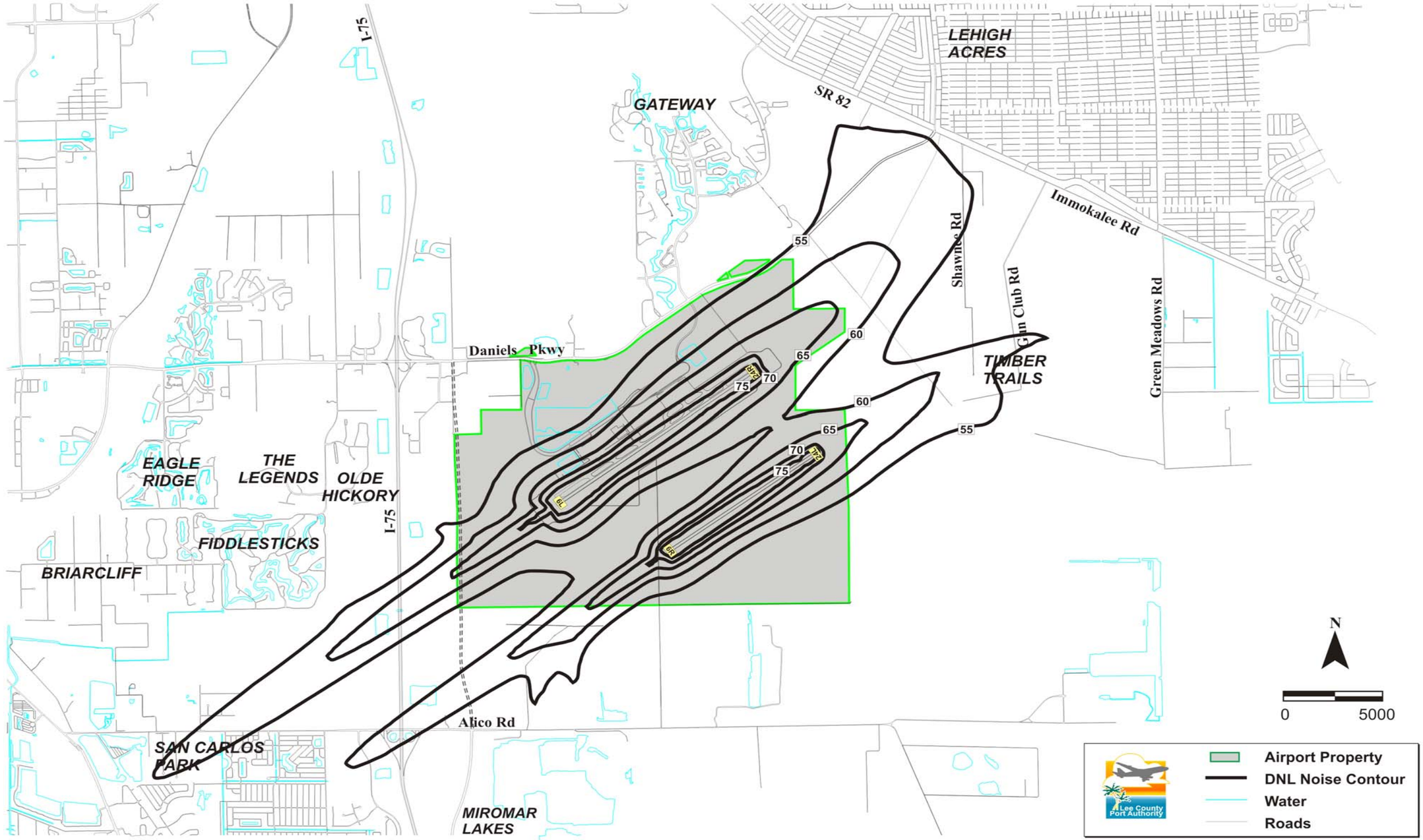


Source: Environmental Science Associates, 2002

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

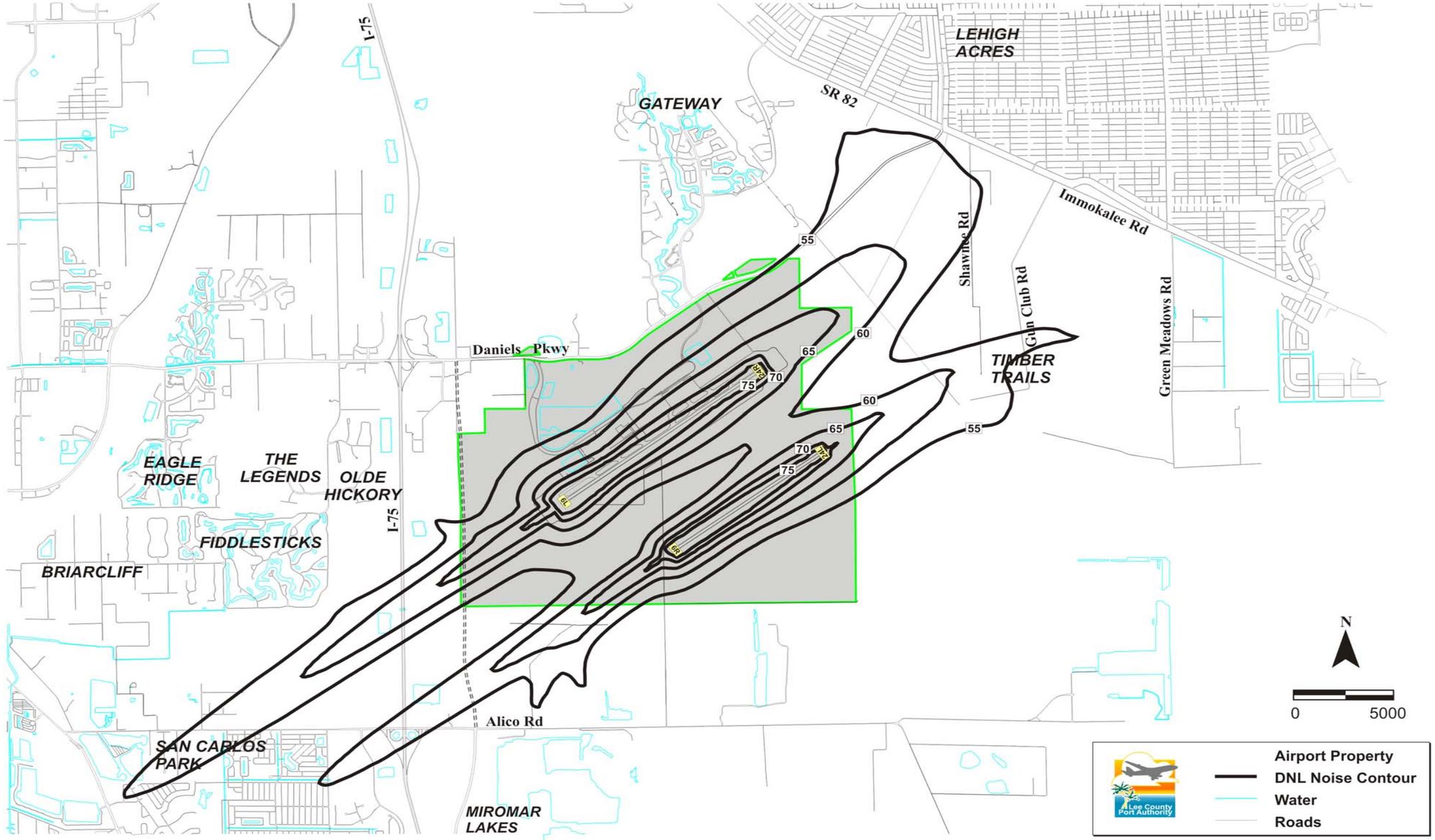


Source: Environmental Science Associates, 2002

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

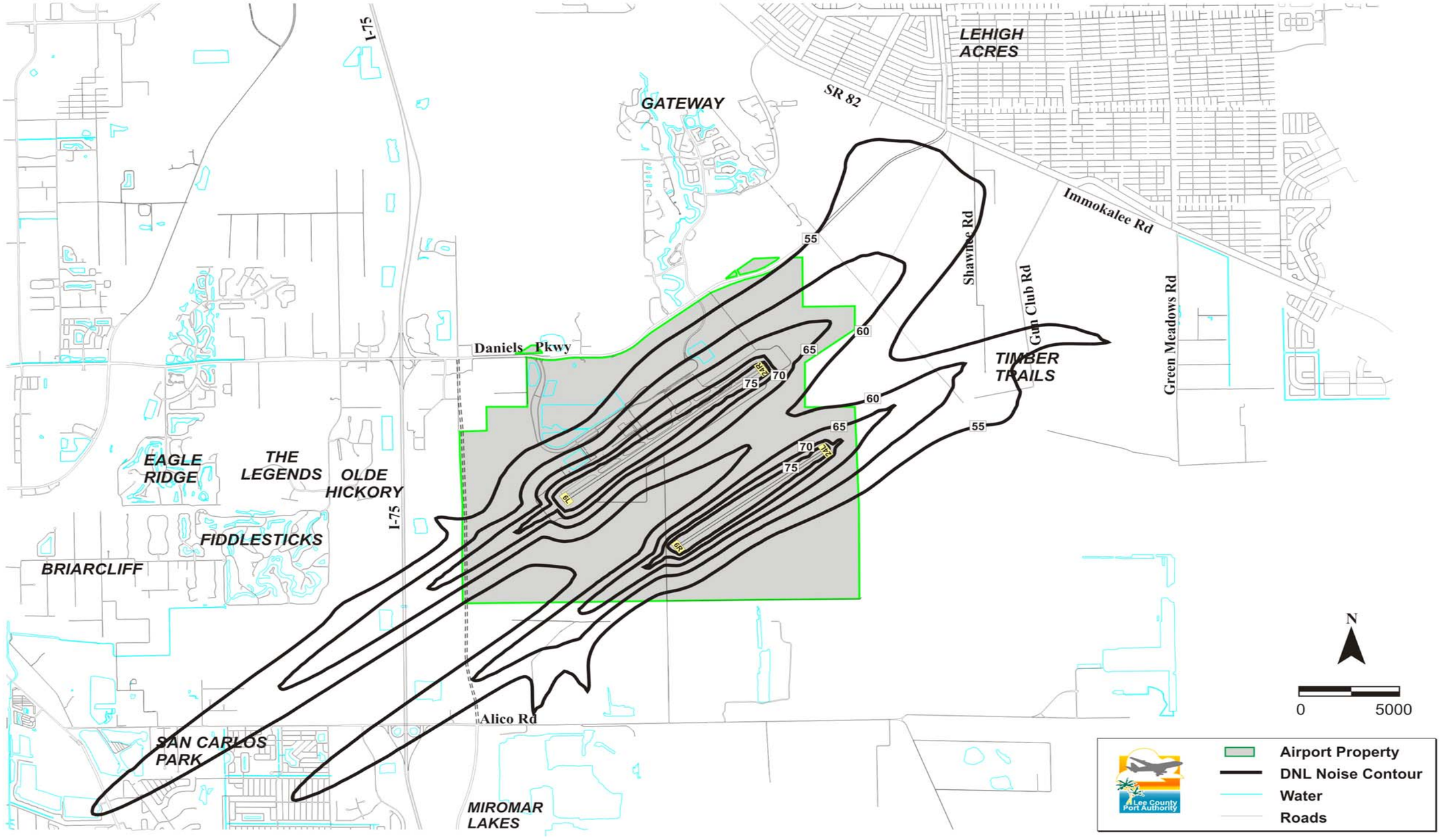


Source: Environmental Science Associates, 2002

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

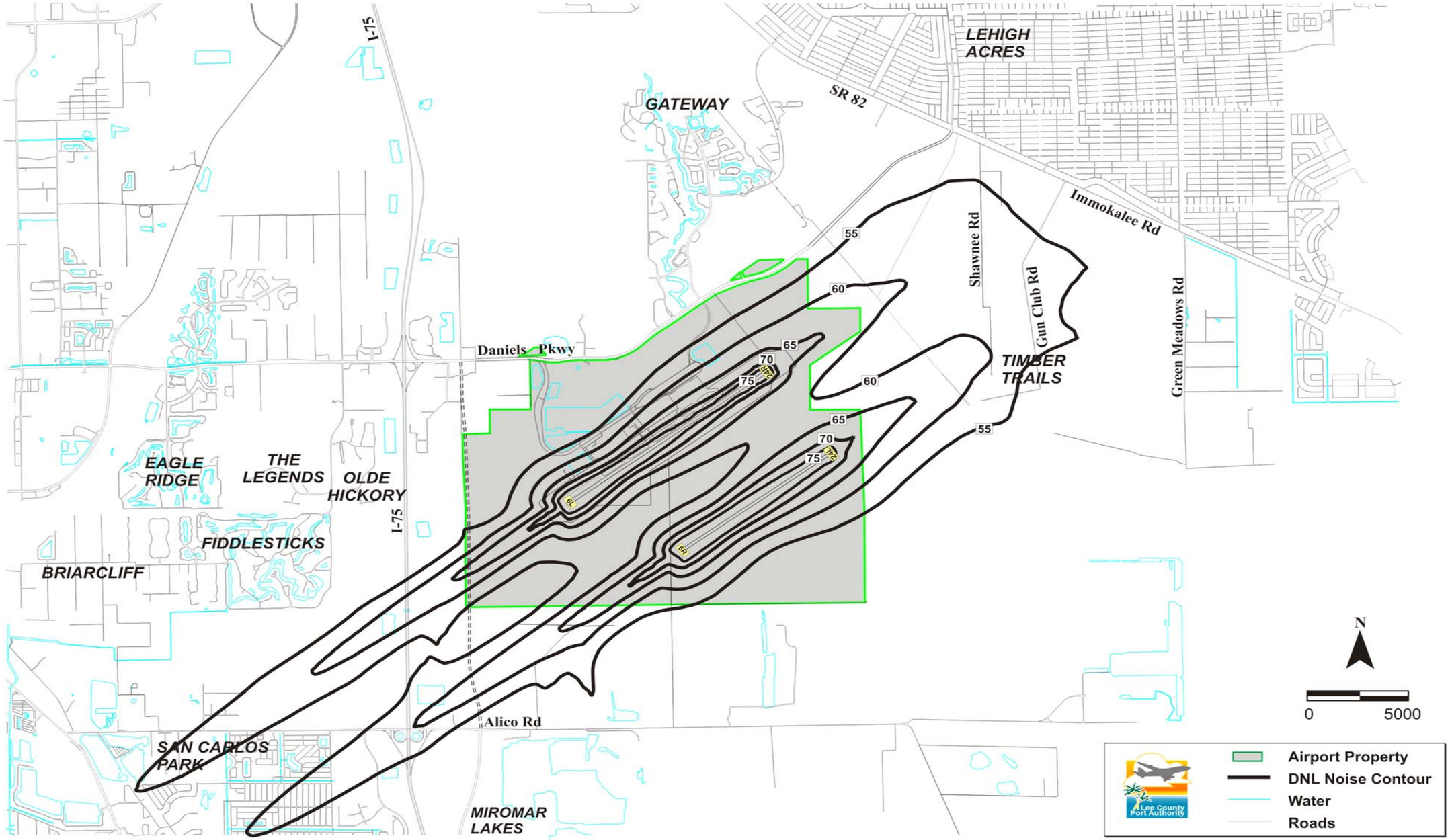
2020 Parallel Runways Noise Contours



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^6	Y^7	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	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	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.

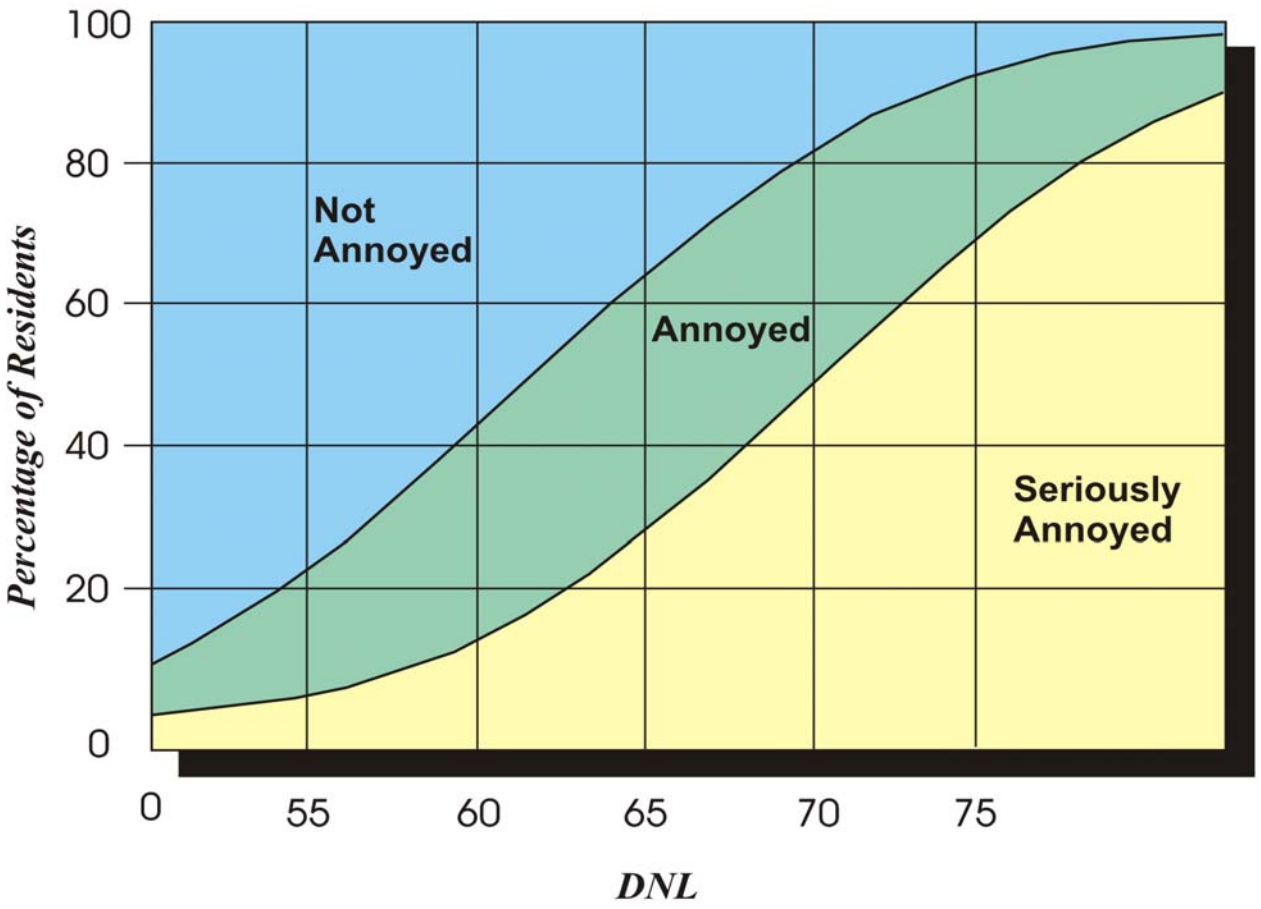
Under the approved off-Airport Noise Overlay Zone plan, all land use requirements contained in the Lee County Development Code would apply as if no Overlay Zone was in place. However, for properties located within the Overlay Zone, certain additional requirements must be met for new development. Specifically, 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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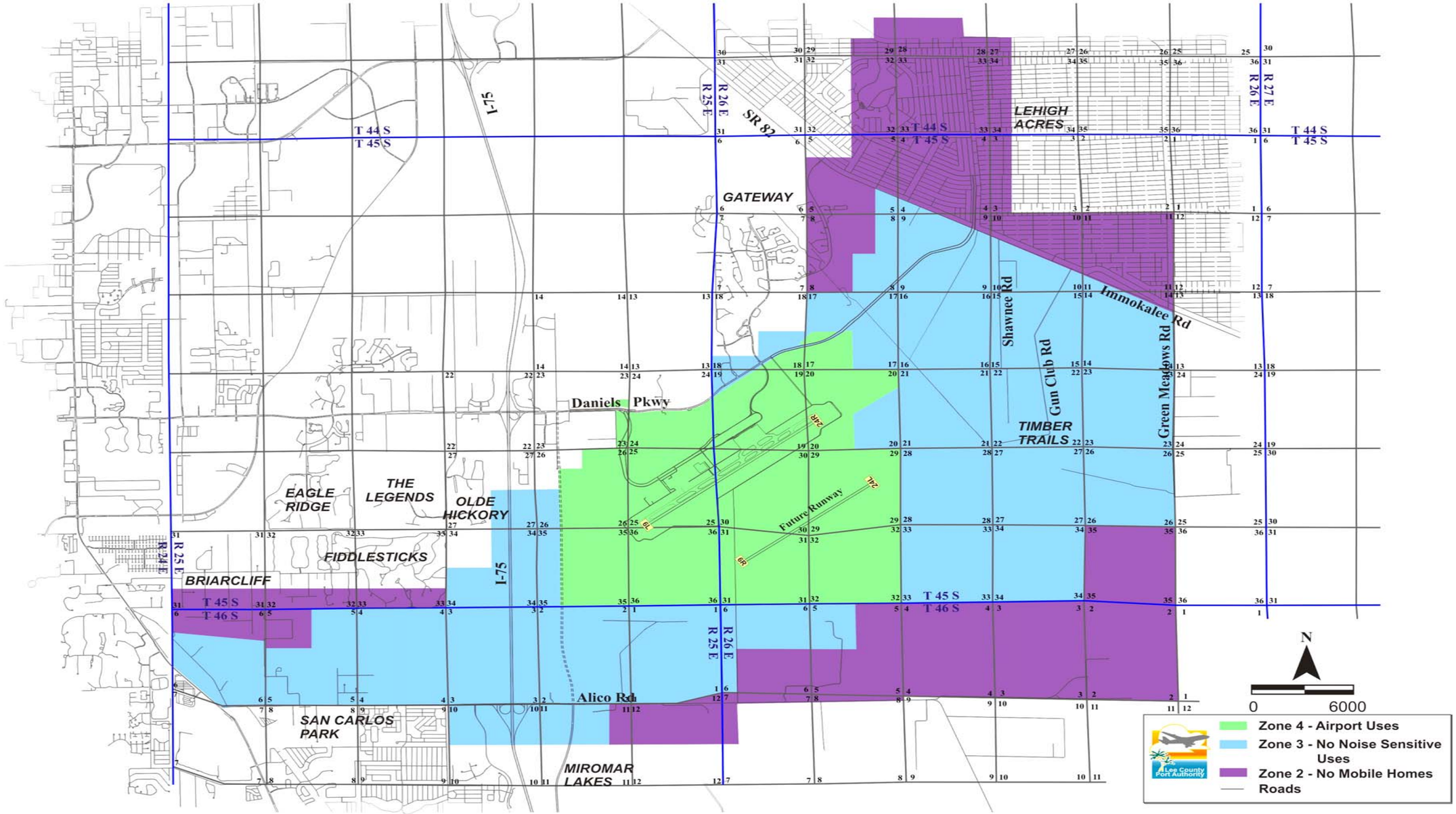
Exhibit 7-17

Existing Overlay Zone Limits



Source: Environmental Science Associates, 2002

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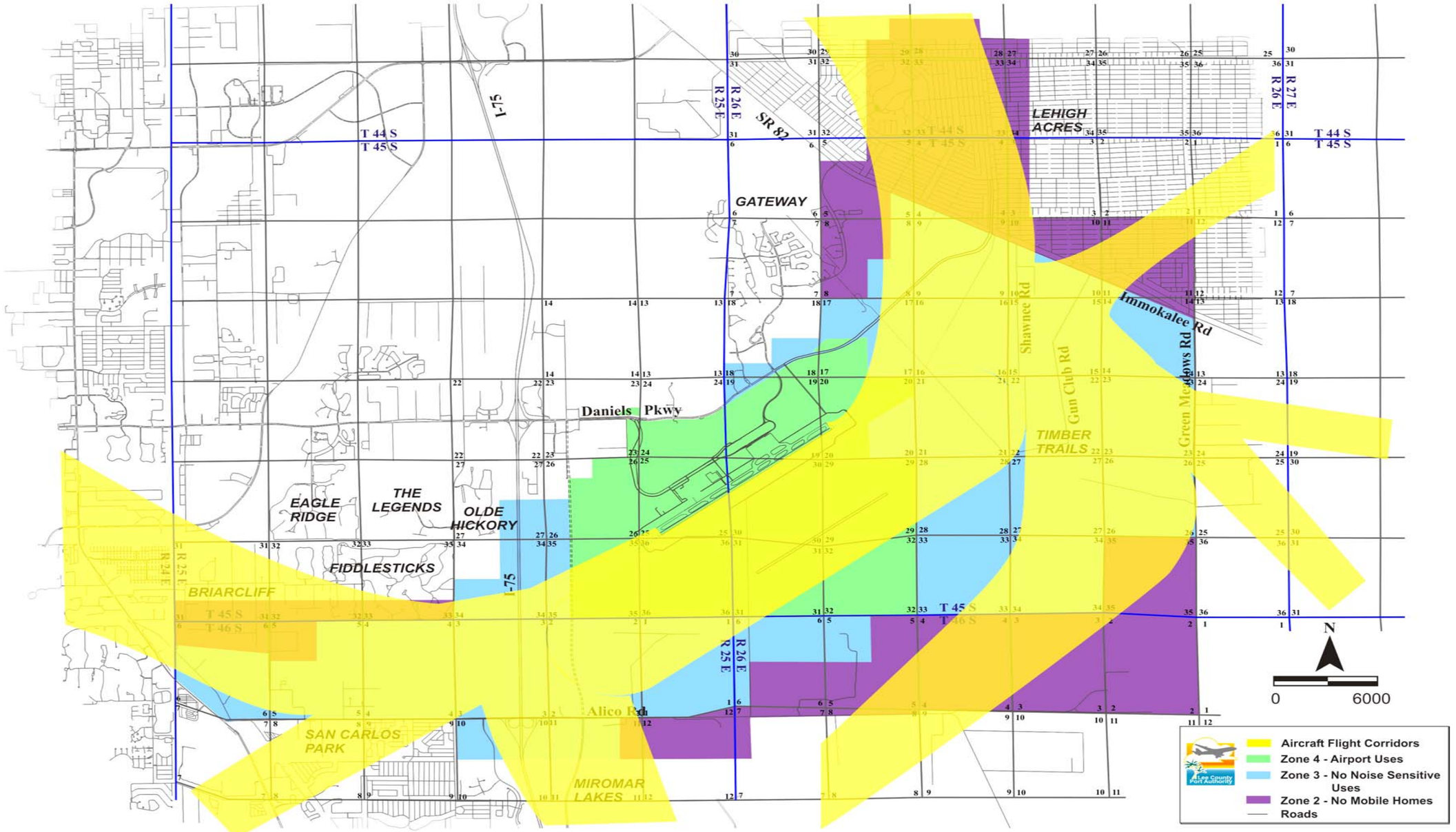
Exhibit 7-18

Flight Corridors



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 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.

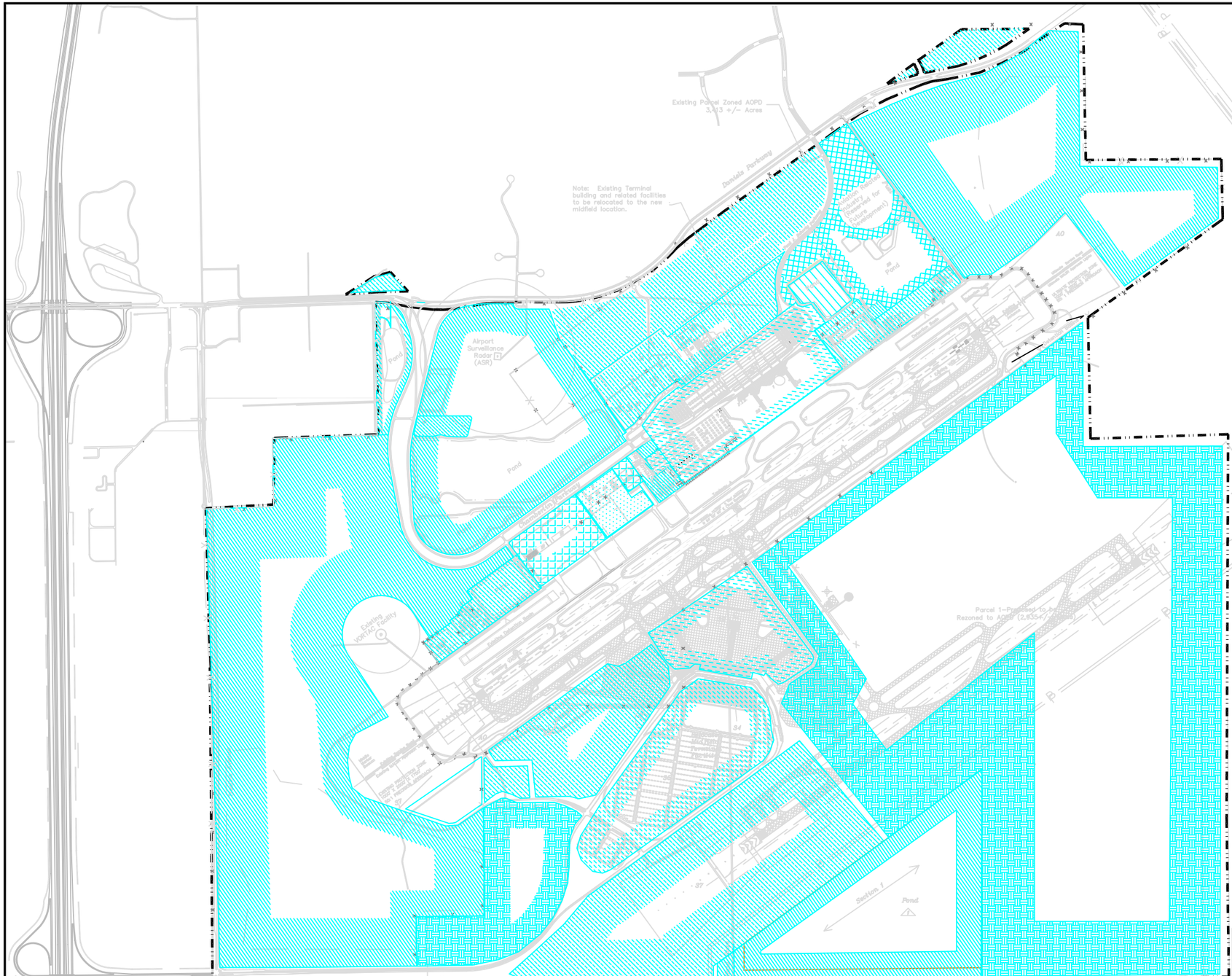
FAA Advisory Circular 150/5300-13 also states FAA policy to conduct studies of existing and proposed objects and activities, both off and on public-use airports, with respect to their effect on the safe and efficient use of airports and safety of persons and property on the ground. This particularly 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

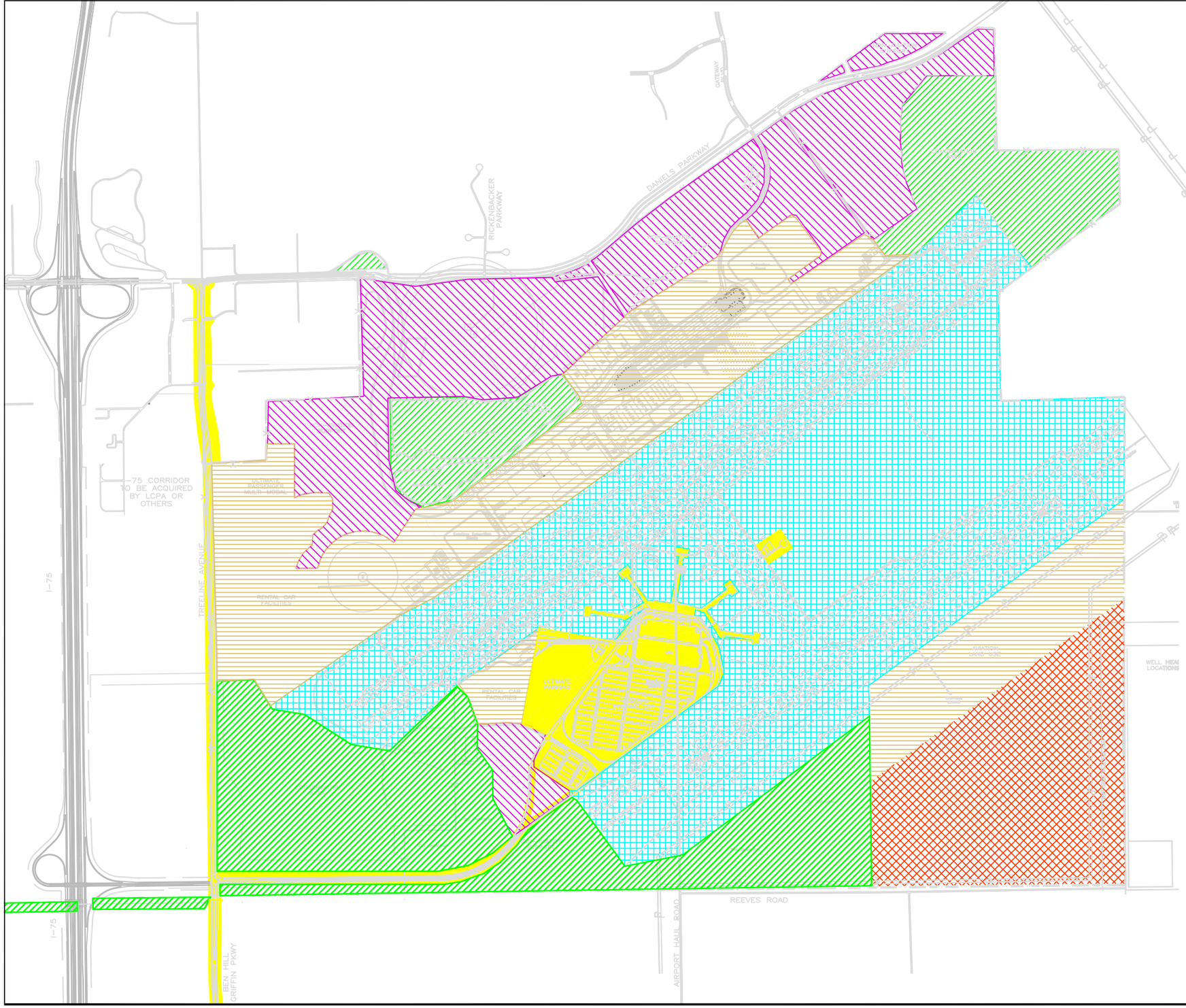
MASTER PLAN UPDATE
ON-AIRPORT EXISTING LAND USE MAP

EXHIBIT

7-19

Exhibit 7-20

Proposed on-airport land use



Magnetic Declination 4°W (2000)

NOT TO SCALE

LEGEND

- AO - AIRFIELD OPERATIONS (2204 +/- ACRES)
- AT - AIRLINE TERMINAL (250 +/- ACRES)
- AS - AIRPORT SUPPORT (1195 +/- ACRES)
- E/CLU - ENVIRONMENTAL/ COMPATIBLE LAND USE BUFFER (1272 +/- ACRES)
- NA - NON-AVIATION DEVELOPMENT AREA (934 +/- ACRES)
- PFD - POTENTIAL FUTURE DEVELOPMENT AREA (517 +/- ACRES)

TOTAL ACREAGE - 6372 +/- ACRES WITHIN CONTIGUOUS AIRPORT BOUNDARY

AIRPORT PROPERTY LINE

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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.

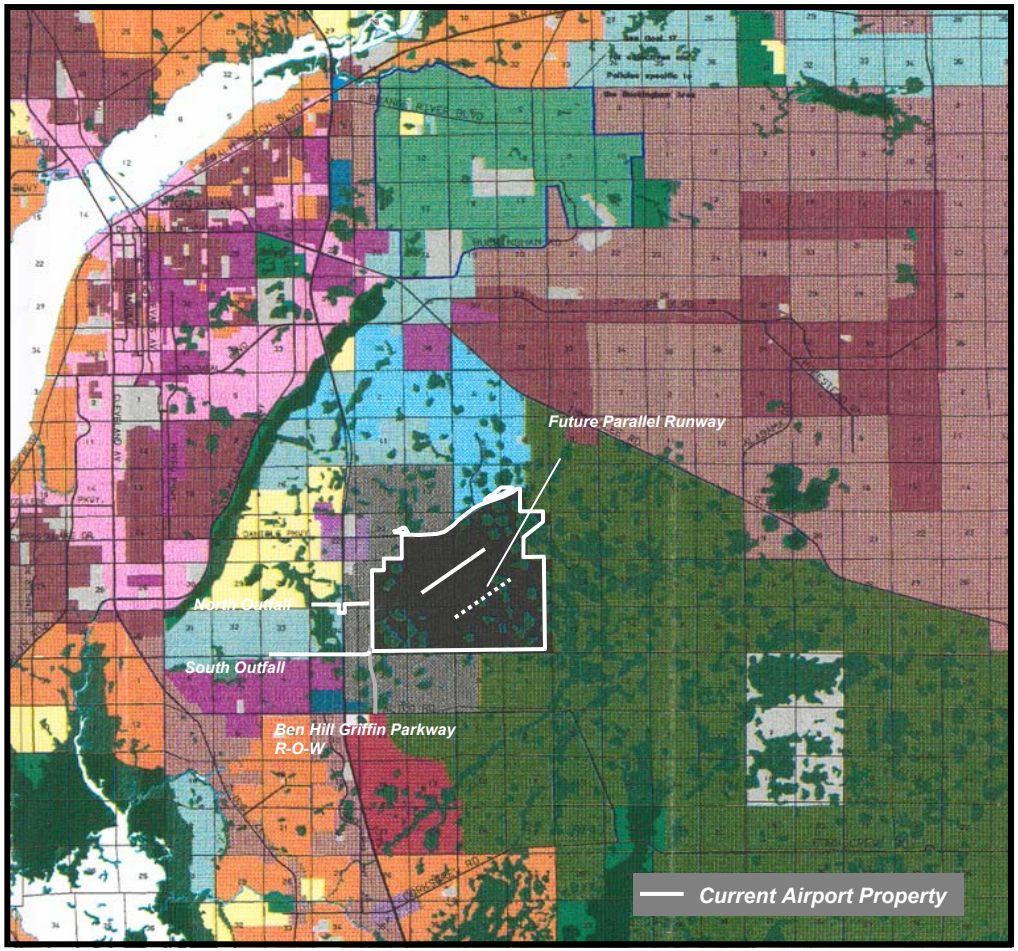
The Lee Plan also presents the future land use map for Lee County. The goal of the future land use map is to depict the location, type and density of future land uses in order to protect natural and manmade resources, provide essential services in a cost-effective manner and to discourage

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

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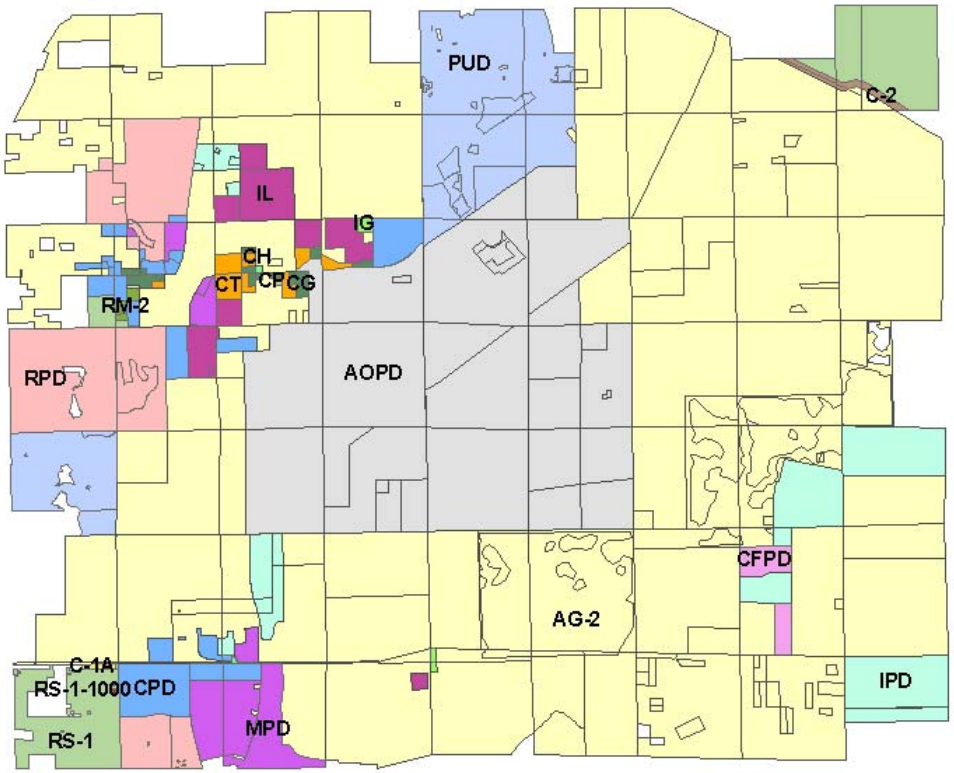
SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
FORT MYERS, FLORIDA
MASTER PLAN UPDATE
FUTURE LAND USE MAP

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

Lee County Port Authority	Birk Hillman Orlando · Miami · Atlanta	DMJM Aviation	RS&H	SOUTHWEST FLORIDA INTERNATIONAL AIRPORT FORT MYERS, FLORIDA MASTER PLAN UPDATE LEE COUNTY ZONING MAP	EXHIBIT 7-22

7.5.3 Social Impacts

The purpose of a social impact analysis is to determine the effect of airport development on the human environment. The types of social impacts that 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	American Alligator
	Cypress	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.

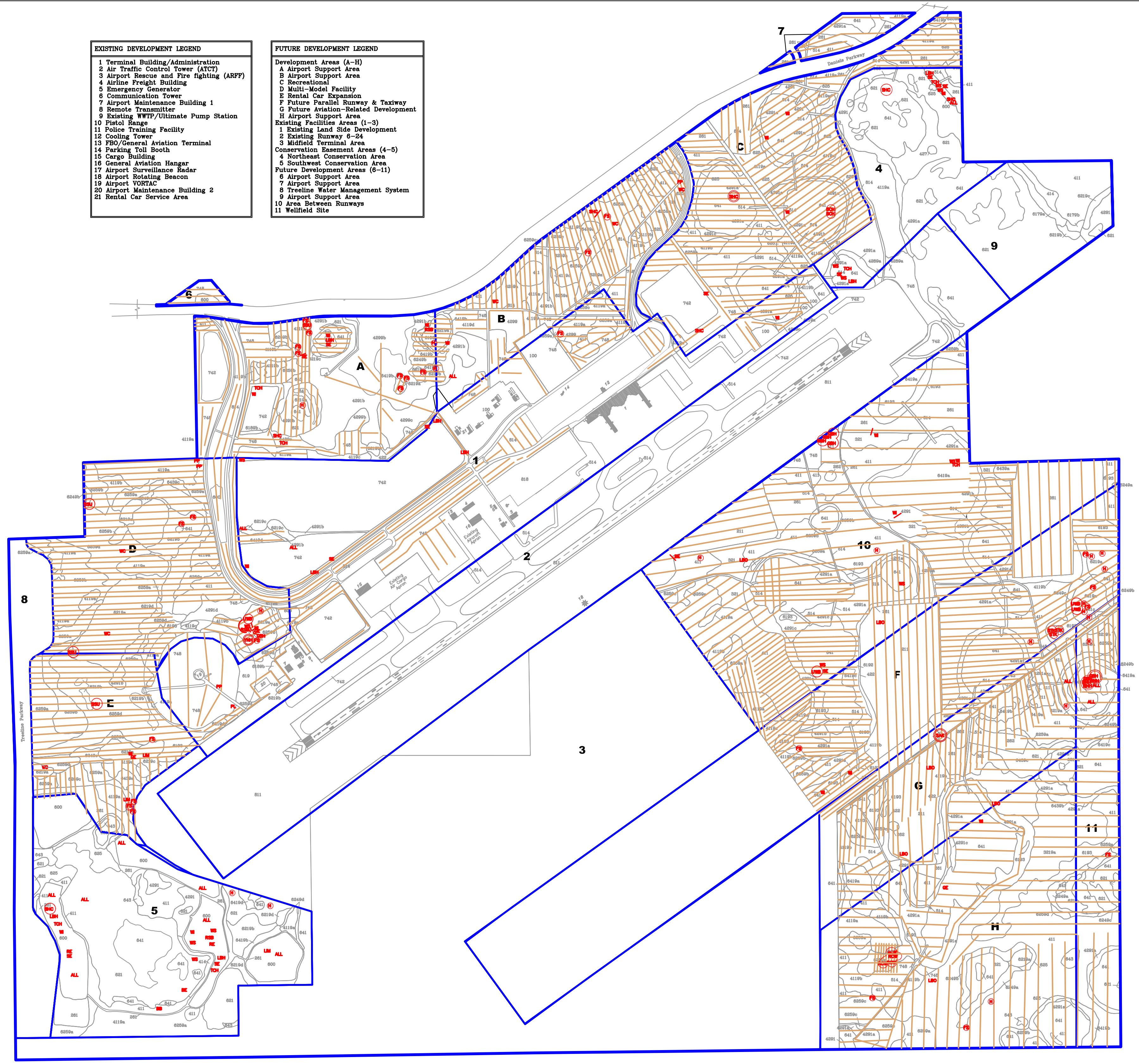
Six listed plant species have been observed on-site. None of these species are federally listed. State-listed plant species are regulated pursuant to the Preservation of Native Flora of Florida Act. The purpose of this rule is to prevent the wanton destruction of native plants and to

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

Southwest Florida International Airport Preliminary Vegetation and Listed Species Survey Transect Map

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
*619	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
748	Cleared Areas
811	Airport
814	Roads & Highways
818	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
RE	Reddish Egret
RSB	Roseate Spoonbill
SAK	Southeastern American Kestrel
SE	Snowy Egret
SHC	Florida Sandhill Crane
STK	American Swallow-Tailed Kite
TCH	Tricolor Heron
UWB	Unknown Wading Bird
WS	Wood Stork
WI	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 S W E

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:
10-26-01	veg-aftertrim-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

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.

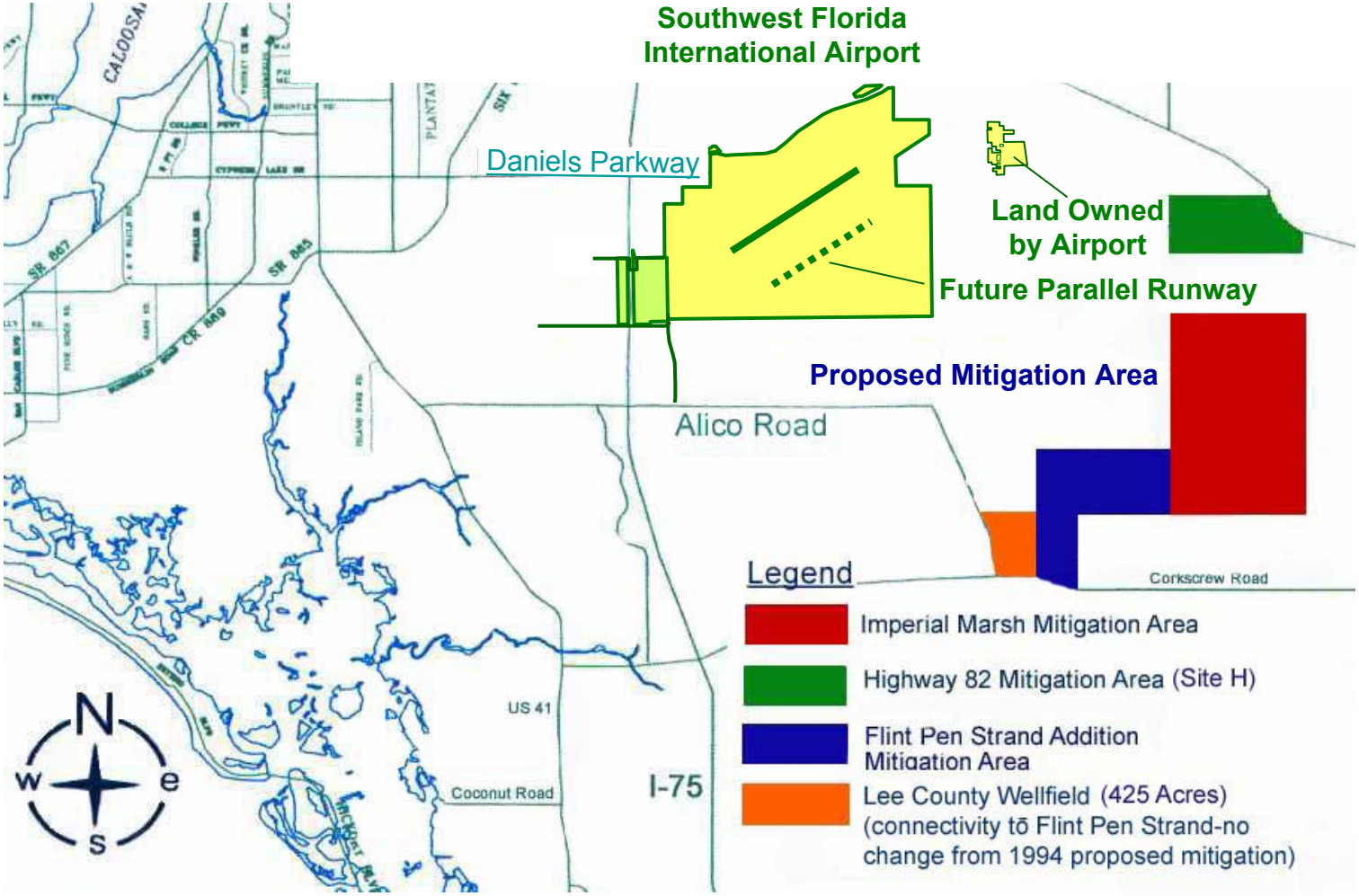
Wetland impacts for the USACE were evaluated by the Wetland Rapid Assessment Procedure (WRAP). WRAP variables that are analyzed include wildlife utilization, wetland overstory/shrub canopy, wetland vegetative ground cover, adjacent upland support/wetland buffer, field indicators of wetland hydrology, 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**.

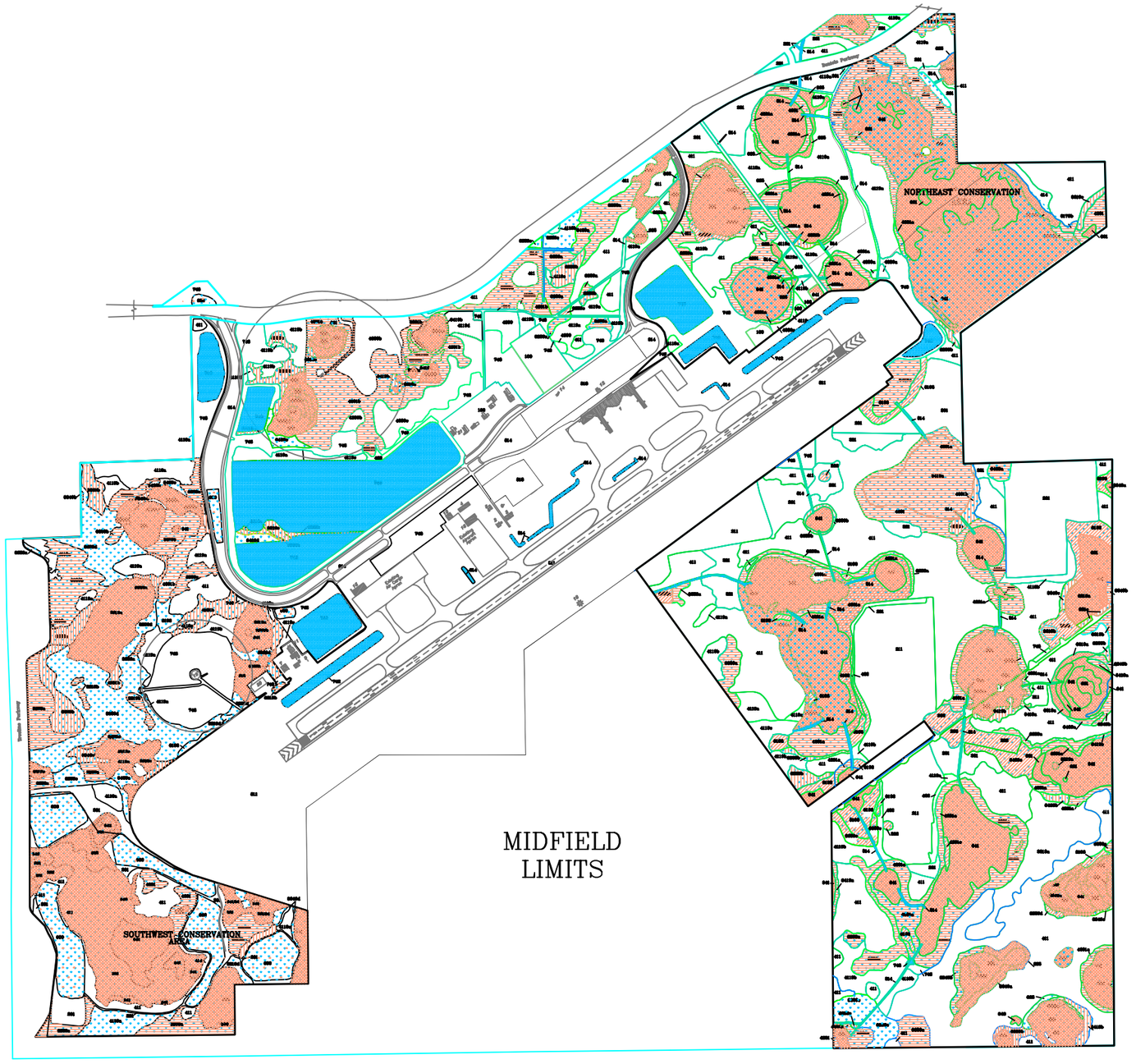
The project site consists of a mosaic of habitat types. A total of 35 plant communities have been delineated. Approximately 1,878.8 acres of jurisdictional wetlands and 237.9 acres of other surface waters have been identified within the site, exclusive of the existing Runway 6-24 and recently approved 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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SOUTHWEST FLORIDA INTERNATIONAL AIRPORT
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.

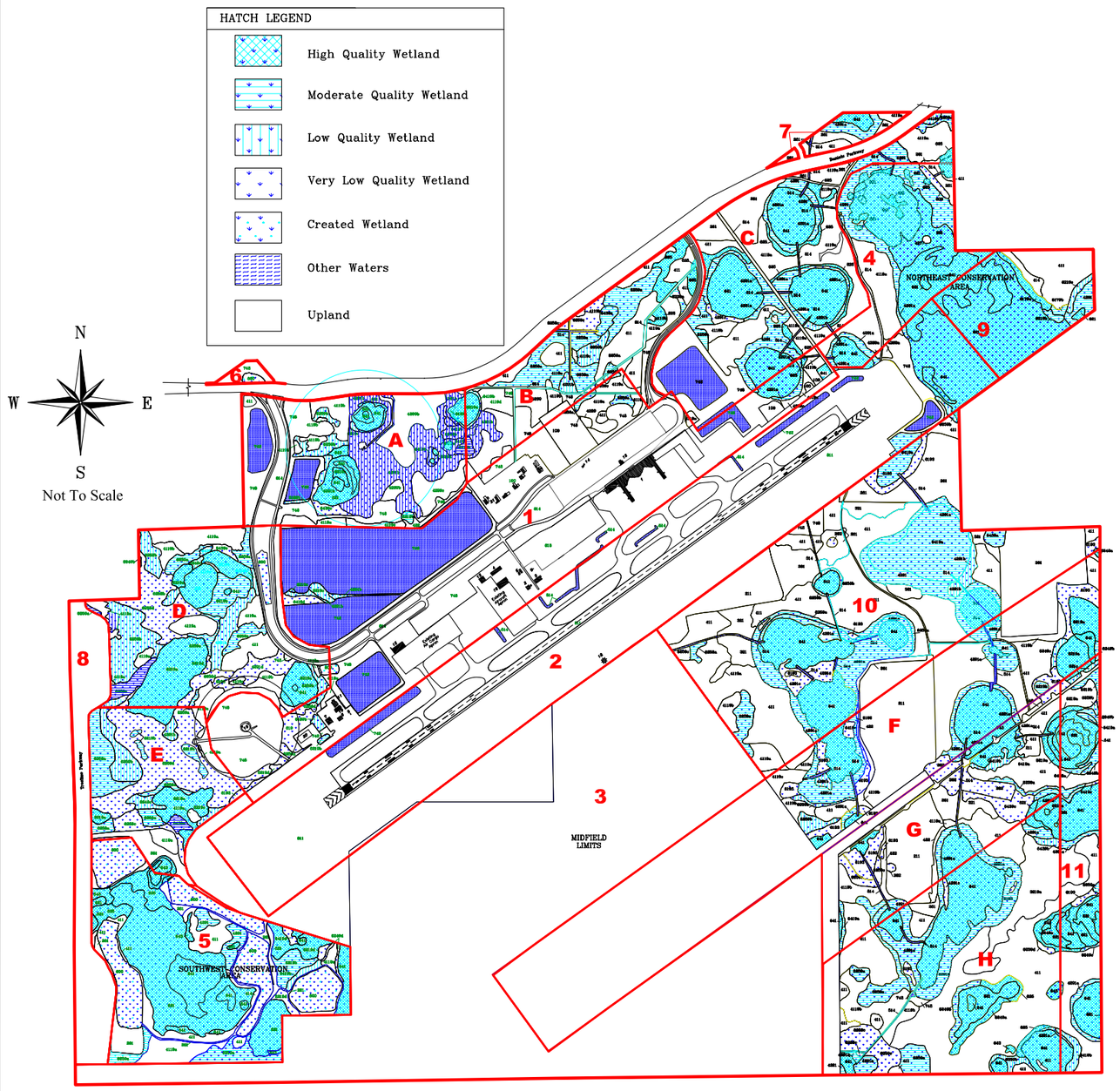
Development Area A (241.4± acres) is located in the southeast quadrant of the Daniels Parkway - Chamberlin Parkway intersection. The parcel consists of 121.6± acres of uplands, 99.4± acres of wetlands, and 20.4± acres of other surface waters (Table 7-34). The majority of the wetlands consist of low quality 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



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

Source: Kevin L. Erwin Consulting Ecologist, Inc. and Reynolds, Smith and Hills, Inc., 2002

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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.

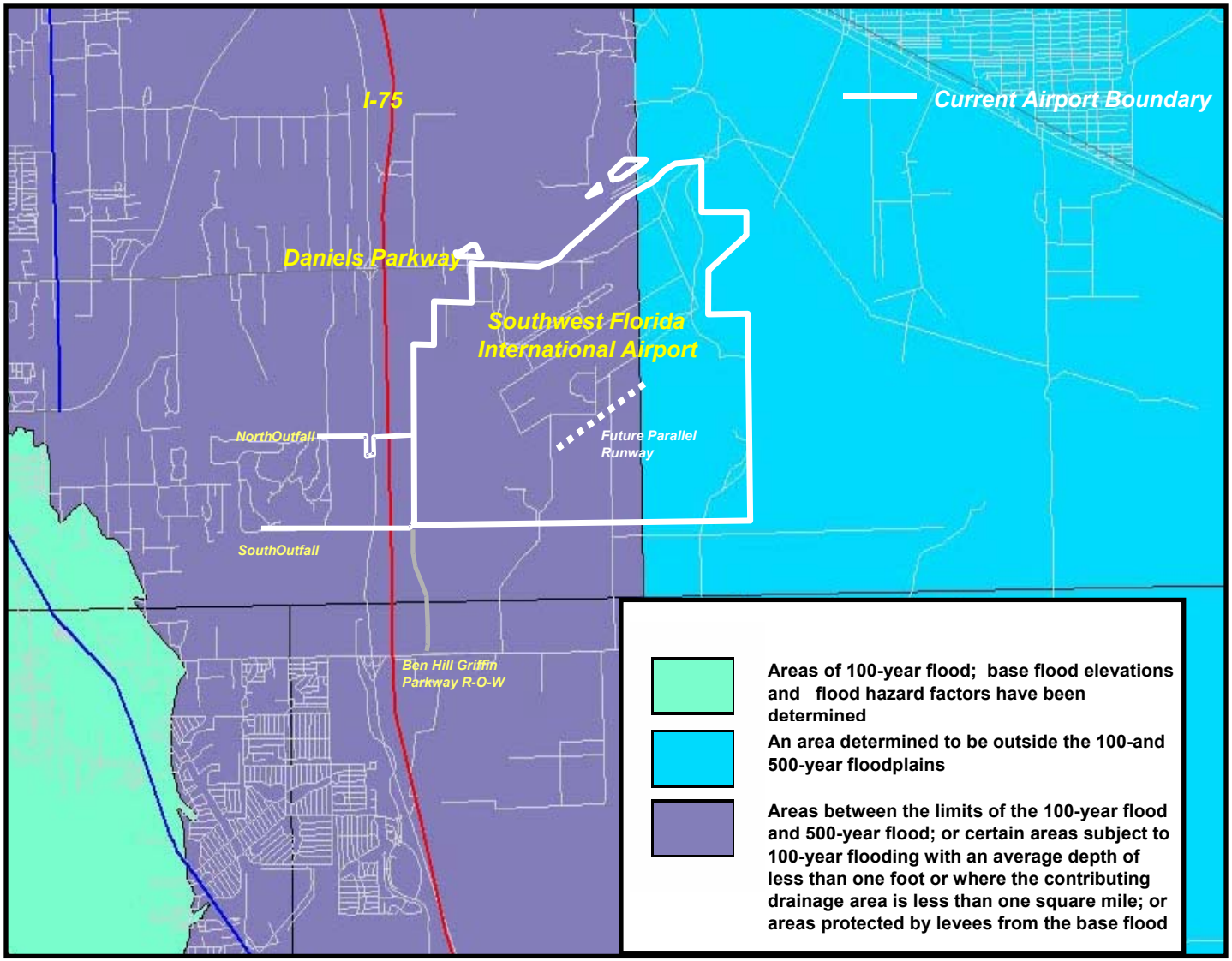
- The two cypress wetlands that contained active nests of colonial nesting wading birds should be inspected annually. This will be required to determine if these areas are established nesting sites used each year or if the nesting observed in 2002 was an atypical event.

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

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MASTER PLAN UPDATE
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.

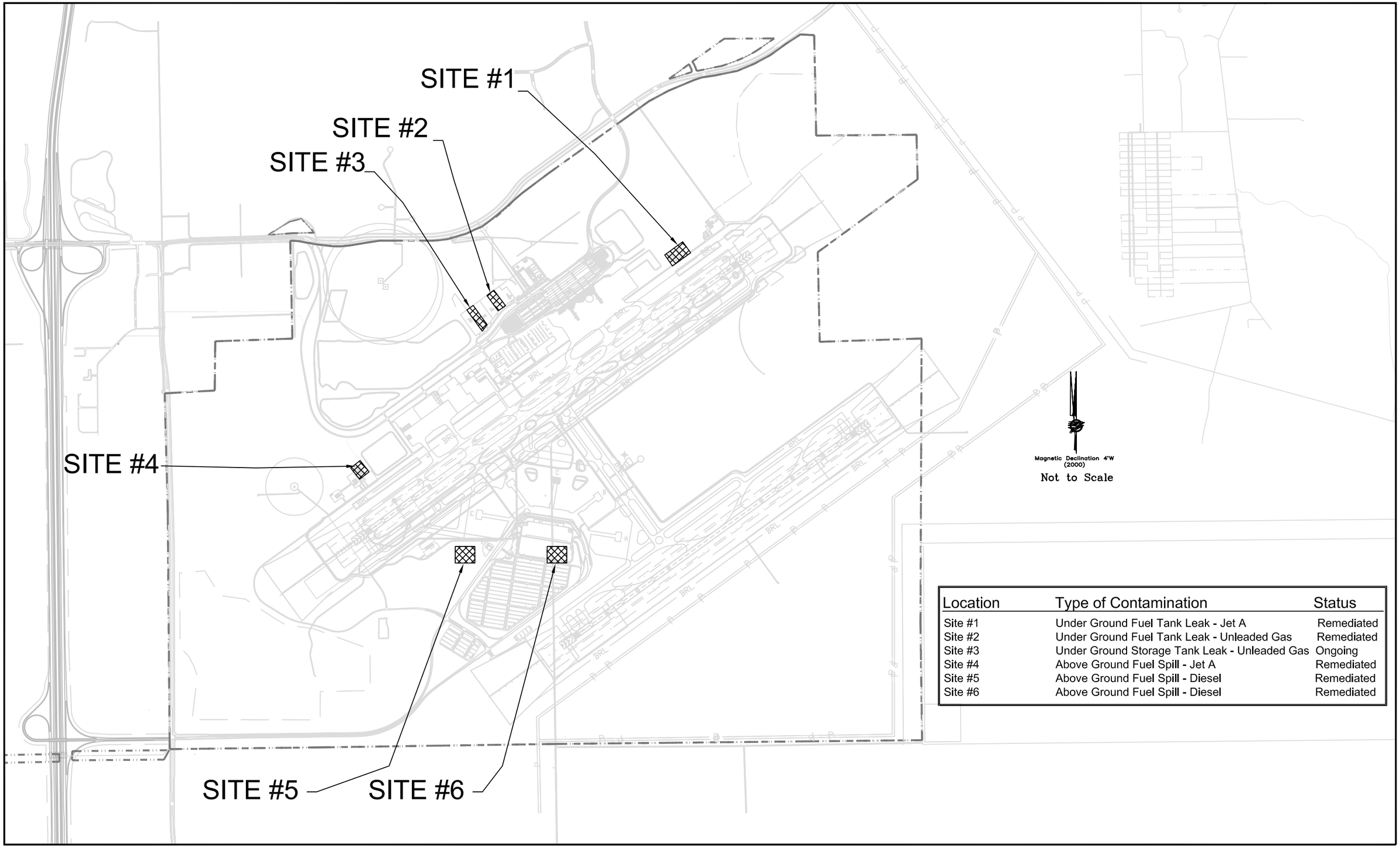
Potential impacts are associated with this category; however, they are the types of impacts that effective construction techniques can minimize.

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.

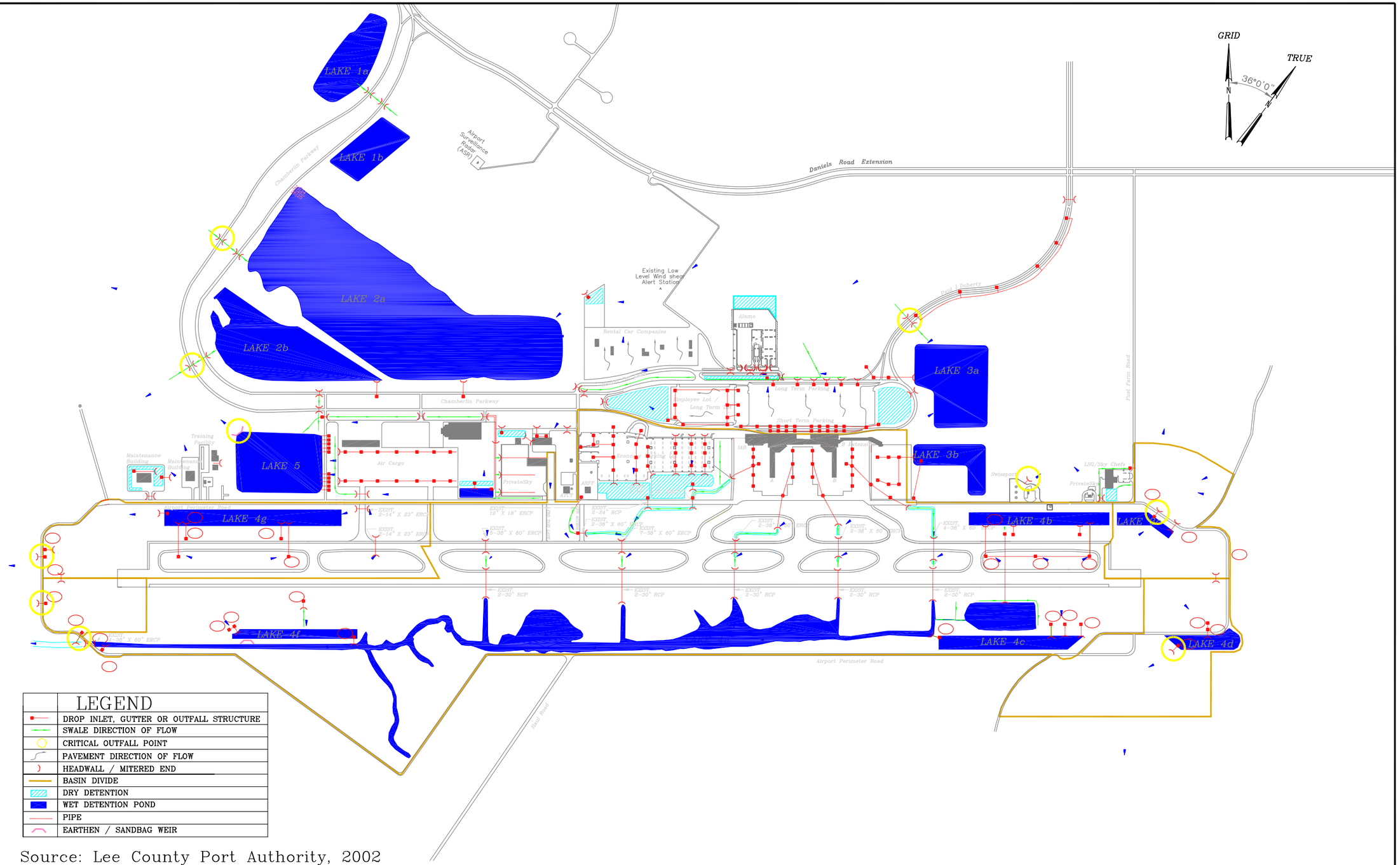
Implementation of the midfield terminal relocation added approximately 623.5 acres of additional impervious surfaces and required an expanded surface water management system at SWFIA. This additional impervious surface also includes the future parallel runway.

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



	LEGEND
	DROP INLET, GUTTER OR OUTFALL STRUCTURE
	SWALE DIRECTION OF FLOW
	CRITICAL OUTFALL POINT
	PAVEMENT DIRECTION OF FLOW
	HEADWALL / MITERED END
	BASIN DIVIDE
	DRY DETENTION
	WET DETENTION POND
	PIPE
	EARTHEN / SANDBAG WEIR

Source: Lee County Port Authority, 2002

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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.