

# Memo

To: Paul O'Connor, Lee County Planning Director *DM*

From: David Loveland, LCDOT Transportation Planning Manager

Date: September 13, 2004

Subject: LEE PLAN AMENDMENT CPA 2003-02  
(AIRPORT MASTER PLAN)

LEE COUNTY  
PLANNING DIVISION

As part of the February ORC Report on the above-referenced plan amendment, the Florida Department of Community Affairs (DCA) expressed concern about the adequacy of the transportation assessment. The ORC specifically noted that the County did not provide an analysis of the impact of the proposed amendment on regional transportation facilities, even though the projected trip generation of the revised airport plan is within one percent of the trip generation already assumed in the MPO model. The ORC also suggested it has not been demonstrated that the improvements called for in the MPO plan would be enough to maintain the adopted level of service standards on roads impacted by the airport, and that the MPO Plan is not actually considered financially feasible beyond five years.

The June 4<sup>th</sup> draft response to DCA's ORC report re-emphasized that the airport traffic is in fact part of the model used to develop the MPO's plan, supported by a statement from the Lee County MPO Coordinator, Mr. Glen Ahlert. A meeting was held with DCA staff in Tallahassee on July 20<sup>th</sup> to discuss the draft response. Although LCDOT staff was not in attendance at that meeting, it is our understanding that there was agreement that the County would submit additional documentation to DCA to clarify the process utilized in preparing the transportation analysis and assuring adequate transportation capacity.

To reiterate, the traffic expected from the Southwest Florida International Airport in 2020 is a key component of the transportation model used to develop the MPO's 2020 *Financially Feasible* Transportation Plan. The FSUTMS model that is used statewide to develop MPO plans, as distributed by the Florida Department of Transportation, typically relies on projections of various land-use related factors to generate and distribute future traffic. The **production** factors are things that produce trips (known as ZDATA1 variables), and include such things as the number of single-family and multi-family units. The **attraction** factors are things that attract trips (known as ZDATA2 variables), and include such things as commercial, service and industrial employment, the number of hotel/motel units, and school enrollment. These factors are projected to the plan horizon year, in this case the year 2020, by geographical sub-units known as traffic analysis zones (TAZs). The Lee County model area, which includes all of Lee County and parts of Charlotte and Collier Counties, is divided into over 1000 TAZs. The model

combines the primary factors with sub-factors such as the number of cars per household, and the percentage of vacant or seasonal housing units, to estimate the number of trips that would be coming from each TAZ and attracted to each TAZ. Those trips utilize the future road network, and can indicate whether additional lanes or new roads are required to meet the estimated demand.

There are certain land uses generating trips that aren't adequately represented by standard production and attraction variables, things like stadiums, regional malls, and beaches. The model recognizes that and allows the hand-calculated trip generation for those uses to be plugged into a particular TAZ as a **special generator** (known as ZDATA3 info). The Southwest Florida International Airport is a perfect example of a special generator- it doesn't have any residential uses, and simple employment variables wouldn't produce the kinds of trips you would actually get there. From a trip generation standpoint, the variable that best determines the number of trips coming to and from an airport (based on numerous studies) is the number of enplanements. That variable is also a critical component of the airport master plan, which is reviewed and approved by FDOT and the Federal Aviation Administration. It should be noted that the most recent studies have reduced the ratio of trips to enplanements, meaning the same number of enplanements would be expected to generate fewer trips than previously assumed.

Using the officially approved enplanement forecasts for the year 2020, those forecasts are converted to vehicle trips and plugged into the Lee County MPO's model as a special generator. The Southwest Florida Regional Airport has been a special generator in the Lee County model since it opened in the mid-1980's. Beyond that, however, the airport is treated even more specially in the Lee County model, to ensure that the trips to and from the airport are properly distributed. Unlike some special generators, there is additional data available from the airport on where its traffic is coming from and going to, based on origin-and-destination (O&D) surveys that were done a few years ago. Those surveys showed that 35-40% of the traffic was coming from south of the airport. Rather than simply relying on the model's productions and attractions to determine where the airport's trips might go, a special module was set up in the 2000 plan update to specifically assign the airport's trips in a way that matches the O&D survey results. This is a special pre-load routine that is run in the model before the rest of its data is processed and trips assigned. Clearly, the Southwest Florida International Airport is an integral part of the Lee County MPO's modeling effort and long-range plan development.

As noted above, the airport trips are calculated separately and plugged into the model as a special generator. Using the revised enplanement forecasts from the new master plan update, in conjunction with the trips from the proposed new land uses, a new trip generation number for the airport was calculated. Since the new number is within 1% of the old number, the net effect of plugging that new number into the MPO's 2020 model is negligible. That is why the County drew the conclusion that no additional improvements are warranted by the Lee Plan amendment to incorporate the proposed changes at the airport.

To provide the FDCA staff a level of comfort, we have created a series of tables that pull the 2020 traffic volumes for the surrounding roads out of the MPO's 2020 Financially Feasible Plan network, converts them to peak hour, peak season, peak direction conditions, and identifies the resultant levels of service (attached). Table 1 identifies the number of lanes that currently exist

on the road network surrounding the airport, and where improvements are programmed in the next five years (CIP/TIP) or planned in the next 20 years. Table 2 shows the assumptions made for each road segment to convert the model's peak season, daily traffic volume output to peak season, peak hour, peak direction volumes, the basis for the level of service standards in the County's comprehensive plan. Table 3 shows the specific link-by-link conversions and the resultant levels of service. We would note that all the surrounding roads are projected to operate at level of service "D" or better in 2020.

The MPO Plan is also going to be updated and extended to 2030 over the next year, and there will be a lot of focus on I-75, including the possibility of tolling to fund an expansion beyond the currently planned 6 lanes to 10 lanes, consistent with FDOT's PD&E Study. We would note the MPO Plan is specifically identified as a "Financially Feasible" plan. The MPO is required to develop a financially feasible plan under state and federal law, and does so by projecting available transportation revenues over the horizon of the plan, costing out all of the improvements in the plan, and limiting the plan to those improvements that fit within the revenue forecasts.

We hope this information helps the FDCA staff better understand the airport's role in the MPO planning process, and we would like to stress that the MPO's 2020 Financially Feasible Highway Plan is directly incorporated into Lee County's comprehensive plan as Map 3A of the Transportation Map Series. If the FDCA staff would like to confirm what we have said, they can contact the Lee County MPO staff, which is part of the Southwest Florida Regional Planning Council (Glen Ahlert, MPO Coordinator, (239) 656-7720), or the Florida Department of Transportation, which is actively involved in the MPO plan development as well as the airport's master planning process (Mike Rippe, FDOT Southwest Area Office Director, (239) 461-4300).

DML/mlb

cc: Tim Jones, Lee County Attorney's Office  
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Glen Ahlert, Lee County Metropolitan Planning Organization  
Jeff Breeden, Reynolds, Smith and Hill

DATE: 09/08/04

TABLE 1

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT  
 COMPREHENSIVE PLAN AMENDMENT  
 LEE COUNTY DOT LEVEL OF SERVICE TEST

ROADWAY	FROM	TO	EXISTING NETWORK # OF LANES	CIP/TIP NETWORK # OF LANES	2020 FF NETWORK # OF LANES	2020 NEEDS NETWORK # OF LANES
AIRPORT ENTRANCE ROAD	SWFIA WEST ENTRANCE	I-75	0	0	6	6
AIRPORT ENTRANCE ROAD	I-75	US 41	0	0	4	4
ALICO ROAD	US 41	THREE OAKS PKWY	2	6	6	6
ALICO ROAD	THREE OAKS PKWY	I-75	4	6	6	6
ALICO ROAD	I-75	BEN HILL GRIFFIN PKWY	4	6	6	6
ALICO ROAD	BEN HILL GRIFFIN PKWY	CORKSCREW RD	2	2	2	2
BEN HILL GRIFFIN PARKWAY	FGCU ENTRANCE	ALICO ROAD	4	4	6	6
BEN HILL GRIFFIN PARKWAY	ALICO RD	SWFIA WEST ENTRANCE	4	4	6	6
DANIELS PARKWAY	US 41	METRO PKWY	6	6	6	6
DANIELS PARKWAY	METRO PKWY	BEN PRATT/6 MILE PARKWAY	6	6	6	6
DANIELS PARKWAY	BEN PRATT/6 MILE PARKWAY	THREE OAKS PKWY	6	6	6	6
DANIELS PARKWAY	THREE OAKS PKWY	I-75	6	6	6	6
DANIELS PARKWAY	I-75	TREELINE AVE	6	6	6	6
DANIELS PARKWAY	TREELINE AVE	CHAMBERLAIN PKWY	6	6	6	6
DANIELS PARKWAY	CHAMBERLAIN PKWY	GATEWAY BLVD	4	4	6	6
DANIELS PARKWAY	GATEWAY BLVD	SR 82	4	4	6	6
I-75	BONITA BEACH RD	CORKSCREW RD	4	6	6	6 + 4
I-75	CORKSCREW RD	ALICO RD	4	6	6	6 + 4
I-75	ALICO RD	AIRPORT ENTRANCE ROAD	4	6	6	6 + 4
I-75	AIRPORT ENTRANCE ROAD	DANIELS PKWY	4	6	6	6 + 4
I-75	DANIELS PKWY	COLONIAL BLVD	4	4	6	6 + 4
I-75	COLONIAL BLVD	SR 82	4	4	6	6 + 4
THREE OAKS PARKWAY	CORKSCREW RD	ESTERO PARKWAY	2	4	6	6
THREE OAKS PARKWAY	ESTERO PARKWAY	ALICO RD	2	4	4	4
THREE OAKS PARKWAY	ALICO RD	FIDDLESTICKS BLVD	0	4	4	4
THREE OAKS PARKWAY	FIDDLESTICKS BLVD	DANIELS PKWY	0	4	4	4
TREELINE AVENUE	SWFIA WEST ENTRANCE	DANIELS PKWY	0	4	4	4
TREELINE AVENUE	DANIELS PKWY	COLONIAL BLVD	0	4	4	4

		DATE: 09/08/04	TABLE 2											
			SOUTHWEST FLORIDA INTERNATIONAL AIRPORT											
			COMPREHENSIVE PLAN AMENDMENT											
			LEE COUNTY DOT LEVEL OF SERVICE TEST											
											MPO 2020 FINANCIALLY			
ROADWAY	FROM	TO	ROAD TYPE	SIGNALS PER MILE (AVG)	ADOPTED LOS	GENERALIZED DIRECTIONAL SERVICE VOLUMES					ROADWAY PEAK	LEE COUNTY TRAFFIC REPORT		
						LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"	DIRECTION	PCS NUMBER		
AIRPORT ENTRANCE ROAD	SWFIA WEST ENTRANCE	I-75	UNINTERRUPTED	1.5	E	1490	2410	3490	4510	5130	WEST	10		
AIRPORT ENTRANCE ROAD	I-75	US 41	UNINTERRUPTED	1.5	E	990	1610	2330	3010	3420	WEST	10		
ALICO ROAD	US 41	THREE OAKS PKWY	ARTERIAL SIGNALS	1.5	E	670	2490	2850	2920	2920	WEST	10		
ALICO ROAD	THREE OAKS PKWY	I-75	ARTERIAL SIGNALS	1.5	E	670	2490	2850	2920	2920	WEST	10		
ALICO ROAD	I-75	BEN HILL GRIFFIN PKWY	ARTERIAL SIGNALS	1.5	E	670	2490	2850	2920	2920	WEST	53		
ALICO ROAD	BEN HILL GRIFFIN PKWY	CORKSCREW RD	COLLECTOR SIGNALS	1.5	E	0	0	530	800	850	WEST	53		
BEN HILL GRIFFIN PARKWAY	FGCU ENTRANCE	ALICO ROAD	ARTERIAL SIGNALS	1.5	E	670	2490	2850	2920	2920	WEST	15		
BEN HILL GRIFFIN PARKWAY	ALICO RD	SWFIA WEST ENTRANCE	ARTERIAL SIGNALS	1	E	670	2490	2850	2920	2920	EAST	32		
DANIELS PARKWAY	US 41	METRO PKWY	CONTROLLED ACCESS	2.9	E	410	2490	2960	3040	3040	WEST	30		
DANIELS PARKWAY	METRO PKWY	BEN PRATT/6 MILE PARKWAY	CONTROLLED ACCESS	2.9	E	410	2490	2960	3040	3040	WEST	30		
DANIELS PARKWAY	BEN PRATT/6 MILE PARKWAY	THREE OAKS PKWY	CONTROLLED ACCESS	1.5	E	410	2490	2960	3040	3040	EAST	31		
DANIELS PARKWAY	THREE OAKS PKWY	I-75	CONTROLLED ACCESS	1.5	E	410	2490	2960	3040	3040	EAST	52		
DANIELS PARKWAY	I-75	TREELINE AVE	CONTROLLED ACCESS	1.5	E	410	2490	2960	3040	3040	EAST	52		
DANIELS PARKWAY	TREELINE AVE	CHAMBERLAIN PKWY	CONTROLLED ACCESS	1.5	E	410	2490	2960	3040	3040	EAST	32		
DANIELS PARKWAY	CHAMBERLAIN PKWY	GATEWAY BLVD	CONTROLLED ACCESS	1.5	E	410	2490	2960	3040	3040	EAST	48		
DANIELS PARKWAY	GATEWAY BLVD	SR 82	CONTROLLED ACCESS	1.5	E	410	2490	2960	3040	3040	EAST	48		
I-75	BONITA BEACH RD	CORKSCREW RD	FREEWAY	0	C/D	2000	3290	4460	5280	5870	NORTH	FDOT I-75		
I-75	CORKSCREW RD	ALICO RD	FREEWAY	0	C/D	2000	3290	4460	5280	5870	NORTH	FDOT I-75		
I-75	ALICO RD	AIRPORT ENTRANCE ROAD	FREEWAY	0	C/D	2000	3290	4460	5280	5870	NORTH	FDOT I-75		
I-75	AIRPORT ENTRANCE ROAD	DANIELS PKWY	FREEWAY	0	C/D	2000	3290	4460	5280	5870	NORTH	FDOT I-75		
I-75	DANIELS PKWY	COLONIAL BLVD	FREEWAY	0	C/D	2000	3290	4460	5280	5870	NORTH	FDOT I-75		
I-75	COLONIAL BLVD	SR 82	FREEWAY	0	C/D	2000	3290	4460	5280	5870	NORTH	FDOT I-75		
THREE OAKS PARKWAY	CORKSCREW RD	ESTERO PARKWAY	ARTERIAL SIGNALS	0.5	E	670	2490	2850	2920	2920	WEST	15		
THREE OAKS PARKWAY	ESTERO PARKWAY	ALICO RD	ARTERIAL SIGNALS	0.5	E	450	1630	1900	1950	1950	WEST	15		
THREE OAKS PARKWAY	ALICO RD	FIDDLESTICKS BLVD	ARTERIAL SIGNALS	0.5	E	450	1630	1900	1950	1950	WEST	10		
THREE OAKS PARKWAY	FIDDLESTICKS BLVD	DANIELS PKWY	ARTERIAL SIGNALS	0.5	E	450	1630	1900	1950	1950	WEST	10		
TREELINE AVENUE	SWFIA WEST ENTRANCE	DANIELS PKWY	ARTERIAL SIGNALS	1	E	450	1630	1900	1950	1950	EAST	32		
TREELINE AVENUE	DANIELS PKWY	COLONIAL BLVD	ARTERIAL SIGNALS	1	E	450	1630	1900	1950	1950	EAST	32		

	DATE: 09/08/04		TABLE 3			
			SOUTHWEST FLORIDA INTERNATIONAL AIRPORT			
			COMPREHENSIVE PLAN AMENDMENT			
			LEE COUNTY DOT LEVEL OF SERVICE TEST			
ROADWAY	FROM	TO	FSUTMS PSWDT	MODEL PK-HR CONVERSION FACTOR	100TH-HOUR PEAK-DIR VOLUME	FEASIBLE PLAN LOS
AIRPORT ENTRANCE ROAD	SWFIA WEST ENTRANCE	I-75	49276	0.05518	2719	C
AIRPORT ENTRANCE ROAD	I-75	US 41	28902	0.05518	1595	B
ALICO ROAD	US 41	THREE OAKS PKWY	48317	0.05518	2666	C
ALICO ROAD	THREE OAKS PKWY	I-75	49519	0.05518	2732	C
ALICO ROAD	I-75	BEN HILL GRIFFIN PKWY	42112	0.05604	2360	B
ALICO ROAD	BEN HILL GRIFFIN PKWY	CORKSCREW RD	7337	0.05604	411	C
BEN HILL GRIFFIN PARKWAY	FGCU ENTRANCE	ALICO ROAD	58745	0.04741	2785	C
BEN HILL GRIFFIN PARKWAY	ALICO RD	SWFIA WEST ENTRANCE	43616	0.04306	1878	B
DANIELS PARKWAY	US 41	METRO PKWY	45802	0.04101	1878	B
DANIELS PARKWAY	METRO PKWY	BEN PRATT/6 MILE PARKWAY	39525	0.04101	1621	B
DANIELS PARKWAY	BEN PRATT/6 MILE PARKWAY	THREE OAKS PKWY	51357	0.04383	2251	B
DANIELS PARKWAY	THREE OAKS PKWY	I-75	52987	0.04148	2198	B
DANIELS PARKWAY	I-75	TREELINE AVE	49405	0.04148	2050	B
DANIELS PARKWAY	TREELINE AVE	CHAMBERLAIN PKWY	45416	0.04306	1955	B
DANIELS PARKWAY	CHAMBERLAIN PKWY	GATEWAY BLVD	44811	0.05938	2661	C
DANIELS PARKWAY	GATEWAY BLVD	SR 82	46944	0.05938	2788	C
I-75	BONITA BEACH RD	CORKSCREW RD	89882	0.05042	4532	D
I-75	CORKSCREW RD	ALICO RD	91449	0.05042	4611	D
I-75	ALICO RD	AIRPORT ENTRANCE ROAD	61759	0.05042	3114	B
I-75	AIRPORT ENTRANCE ROAD	DANIELS PKWY	91246	0.05042	4600	D
I-75	DANIELS PKWY	COLONIAL BLVD	86491	0.05042	4361	C
I-75	COLONIAL BLVD	SR 82	82605	0.05042	4165	C
THREE OAKS PARKWAY	CORKSCREW RD	ESTERO PARKWAY	51105	0.04741	2423	B
THREE OAKS PARKWAY	ESTERO PARKWAY	ALICO RD	35340	0.04741	1676	C
THREE OAKS PARKWAY	ALICO RD	FIDDLESTICKS BLVD	28906	0.05518	1595	B
THREE OAKS PARKWAY	FIDDLESTICKS BLVD	DANIELS PKWY	15042	0.05518	830	B
TREELINE AVENUE	SWFIA WEST ENTRANCE	DANIELS PKWY	36335	0.04306	1564	B
TREELINE AVENUE	DANIELS PKWY	COLONIAL BLVD	30458	0.04306	1311	B

2095

**Responses to DCA Comments dated February 5, 2004  
(Supplemented May 19, 2004 and August 10, 2004)**

**A. Amendment CPA 2003-02(Airport Master Plan):**

**OBJECTIONS:**

Objective 1.2 and Policy 1.2.1, Future Land Use Element (FLUE), are proposed to be revised to incorporate the Airport Layout Plan (Map 3F) and Table 5, that outlines the proposed development to be constructed on Airport property. The proposal includes the construction of aviation and non-aviation related development. The following concerns have been identified with the proposed amendment:

**1. FAA Approval of Airport Master Plan :** According to the information provided the Airport Master Plan, and the Airport Layout Plan are not approved by the FAA. In view of that, the current proposal is not consistent with the requirements of Chapter 163.3177(6)(k), F.S., regarding the incorporation of an Airport Master Plan into the comprehensive plan for the purpose of achieving DRI exemption.

*Chapter 163.3177(6)(k), F. S., and Rule 9J-5.005(2)(a) & (b), F.A.C.*

**Recommendation:** The County should ensure that the proposed Master Plan and Layout Plan are approved by the FAA before adopting the amendment, and include documentation of approval in the adoption package.

**Response:** Lee County is requiring that the Airport Master Plan and the Airport Layout Plan Set proposed for inclusion in the Lee Plan be officially approved by the FAA prior to adoption of the Lee Plan Amendment. The statutory references noted in the objection (FS §163.3177(6)(k) noted below and FAC Rule 9J-5.005(a) and (b)) refer to an "adopted" master plan document, but do not refer to a specific approval entity.

*(k) An airport master plan, and any subsequent amendments to the airport master plan, prepared by a licensed publicly owned and operated airport under s. 333.06 may be incorporated into local government comprehensive plan by the local government having jurisdiction under this act for the area in which the airport or projected airport development is located by the adoption of a comprehensive plan amendment. In the amendment to the local comprehensive plan that integrates the airport master plan, the comprehensive plan amendment shall address land use compatibility consistent with chapter 333 regarding airport zoning; the provision of regional transportation facilities for the efficient use and operation of the transportation system and airport; consistency with the local government transportation circulation element and applicable metropolitan planning organization long-range transportation plans; and the execution of any necessary interlocal agreements for the purposes of the provision of public facilities and services to maintain the adopted level of service standards for facilities subject to concurrency; and may address airport-related or aviation-related development. Development or expansion of an airport consistent with the adopted airport master plan that has been incorporated into the local comprehensive plan in compliance with this part, and airport-related or aviation-related development that has been addressed in the comprehensive plan amendment that incorporates the airport master plan, shall not be a development of regional impact. Notwithstanding any other general law, an airport that has received a development-of-regional-impact development order pursuant to s. 380.06, but which is no longer required to undergo development-of-regional-impact review pursuant to this subsection, may abandon its development-of-regional-impact order upon written notification to the applicable local government. Upon receipt by the local government, the development-of-regional-impact development order is void.*

We believe the intention was for FAA approval of the Airport Master Plan and Airport Layout Plan Set. The Lee County Port Authority (LCPA) has regularly and consistently coordinated with both the FAA and FDOT regarding the master plan update. It is also important to note that the Lee County Port Board of County Commissioners formally adopted and approved the Airport Master Plan Update and Plan Set, which is unusual for airport master plan updates. The LCPA has received approval of the Master Plan and Airport Layout Plan Set from both the FAA and FDOT and their approval letters are attached.

**2. The Provision of Regional Transportation Facilities:** Pursuant to Chapter 163.3177(6)(k), F.S., an Airport whose Master Plan has been incorporated into the comprehensive plan will be exempt from the development of regional impact review. In view of that, the statute specifies that an amendment incorporating the Airport Master Plan into the comprehensive plan shall address among other things, the provision of regional transportation facilities for efficient use and operation of the transportation system, and consistency with the local government's transportation element and applicable MPO's long-range plan. This issue has not been adequately addressed by the County for the following reasons:

1) The County has not provided an analysis of the impact of the proposed amendment on regional transportation facilities. The traffic analysis provided on page 42 of the supporting documentation show the number of trips projected to be generated by the airport in 2020 (the buildout date) as 52,960, based on the proposed development. This projection is believed to be one percent less than previous projections for the airport, and as a result it was concluded that no additional improvements are needed beyond what has been planned in the MPO's long-range transportation plan. However, an analysis was not provided which distributes the trips on the roadway network in order to identify the regional roadways that will be adversely impacted by the phased level of development proposed to occur on the Airport, including non-aviation related development, and, if adversely impacted, a phased scheduled improvements to correct the deficiency, in order to ensure that the adopted level of service standards on the affected roadways will be achieved and maintained.

2) Department's staff has evaluated the MPO's Long Range Transportation Plan and identified certain items referenced to the Airport; but it has not been demonstrated that the items in the MPO's Long Range Transportation plan are the only improvements needed to maintain the adopted level of service standards on the roadways adversely impacted by the Airport. Furthermore, the fact that certain improvements are shown on the MPO's Long Range Plan does not mean that those projects will be funded or completed, since items in the MPO's Long Range Plan are not considered financially feasible until they are included on the County's Five Year Schedule of Capital Improvements, or in the FDOT's work plan.

*Chapter 163.3177(6)(k), (8), & Chapter 163.3180(2)c, F.S.; and Rule 9J-5.005(2)(a), (c), & (3); 9J-5.0055(1)(a), (b), (2)(a) 1., & (3)(c); 9J-5.06(2)(a) & (3)(c)3.; 9J-5.016(4)1., 9J-5.019(1), (4)(b)1., & 2., & (4)(c)1., F.A.C.*

**Recommendation:** Include with the amendment traffic analysis that: 1) identifies the roadways that would be impacted by the development projected to occur on the airport's property at the buildout date of 2020; 2) the projected level of service standards on those roadways in 2020, with and without the airport; 3) the roadways that will be adversely impacted, i.e., the roadways whose level of service would fall due to the proposed development; and, 4) for the roadways that are failing, include a schedule of capital improvements that is fully funded and demonstrated to be financially feasible for, at least, the first five years. Long range improvements needed beyond the first five years should be included in the long range Capital Improvement Plan of the County's comprehensive plan if the project was not included within the MPO's Long Range Transportation Plan. In addition, include a policy linking future development at the airport to the provision of the necessary roadway improvements needed to achieve and maintain the adopted level of service standards.

**Response:**

The Southwest Florida International Airport Master Plan is a consistent element in the regional aviation plan, the Florida Aviation System Plan (FDOT) and the National Plan of Integrated Airport Systems (FAA/USDOT), further it is a key element in the State of Florida's Strategic Intermodal System (SIS), being the only airport in Southwest Florida to have that distinction. The airport plan is also contained in and consistent with the SWFRPC Strategic Policy Plan, the Lee County Comprehensive Plan, the MPO Adopted Cost Feasible Plan and the FDOT Adopted State Transportation Plan. In fact, on-going capital improvement program coordination results in a significant portion of the revenue supporting continued development of the airport. The airport development is supported by user taxes and fees and is regulated by the aviation trust fund. Highway projects are similarly funded by user fees and taxes with proceeds regulated by a highway trust fund. Close coordination between the modes and their long-range plans allows for the consistent and compatible



development of each and facilitates budgeting and funding to implement these projects when needed to insure an efficient, seamlessly interconnected system.

The LCPA has worked diligently with local land-use and transportation planners, Lee County DOT, the MPO, the SWFRPC, FDOT and the FAA to make sure that all elements of the airports existing and future programs are consistent with various agency plans and programs.

The airport has been a major contributor to the success of the region for over 21 years and recognizes that proper planning will allow it to continue this service well into the next century. The LCPA serves as a voting member of the MPO and worked with the MPO and FDOT staff during several past urban model updates and calibrations to ensure the airport plans were properly documented in the urban model structure. During the recent update of the Airport Master Plan and Urban Area Plan Update staff worked to ensure that the airports Master Plan was properly included in development of the regional traffic model, creation of the highway needs plan, and the approved cost feasible plan.

The MPO recognized that the Southwest Florida International Airport is a unique and critical element of the transportation system for the region and therefore elected to place special emphasis on it to ensure modal compatibility. In preparing the recent update of the regional Florida Standard Urban Transportation Model Structure (FSUTMS) transportation model the MPO included the existing and proposed airport plans as a Z-data 3 file more commonly referred to as a special generator file within the model structure. A special generator file is essential to properly replicate the unique characteristics of the airport and numerous data and modeling assumptions are required to ensure a successfully calibrated model.

The supporting data for the FSUTMS model included collecting traffic volume counts on existing airport highway access routes. These traffic volumes were then correlated to concurrent aircraft passenger activity (enplaning passengers per ITE procedures) to establish and verify acceptable trip generation characteristics of the airport. After the trip generation characteristics were verified, a base year "calibration" was established to replicate existing airport activity. Prior to network assignment additional data was collected from passengers using the airport in the form of an origin/destination survey. This data effectively established the "market or service area" for the airport and provided logical trip assignment linkages for the service area and the model traffic analysis zones (TAZ). This data was combined with model land use and population data (Z-data 1 and Z-data 2 files) was utilized to create a pre-load assignment to the model network for all airport arriving and departing traffic. In addition, the traffic trip-generation characteristics for the non-aviation land use was established per ITE guidelines and included in the airport totals. However, network assignments and trip distributions within the TAZ structure of the model for this component was done consistent with other similar land-uses in the model.

In preparing the MPO model for future year applications the special generator files were expanded to include projections of future enplaning passenger activity consistent with the adopted regional Continuing Florida Aviation System Plan (CFASP) Plan and non-aviation land-use projections were included from the Airport Master Plan. Trip generation was assumed to be consistent with previous studies and ITE recommendations.

The network pre-load assignments were updated consistent with future land-use and population projections contained in the model structure. The complete land-use, population and special generator files were loaded to the model to establish a fully loaded network assignment, and after further calibration and network linkage refinements to provide acceptable levels-of-service, a cost feasible plan was prepared and agreed upon by the MPO. The resulting adopted MPO plan and Airport Master Plan are completely consistent, compatible and interdependent.

The Airport Master Plan was developed consistent with the regional element of the CFASP and forecasts of future aviation activity contained in the Master Plan are consistent with this plan including projections of aviation demand. The MPO recognized the value of this transportation mode and again included the airport master plan in their transportation model and updated the existing special generator characteristics so the airport could continue to serve as a seamlessly interconnected component of the Southwest Florida Transportation System, in-fact, several additions were made to the highway plan to ensure this on-going compatibility and the maintenance of acceptable levels-of-service on regional roadways. DRI analyses were also performed for SWFIA, the last of which was completed in December 2000.

The Traffic Circulation Analysis provided to determine the effect of the land use change on the Financially

Feasible Transportation Plan and on the Capital Improvement Element showed a reduction in the number of trips generated from Traffic Analysis Zone (TAZ) 1142 (the airport TAZ) of less than 1%. Since the land use change results in fewer trips generated (52,960 versus the 53,254 trip ends in the adopted 2020 model), no modification to the forecasts is required, and therefore no further analysis for the long range horizon is necessary. We believe the analysis submitted meets the intent of Chapter 163.3177(6)(k), F.S. and ensures on-going modal compatibility thru enhanced coordination between the modes to achieve the "efficient use and operation of all modes" in the transportation system. In light of the above, the following policy is proposed to address non-aviation related development in regards to the Lee County Land Development Code.

**Policy 32.4.5: Development of non-aviation related uses on airport will be required to meet concurrency standards set forth in the Lee County Land Development Code.**

After some initial discussions regarding the traffic analysis response above, DCA requested some additional details and analysis regarding how the traffic analysis was prepared. The actual trip generation rates established for the airport in the model year 2020 are listed in Table 1 that is attached in the appendix of this response. The figures used in the generation of all airport trips were developed utilizing FAA and FDOT approved enplanement forecasts from the adopted Airport Master Plan (AMP). The generation and network assignments were based upon detailed FDOT procedures and those additionally agreed to in numerous traffic methodology meetings between the FDOT, MPO, Lee County DOT and growth management representatives. In addition, traffic generated by non-aviation land uses contained in the AMP was projected utilizing standard ITE and approved FDOT trip generation rates. A copy of the trip assignments used by the model is included in the appendix of this response. The goal of the traffic analysis was to ensure that all off-site impacts associated with the airport development proposed in the AMP were clearly identified and that these impacts were properly reflected in other planning documents, including the regional MPO (Transportation Planning) and local Comprehensive Plans (local land-use and transportation plans). This is also a requirement of FAA (PGL 04-2.1 – Intermodal Planning Coordination) for hub airports to coordinate with MPO's to assure that adequate funds are available to properly respond to meet off-site transportation needs prior to the FAA making major investments in expanding the airports capacity. This "goal" was achieved and the modeled results of the adopted MPO Cost-feasible Plan and the proposed Comprehensive Plan Amendment are for practical purposes the same numbers. The adopted cost-feasible plan for the MPO surface transportation plan is now totally consistent with the adopted Airport Master Plan and the identified impacts attributed to development of the airport are adequately addressed by proposed improvements to the adjoining highway network and a copy of the Lee County 2020 Financially Feasible Highway Plan Amended February 2004 is included in the appendix of this response. This was no accident nor did it occur on our first attempt to define the airport's impacts and develop fundable solutions.

Over the last ten years, the airport staff has worked with the County and MPO to facilitate the design and construction of the adjacent Treeline / Ben Hill Griffin arterial link connecting Alico and Daniels Parkway which also provided interim access to the new midfield terminal site. This project was identified as a needed roadway improvement not only serving the airport but also providing another link to a North-South roadway system to help alleviate the traffic from I-75. In an effort to help expedite the design and construction of the road, the Lee County Port Authority lead the efforts in donating right of way for the project, provided design services, provided permitting services, assisted with mitigation, secured funding for the construction and provided construction management services. The total costs for the roadway improvements including right of way and mitigation is estimated to be \$27.5 million dollars. The roadway system is currently under construction and is expected to open to traffic at the end of this year.

Other roadway improvements that were identified to help serve the continued growth of Southwest Florida International Airport and the surrounding regional roadway system was a direct connection to the Airport from I-75 which will help eliminate traffic off of Daniels Parkway and Alico Road. The same group worked together with FDOT and FHWA to develop a plan, obtain approval, fund and develop additional Interstate capacity and provide a new direct access corridor from the Interstate to the new airport midfield terminal complex. Once completed and agreed to those plans were incorporated into the highway planning and development process to ensure that adequate capacity would be available to meet projected growth demands for the airport. In order to help maintain the adopted level of service for the planning period, several roadway projects were

added to the plan. These roadway projects include the Airport entrance road extension and I-75 Interchange, improvements to the Alico Road Interchange and minor improvements to Treeline Avenue. These roadway improvements are listed and identified in the MPO Cost Feasible Plan with a copy attached in the appendix of this response. Because of the estimated cost of improvements for this roadway system is expected to be close to 80 million dollars, the initial phases of construction funding has been identified but it is expected that full funding will be identified over the next couple of year. The airport has already secured a FDOT grant for 6 million dollars for design services for the roadway improvements and it is expected that this contract will be signed with the engineer next month. For your information I have attached the Governor's Press Release announcing SIS Connector Projects to be funded by the \$100 million 2004 Legislative Appropriation and the Lee County Port Authority received another 5 million dollars to be used for right of way acquisition. The Alico Interchange improvements will be let for construction in November and the Signal upgrades for Treeline are funded with on-going construction.

Because of these facts the County feels that it has met the specific requirement of the law that the amendment incorporating the Airport Master Plan into the comprehensive plan shall address "the provisions of regional transportation facilities for the efficient use and operation of the transportation system and the airport".

In summary, the Lee County Port Authority has either secured funding and constructed (Treeline Avenue and Ben Hill Griffin parkway) or secured the initial funding stream for future roadway projects (Direct access from I-75) for over 100 million dollars of roadway improvements. The adopted cost feasible plan maintains the adopted level of service. Identified projects are a high local and state priority, with funding committed for their implementation and the planned expansion of the airport will not be restrained by the lack of adequate surface accessibility nor will its operation be adversely impacted by poor access.

This Airport Master Plan (prepared in compliance with AC No. 150/5070-6B) is the basic planning tool guiding and regulating all on-site development at the airport and included a capital improvement program. It is also the instrument that FAA and FDOT use as the basis for funding aviation related improvements. These improvements are funded, in part by aviation trust fund monies and are regulated by statute to be utilized on-airport and exclusively for "aviation purposes". The Airport Master Plan is a heavily regulated building block, which once approved feeds into the regional aviation plan (RPC and Regional CFASP), the State Aviation Plan (CFASP), becoming an integral component of the Florida Transportation Plan (FTP) and the National Aviation Plan (NPIAS). As you are aware the State of Florida and the Federal government have begun a major transportation initiative to insure modal compatibility. Simply stated the goal is to have all modal plans prepared and coordinated to insure intermodal compatibility and interoperability. The goal is to have a statewide Strategic Intermodal System with seamless connections that support an improved transportation system, provides enhanced mobility and provides for the efficient movement of both people and goods. The Southwest Florida International Airport is identified in the SIS Plan as a major component of the State's transportation system and makes it a statewide priority to adequately fund those interconnected system elements to ensure its continued operational success.

**3. Site Suitability for Non-Aviation Related Uses:** The proposed non-aviation related development involves Hotel/Motel: 300 Rooms; Office: 225,000 square feet; Gas Station/Convenience Store: 3,500 square feet; Warehouse: 100,000 square feet; and Light Manufacturing: 100,000 square feet. It has not been demonstrated that all of the areas designated for non-aviation related development are suitable considering the environmentally sensitive nature of some of these sites, the most problematic of which is the area on the southeast of the airport. According to the information provided, these sites contain wetlands, and although mitigation of wetland impact is proposed, it is not appropriate to locate these uses on sites that are predominated by wetlands, and therefore, environmentally unsuitable for commercial and industrial uses.

Also, Policy 1.2.1 is proposed to be revised, to delete the requirement for buffering for airport and non-airport related development in order protect environmentally sensitive resources, and instead, offset environmental impacts through off-site mitigation. This will not ensure the protection of environmentally sensitive resources including groundwater and it is inconsistent with the County's comprehensive plan. Lee Plan Goal 77, and

Objectives 77.1, and 84.1, require that wetlands be protected on site so as to ensure that wetland functions are maintained. Furthermore, Policy 77.2.2 specifically states that the County shall "prevent incompatible developments in and around environmentally sensitive lands". The proposed amendments are inconsistent with, and do not further the above cited provisions of the Lee Plan because they direct incompatible land uses to environmentally sensitive areas, and therefore, will not ensure the protection of environmentally sensitive resources including groundwater.

*Chapter 163.3177(2), (6)(a), (d), F.S.; 9J-5.005(2)(a), (5), & (6); 9J-5.006(2)(b), (3)(b)1., & (3)(c)6.; 9J-5.012(3)(c)1.; 9J-5.013(1)(a)1., (2)(b)3., & (2)(c)6., & 9., F.A.C*

**Recommendation:** Revise the amendment to direct non-aviation related development away from areas that are environmentally sensitive. Policies controlling the amount, type, and extent of non-aviation related development should be included to ensure that land use suitability and compatibility are achieved, and environmentally sensitive areas be protected. Also, the existing requirement in Policy 1.2.1, for the buffering of aviation and non-aviation related development should not be removed.

**Response:**

In order to address concerns about groundwater resources and recharge areas, the following policy is proposed. This policy is intended to reinstate the protection to groundwater resources lost in the initial proposed revision of Policy 1.2.1.

**Policy 1.2.6. Any future airport expansion or development of aviation related or non-aviation related uses will provide appropriate buffer areas, as determined by Lee County, for the protection of groundwater resources in the Southeast and Northeast quadrants of the airport property.**

The Airport Layout Plan (ALP), Map 3F, has been amended to reflect a change in the "future non-aviation" use proposed for the parcel located in the southeast corner of the Airport Lands. This parcel is now identified as "Potential Future Development Area" and a note has been added to the ALP (Map 3F) and Table 5, which reads as follows:

**Development within the "Potential Future Development Area" will require amendment of the Lee Plan prior to development.**

The Port Authority has consistently indicated a willingness to protect natural wetlands on Airport property in accordance with FAA guidelines. These guidelines are set forth in FAA Advisory Circular 150/5200-33 and a Memorandum of Understanding between the various Federal agencies. A copy of each of these documents is attached. The Port Authority has also limited the square footage of the proposed development within the non-aviation land use areas in order to provide wetland protection and direct development to upland areas.

The proposed ALP (Map 3F) includes approximately 1,000 +/- acres of future non-aviation development area. Approximately 448 +/- acres of this area is uplands. Proposed Table 5 identifies 428,500 square feet, excluding the fuel pumps and hotel, of non-aviation-related development through 2020. Based upon a conservative floor area ratio of 25-30%, which allows for buffers, setbacks and compliance with Lee County Land Development Code requirements, the proposed development can be fully accommodated on 100 acres.

In light of the above, the following policy is proposed to further articulate the Port Authority's commitment to advance Airport needs while maintaining a balance with environmental considerations to the extent possible.

**Policy 1.2.7. Future non-aviation areas depicted on the Airport Layout Plan (Map 3F) will be developed, to the greatest extent possible, only within existing upland areas. Impacts to wetlands in the future non-aviation areas will be minimized by site design, whenever possible, in compliance with the Lee County Land Development Code. Development within the future non-aviation area, as designated on Map 3F, is limited to a total of 100 acres. Development of additional acreage will require prior Lee Plan amendment approval.**

**4. Amendments to the Airport Layout Plan:** The existing Transportation Element Policies 32.2.5, and 32.3.4 are proposed to be revised to require a comprehensive plan amendment whenever "a substantive change" is proposed to either the Airport Layout Plan or the Table of uses (Table 5). However, the extent of change that will be considered "a substantive change" which would trigger a comprehensive plan amendment is not stated; in the absence of which it will be difficult to ascertain when a comprehensive amendment is needed. *Chapter 163.3187, F.S., and Rule 9J-5.003(90), & 9J-5.005(6), F.A.C.*

**Recommendation:** Revise the amendment to define the term "a substantive change" that will form the basis of a plan amendment to the Master Layout Plan Map (3F) and the table of uses (Table 5). The definition should be consistent with the requirements of Chapter 163, FS and Rule 9J-5, Florida Administrative Code, regarding amendments to the comprehensive plan.

**Response:** Airports typically update their master plan on a 6 to 10 year cycle with the average time between updates of 8 years.

In order to clarify the meaning of "substantive change" as used in proposed Policy 32.2.5 and 32.3.4, the following definition will be added to the Glossary.

**Substantive Change.** As used in Policies 32.2.5 and 32.3.4, the term "substantive change" means development not specifically stated or identified in Table 5 or depicted on Map 3F.

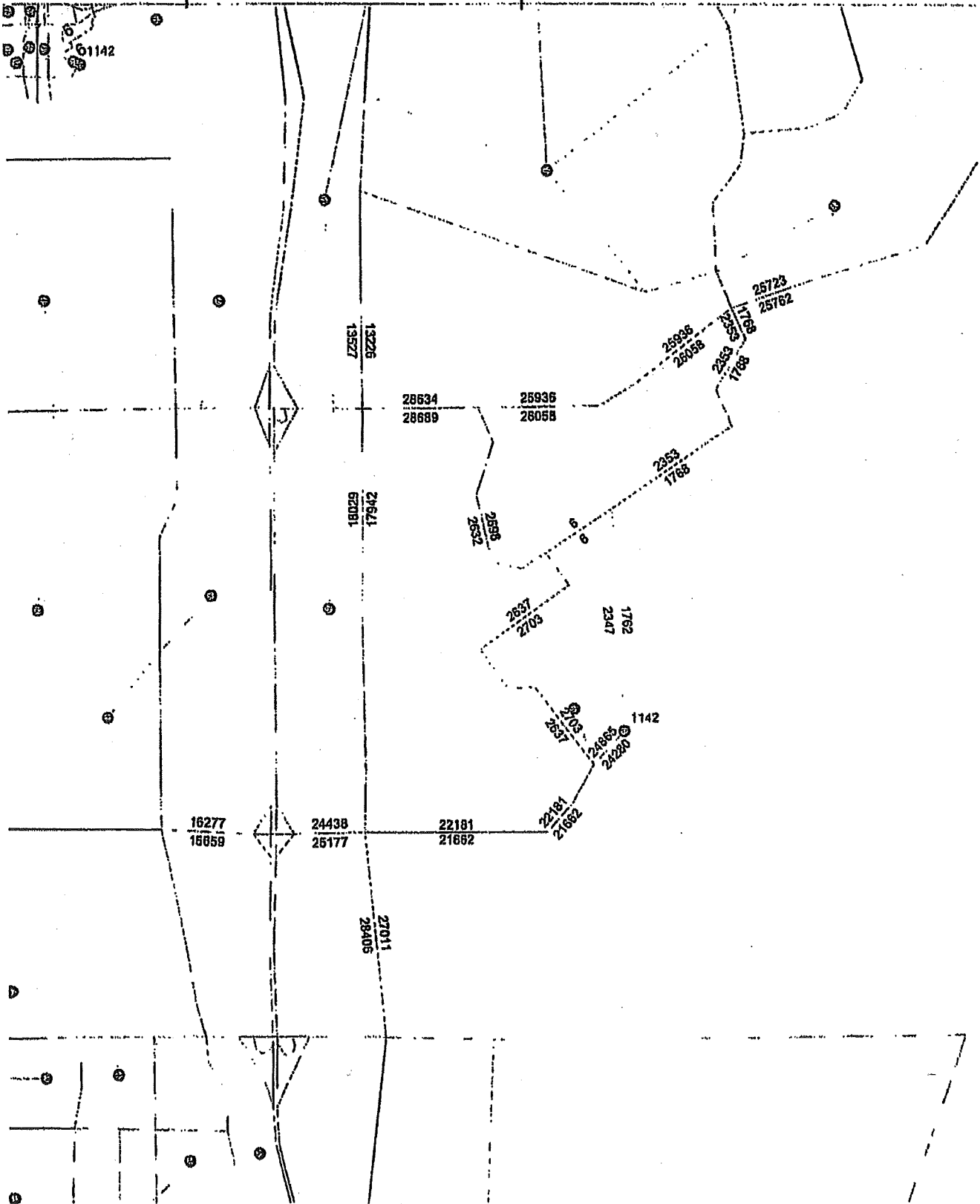
**Table 1. RSW Trip Generation**

2020							
Trip Generation	Land Use	ITE		P.M. Peak Hour			Daily
		LUC	Size Units	In	Out	Total	Total
	General Office	710	225 KSF	58	275	332	2,474
	Convenience Mkt w/ Gas Pumps	845	12 Pumps	80	80	161	1,853
	General Light Industrial	110	100 KSF	12	86	98	645
	Warehouse	150	100 KSF	18	86	74	718
			Subtotal	168	495	664	5,790
	Airport <sup>1</sup>			1,179	1,179	2,359	47,170
			<b>Total</b>	<b>1,345</b>	<b>1,677</b>	<b>3,022</b>	<b>52,960</b>

\*Source: Trip Generation Handbook, 6th Edition, ITE, 1997  
 1 2020 Peak Season Traffic From Airport Related Traffic Projection. RS&H

Source: RS&H  
 Date: January 29, 2003  
 C:\DOCUME~1\wredon\LOCALS~1\Temp\TRIPGEN22.xls\Sheet1

# MPO MODEL



**Table D-2  
2020 FINANCIALLY FEASIBLE HIGHWAY PLAN PROJECTS**

ROAD NAME	PROJECT	TO	TYPE IMPROVEMENT/CONFIGURATION	LANE WIDTH (FEET)	PROJECT LENGTH (MILES)	NOTES	COST ESTIMATED (\$ THOUSANDS)
<b>BONITA SPRINGS</b>							
Bonita Beach Rd	Bonita Grande Dr	CR 851 end	TL	4L	170	Submitted for Florida Assessment parcel CR 851 extension	\$1918
Bonita BR Dr	11th St Fly	Three Oaks Fly	10L Upgrade	Pave 2L	0.21	Submission for Cash/Debt 4 (Employer) not just in negotiation w/ county	\$1,060
Bonita Grande Dr ext	Bonita Beach Rd	Cocacoa Rd ext		New 4L	4.55		\$15,350
CR 851 ext	Collier County line	Bonita Beach Rd		New 2L	1.00	Final stage Collier MPO Plan calls for 2L each of county line	\$1,411
CR 851 ext	Collier County line	Bonita Beach Rd	2L	4L	1.00	Second stage	\$2,070
CR 851 Rd	Collier County line	Bonita Beach Rd	2L	4L	1.2		\$1,745
CR 851 Rd Standby Ln ext	CR 851 Rd	City limits	Part 2L	2L (2.21 ext total)	0.21	Via Production Order	\$4,501
Eastway Phase Dr	East Tarry St	Parsons Parkway extension	2L	Upgrade to standards	0.58	CTI only	\$435
Eastway Phase Dr ext W	CR 851 Rd	W end of Eastway Phase Dr		New 2L	1.40		\$1,023
Goldend Fly	Madison Ln	Bonita BR Dr	Gravel	Pave 2L & strip w/ catchbasin	1.21	Submission for Cash/Debt subject to negotiation	\$5,093
Table Ln	CR 851 Rd	Three Oaks Fly ext	Gravel	New 2L	2.30		\$5,937
<b>Subtotal:</b>							<b>\$46,443</b>
<b>FINANCIAL RESOURCES (05/08-10/20):</b>							<b>\$109,347</b>
<b>DEBT SERVICE:</b>							<b>\$9,210</b>
<b>BALANCE AVAILABLE FOR OTHER CITY PROJECTS / UNFUNDED:</b>							<b>\$84,114</b>

This table does not imply a commitment on the part of this jurisdiction to complete the projects listed for it.

ROAD NAME	PROJECT	TO	TYPE IMPROVEMENT/CONFIGURATION	LANE WIDTH (FEET)	PROJECT LENGTH (MILES)	NOTES	COST ESTIMATED (\$ THOUSANDS)
<b>CAPE CORAL</b>							
Andalus Blvd	1000 north of Kismet Fly	Isomachi Fly		New 4L	0.76	Access or easement required/limited land	\$1,574
Andalus Blvd Connector	Old Point Blvd extension to SR 78	Andalus Blvd		New 4L	0.23		\$5,580
Arroyo Blvd ext	Old Point Blvd	Isomachi Fly		New 4L	0.24		\$744
Burd Stone Rd	Five Islands Rd / SR 78	Goldend Fly	2L	4L	1.00	May be eligible for 25% CDFP funding project will include wildlife crossings where deemed needed	\$606
Burd Stone Rd	Griffin Fly	Culberson Fly	2L	4L	2.68	May be eligible for 25% CDFP funding project will include wildlife crossings where deemed needed	\$1,254
Burd Stone Rd	Culberson Fly	Charlotte County line	2L	4L	0.14	May be eligible for 25% CDFP funding project will include wildlife crossings where deemed needed	\$3,877
Chiquita Blvd	Cape Coral Fly	Yulee Fly	4L	4L	3.04	Phase 1 of low bridge project	\$15,170
Chiquita Blvd	Yulee Fly	SR 78	4L	4L	2.64		\$11,150
Old Point Blvd	Five Islands Rd / SR 78	NE 15th Ter	4L	4L		Completion of connected project	\$58
Old Point Blvd	NE 15th Ter	Kismet Fly	4L	2L (strip) ext on W side		Other years must 4L to FHIS standards with chary if access road of	\$58
The Mayers Fly ext	Griffin Blvd	Old Point Blvd	New 2L	4L	0.54	Adopt or amend Conservation 2020 land. Includes wildlife crossing across conservation lands. Cost requires Lee County and dependent on individual agreement.	\$1,203
Quince Blvd ext	Old Point Blvd	Current services	New 4L	4L	0.94	Cost includes 100' wide 8' sidewalk lane	\$126
Quince Blvd Fly ext	West of Arroyo Blvd	Arroyo Blvd	New 2L	4L	0.22	Cost included in Arroyo Blvd ext	\$29
Riverview Ave Ext	SR 78	Burd Stone Rd	New 4L	4L	1.01	Includes widening 1000' to 4 lanes w/ 2 lane section from CR 851 to 100' SR 78	\$4,650
SR 24th Ave	SR 78	Culberson Rd	2L	4L	1.44		\$6,375
SR 24th Ave ext	Kismet Fly	Old Point Blvd ext		New 2L	0.23	Adopt or amend Conservation 2020 land. Includes wildlife crossing across conservation lands. Cost requires Lee County and dependent on individual agreement.	\$681
Five Islands Rd / SR 78	Burd Stone Rd	Andalus Blvd			1.50	Partial access roads on each side	\$26,576
Five Islands Rd / SR 78	Burd Stone Rd	W of Chiquita Blvd	2L	4L	1.91	CTI only, FHIS, but not in FHQ cost feasible plan Also includes ROW costs of 0.23M that might be distributed due to limited land. Cape Coral no long discretionary funding. Most (probably not) ROW costs in PDOT portion of plan.	\$13,510
Sancti Barbara Blvd	Griffin Fly	SR 78	4L	4L	4.00	Completion of connected project. Connected report due out in 2003 and define scope of project.	\$5,544
SR 15th and 10th Pisco	Manassah Bridge Fly	SR 115 Ln				Access Management Commercial Buffer Improvements	\$10,230
Two Islands Blvd	Yulee Fly	SR 78	2L	4L	1.05		\$3,755
Walden Fly	W of 20th St	Western Yulee	2L	4L	1.06		\$455
<b>Subtotal:</b>							<b>\$121,704</b>
<b>FINANCIAL RESOURCES (05/08-10/20):</b>							<b>\$136,408</b>
<b>BALANCE AVAILABLE FOR OTHER CITY PROJECTS / UNFUNDED:</b>							<b>\$14,704</b>

This table does not imply a commitment on the part of this jurisdiction to complete the projects listed for it.

D-25

Amended February 20, 2004



**Table D-2  
2020 FINANCIALLY FEASIBLE HIGHWAY PLAN PROJECTS**

ROAD NAME	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	COST ESTIMATES (FY04-FY20)
<b>FDOT</b>																		
Alton Rd	US 41		Metro Pkwy / SR 723 ext on-ramp	4L	Reopen	0.42												SB payback included in Metro Pkwy / SR 723 ext
Alton Rd			Metro Pkwy / SR 723 ext on-ramp	4L	Reopen SR 723, FID	0.29												SB payback included in Metro Pkwy / SR 723 ext
Countywide			Albany/De Soto		Bridge replacement	158												Response to \$1,500,000 annual, statutory FY 05/07
Countywide					Corporation mitigation & TSM projects	154												\$700,000 annually
Countywide			Cape Coral Bridge, 654-Port Drive, Calumet/Chow Bridge, and Edison Bridge		Incident Management System	104												Total project cost (includes \$220 in 2007) to be funded out of Corporation Mitigation fund
Countywide					Traffic signal control system update	104												Costs FY 04/03
Old Prado Blvd extension	US 41			ITS	FDLE Study	4.08												Cost includes State Grade Rd extension (FDLE study)
Palmer Rd / SR 723			Federal Metro extension	Dr Martin Luther King Jr Blvd / SR 82	4L	SR 723	1.28											CSF share only; ROW included in Florida's 100 corridor project
Franklin Ave extension / SR 723			Metro Pkwy / SR 723 ext of W. Lake Ave	Federal SR 723		Met CL	0.75											Pre-CST phase only by 2010; includes ROW for Center Street extension project
SR 723			Alton Rd	Alpert Access Rd Extension		How SR 723 meets SR 82	1.20											In FHS cost feasible plan
SR 723			Collier County line	Daniels Pkwy / SR 878	4L, Fwy	CL, Fwy	6.73											FHS funds (likely 2008); ROW FY 05/06
SR 723			Daniels Pkwy / SR 878	Colonial Blvd / SR 884	4L, Fwy	CL, Fwy	4.13											In FHS cost feasible plan
SR 723			Colonial Blvd / SR 884	Palms Beach Blvd / SR 84	4L, Fwy	CL, Fwy	4.95											In FHS cost feasible plan
SR 723			Palms Beach Blvd / SR 84	Brykore Road / SR 78	4L, Fwy / Bridge	CL, Fwy / Bridge	2.13											ROW only in FHS cost feasible plan; eligible for GRP COOP funding
SR 723				SR 78			0.73											ROW only in FHS cost feasible plan; eligible for GRP COOP funding
SR 723				SR 878			0.97											FHS funds (likely 2008); ROW funds 04/05
SR 723				SR 884			0.57											FHS funds (likely 2008); ROW funds 04/05
SR 723				SR 84			0.13											In FHS cost feasible plan
SR 723				SR 82			0.15											ROW only in FHS cost feasible plan
SR 723				SR 82			0.53											ROW only in FHS cost feasible plan
SR 723				SR 78			0.50											ROW only in FHS cost feasible plan
SR 723				SR 78			1.05											In FHS cost feasible plan
SR 723				SR 78			0.11											Replaces several surface & sidewalk
SR 723				SR 78			0.24											SB payback only
SR 723				SR 78			2.55											
SR 723				SR 78			0.33											
SR 723				SR 78			1.29											FE in FY 04/05
SR 723				SR 78			4.12											
SR 723				SR 78			0.77											Cost included in Old Prado extension FDLE study
SR 723				SR 78			0.21											
SR 723				SR 78			1.81											ROW portion of the project. Construction and possibly costs of ROW are under Cape Coral portion of plan. See Cape Coral entry for more information.
SR 82 / Dr Martin Luther King Jr Blvd							0.50											ADD SR 82 lane with existing ROW
SR 82 / Dr Martin Luther King Jr Blvd							0.10											
SR 82 / Dr Martin Luther King Jr Blvd							2.15											3rd phase construction
SR 82 / Dr Martin Luther King Jr Blvd							2.30											2nd phase construction
SR 82 / Immokalee Rd							4.13											
SR 82 / Immokalee Rd							1.87											
US 41							2.43											
US 41, SR 723							0.13											
US 41 / Ben Ave / SR 723							1.93											
This table does not imply a commitment on the part of this jurisdiction to complete the projects listed for it. FDLE and Design are not included in cost estimates for FDOT projects																FHS projects subtotal: \$274,397 Other state highway projects subtotal: \$191,758 Total state highway projects: \$466,095 <b>FINANCIAL RESOURCES (0406-1020)</b> FHS funds available: \$274,397 Other statewide and discretionary funds available: \$0 Florida/Highway funds available: \$191,758 Total state & federal financial resources: \$466,237 FHS Balance (Unfunded or Funded From Other Sources): \$0 BALANCE (UNFUNDED): \$144		

Table D-2  
2020 FINANCIALLY FEASIBLE HIGHWAY PLAN PROJECTS

ROAD NAME	FROM	TO	TYPE OF IMPROVEMENT	LENGTH (MILES)	PROJECT COST (\$ MIL)	NOTES	COST ESTIMATE (\$ THOUSAND)
<b>FORT MYERS</b>							
Chaloner Blvd ext	Colonial Blvd	Wilder Ave		New RL	0.24	Y&H work, partial & adjacent to SR 92W	\$1,602
Colonial Blvd / SR 654	Ortiz Ave/Giselle Cypress Pkwy	173 SR ramp intersections	RL	RL	0.26	Median improvement with existing ROW, financed with impact fees	\$450
Commerce Lakes Dr ext	Commerce Lakes Dr	Current system terrace		New RL	2.69	To be funded by Advertiser/developer	
Edison Ave ext	Arcadia St	Ortiz Ave		New RL	0.17		\$2,824
Hanson St	Micha Pkwy	Palmetto Ave	RL	RL	0.73	Right of way acquisition only	\$4,319
Hanson St	Conoco Ave	Palmetto Ave	RL	RL	1.23	Reimbursement of city share (CPI) only	\$1,039
Hanson St ext	Palmetto Ave	Ortiz Ave		New RL	2.24	Eng Street exposure to acquire RL ROW & build local RL by FY 0402; debt financing anticipated	\$5,951
Hanson St ext	Palmetto Ave	Ortiz Ave	RL	RL	2.13	City RL contribution only	\$4,216
Hanson St ext	Ortiz Ave	1/4 mile east of Cypress Lane Rd		New RL	0.75	1/2 mile access	\$6,703
Hanson St ext	SW end of Cypress Lane Rd (Driv)	Marin Lofas King Jr Blvd / SR 62 @ Buckingham Rd ext		New RL	0.12	Opposite Buckingham Rd and W of the 1/4 mile Cypress through	\$4,840
Kachin Rd ext	Hanson St ext	Current terminus		New RL	0.23	Contiguous upon SPTLD acceptance of route	\$1,077
							\$23,088
							\$28,245
							\$6,146

This table does not imply a commitment on the part of this jurisdiction to complete the projects listed for it.

<b>LEE COUNTY</b>							
ROAD NAME	FROM	TO	TYPE OF IMPROVEMENT	LENGTH (MILES)	PROJECT COST (\$ MIL)	NOTES	COST ESTIMATE (\$ THOUSAND)
Alphabet entrance road ext	US 41	173 SR ramp		New RL	2.19	Overpass Lincey Pkwy into LG	\$11,970
Alphabet entrance road ext		Q 173		New purpose & RL, 1/4 mile access	0.56	Connect with SR road (if funded) or through lower frequency crosswalked USA pavement, 1/2 mile into driveway	\$8,604
Alphabet RD Connector	173 SR ramp	Trodine Ave		New RL	0.72		\$6,480
Alphabet RD Connector		Q Trodine Ave/Don Mc Guffin Pkwy		Overpass with partial interchange	0.77		\$4,510
Andra Ln, Ext.	Current terminus	Ukita Pkwy / SR 733		New RL	0.26		\$1,338
Burke Ln ext	Truckee Ln	Ukita Dr		New RL	0.62	Palmetto Rd Rd ext	\$291
Case Rd	700 north of Park Royal Dr	Ch. Soler Dr	RL	RL	0.57		\$1,218
Case Rd ext	Chickadee Dr	Cypress Lake Dr		New RL	1.77		\$8,308
Don Hill Griffin Pkwy	Estero Pkwy ext	Alton Rd	RL	RL	3.18		\$4,800
Don Hill Griffin Pkwy ext	Alton Rd	New airport entrance road	RL	RL	1.30	Eligible for 33% CAG funding	\$3,562
Dick Cheney Blvd ext	SW 22nd St	Almondale Blvd		New RL	1.69	Impact fee credits only; remaining 47% of CBT to be funded by Lehigh Corp	\$18,623
Dunbar Beach Rd	Yanderbush Dr	Yanderbush Dr	RL	RL	3.33		\$15,459
Dunbar Beach Rd		Q US 41		New RL, overpass of US 41	0.92	Fast lane overpass of US 41 over Dunbar Beach Road	\$4,400
Dunbar Grande Dr ext	Coconut Rd ext	Carl Lewis Rd		New RL, no access	2.81		\$16,070
Dunbar Grande Dr ext	Coconut Rd	Estero Pkwy		New RL	0.53		\$2,163
Eng Street	Commerce Rd	US 41	RL	RL	0.58	Connect segment at Red Cedar & Ramsey Way to directional median overpass Add 3rd EB lane to Summerlin & 2nd SR R/L lane to US 41	\$4,200
Buckingham Rd & ext	Marin Lofas King Jr Blvd / SR 62 @ Hanson St ext	Ortiz Rd	RL	RL	2.16	Work on way need to be re-graded - 100' to the 1/4 mile extended @ 23' of W of present intersection with SR 62. Extension to SR 62 @ Hanson St ext W of the Cypress 8' high in contiguous upon SPTLD acceptance of route	\$5,848
Buckingham Rd	Ukita Rd	Coconut Ave ext	RL	RL	1.63		\$4,075
David Stone Rd	Pine Island Rd / SR 73	Griffin Pkwy	RL	RL	1.09	May be eligible for 33% CAG funding; project will include wide coverage where deemed needed	\$1,272
David Stone Rd	Carlson Pkwy	Griffin Pkwy	RL	RL	2.09	May be eligible for 33% CAG funding; project will include wide coverage where deemed needed	\$2,039
David Stone Rd	Griffin Pkwy	Chickadee County Lane	RL	RL	4.14	May be eligible for 33% CAG funding; project will include wide coverage where deemed needed	\$5,509
Delarosa Ave	Buckingham Rd	Coconut Blvd	Part RL	RL (RL on main)	0.22		
Delarosa Blvd	Coconut Ave	Curran Rd	RL	RL	0.42		
Delarosa Blvd ext	Coconut Rd	Delarosa Rd		New RL	0.18		
Delarosa Rd ext	Coconut terminus	Donna Garcia Dr ext		New RL, 1/4 mile access	1.57		\$18,050
Delmar Blvd (prop)	W of Wilder Ave	1/4 mile Trodine Ave ext	RL	RL, 1/4 mile in bus lane/overhead	2.69	1/4 mile approx RL, but, independent only, no access Second 1/4 mile improvement; 1/4 mile supporting @ \$ 2.23 mil (in 98 1:1)	\$52,200
Delmar Blvd	173	SR 62 / Inveshale Rd / Dr ML King Jr Blvd	RL	RL	2.13	FE programmed in FY 0401, CS 1 in 2004	\$1,015
Commerce Lakes Dr ext	Commerce Lakes Dr	Current system terrace		New RL	2.69	To be funded by Advertiser/developer	\$6,953

D-27 Amended February 20, 2004

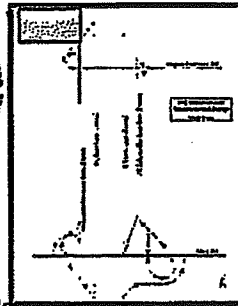
**Table D-2  
2020 FINANCIALLY FEASIBLE HIGHWAY PLAN PROJECTS**

ROAD NAME	Project	Location	PHASE	STATUS	ESTIMATED COST (\$ MIL)	Notes	ESTIMATED COST (\$ MIL)
Carboney Rd	1 mile west of I75	Express road to The Hublot	2L	4L	2.00	CNSA Funding	
Crytal Dr	US 41	Wicko Pkwy / SR 723	2L	4L	1.14	Includes WW line bridge	\$5,540
Crytal Dr	Micro Pkwy / SR 723	Phonetic Rd	2L	4L	0.33		\$1,031
Crytal Dr	Marathon Rd	Seville Cypress Parkway	2L	4L	1.00	Rustonia Parkways Blvd extension	\$2,418
Crytal Dr	Chamblee Pkwy	Smyrna Rd / SR 62	4L	6L	4.74		\$4,228
Old Prada Blvd	Copa Canal Pkwy	SR 70	2L	4L	7.20		\$257
Old Prada Blvd & extension	US 41	I75	pl 2L	pl 4L	4.06	Cost includes Holly Grove Rd extension corridor study	\$313
Erlyne Pkwy ext	Barr H&B Gables Blvd	Banks Circle Dr ext	1 mile 2L	1.20			\$3,780
Fowler St	Cabot Rd / SR 634	Walker Ave	4L	6L	0.34		\$1,338
Gardner Dr	Fire Ridge Rd	Walker Ave	4L	6L	2.13	7L to 4L, from Fire Ridge to East; 4L to 6L, from East to Walker	\$7,547
Gardner Dr	East of Kennesaw Rd	West of US 41	6L	6L	1.00	POLE only by 2010	\$13,833
Gardner Dr-Gis 103 Cypress Pkwy	(US 41)	(US 41)			0.50	Grade separation	\$13,050
Harmon St	Contra Ave	Palmetto Ave	2L	4L	1.71	County share only 60%	\$5,378
Leitchman Rd	Business US 41 / SR 723	Stacy Rd	1 mile 2L	7.18			\$5,733
Leitchman Rd ext	Wickham Dr	Stacy Rd	1 mile 2L	0.17			
Leitchman Rd ext	Chamblee Farm Rd	Stacy Rd	2L	0.25			\$15,747
Leitchman Rd ext	Panola Rd	Stacy Rd	1 mile 2L	2.48			
Leitchman Rd ext	Current terminus @ Preston / Leitchman St	Stacy Rd	1 mile 2L	0.64		Impact fee to be paid only remaining 47% of CSF to be funded by Leitchman Corp	\$1,555
Leitchman Rd & extension	I75	Leitchman Rd / SR 31	pl 2L	pl 4L	0.17	Cost includes 1/2 mile grade Rd extension corridor study	
NE 20th Ave ext	Unimod Pkwy	Old Prada Blvd ext	1 mile 2L	0.73		Adopt or construct Connection 2020 bond. The extension will be funded with unimod bonds for 60% coverage. Project cost split with Lee County LPO. The split will be determined by an interlocal agreement, the split shown on this list is based on geography which will not necessarily resemble the final agreement.	\$348
Orlando Rd - 2 mile L&C connector	Emoryway	Marquette Rd	1 mile 2L	1.43		Adopt or construct Connection 2020 bond	\$4,531
Orly Ave	Dr Martin Luther King Jr Blvd / SR 62	Lawrence Ave	2L	4L	0.21	FE programmed in FY 0001	\$318
Orly Ave	Lawrence Ave	Lawrence Rd	2L	4L	0.49	FE programmed in FY 0001	\$1,424
Orly Ave	Richard Rd	Lawrence Rd	2L	4L	0.25	FE programmed in FY 0001	\$709
Palmetto Rd bridge	(US 41)	(US 41)			0.08		\$55.8
Palmetto Rd ext (S)	Airport interchange road extension	Current south terminus	1 mile 2L & bridge	0.70			\$62.8
Palmetto Rd ext	SR 634	SR 634 / SR 634 (Q) Palmetto Ave	2L	4L	0.13	Programmed in FY 04/07	\$2,503
Palmetto Rd ext	SR 634	SR 634 / SR 634 (R) Palmetto Ave	2L	4L	0.13	Stored investment	\$1,710
Palmetto Rd	US 41	SR 634	2L	4L	0.13		\$12,013
Palmetto Rd	US 41	SR 634 / SR 634 (R) Palmetto Ave	4L	6L	0.18		\$4,450
Parry Ln ext	East of SR 634	Palmetto Rd	1 mile 2L	0.71		Adopt or construct Connection 2020 bond	\$18,418
SR 634 Cypress Pkwy	East of US 41	Palmetto Rd	4L	6L	1.14		\$3,050
SR 634 Cypress Pkwy	SR 634	Palmetto Rd	2L	4L	1.12		\$3,718
SR 634	SR 634	Palmetto Rd	2L	4L	1.28		\$2,978
SR 634	SR 634	Palmetto Rd	2L	4L	1.18		\$3,000
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$4,872
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$1,708
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$1,035
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$18,855
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$3,902
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$3,220
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$753
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$2,488
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$11,559
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$4,837
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$1,538
SR 634	SR 634	Palmetto Rd	2L	4L	1.12		\$1,538

This table does not imply a commitment on the part of this jurisdiction to complete the projects listed for it.

<b>Subtotal:</b>		<b>\$414,052</b>
<b>FINANCIAL RESOURCES (03/06-12/20)</b>		
From established sources:	\$366,418	
New toll revenue bonds:	\$62,100	
<b>Total financial resources:</b>	<b>\$417,616</b>	
<b>BALANCE AVAILABLE FOR OTHER COUNTY PROJECTS (UNFUNDED):</b>	<b>\$3,464</b>	

**GRAND TOTAL: \$417,616**



**Existing & Committed Roads**

- 2 Lanes
- 3 Lanes (2+1 Lanes)
- 4 Lanes
- 6 Lanes
- 8 Lanes

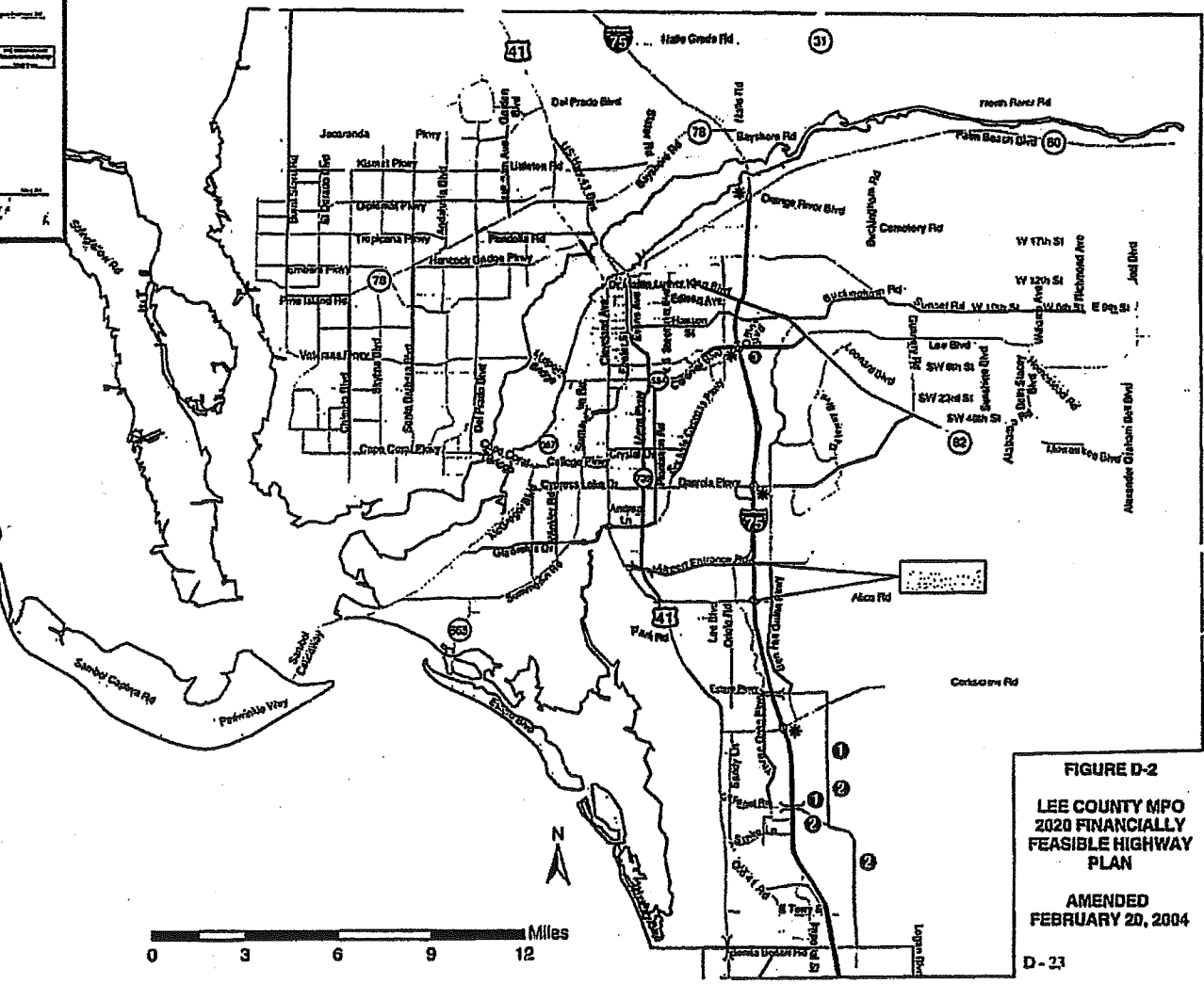
**Financially Feasible Improvements**

- New Interchanges
- 2 Lanes
- 3 Lanes (2+1 Lanes)
- 3 Lanes (One Way)
- 4 Lanes
- 5 Lanes (3+2 Lanes)
- 6 Lanes
- 7 Lanes (4+3 Lanes)
- 8 Lanes
- Overpass
- \* Interchanges Improvements
- Future Corridor Evaluation

The lines on this plan represent only the general centerline. Specific alignments will be determined through corridor and design studies.

**NOTES APPLYING TO SPECIFIC IMPROVEMENTS**

- 1 No access should be permitted to these roads east of I 75, south of Coopers Road, and north of the Santa Spinks city limits.
- 2 The feasibility and alignment of these roads should be determined through studies that specifically address their growth management and environmental impacts, including their secondary and cumulative effects on traffic, water, and water management. Existing State Lanes should be evaluated as an alternative to extending Coconut Road east of I 75.
- 3 A 4 lane full access ramp, open to transportation users only, with the access points on road, is to be constructed when the median at Coconut Boulevard runs west of Walker Avenue to east of Trolley Avenue.



**FIGURE D-2**  
**LEE COUNTY MPO**  
**2020 FINANCIALLY**  
**FEASIBLE HIGHWAY**  
**PLAN**  
**AMENDED**  
**FEBRUARY 20, 2004**  
**D - 23**



U.S. Department  
of Transportation  
Federal Aviation  
Administration

ORLANDO AIRPORTS DISTRICT OFFICE  
5950 Hazeltine National Dr., Suite 400  
Orlando, Florida 32822-5024  
Phone: (407) 812-6331 Fax: (407) 812-6978

April 14, 2004

Mr. Robert M. Ball, A.A.E.  
Executive Director  
Lee County Port Authority  
16000 Chamberlin Parkway  
Suite 8671  
Fort Myers, Florida 33913-8899

Dear Mr. Ball:

RE: Southwest Florida International Airport; Fort Myers, Florida  
Master Plan Acceptance and ALP Approval

The Federal Aviation Administration (FAA) accepts your Airport Master Plan and conditionally approves your Airport Layout Plan (ALP) dated March 2004 for Southwest Florida International Airport with the exception of the following items of development, which were unconditionally approved in accordance with the Finding of No Significant Impact dated March 10, 1994:

Construction of a 9,100 foot runway with an associated midfield development area, navigational aids, terminal access roadways, taxiways, marking, lighting, drainage and flood control systems, additional airport support service facilities (ATCT, ARFF, etc.), and land acquisition, necessary for the runway, midfield development complex, and related mitigation areas.

FAA approval of your ALP means that all existing and proposed airport development shown on the plan meets current FAA airport design standards or a currently approved modification of the design standards that provide an acceptable level of safety at your airport. It also means that we find the proposed airport development shown on the plan useful and efficient. However, our approval does not represent a commitment to provide federal financial assistance to implement any development or air navigation facilities shown on the plan, nor does it mean that we find funding of the proposed airport development justified.

FAA acceptance of your Airport Master Plan means that it complies with the scope of work. The contents of your Airport Master Plan reflect the views of the Lee County Port Authority, which is responsible for the facts and accuracy of the data presented. As with

the ALP approval, acceptance of your Airport Master Plan does not represent a commitment to provide federal financial assistance to implement any development or air navigation facilities shown on the plan, nor does it mean that we find funding of the proposed airport development justified.

Please note that the Airport Master Plan forecast is not within 10 percent of FAA's Terminal Area Forecast (TAF). The justification for the forecast in the Airport Master Plan report does not support a revision of the TAF. Therefore, please understand that FAA's future decisions regarding federal funding of development on your airport will be based on the TAF rather than the Airport Master Plan forecast.

Please be aware that you are required to notify this office at least 60 days prior to the start of construction of any facilities on the airport. Also, this conditional ALP approval does not constitute airspace approval for aircraft parking aprons or structures. Prior to the start of construction of these facilities, you must submit proper notification to our office and receive FAA airspace approval.

We look forward to working with you in the continued development of your airport.

Sincerely,

04/15/04 10:15 By

Bart Vernace, P.E.  
Assistant Manager

Enclosure (1 ALP)

cc:

ASO-520 (with 1 ALP)  
ATL-FPO (with 2 ALPs)  
ASO-472 (with 1 ALP)  
ASO-620 (with 1 ALP)  
FDOT/1  
Steven Ritter, ESA

ORL-623:Jbrown:alb:4/15/04

P:/Juan/rsw updated alp.doc



*Florida Department of Transportation*

JED BUSH  
GOVERNOR

JOSE ABREU  
SECRETARY

May 7, 2004

Ms. Juliet Iglesias  
Lee County Port Authority  
16000 Chamberlin Parkway  
Ft. Myers, FL 33913-8899

Re: FM: 206603-1-94-01 Southwest Florida International Airport Master Plan

Dear Ms. Iglesias:

We have reviewed the Southwest Florida International Airport Master Plan Update and ALP. It has been determined to be in substantial compliance with the FDOT Guidebook for Airport Master Planning and is approved for use.

Sincerely,

Terry W. Beacham  
Aviation/Intermodal Agency Liaison

TWB/twb

cc: Wayne L. Chewning, Aviation/Intermodal Administrator

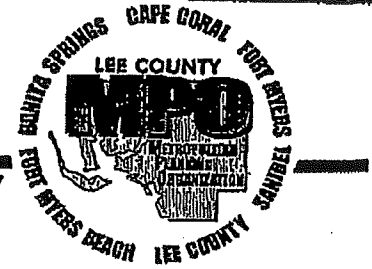
District One, Public Transportation Office  
801 North Broadway Avenue\*Post Office Box 1249\*Bartow, FL 33831-1249  
(863)519-2300\*(863)534-7172\*MS 1-39

received  
4/14/04

POST OFFICE BOX 3455  
NORTH FORT MYERS, FL 33918-3455

Ph. (239) 656-7720 Suncom 749-7720  
Fax (239) 656-7724 Sunfax 749-7724  
E-Mail: mpo@swfpc.org

Lee County Electric Co-op Building, 4th floor, 4980 Bayline Drive, 33917



April 12, 2004

Bill Horner  
Southwest Florida International Airport  
16000 Chamberlin Parkway, Suite 8671  
Fort Myers, FL 33913-8899

RE: Airport-generated trips in the MPO's travel demand model

Dear Bill:

Federal and state law created metropolitan planning organizations (MPOs) to be multimodal transportation planning agencies, and particularly stress that they must plan for efficient connections among the various transportation modes, including shipping and aviation. Recognizing the fundamental importance of the Southwest Florida International Airport to this region's economy, the Lee County MPO's long range transportation plan treats it as a crucial intermodal facility that is an integral part of the region's transportation system. Since aviation system and facility planning are not part of the metropolitan transportation planning process under the state and federal laws governing aviation and MPOs, the Lee County MPO treats the airport master plan for Southwest Florida International Airport and its forecast of aviation activity as givens that the MPO's transportation plan is obliged to accommodate by planning for the most efficient access to the airport, considering financial, environmental, and community impact constraints. The MPO plan includes a number of projects particularly intended to facilitate access to the new midfield terminal, although the plan does count on winning state and federal discretionary funding in order to implement some of these projects.

We have verified that the forecasts of average daily peak season trip generation by Southwest Florida International Airport in 2010 and 2020 that the Lee County MPO used in the travel demand modeling upon which the MPO's long range transportation plan was based were consistent with those in the Lee County Port Authority's comprehensive plan amendment.

Since Southwest Florida International Airport is a uniquely regional generator, the Lee County MPO's travel model distributes airport trips separately from other trips rather than with the gravity model algorithm used for other internal trips. The airport trips are distributed based on the population and number of hotel/motel units forecast for each traffic analysis zone (TAZ) among all the TAZs in the modeling area, which includes all of Lee and Charlotte Counties lying southeast of Charlotte Harbor and the Peace River, plus Collier County south to the intersection of US 41 and SR 951 and east to the interchange of I 75 with SR 29. The distributed airport trips are then preloaded into the model and assigned to the road network before other trips.

Sincerely,

LEE COUNTY METROPOLITAN PLANNING ORGANIZATION

Glen H. Ahlert  
MPO Staff Director

cc: Matt Noble, Lee County Planning Department





U.S. Department  
of Transportation

Federal Aviation  
Administration

# Advisory Circular

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**Subject:** HAZARDOUS WILDLIFE ATTRACTANTS ON  
OR NEAR AIRPORTS

**Date:** 5/1/97

**AC No:** 150/5200-33

**Initiated by:**

**Change:**

AAS-310 and APP-600

---

**1. PURPOSE.** This advisory circular (AC) provides guidance on locating certain land uses having the potential to attract hazardous wildlife to or in the vicinity of public-use airports. It also provides guidance concerning the placement of new airport development projects (including airport construction, expansion, and renovation) pertaining to aircraft movement in the vicinity of hazardous-wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

**2. APPLICATION.** The standards, practices, and suggestions contained in this AC are recommended by the Federal Aviation Administration (FAA) for use by the operators and sponsors of all public-use airports. In addition, the standards, practices, and suggestions contained in this AC are recommended by the FAA as guidance for land use planners, operators, and developers of projects, facilities, and activities on or near airports.

**3. BACKGROUND.** Populations of many species of wildlife have increased markedly in the

last few years. Some of these species are able to adapt to human-made environments, such as exist on and around airports. The increase in wildlife populations, the use of larger turbine engines, the increased use of twin-engine aircraft, and the increase in air-traffic, all combine to increase the risk, frequency, and potential severity of wildlife-aircraft collisions.

Most public-use airports have large tracts of open, unimproved land that are desirable for added margins of safety and noise mitigation. These areas can present potential hazards to aviation because they often attract hazardous wildlife. During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives world-wide, as well as billions of dollars worth of aircraft damage. Hazardous wildlife attractants near airports could jeopardize future airport expansion because of safety considerations.

DAVID L. BENNETT  
Director, Office of Airport Safety and Standards

## SECTION 1. HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.

**1-1. TYPES OF HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.** Human-made or natural areas, such as poorly-drained areas, retention ponds, roosting habitats on buildings, landscaping, putrescible-waste disposal operations, wastewater treatment plants, agricultural or aquacultural activities, surface mining, or wetlands, may be used by wildlife for escape, feeding, loafing, or reproduction. Wildlife use of areas within an airport's approach or departure airspace, aircraft movement areas, loading ramps, or aircraft parking areas may cause conditions hazardous to aircraft safety.

All species of wildlife can pose a threat to aircraft safety. However, some species are more commonly involved in aircraft strikes than others. Table 1 lists the wildlife groups commonly reported as being involved in damaging strikes to U.S. aircraft from 1993 to 1995.

**Table 1. Wildlife Groups Involved in Damaging Strikes to Civilian Aircraft, USA, 1993-1995.**

Wildlife Groups	Percent involvement in reported damaging strikes
Gulls	28
Waterfowl	28
Raptors	11
Doves	6
Vultures	5
Blackbirds-	5
Starlings	
Corvids	3
Wading birds	3
Deer	11
Canids	1

**1-2. LAND USE PRACTICES.** Land use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions. FAA recommends against land use practices, within the siting criteria stated in 1-3, that attract or sustain populations of hazardous wildlife within the vicinity of airports or cause movement of hazardous wildlife onto, into, or across the approach or departure airspace, aircraft movement area, loading ramps, or aircraft parking area of airports.

Airport operators, sponsors, planners, and land use developers should consider whether proposed land uses, including new airport development projects, would increase the wildlife hazard. Caution should be exercised to ensure that land use practices on or near airports do not enhance the attractiveness of the area to hazardous wildlife.

**1-3. SITING CRITERIA.** FAA recommends separations when siting any of the wildlife attractants mentioned in Section 2 or when planning new airport development projects to accommodate aircraft movement. The distance between an airport's aircraft movement areas, loading ramps, or aircraft parking areas and the wildlife attractant should be as follows:

a. Airports serving piston-powered aircraft. A distance of 5,000 feet is recommended.

b. Airports serving turbine-powered aircraft. A distance of 10,000 feet is recommended.

c. Approach or Departure airspace. A distance of 5 statute miles is recommended, if the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace.

## SECTION 2. LAND USES THAT ARE INCOMPATIBLE WITH SAFE AIRPORT OPERATIONS.

**2-1. GENERAL.** The wildlife species and the size of the populations attracted to the airport environment are highly variable and may depend on several factors, including land-use practices on or near the airport. It is important to identify those land use practices in the airport area that attract hazardous wildlife. This section discusses land use practices known to threaten aviation safety.

**2-2. PUTRESCIBLE-WASTE DISPOSAL OPERATIONS.** Putrescible-waste disposal operations are known to attract large numbers of wildlife that are hazardous to aircraft. Because of this, these operations, when located within the separations identified in the siting criteria in 1-3 are considered incompatible with safe airport operations.

FAA recommends against locating putrescible-waste disposal operations inside the separations identified in the siting criteria mentioned above. FAA also recommends against new airport development projects that would increase the number of aircraft operations or that would accommodate larger or faster aircraft, near putrescible-waste disposal operations located within the separations identified in the siting criteria in 1-3.

**2-3. WASTEWATER TREATMENT FACILITIES.** Wastewater treatment facilities and associated settling ponds often attract large numbers of wildlife that can pose a threat to aircraft safety when they are located on or near an airport.

**a. New wastewater treatment facilities.** FAA recommends against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in the siting criteria in 1-3. During the siting analysis for wastewater treatment facilities, the potential to attract hazardous wildlife should be considered if an airport is in the vicinity of a proposed site. Airport operators should voice their opposition to such sitings. In addition, they should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.

**b. Existing wastewater treatment facilities.** FAA recommends correcting any wildlife hazards arising from existing wastewater treatment facilities located on or near airports without delay, using appropriate wildlife hazard mitigation techniques. Accordingly, measures to minimize hazardous wildlife attraction should be developed in consultation with a wildlife damage management biologist. FAA recommends that wastewater treatment facility operators incorporate appropriate wildlife hazard mitigation techniques into their operating practices. Airport operators also should encourage those operators to incorporate these mitigation techniques in their operating practices.

**c. Artificial marshes.** Waste-water treatment facilities may create artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. FAA recommends against establishing artificial marshes within the separations identified in the siting criteria stated in 1-3.

**d. Wastewater discharge and sludge disposal.** FAA recommends against the discharge of wastewater or sludge on airport property. Regular spraying of wastewater or sludge disposal on unpaved areas may improve soil moisture and quality. The resultant turf growth requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw. The maimed or flushed organisms and the straw can attract hazardous wildlife and jeopardize aviation safety. In addition, the improved turf may attract grazing wildlife such as deer and geese.

Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

**e. Underwater waste discharges.** The underwater discharge of any food waste, e.g., fish processing offal, that could attract scavenging wildlife is not recommended within the separations identified in the siting criteria in 1-3.

**2-4. WETLANDS.****a. Wetlands on or near Airports.**

(1) **Existing Airports.** Normally, wetlands are attractive to many wildlife species. Airport operators with wetlands located on or nearby airport property should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations.

(2) **Airport Development.** When practicable, the FAA recommends siting new airports using the separations identified in the siting criteria in 1-3. Where alternative sites are not practicable or when expanding existing airports in or near wetlands, the wildlife hazards should be evaluated and minimized through a wildlife management plan prepared by a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (COE).

**NOTE:** If questions exist as to whether or not an area would qualify as a wetland, contact the U.S. Army COE, the Natural Resource Conservation Service, or a wetland consultant certified to delineate wetlands.

**b. Wetland mitigation.** Mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects. Wetland mitigation should be designed so it does not create a wildlife hazard.

(1) FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations

identified in the siting criteria in 1-3. Wetland mitigation banks meeting these siting criteria offer an ecologically sound approach to mitigation in these situations.

(2) Exceptions to locating mitigation activities outside the separations identified in the siting criteria in 1-3 may be considered if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge. Such mitigation must be compatible with safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife should be avoided. On-site mitigation plans may be reviewed by the FAA to determine compatibility with safe airport operations.

(3) Wetland mitigation projects that are needed to protect unique wetland functions (see 2-4.b.(2)), and that must be located in the siting criteria in 1-3 should be identified and evaluated by a wildlife damage management biologist before implementing the mitigation. A wildlife damage management plan should be developed to reduce the wildlife hazards.

**NOTE:** AC 150/5000-3, *Address List for Regional Airports Division and Airports District/Field Offices*, provides information on the location of these offices.

**2-5. DREDGE SPOIL CONTAINMENT AREAS.** FAA recommends against locating dredge spoil containment areas within the separations identified in the siting criteria in 1-3, if the spoil contains material that would attract hazardous wildlife.

### SECTION 3. LAND USES THAT MAY BE COMPATIBLE WITH SAFE AIRPORT OPERATIONS.

**3-1. GENERAL.** Even though they may, under certain circumstances, attract hazardous wildlife, the land use practices discussed in this section have flexibility regarding their location or operation and may even be under the airport operator's or sponsor's control. In general, the FAA does not consider the activities discussed below as hazardous to aviation if there is no apparent attraction to hazardous wildlife, or wildlife hazard mitigation techniques are implemented to deal effectively with any wildlife hazard that may arise.

**3-2. ENCLOSED WASTE FACILITIES.** Enclosed trash transfer stations or enclosed waste handling facilities that receive garbage indoors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles, generally would be compatible, from a wildlife perspective, with safe airport operations, provided they are not located on airport property or within the runway protection zone (RPZ). No putrescible-waste should be handled or stored outside at any time, for any reason, or in a partially enclosed structure accessible to hazardous wildlife.

Partially enclosed operations that accept putrescible-waste are considered to be incompatible with safe airport operations. FAA recommends these operations occur outside the separations identified in the siting criteria in 1-3.

**3-3. RECYCLING CENTERS.** Recycling centers that accept previously sorted, non-food items such as glass, newspaper, cardboard, or aluminum are, in most cases, not attractive to hazardous wildlife.

**3-4. COMPOSTING OPERATIONS ON AIRPORTS.** FAA recommends against locating composting operations on airports. However, when they are located on an airport, composting operations should not be located closer than the greater of the following distances: 1,200 feet from any aircraft movement area, loading ramp, or aircraft parking space; or the distance called for by airport design requirements. This spacing is intended to prevent material, personnel, or equipment from penetrating any Obstacle Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway (see AC 150/5300-13, *Airport Design*). On-airport disposal of compost by-products is not recommended for the reasons stated in 2-3.d.

**a. Composition of material handled.** Components of the compost should never include any municipal solid waste. Non-food waste such as leaves, lawn clippings, branches, and twigs generally are not considered a wildlife attractant. Sewage sludge, wood-chips, and similar material are not municipal solid wastes and may be used as compost bulking agents.

**b. Monitoring on-airport composting operations.** If composting operations are to be located on airport property, FAA recommends that the airport operator monitor composting operations to ensure that steam or thermal rise does not affect air traffic in any way. Discarded leaf disposal bags or other debris must not be allowed to blow onto any active airport area. Also, the airport operator should reserve the right to stop any operation that creates unsafe, undesirable, or incompatible conditions at the airport.

**3-5. ASH DISPOSAL.** Fly ash from resource recovery facilities that are fired by municipal solid waste, coal, or wood, is generally considered not to be a wildlife attractant because it contains no putrescible matter. FAA generally does not consider landfills accepting only fly ash to be wildlife attractants, if those landfills: are maintained in an orderly manner; admit no putrescible-waste of any kind; and are not co-located with other disposal operations.

Since varying degrees of waste consumption are associated with general incineration, FAA classifies the ash from general incinerators as a regular waste disposal by-product and, therefore, a hazardous wildlife attractant.

**3-6. CONSTRUCTION AND DEMOLITION (C&D) DEBRIS LANDFILLS.** C&D debris (Class IV) landfills have visual and operational characteristics similar to putrescible-waste disposal sites. When co-located with putrescible-waste disposal operations, the probability of hazardous wildlife attraction to C&D landfills increases because of the similarities between these disposal activities.

FAA generally does not consider C&D landfills to be hazardous wildlife attractants, if those landfills: are maintained in an orderly manner; admit no putrescible-waste of any kind; and are not co-located with other disposal operations.

**3-7. WATER DETENTION OR RETENTION PONDS.** The movement of storm water away from runways, taxiways, and aprons is a normal function on most airports and is necessary for safe aircraft operations. Detention ponds hold storm water for short periods, while retention ponds hold water indefinitely. Both types of ponds control runoff, protect water quality, and can attract hazardous wildlife. Retention ponds are more attractive to hazardous wildlife than detention ponds because they provide a more reliable water source.

To facilitate hazardous wildlife control, FAA recommends using steep-sided, narrow, linearly-shaped, rip-rap lined, water detention basins rather than retention basins. When possible, these ponds should be placed away from aircraft movement areas to minimize aircraft-wildlife interactions. All vegetation in or around detention or retention basins that provide food or cover for hazardous wildlife should be eliminated.

If soil conditions and other requirements allow, FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

**3-8. LANDSCAPING.** Wildlife attraction to landscaping may vary by geographic location. FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. All landscaping plans should be reviewed by a wildlife damage management biologist. Landscaped areas should be monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be implemented immediately.

**3-9. GOLF COURSES.** Golf courses may be beneficial to airports because they provide open space that can be used for noise mitigation or by aircraft during an emergency. On-airport golf courses may also be a concurrent use that provides income to the airport.

Because of operational and monetary benefits, golf courses are often deemed compatible land uses on or near airports. However, waterfowl (especially Canada geese) and some species of gulls are attracted to the large, grassy areas and open water found on most golf courses. Because waterfowl and gulls occur throughout the U.S., FAA recommends that airport operators exercise caution and consult with a wildlife damage management biologist when considering proposals for golf

course construction or expansion on or near airports. Golf courses should be monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be implemented immediately.

**3-10. AGRICULTURAL CROPS.** As noted above, airport operators often promote revenue-generating activities to supplement an airport's financial viability. A common concurrent use is agricultural crop production. Such use may create potential hazards to aircraft by attracting wildlife. Any proposed on-airport agricultural operations should be reviewed by a wildlife damage management biologist. FAA generally does not object to agricultural crop production on airports when: wildlife hazards are not predicted; the guidelines for the airport areas specified in 3-10.a-f. are observed; and the agricultural operation is closely monitored by the airport operator or sponsor to ensure that hazardous wildlife are not attracted.

**NOTE:** If wildlife becomes a problem due to on-airport agricultural operations, FAA recommends undertaking the remedial actions described in 3-10.f.

**a. Agricultural activities adjacent to runways.** To ensure safe, efficient aircraft operations, FAA recommends that no agricultural activities be conducted in the Runway Safety Area (RSA), OFA, and the OFZ (see AC 150/5300-13).

**b. Agricultural activities in areas requiring minimum object clearances.** Restricting agricultural operations to areas outside the RSA, OFA, OFZ, and Runway Visibility Zone (RVZ) (see AC 150/5300-13) will normally provide the minimum object clearances required by FAA's airport design standards. FAA recommends that farming operations not be permitted within areas critical to the proper operation of localizers, glide slope indicators, or other visual or electronic navigational aids. Determinations of minimal areas that must be kept free of farming operations should be made on a case-by-case basis. If navigational aids are present, farm leases for on-airport agricultural activities should be coordinated with FAA's Airway Facilities Division, in accordance with FAA Order 6750.16, *Siting Criteria for Instrument Landing Systems*.

**NOTE:** Crop restriction lines conforming to the dimensions set forth in Table 2 will normally provide the minimum object clearance required by

FAA airport design standards. The presence of navigational aids may require expansion of the restricted area.

c. Agricultural activities within an airport's approach areas. The RSA, OFA, and OFZ all extend beyond the runway shoulder and into the approach area by varying distances. The OFA normally extends the farthest and is usually the controlling surface. However, for some runways, the TSS (see AC 150/5300-13, Appendix 2) may be more controlling than the OFA. The TSS may not be penetrated by any object. The minimum distances shown in Table 2 are intended to prevent penetration of the OFA, OFZ, or TSS by crops or farm machinery.

NOTE: Threshold Siting standards should not be confused with the approach areas described in Title 14, Code of Federal Regulations, Part 77, (14 CFR 77), *Objects Affecting Navigable Airspace*

d. Agricultural activities between intersecting runways. FAA recommends that no agricultural activities be permitted within the RVZ. If the terrain is sufficiently below the runway elevation, some types of crops and equipment may be acceptable. Specific determinations of what is permissible in this area requires topographical data. For example, if the terrain within the RVZ is level with the runway ends, farm machinery or crops may interfere with a pilot's line-of-sight in the RVZ.

e. Agricultural activities in areas adjacent to taxiways and aprons. Farming activities should not be permitted within a taxiway's OFA. The outer portions of aprons are frequently used as a taxilane and farming operations should not be permitted within the OFA. Farming operations should not be permitted between runways and parallel taxiways.

f. Remedial actions for problematic agricultural activities. If a problem with hazardous wildlife develops, FAA recommends that a professional wildlife damage management biologist be contacted and an on-site inspection be conducted. The biologist should be requested to determine the source of the hazardous wildlife attraction and suggest remedial action. Regardless of the source of the attraction, prompt remedial actions to protect aviation safety are recommended. The remedial actions may range from choosing another crop or farming technique to complete termination of the agricultural operation.

Whenever on-airport agricultural operations are stopped due to wildlife hazards or annual harvest, FAA recommends plowing under all crop residue and harrowing the surface area smooth. This will reduce or eliminate the area's attractiveness to foraging wildlife. FAA recommends that this requirement be written into all on-airport farm use contracts and clearly understood by the lessee.

Table 2. Minimum Distances Between Certain Airport Features And Any On-Airport Agriculture Crops.

Aircraft Approach Category And Design Group <sup>1</sup>	Distance In Feet From Runway Centerline To Crop		Distance In Feet From Runway End To Crop		Distance In Feet From Centerline Of Taxiway To Crop	Distance In Feet From Edge Of Apron To Crop
	Visual & $\geq \frac{1}{4}$ mile	$< \frac{1}{4}$ mile	Visual & $\geq \frac{1}{4}$ mile	$< \frac{1}{4}$ mile		
<b>Category A &amp; B Aircraft</b>						
Group I	200 <sup>2</sup>	400	300 <sup>3</sup>	600	45	40
Group II	250	400	400 <sup>3</sup>	600	66	58
Group III	400	400	600	800	93	81
Group IV	400	400	1,000	1,000	130	113
<b>Category C, D &amp; E Aircraft</b>						
Group I	530 <sup>3</sup>	575 <sup>3</sup>	1,000	1,000	45	40
Group II	530 <sup>3</sup>	575 <sup>3</sup>	1,000	1,000	66	58
Group III	530 <sup>3</sup>	575 <sup>3</sup>	1,000	1,000	93	81
Group IV	530 <sup>3</sup>	575 <sup>3</sup>	1,000	1,000	130	113
Group V	530 <sup>3</sup>	575 <sup>3</sup>	1,000	1,000	160	138
Group VI	530 <sup>3</sup>	575 <sup>3</sup>	1,000	1,000	193	167

1. Design Groups are based on wing span, and Category depends on approach speed of the aircraft.

Group I: Wing span up to 49 ft.

Group II: Wing span 49ft. up to 78 ft.

Group III: Wing span 79 ft. up to 117 ft.

Group IV: Wing span 118 ft. up to 170 ft.

Group V: Wing span 171 ft. up to 213 ft.

Group VI: Wing span 214 ft. up to 261 ft.

Category A:

Speed less than 91 knots

Category B:

Speed 91 knots up to 120 knots

Category C:

Speed 121 knots up to 140 knots

Category D:

Speed 141 knots up to 165 knots

Category E:

Speed 166 knots or more

2. If the runway will only serve small airplanes (12,500 lb. and under) in Design Group I, this dimension may be reduced to 125 feet; however, this dimension should be increased where necessary to accommodate visual navigational aids that may be installed. For example farming operations should not be allowed within 25 feet of a Precision Approach Path Indicator (PAPI) light box.

3. These dimensions reflect the TSS as defined in AC 150/5300-13, Appendix 2. The TSS cannot be penetrated by any object. Under these conditions, the TSS is more restrictive than the OFA, and the dimensions shown here are to prevent penetration of the TSS by crops and farm machinery.



## SECTION 4. NOTIFICATION OF FAA ABOUT HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AN AIRPORT.

**4-1. GENERAL.** Airport operators, land developers, and owners should notify the FAA in writing of known or reasonably foreseeable land use practices on or near airports that either attract or may attract hazardous wildlife. This section discusses those notification procedures.

**4-2. NOTIFICATION REQUIREMENTS FOR WASTE DISPOSAL SITE OPERATIONS.** The Environmental Protection Agency (EPA) requires any operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, section 258.10, *Airport Safety*). The EPA also requires owners or operators of new municipal solid waste landfill (MSWLF) units, or lateral expansions of existing MSWLF units that are located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft.

**a. Timing of Notification.** When new or expanded MSWLFs are being proposed near airports, MSWLF operators should notify the airport operator and the FAA of this as early as possible pursuant to 40 CFR Part 258. Airport operators should encourage the MSWLF operators to provide notification as early as possible.

**NOTE:** AC 150/5000-3 provides information on these FAA offices.

**b. Putrescible-Waste Facilities.** In their effort to satisfy the EPA requirement, some putrescible-waste facility proponents may offer to undertake experimental measures to demonstrate that their proposed facility will not be a hazard to aircraft. To date, the ability to sustain a reduction in the numbers of hazardous wildlife to levels that existed before a putrescible-waste landfill began operating has not been successfully demonstrated. For this reason, demonstrations of experimental wildlife control measures should not be conducted in active aircraft operations areas.

**c. Other Waste Facilities.** To claim successfully that a waste handling facility sited within the separations identified in the siting criteria in 1-3

does not attract hazardous wildlife and does not threaten aviation, the developer must establish convincingly that the facility will not handle putrescible material other than that as outlined in 3-2. FAA requests that waste site developers provide a copy of an official permit request verifying that the facility will not handle putrescible material other than that as outlined in 3-2. FAA will use this information to determine if the facility will be a hazard to aviation.

**4-3. NOTIFYING FAA ABOUT OTHER WILDLIFE ATTRACTANTS.** While U. S. EPA regulations require landfill owners to provide notification, no similar regulations require notifying FAA about changes in other land use practices that can create hazardous wildlife attractants. Although it is not required by regulation, FAA requests those proposing land use changes such as those discussed in 2-3, 2-4, and 2-5 to provide similar notice to the FAA as early in the development process as possible. Airport operators that become aware of such proposed development in the vicinity of their airports should also notify the FAA. The notification process gives the FAA an opportunity to evaluate the effect of a particular land use change on aviation safety.

The land use operator or project proponent may use FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents to notify the appropriate FAA Regional Airports Division Office.

It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land use operator or project proponent should also forward specific details of the proposed land use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

### 4-5. FAA REVIEW OF PROPOSED LAND USE CHANGES.

**a.** The FAA discourages the development of facilities discussed in section 2 that will be located within the 5,000/10,000-foot criteria in 1-3.

b. For projects which are located outside the 5,000/10,000-foot criteria, but within 5 statute miles of the airport's aircraft movement areas, loading ramps, or aircraft parking areas, FAA may review development plans, proposed land use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. Sensitive airport areas will be identified as those that lie under or next to approach or departure airspace. This brief examination should be sufficient to determine if further investigation is warranted.

c. Where further study has been conducted by a wildlife damage management biologist to evaluate a site's compatibility with airport operations, the FAA will use the study results to make its determination.

d. FAA will discourage the development of any excepted sites (see Section 3) within the criteria specified in 1-3 if a study shows that the area supports hazardous wildlife species.

**4-6. AIRPORT OPERATORS.** Airport operators should be aware of proposed land use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in the siting criteria in 1-3. Particular attention should be given to proposed land uses involving creation or expansion of waste water treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas.

a. **AIP-funded airports.** FAA recommends that operators of AIP-funded airports, to the extent practicable, oppose off-airport land use changes or practices (within the separations identified in the siting criteria in 1-3) that may attract hazardous wildlife. Failure to do so could place the airport operator or sponsor in noncompliance with applicable grant assurances.

FAA recommends against the placement of airport development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants. Airport operators, sponsors, and planners should identify wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects.

b. **Additional coordination.** If, after the initial review by FAA, questions remain about the existence of a wildlife hazard near an airport, the airport operator or sponsor should consult a wildlife damage management biologist. Such questions may be triggered by a history of wildlife strikes at the airport or the proximity of the airport to a wildlife refuge, body of water, or similar feature known to attract wildlife.

c. **Specialized assistance.** If the services of a wildlife damage management biologist are required, FAA recommends that land use developers or the airport operator contact the appropriate state director of the United States Department of Agriculture/Animal Damage Control (USDA/ADC), or a consultant specializing in wildlife damage management. Telephone numbers for the respective USDA/ADC state offices may be obtained by contacting USDA/ADC's Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157. The ADC biologist or consultant should be requested to identify and quantify wildlife common to the area and evaluate the potential wildlife hazards.

d. **Notifying airmen.** If an existing land use practice creates a wildlife hazard, and the land use practice or wildlife hazard cannot be immediately eliminated, the airport operator should issue a Notice to Airmen (NOTAM) and encourage the land owner or manager to take steps to control the wildlife hazard and minimize further attraction.

## APPENDIX 1. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR.

**1. GENERAL.** This appendix provides definitions of terms used throughout this AC.

**a. Aircraft movement area.** The runways, taxiways, and other areas of an airport which are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft exclusive of loading ramps and aircraft parking areas.

**b. Airport operator.** The operator (private or public) or sponsor of a public use airport.

**c. Approach or departure airspace.** The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.

**d. Concurrent use.** Aeronautical property used for compatible non-aviation purposes while at the same time serving the primary purpose for which it was acquired; and the use is clearly beneficial to the airport. The concurrent use should generate revenue to be used for airport purposes (see Order 5190.6A, *Airport Compliance Requirements*, sect. 5h).

**e. Fly ash.** The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.

**f. Hazardous wildlife.** Wildlife species that are commonly associated with wildlife-aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a wildlife-aircraft strike hazard.

**g. Piston-use airport.** Any airport that would primarily serve FIXED-WING, piston-powered aircraft. Incidental use of the airport by turbine-powered, FIXED-WING aircraft would not affect this designation. However, such aircraft should not be based at the airport.

**h. Public-use airport.** Any publicly owned airport or a privately-owned airport used or intended to be used for public purposes.

**i. Putrescible material.** Rotting organic material.

**j. Putrescible-waste disposal operation.** Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.

**k. Runway protection zone (RPZ).** An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the design aircraft, type of operation, and visibility minimum.

**l. Sewage sludge.** The de-watered effluent resulting from secondary or tertiary treatment of municipal sewage and/or industrial wastes, including sewage sludge as referenced in U.S. EPA's *Effluent Guidelines and Standards*, 40 C.F.R. Part 401.

**m. Shoulder.** An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface, support for aircraft running off the pavement, enhanced drainage, and blast protection (see AC 150/5300-13).

**n. Turbine-powered aircraft.** Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.

**o. Turbine-use airport.** Any airport that ROUTINELY serves FIXED-WING turbine-powered aircraft.

**p. Wastewater treatment facility.** Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1987 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. (See 40 C.F. R. Section 403.3 (o), (p), & (q)).

q. **Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring thereof of (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this AC, WILDLIFE includes feral animals and domestic animals while out of the control of their owners (14 CFR 139.3, *Certification and Operations: Land Airports Serving CAB-Certificated Scheduled Air Carriers Operating Large Aircraft (Other Than Helicopters)*).

r. **Wildlife attractants.** Any human-made structure, land use practice, or human-made or natural geographic feature, that can attract or sustain hazardous wildlife within the landing or departure airspace, aircraft movement area, loading ramps, or aircraft parking areas of an airport. These attractants can include but are not limited to architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquacultural activities, surface mining, or wetlands.

s. **Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport (14 CFR 139.3).

2. **RESERVED.**

**Memorandum of Agreement Between  
the Federal Aviation Administration,  
the U.S. Air Force,  
the U.S. Army,  
the U.S. Environmental Protection Agency,  
the U.S. Fish and Wildlife Service, and  
the U.S. Department of Agriculture  
to Address Aircraft-Wildlife Strikes**

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### **PURPOSE**

The signatory agencies know the risks that aircraft-wildlife strikes pose to safe aviation.

This Memorandum of Agreement (MOA) acknowledges each signatory agency's respective missions. Through this MOA, the agencies establish procedures necessary to coordinate their missions to more effectively address existing and future environmental conditions contributing to aircraft-wildlife strikes throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety, while protecting the Nation's valuable environmental resources.

### **BACKGROUND**

Aircraft-wildlife strikes are the second leading causes of aviation-related fatalities. Globally, these strikes have killed over 400 people and destroyed more than 420 aircraft. While these extreme events are rare when compared to the millions of annual aircraft operations, the potential for catastrophic loss of human life resulting from one incident is substantial. The most recent accident demonstrating the grievous nature of these strikes occurred in September 1996, when a U.S. Air Force reconnaissance jet struck a flock of Canada geese during takeoff, killing all 24 people aboard.

The Federal Aviation Administration (FAA) and the United States Air Force (USAF) databases contain information on more than 54,000 United States civilian and military aircraft-wildlife strikes reported to them between 1990 and 1999<sup>1</sup>. During that decade, the FAA received reports indicating that aircraft-wildlife strikes, damaged 4,500 civilian U.S. aircraft (1,500 substantially), destroyed 19 aircraft, injured 91 people, and killed 6 people. Additionally, there were 216 incidents where birds struck two or more engines on civilian aircraft, with damage occurring to 26 percent of the 449 engines involved in these incidents. The FAA estimates that during the same decade, civilian U.S. aircraft sustained \$4 billion worth of damages and associated losses and 4.7 million hours of aircraft downtime due to aircraft-wildlife strikes. For the same period,

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<sup>1</sup> FAA estimates that the 28,150 aircraft-wildlife strike reports it received represent less than 20% of the actual number of strikes that occurred during the decade.

USAF planes colliding with wildlife resulted in 10 Class A Mishaps<sup>2</sup>, 26 airmen deaths, and over \$217 million in damages.

Approximately 97 percent of the reported civilian aircraft-wildlife strikes involved common, large-bodied birds or large flocks of small birds. Almost 70 percent of these events involved gulls, waterfowl, and raptors (Table 1).

About 90 percent of aircraft-wildlife strikes occur on or near airports, when aircraft are below altitudes of 2,000 feet. Aircraft-wildlife strikes at these elevations are especially dangerous because aircraft are moving at high speeds and are close to or on the ground. Aircrews are intently focused on complex take-off or landing procedures and monitoring the movements of other aircraft in the airport vicinity. Aircrew attention to these activities while at low altitudes often compromises their ability to successfully recover from unexpected collisions with wildlife and to deal with rapidly changing flight procedures. As a result, crews have minimal time and space to recover from aircraft-wildlife strikes.

Increasing bird and wildlife populations in urban and suburban areas near airports contribute to escalating aircraft-wildlife strike rates. FAA, USAF, and Wildlife Services (WS) experts expect the risks, frequencies, and potential severities of aircraft-wildlife strikes to increase during the next decade as the numbers of civilian and military aircraft operations grow to meet expanding transportation and military demands.

## SECTION I.

### SCOPE OF COOPERATION AND COORDINATION

Based on the preceding information and to achieve this MOA's purpose, the signatory agencies:

- A. Agree to strongly encourage their respective regional and local offices, as appropriate, to develop interagency coordination procedures necessary to effectively and efficiently implement this MOA. Local procedures should clarify time frames and other general coordination guidelines.
- B. Agree that the term "airport" applies only to those facilities as defined in the attached glossary.
- C. Agree that the three major activities of most concern include, but are not limited to:
  1. airport siting and expansion;

<sup>2</sup> See glossary for the definition of a Class A Mishap and similar terms.

2. development of conservation/mitigation habitats or other land uses that could attract hazardous wildlife to airports or nearby areas; and
  3. responses to known wildlife hazards or aircraft-wildlife strikes.
- D. Agree that "hazardous wildlife" are those animals, identified to species and listed in FAA and USAF databases, that are most often involved in aircraft-wildlife strikes. Many of the species frequently inhabit areas on or near airports, cause structural damage to airport facilities, or attract other wildlife that pose an aircraft-wildlife strike hazard. Table 1 lists many of these species. It is included solely to provide information on identified wildlife species that have been involved in aircraft-wildlife strikes. It is not intended to represent the universe of species concerning the signatory agencies, since more than 50 percent of the aircraft-wildlife strikes reported to FAA or the USAF did not identify the species involved.
- E. Agree to focus on habitats attractive to the species noted in Table 1, but the signatory agencies realize that it is imperative to recognize that wildlife hazard determinations discussed in Paragraph L of this section may involve other animals.
- F. Agree that not all habitat types attract hazardous wildlife. The signatory agencies, during their consultative or decisionmaking activities, will inform regional and local land use authorities of this MOA's purpose. The signatory agencies will consider regional, local, and site-specific factors (e.g., geographic setting and/or ecological concerns) when conducting these activities and will work cooperatively with the authorities as they develop and implement local land use programs under their respective jurisdictions. The signatory agencies will encourage these stakeholders to develop land uses within the siting criteria noted in Section 1-3 of FAA Advisory Circular (AC) 150.5200-33 (Attachment A) that do not attract hazardous wildlife. Conversely, the agencies will promote the establishment of land uses attractive to hazardous wildlife outside those siting criteria. Exceptions to the above siting criteria, as described in Section 2.4.b of the AC, will be considered because they typically involve habitats that provide unique ecological functions or values (e.g., critical habitat for federally-listed endangered or threatened species, ground water recharge).
- G. Agree that wetlands provide many important ecological functions and values, including fish and wildlife habitats; flood protection; shoreline erosion control; water quality improvement; and recreational, educational, and research opportunities. To protect jurisdictional wetlands, Section 404 of the Clean Water Act (CWA) establishes a program to regulate dredge and/or fill activities in these wetlands and navigable waters. In recognizing Section 404 requirements and the Clean Water Action Plan's goal to annually increase the Nation's net wetland acreage by 100,000 acres through 2005, the signatory agencies agree to resolve aircraft-wildlife conflicts. They will do so by

avoiding and minimizing wetland impacts to the maximum extent practicable, and will work to compensate for all associated unavoidable wetland impacts. The agencies agree to work with landowners and communities to encourage and support wetland restoration or enhancement efforts that do not increase aircraft-wildlife strike potentials.

- H. Agree that the: U.S. Army Corps of Engineers (ACOE) has expertise in protecting and managing jurisdictional wetlands and their associated wildlife; U.S. Environmental Protection Agency (EPA) has expertise in protecting environmental resources; and the U.S. Fish and Wildlife Service (USFWS) has expertise in protecting and managing wildlife and their habitats, including migratory birds and wetlands. Appropriate signatory agencies will cooperatively review proposals to develop or expand wetland mitigation sites, or wildlife refuges that may attract hazardous wildlife. When planning these sites or refuges, the signatory agencies will diligently consider the siting criteria and land use practice recommendations stated in FAA AC 150/5200-33. The agencies will make every effort to undertake actions that are consistent with those criteria and recommendations, but recognize that exceptions to the siting criteria may be appropriate (see Paragraph F of this section).
- I. Agree to consult with airport proponents during initial airport planning efforts. As appropriate, the FAA or USAF will initiate signatory agency participation in these efforts: When evaluating proposals to build new civilian or military aviation facilities or to expand existing ones, the FAA or the USAF, will work with appropriate signatory agencies to diligently evaluate alternatives that may avoid adverse effects on wetlands, other aquatic resources, and Federal wildlife refuges. If these or other habitats support hazardous wildlife, and there is no practicable alternative location for the proposed aviation project, the appropriate signatory agencies, consistent with applicable laws, regulations, and policies, will develop mutually acceptable measures, to protect aviation safety and mitigate any unavoidable wildlife impacts.
- J. Agree that a variety of other land uses (e.g., storm water management facilities, wastewater treatment systems, landfills, golf courses, parks, agricultural or aquacultural facilities, and landscapes) attract hazardous wildlife and are, therefore, normally incompatible with airports. Accordingly, new, federally-funded airport construction or airport expansion projects near habitats or other land uses that may attract hazardous wildlife must conform to the siting criteria established in the FAA Advisory Circular (AC) 150/5200-33, Section 1-3.
- K. Agree to encourage and advise owners and/or operators of non-airport facilities that are known hazardous wildlife attractants (See Paragraph J) to follow the siting criteria in Section 1-3 of AC 150/5200-33. As appropriate, each signatory agency will inform proponents of these or other land uses about the land use's potential to attract hazardous species to airport areas.



The signatory agencies will urge facility owners and/or operators about the critical need to consider the land uses' effects on aviation safety.

- L. Agree that FAA, USAF, and WS personnel have the expertise necessary to determine the aircraft-wildlife strike potentials of various land uses. When there is disagreement among signatory agencies about a particular land use and its potential to attract hazardous wildlife, the FAA, USAF, or WS will prepare a wildlife hazard assessment. Then, the appropriate signatory agencies will meet at the local level to review the assessment. At a minimum, that assessment will:
1. identify each species causing the aviation hazard, its seasonal and daily populations, and the population's local movements;
  2. discuss locations and features on and near the airport or land use attractive to hazardous wildlife; and
  3. evaluate the extent of the wildlife hazard to aviation.
- M. Agree to cooperate with the airport operator to develop a specific, wildlife hazard management plan for a given location, when a potential wildlife hazard is identified. The plan will meet applicable FAA, USAF, and other relevant requirements. In developing the plan, the appropriate agencies will use their expertise and attempt to integrate their respective programmatic responsibilities, while complying with existing laws, regulations, and policies. The plan should avoid adverse impacts to wildlife populations, wetlands, or other sensitive habitats to the maximum extent practical. Unavoidable impacts resulting from implementing the plan will be fully compensated pursuant to all applicable Federal laws, regulations, and policies.
- N. Agree that whenever a significant aircraft-wildlife strike occurs or a potential for one is identified, any signatory agency may initiate actions with other appropriate signatory agencies to evaluate the situation and develop mutually acceptable solutions to reduce the identified strike probability. The agencies will work cooperatively, preferably at the local level, to determine the causes of the strike and what can and should be done at the airport or in its vicinity to reduce potential strikes involving that species.
- O. Agree that information and analyses relating to mitigation that could cause or contribute to aircraft-wildlife strikes should, whenever possible, be included in documents prepared to satisfy the National Environmental Policy Act (NEPA). This should be done in coordination with appropriate signatory agencies to inform the public and Federal decision makers about important ecological factors that may affect aviation. This concurrent review of environmental issues will promote the streamlining of the NEPA review process.
- P. Agree to cooperatively develop mutually acceptable and consistent guidance, manuals, or procedures addressing the management of habitats attractive to

hazardous wildlife, when those habitats are or will be within the siting criteria noted in Section 1-3 of FAA AC 5200-33. As appropriate, the signatory agencies will also consult each other when they propose revisions to any regulations or guidance relevant to the purpose of this MOA, and agree to modify this MOA accordingly.

## SECTION II. GENERAL RULES AND INFORMATION

- A. Development of this MOA fulfills the National Transportation Safety Board's recommendation of November 19, 1999, to form an inter-departmental task force to address aircraft-wildlife strike issues.
- B. This MOA does not nullify any obligations of the signatory agencies to enter into separate MOAs with the USFWS addressing the conservation of migratory birds, as outlined in Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, dated January 10, 2001 (66 *Federal Register*, No. 11, pg. 3853).
- C. This MOA in no way restricts a signatory agency's participation in similar activities or arrangements with other public or private agencies, organizations, or individuals.
- D. This MOA does not alter or modify compliance with any Federal law, regulation or guidance (e.g., Clean Water Act; Endangered Species Act; Migratory Bird Treaty Act; National Environmental Policy Act; North American Wetlands Conservation Act; Safe Drinking Water Act; or the "no-net loss" policy for wetland protection). The signatory agencies will employ this MOA in concert with the Federal guidance addressing wetland mitigation banking dated March 6, 1995 (60 *Federal Register*, No. 43, pg. 12286).
- E. The statutory provisions and regulations mentioned above contain legally binding requirements. However, this MOA does not substitute for those provisions or regulations, nor is it a regulation itself. This MOA does not impose legally binding requirements on the signatory agencies or any other party, and may not apply to a particular situation in certain circumstances. The signatory agencies retain the discretion to adopt approaches on a case-by-case basis that differ from this MOA when they determine it is appropriate to do so. Such decisions will be based on the facts of a particular case and applicable legal requirements. Therefore, interested parties are free to raise questions and objections about the substance of this MOA and the appropriateness of its application to a particular situation.
- F. This MOA is based on evolving information and may be revised periodically without public notice. The signatory agencies welcome public comments on this MOA at any time and will consider those comments in any future revision of this MOA.

LET DOWN  
TRAINING DIVISION

- G. This MOA is intended to improve the internal management of the Executive Branch to address conflicts between aviation safety and wildlife. This MOA does not create any right, benefit, or trust responsibility, either substantively or procedurally. No party, by law or equity, may enforce this MOA against the United States, its agencies, its officers, or any person.
- H. This MOA does not obligate any signatory agency to allocate or spend appropriations or enter into any contract or other obligations.
- I. This MOA does not reduce or affect the authority of Federal, State, or local agencies regarding land uses under their respective purviews. When requested, the signatory agencies will provide technical expertise to agencies making decisions regarding land uses within the siting criteria in Section 1-3 of FAA AC 150/5200-33 to minimize or prevent attracting hazardous wildlife to airport areas.
- J. Any signatory agency may request changes to this MOA by submitting a written request to any other signatory agency and subsequently obtaining the written concurrence of all signatory agencies.
- K. Any signatory agency may terminate its participation in this MOA within 60 days of providing written notice to the other agencies. This MOA will remain in effect until all signatory agencies terminate their participation in it.

### SECTION III. PRINCIPAL SIGNATORY AGENCY CONTACTS

The following list identifies contact offices for each signatory agency.

Federal Aviation Administration  
Office Airport Safety and Standards  
Airport Safety and  
Compliance Branch (AAS-310)  
800 Independence Ave., S.W.  
Washington, D.C. 20591  
V: 202-267-1799  
F: 202-267-7546

U.S. Air Force  
HQ AFSC/SEFW  
9700 Ave., G. SE, Bldg. 24499  
Kirtland AFB, NM 87117  
V: 505-846-5679  
F: 505-846-0684

U.S. Army  
Directorate of Civil Works  
Regulatory Branch (CECW-OR)  
441 G St., N.W.  
Washington, D.C. 20314  
V: 202-761-4750  
F: 202-761-4150

U.S. Environmental Protection Agency  
Office of Water  
Wetlands Division  
Ariel Rios Building, MC 4502F  
1200 Pennsylvania Ave., SW  
Washington, D.C. 20460  
V: 202-260-1799  
F: 202-260-7546

U.S. Fish and Wildlife Service  
Division of Migratory Bird Management  
4401 North Fairfax Drive, Room 634  
Arlington, VA 22203  
V: 703-358-1714  
F: 703-358-2272

U.S. Department of Agriculture  
Animal and Plant Inspection Service  
Wildlife Services  
Operational Support Staff  
4700 River Road, Unit 87  
Riverdale, MD 20737  
V: 301-734-7921  
F: 301-734-5157

Signature Page

Wood Gordon  
Associate Administrator for Airports,  
Federal Aviation Administration

12/17/02  
Date

Samuel W. Jen  
Chief of Safety,  
U. S. Air Force

27 May 2003  
Date

R. L. Browne  
Acting Assistant Secretary of the Army  
(Civil Works)  
Department of the Army

December 9, 2002  
Date

B. Tracy Behan, MS  
Assistant Administrator, Office of Water,  
U.S. Environmental Protection Agency

1/17/03

Paul R. Schmidt  
Assistant Director, Migratory Birds  
and State Programs,  
U.S. Fish and Wildlife Service

7/29/03  
Date

Richard D. Connor  
Acting Deputy Administrator, Wildlife Services  
U.S. Department of Agriculture

09 January 2003  
Date

## GLOSSARY

This glossary defines terms used in this MOA.

**Airport.** All USAF airfields or all public use airports in the FAA's National Plan of Integrated Airport Systems (NPIAS). Note: There are over 18,000 civil-use airports in the U.S., but only 3,344 of them are in the NPIAS and, therefore, under FAA's jurisdiction.

**Aircraft-wildlife strike.** An aircraft-wildlife strike is deemed to have occurred when:

1. a pilot reports that an aircraft struck 1 or more birds or other wildlife;
2. aircraft maintenance personnel identify aircraft damage as having been caused by an aircraft-wildlife strike;
3. personnel on the ground report seeing an aircraft strike 1 or more birds or other wildlife;
4. bird or other wildlife remains, whether in whole or in part, are found within 200 feet of a runway centerline, unless another reason for the animal's death is identified; or
5. the animal's presence on the airport had a significant, negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal)

(Source: *Wildlife Control Procedures Manual*, Technical Publication 11500E, 1994).

**Aircraft-wildlife strike hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport (14 CFR 139.3).

**Bird Sizes.** Title 40, Code of Federal Regulations, Part 33.76 classifies birds according to weight:

- small birds weigh less than 3 ounces (oz).
- medium birds weigh more than 3 oz and less than 2.5 lbs.
- large birds weigh greater than 2.5 lbs.

**Civil aircraft damage classifications.** The following damage descriptions are based on the *Manual on the International Civil Aviation Organization Bird Strike Information System*:

**Minor:** The aircraft is deemed airworthy upon completing simple repairs or replacing minor parts and an extensive inspection is not necessary.

**Substantial:** Damage or structural failure adversely affects an aircraft's structural integrity, performance, or flight characteristics. The damage normally requires major repairs or the replacement of the entire affected component. Bent fairings or cowlings; small dents; skin punctures; damage to wing tips, antenna, tires or brakes, or engine blade damage not requiring blade replacement are specifically excluded.

**Destroyed:** The damage sustained makes it inadvisable to restore the aircraft to an airworthy condition.

**Significant Aircraft-Wildlife Strikes.** A significant aircraft-wildlife strike is deemed to have occurred when any of the following applies:

1. a civilian, U.S. air carrier aircraft experiences a multiple aircraft-bird strike or engine ingestion;
2. a civilian, U.S. air carrier aircraft experiences a damaging collision with wildlife other than birds; or
3. a USAF aircraft experiences a Class A, B, or C mishap as described below:
  - A. **Class A Mishap:** Occurs when at least one of the following applies:
    1. total mishap cost is \$1,000,000 or more;
    2. a fatality or permanent total disability occurs; and/or
    3. an Air Force aircraft is destroyed.
  - B. **Class B Mishap:** Occurs when at least one of the following applies:
    1. total mishap cost is \$200,000 or more and less than \$1,000,000; and/or
    2. a permanent partial disability occurs and/or 3 or more people are hospitalized;
  - C. **Class C Mishap:** Occurs when at least one of the following applies:
    1. cost of reported damage is between \$20,000 and \$200,000;
    2. an injury causes a lost workday (i.e., duration of absence is at least 8 hours beyond the day or shift during which mishap occurred); and/or
    3. an occupational illness causing absence from work at any time.

**Wetlands.** An ecosystem requiring constant or recurrent, shallow inundation or saturation at or near the surface of the substrate. The minimum essential characteristics of a wetland are recurrent, sustained inundation or saturation at or

near the surface and the presence of physical, chemical, and biological features indicating recurrent, sustained inundation, or saturation. Common diagnostic wetland features are hydric soils and hydrophytic vegetation. These features will be present, except where specific physiochemical, biotic, or anthropogenic factors have removed them or prevented their development.

(Source the 1987 Delineation Manual; 40 CFR 230.3(t)).

**Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring thereof (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this MOA, "wildlife" includes feral animals and domestic animals while out of their owner's control (14 CFR 139.3, *Certification and Operations: Land Airports Serving CAB-Certificated Scheduled Air Carriers Operating Large Aircraft (Other Than Helicopters)*)



Table 1. Identified wildlife species, or groups, that were involved in two or more aircraft-wildlife strikes, that caused damage to one or more aircraft components, or that had an adverse effect on an aircraft's flight. Data are for 1990-1999 and involve only civilian, U.S. aircraft.

Birds	No. reported strikes
Gulls (all spp.)	874
Geese (primarily, Canada geese)	468
Hawks (primarily, Red-tailed hawks)	182
Ducks (primarily Mallards.)	166
Vultures (primarily, Turkey vulture)	142
Rock doves	122
Doves (primarily, mourning doves)	109
Blackbirds	81
European starlings	55
Sparrows	62
Egrets	41
Shore birds (primarily, Killdeer & Sandpipers)	40
Crows	31
Owls	24
Sandhill cranes	22
American kestrels	15
Great blue herons	15
Pelicans	14
Swallows	14
Eagles (Bald and Golden)	14
Ospreys	13
Ring-necked pheasants	11
Herons	11
Barn-owls	9
American robins	8
Meadowlarks	8
Buntings (snow)	7
Cormorants	6
Snow buntings	6
Brants	6
Terns (all spp.)	6
Great horned owls	6
Horned larks	4
Turkeys	4
Swans	3
Mockingbirds	3
Quails	3
Homing pigeons	3
Snowy owls	3
Anhingas	2

Birds	No. reported strikes
Ravens	2
Kites	2
Falcons	2
Peregrine falcons	2
Merlins	2
Grouse	2
Hungarian partridges	2
Spotted doves	2
Thrushes	2
Mynas	2
Finches	2
<b>Total known birds</b>	<b>2,612</b>

Mammals	No. reported strikes
Deer (primarily, White-tailed deer)	285
Coyotes	16
Dogs	10
Elk	6
Cattle	6
Bats	4
Horses	3
Pronghorn antelopes	3
Foxes	2
Raccoons	2
Rabbits	2
Moose	2
<b>Total known mammals</b>	<b>340</b>

Ring-billed gulls were the most commonly struck gulls. The U.S. ring-billed gull population increased steadily at about 6% annually from 1966-1988. Canada geese were involved in about 90% of the aircraft-geese strikes involving civilian, U.S. aircraft from 1990-1998. Resident (non-migratory) Canada goose populations increased annually at 13% from 1966-1998. Red-tailed hawks accounted for 90% of the identified aircraft-hawk strikes for the 10-year period. Red-tailed hawk populations increased annually at 3% from 1966 to 1998. Turkey vultures were involved in 93% of the identified aircraft-vulture strikes. The U.S. Turkey vulture populations increased at annually at 1% between 1966 and 1998. Deer, primarily white-tailed deer, have also adapted to urban and airport areas and their populations have increased dramatically. In the early 1900's, there were about 100,000 white-tailed deer in the U.S. Current estimates are that the U.S. population is about 24 million.

# Southwest Florida International Airport

TABLE 5



Southwest Florida International Airport				
TABLE 5				
Existing vs. Proposed Development 2005-2020				
Development	Existing	2005	2010	2020
<b>Landside</b>				
Midfield Terminal Complex	28 gates 761,193 S.F.	No improvements planned	Expand to 32-33 gates 771,193 S.F.	Expand to 43-47 gates 978,362 S.F.
Auto Access	Main entrance at intersection of Daniels and Chamberlin Parkway. Access also from Daniels via Treeline and Alico via Ben Hill Griffin Parkway.	Cargo Road improvements from Chamberlin Connector road for maintenance facilities	Rehab perimeter, service and fuel farm roads Expand entrance road to 6 lanes Construct I-75 access	Miscellaneous roadway improvements
Parking	14,399 total existing spaces	No improvements planned	Construct 750 additional employee spaces	Ultimately 5,126 total hourly spaces Ultimately 9,342 total daily spaces Ultimately 200 total Taxi/Limo spaces Ultimately 3,000 total rental car spaces
Passenger	11,461 spaces			
Hourly	2,519 spaces			
Daily	8,942 spaces			
Employee	1,288 spaces			
Taxi/Limo/Toll Booth	150 spaces			
Rental Cars	1,500 spaces			
<b>Airside</b>				
Existing Runway 6-24	12,000 ft. X 150 ft. runway	Rehabilitate 6-24, using taxiway as a temporary runway	No improvements planned	No improvements planned
Parallel Runway 6R-24L	No improvements planned	No improvements planned	Begin construction on 9,100ft. X 150ft. runway (5,385 ft. separation between runways)	No improvements planned
Taxiways	Taxiway A-parallel taxiway to Rnwy 6-24, 12,000 ft. long X 75 ft. wide; Taxilane B-apron taxilane that runs parallel to terminal for transitioning aircraft going from gates to Taxiway A for approximately 1,580 ft.	No improvements planned	Construct parallel taxiway north of Rnwy 6R-24L (9,100ft. X 75ft. wide) If NLA, then 100ft. wide. Hold bay & by-pass improvements to Rnwy 6R-24L parallel taxiway	Construct dual cross-field connector taxiway (Approx. 4,215 ft. long and 75ft. wide) If NLA, then 100ft. wide.
Terminal Apron	165,000 S.Y.	253,700 SY*	No improvements planned	No improvements planned
Air Cargo	Total of 39,500 S.F. cargo building 69,000 S.Y. apron area	Rehabilitate existing cargo ramp (69,000 S.F.) New freight forwarding facility 15,000 S.F. Expand cargo facilities to 41,189 S.F.	Expand building cargo facilities to 45,389 S.F.	Expand cargo building facilities to 58,314 S.F.
Belly Cargo	15,000 S.F.	No improvements planned	No improvements planned	No improvements planned
General Aviation	8,000 S.F. facility 26,180 S.F. hangar space 48,650 S.Y. apron area	Construct multi-use hangars (12,500 S.F.)	Infrastructure for second FBO Construct multi-use hangars (41,000 S.F.)	Construct multi-use hangars (75,500 S.F.) Expand GA apron to 49,700 S.Y.
Aircraft Maintenance General Aviation Large Aircraft	Approximately 13,000 S.F.	Construct one hangar to accommodate aircraft including the Boeing 747. Land to accommodate an additional three hangars should be set aside, should it be needed in the future.	26,000 S.F. (using existing facilities)	Expand to 36,000 S.F. necessary
Air Traffic Control Tower (ATCT)	Height 76.91 ft., 8,600 S.F.	-	Relocate to midfield-same S.F. as existing 8,600 ft. or more. New height must be greater than 80 ft.**	No improvements planned
Fuel Farm	Commercial (3)420,000 gallon tanks Jet A  General Aviation (4) 15,000 gallon Jet A tanks (1) 12,000 gallon 100LL tank	Fuel to be pumped from existing fuel farm area by a hydrant fueling system to the new midfield area	No improvements planned	No improvements planned

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# Southwest Florida International Airport

TABLE 5

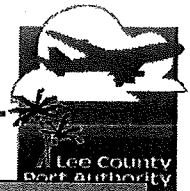
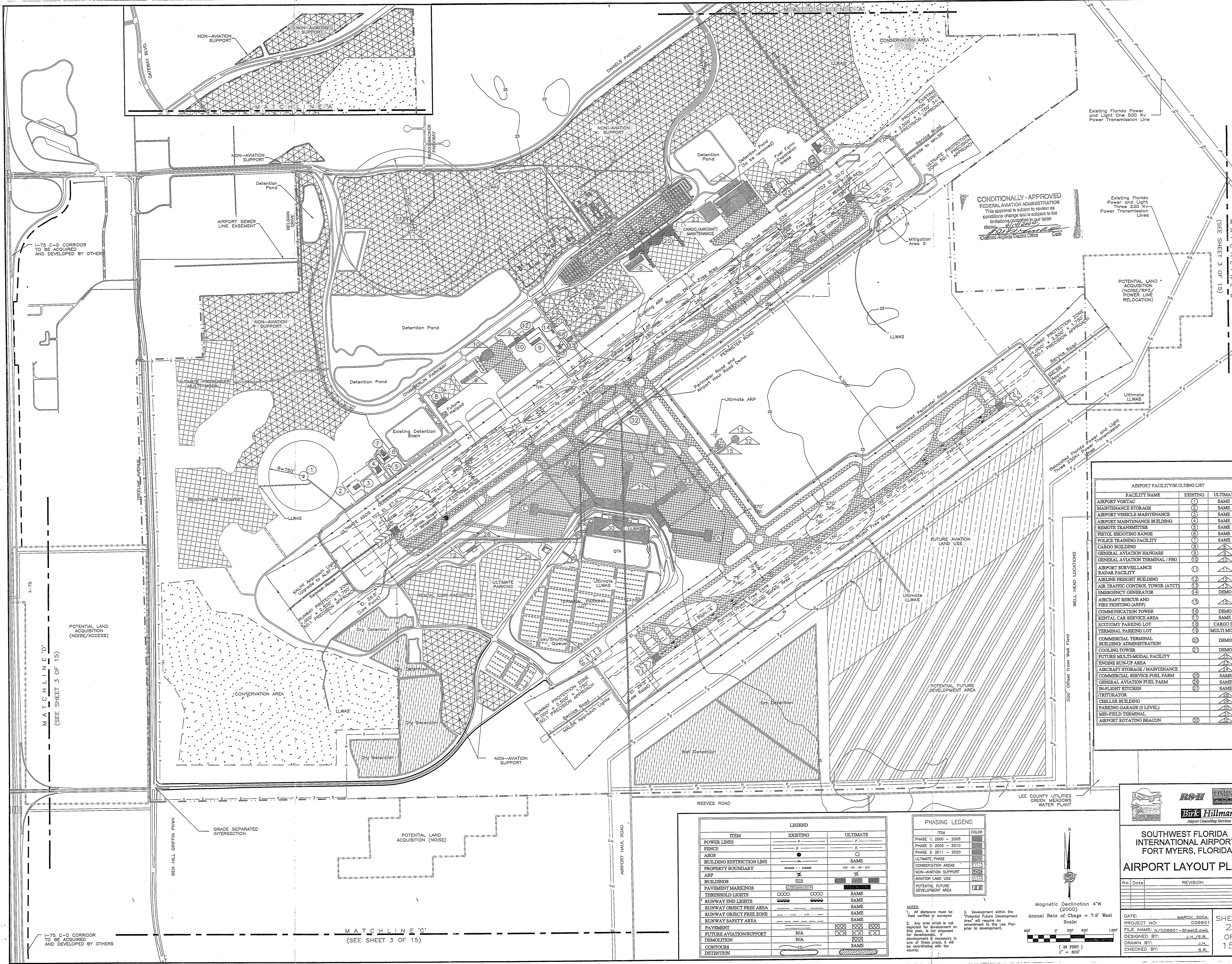


Table 5 (Continued) Southwest Florida International Airport Existing vs. Proposed Development 2005-2020				
Development	Existing	2005	2010	2020
<b>Airside (Continued)</b>				
Miscellaneous	No improvements planned		Relocate high voltage power lines Upgrade airfield emergency generator Helipad (11,000 S.F.) Develop multi-modal center	
Rental Car Expansion		Rental car fuel farm		
Non-Aviation Related Land Uses Hotel <sup>(3)</sup> Light Manufacturing/Assembly Gas Station/Convenience Store Warehouse/Distribution Office <sup>(3)</sup>		- Construct 25,000 S.F. Construct 3,500 S.F. w/ 12 pumps Construct 25,000 S.F. Construct 75,000 S.F.	Construct 300 Rooms Additional 25,000 S.F.  Additional 25,000-S.F. Additional 75,000 S.F.	- -Additional 50,000 S.F. - Additional 50,000 S.F. Additional 75,000 S.F.

1. This table is for general phasing and major development items only. More specific detail is available in the annual Capital Improvement Plan (CIP) prepared by the Lee County Port Authority for the Southwest Florida International Airport.
2. All non-aviation related development will meet local land development code requirements such as open space requirements listed in LDC Sec. 10-415 and Wetland Impacts requirements listed in LDC Sec. 14-293. All development will be required to undergo local site and zoning review prior to local development order issuance.
3. This Development includes 10% retail
4. Development within the "Potential Future Development Area" will require amendment of the Lee Plan prior to development.

**RECEIVED**  
MAY 28 2004

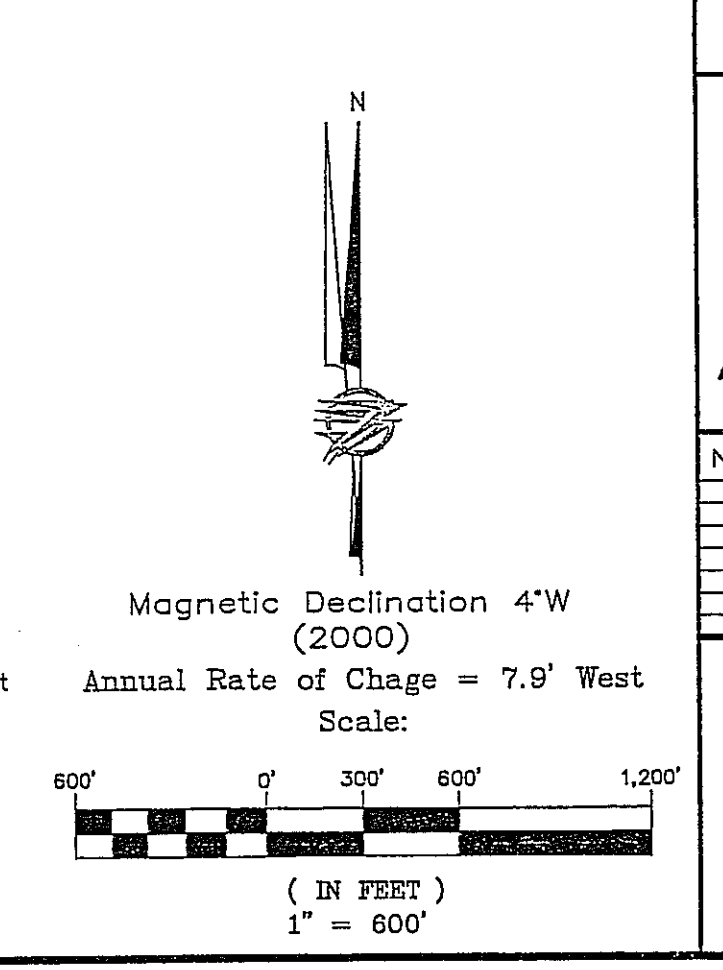


**CONDITIONALLY-APPROVED**  
 FEDERAL AVIATION ADMINISTRATION  
 This approval is subject to review as conditions change and is subject to the limitations contained in our letter dated 4/11/2006.  
 [Signature]  
 Chief, Airport District Office

AIRPORT FACILITY/BUILDING LIST		
FACILITY NAME	EXISTING	ULTIMATE
AIRPORT VORTAC	(1)	SAME
MAINTENANCE STORAGE	(2)	SAME
AIRPORT VEHICLE MAINTENANCE	(3)	SAME
AIRPORT MAINTENANCE BUILDING	(4)	SAME
REMOTE TRANSMITTER	(5)	SAME
PISTOL SHOOTING RANGE	(6)	SAME
POLICE TRAINING FACILITY	(7)	SAME
CARGO BUILDING	(8)	SAME
GENERAL AVIATION HANGARS	(9)	SAME
GENERAL AVIATION TERMINAL / FBO	(10)	SAME
AIRPORT SURVEILLANCE RADAR FACILITY	(11)	SAME
AIRLINE FREIGHT BUILDING	(12)	SAME
AIR TRAFFIC CONTROL TOWER (ATCT)	(13)	SAME
EMERGENCY GENERATOR	(14)	DEMO
AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF)	(15)	SAME
COMMUNICATION TOWER	(16)	DEMO
RENTAL CAR SERVICE AREA	(17)	SAME
ECONOMY PARKING LOT	(18)	CARGO EXP
TERMINAL PARKING LOT	(19)	MULTI-MODAL
COMMERCIAL TERMINAL BUILDING ADMINISTRATION	(20)	DEMO
COOLING TOWER	(21)	DEMO
FUTURE MULTI-MODAL FACILITY	(22)	SAME
ENGINE RUN-UP AREA	(23)	SAME
AIRCRAFT STORAGE / MAINTENANCE	(24)	SAME
COMMERCIAL SERVICE FUEL FARM	(25)	SAME
GENERAL AVIATION FUEL FARM	(26)	SAME
IN-FLIGHT KITCHEN	(27)	SAME
TRUCK RAMP	(28)	SAME
CHILLER BUILDING	(29)	SAME
PARKING GARAGE (6 LEVEL)	(30)	SAME
MID-FIELD TERMINAL	(31)	SAME
AIRPORT ROTATING BEACON	(32)	SAME

ITEM	LEGEND	
	EXISTING	ULTIMATE
POWER LINES	—	—
FENCE	X	X
ASOS	●	○
BUILDING RESTRICTION LINE	—	—
PROPERTY BOUNDARY	—	—
ARP	X	X
BUILDINGS	■	■
PAYMENT MARKINGS	—	—
THRESHOLD LIGHTS	OOOO	OOOO
RUNWAY END LIGHTS	OOOO	OOOO
RUNWAY OBJECT FREE AREA	—	—
RUNWAY SAFETY AREA	—	—
PAYMENT	—	—
FUTURE AVIATION SUPPORT	N/A	X
DEMOLITION	N/A	X
CONTOURS	—	—
DETENTION	—	—

PHASING LEGEND	
ITEM	COLOR
PHASE 1: 2000 - 2005	[Color]
PHASE 2: 2006 - 2010	[Color]
PHASE 3: 2011 - 2020	[Color]
ULTIMATE PHASE	[Color]
CONSERVATION AREAS	[Color]
NON-AVIATION SUPPORT	[Color]
AVIATION LAND USE	[Color]
POTENTIAL FUTURE DEVELOPMENT AREA	[Color]



**SOUTHWEST FLORIDA INTERNATIONAL AIRPORT**  
**FORT MYERS, FLORIDA**  
**AIRPORT LAYOUT PLAN**

RS&H  
 Birk Hillman  
 Airport Consulting Services

No.	Date	REVISION

DATE: MARCH 2004  
 PROJECT NO: C06901  
 FILE NAME: N:\C06901-Sheet2.dwg  
 DESIGNED BY: J.H./S.R.  
 DRAWN BY: J.H.  
 CHECKED BY: S.R.

SHEET 2 OF 15

MATCHLINE 'D'  
(SEE SHEET 3 OF 15)

MATCHLINE 'C'  
(SEE SHEET 3 OF 15)

MATCHLINE 'B'  
(SEE SHEET 3 OF 15)