



2009

Application for TIGER Discretionary Grant



Southwest Florida
International Airport
Collector/Distributor
System



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Southwest Florida International Airport Collector/Distributor System September 2009

- i. Type of Project: Highways
- ii. Location of Project: Lee County, Florida, Congressional District 14
- iii. Urban or Rural area: Urban
- iv. Amount of Funding requested: \$98,695,987
- v. DUNS Number: 809397102
- vi. Central Contractor Registration:



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Executive Summary:

PICTURE THIS: On one side an interstate corridor whose vitality is visible and vibrant each day. On the other side an international airport whose energy is dynamic and palpable every day. Travelers on both sides captains of industry setting new courses, businessmen and women heading to appointments, laborers getting to jobs, commerce moving, grandchildren going on vacation, even Presidents visiting.

On one side a \$430 million investment nearing completion to add capacity on Interstate 75. On the other side a recently completed \$438 million investment to rebuild Southwest Florida International Airport.

WHAT'S MISSING: A transportation connector between this strategic north/south interstate corridor and the 2nd fastest-growing airport in Florida (only behind Miami).

Access, of course, exists between Interstate 75 and the airport in Lee County. Significantly, though, the interstate constructed in the early 1980s had been very heavily congested. Notably, the airport built in 1983 had seen two decades of record breaking growth. With nearly exponential regional growth from the early 1990s until very recent years, a booming Southwest Florida desperately needed MORE. The Florida Department of Transportation (FDOT) and Southwest Florida International Airport responded with what then were among the very largest projects of their kinds in the country. There remains, however, a missing link.

FDOT and the airport together have begun development of a \$98.6 million collector-distributor transportation system that would parallel Interstate 75 and make the vital connection to airport property, providing a transportation link for travelers, commerce, and industry that would power the economy forward.

CONSIDER: During Florida's high season from October through April, Interstate 75 in this region, typically, has carried upward of 100,000 vehicles per day. With the economic downturn, traffic volumes have decreased about 10 percent. Current projections, however, foresee traffic trending upward, and local economists are cautiously optimistic about the upcoming tourist season.

As an integral component of Florida's Strategic Intermodal System, Interstate 75 demonstrates itself to be essential to statewide mobility and economic competitiveness at local, state, national, and international levels. From farm to market mobility within the state to international movement of goods from the ports of Miami and Tampa, the Interstate 75 corridor is the backbone of transportation along the west coast of Florida to all states north.

In 2004 and 2005, Interstate 75 also played a prominent role in public safety as thousands of people evacuated threatened areas during the state's two historic hurricane seasons. Just as importantly, Interstate 75 became a literal life line in Florida's hurricane recovery, bringing water, food, and emergency services to storm victims. Economic recovery, as well, relies on a strong interstate connected to an equally strong international airport.



Efficient, affordable movement of people and goods builds a solid foundation for an economy under reconstruction, one renewing itself for a robust future. The airport serves an air-trade area with more than one million residents. About 21,000 passengers daily – adding up to 7.6 million passengers annually – pass through its gates.

Results from a 2005 economic impact study point out Southwest Florida International Airport infused more than \$3.6 billion directly and indirectly into the local economy because of its operations. Direct economic impacts are bright and clear -- revenue from airlines, airport shops and restaurants, cargo handlers, and other airport operations. Indirect impacts boast crucial effects of increased employment and increased expenditures created by continual local hiring and spending.

What some may consider extraordinary but occurred, nonetheless, is the airport doubled its employment to 2500 full time jobs between 1999 and 2005. Data also showed the airport's impact increased the regional employment rate by 48 percent, from 43,940 jobs to 64,800.

Both the interstate's and airport's ties to a healthy economic engine are evident, bringing much to an economy regaining its strength. Connecting these two economic generators with a collector-distributor system not only enhances significant transportation investments already made but also promotes vigorous, continued economic recovery. This project can create more jobs and it will support responsible regional growth.



PROJECT DESCRIPTION

Overview

The Florida Department of Transportation (FDOT) is submitting a TIGER Discretionary Grant application for the Southwest Florida International Airport Collector/Distributor System in Lee County. This design-build project includes improvements to 4.8 miles of Interstate 75 (S.R. 93) from south of Alico Road to Daniels Parkway. A collector/distributor roadway will combine the interchanges for Alico Road and the new Southwest Florida International Airport (SWFIA) access road into a single point of exit/entry from the interstate. Direct access to the recently completed SWFIA terminal facilities will utilize a new trumpet interchange at I-75 and a partial single point urban interchange at Ben Hill Griffin Parkway. Access road improvements extend one mile from I-75 and cross primary habitat for the Florida panther. Three new bridge structures are required for the airport's south outfall canal, including two flat slab bridges for the collector/distributor roads and an AASHTO girder bridge for a curved ramp. The access road will include a 500-foot, four-span bulb-tee 78 bridge over the interstate and a 177.5-foot, single-span steel plate girder bridge over Ben Hill Griffin Parkway. The design will accommodate provisions for future improvements to I-75 for a ten-lane facility and coordinate with the iROX design/build project providing interim improvements along I-75.



The required environmental studies and documents previously done for this project evaluated various alternatives for meeting the purpose of the project. Its purpose is to provide an acceptable level of service along this section of I-75, the interchanges at Daniels Parkway and Alico Road, and affected arterials and intersections within the study area through the design year with the intent of providing an adequate traffic flow level of service and connectivity for area residents and businesses. The project would also provide for safe and effective traffic demand along I-75 on a local and regional level. Furthermore, the project would address the maintenance of congested existing arterials.

The SIMR researched all reasonable alternatives to this new interchange and states “the need for the proposed configuration of the C/D road and trumpet interchange system is driven by the need for accessibility to support the expansion of the SWFIA, and to alleviate the traffic congestion on the I-75 general use lanes. Ramp metering, mass transit, and HOV lanes are not suitable alternatives in a no-build situation because traffic patterns are substantially different if the C-D and trumpet interchanges are not constructed.” Additionally the SIMR states the improvement is consistent with local and regional plans and has been coordinated with area development



“particularly, the future expansion of SWFIA and Florida Gulf Coast University are the driving force behind the need for modified access.”

The project is part of an overall expansion of I-75. Thanks to a history-making innovative approach, this heavily traveled interstate is expanding from four to six lanes along a 30-mile stretch from Golden Gate Parkway in Collier County to Colonial Boulevard (S.R. 884) in Lee County. The overall expansion project now stands eight months ahead of schedule with a completion date of April 2010. Six lanes are expected to open to traffic at the end of 2009.

Location and Interconnectivity

The project area is located along the I-75 corridor in Lee County, Florida and is bounded by Alico Road on the south end and Daniels Parkway on the north end (See Figure 1). This portion of I-75 provides access to both Southwest Florida International Airport (SWFIA) and Florida Gulf Coast University (FGCU).

Figure 1: Proposed Project Location Map and Regional Infrastructure Connections



Urban Area Demands

Within Lee County, the Average Annual Daily Traffic (AADT) on I-75 is projected to grow tremendously by the year 2030. In year 2000, this segment of I-75 presented an average two-way daily traffic volume (AADT) of approximately 68,100 vehicles per day (vpd). This traffic is expected to grow to more than 137,000 vpd by year 2030, which accounts for a 3.39 percent average yearly growth rate. Based on these traffic projections, additional capacity will be needed on the I-75 mainline. Without significant mainline and interchange improvements, the entire interstate system in Lee County will operate at Level of Service F prior to the year 2030.

In addition to regional population growth, the lack of other regional north/south corridors in the area has led to I-75 used for local trips, thus increasing traffic load at the interchanges. In lieu of providing additional north/south corridors in the area, improvements to I-75 are needed to maintain acceptable operational conditions on the interstate system in Lee County.



Transportation Challenges and Congestion Management

A majority of the I-75 mainline is currently operating below the minimum acceptable Level of Service C standard established for this Florida Intrastate Highway (FIHS) and Strategic Intermodal System (SIS) facility. This includes the southbound I-75 mainline segments located between S.R. 78 and Immokalee Road in the AM peak hour and the northbound I-75 mainline segments located between Immokalee Road and S.R. 80 in the PM peak hour. In addition, many of the interchange ramp termini are currently operating at Level of Service F overall during the peak hours. There are 10 ramp terminal intersections that fail in one or more of the peak hours. This includes the ramp terminal intersections on Daniels Parkway.

The I-75/Daniels Parkway interchange experiences heavy congestion, particularly during the morning, mid-day, and afternoon peaks. The southbound off-ramp often backs up on the interstate particularly during the peak season.

Construction of recommended interchange improvements and collector/distributor (C/D) road system between Alico Road and Daniels Parkway will create a significant redistribution of traffic from the interstate to the C/D road system. This redistribution enables I-75 general use lanes and interchange ramps to operate at acceptable levels of service for interim year 2012 and design year 2030 conditions.

Project Schedule

This project is included in the Lee County MPO's Transportation Improvement Program (TIP). The Statewide Transportation Improvement Program (STIP) will be amended once FDOT is notified funding has been awarded to the project. This C/D project has design plans close to 90 percent complete. NEPA documents were included in the Interstate 75 (S.R. 93) mainline PD&E. As a design build project, it will take approximately two months to get a design build team on board. This timeline includes an advertisement period, long listing/short listing, preparation of written technical proposals by shortlisted teams, a question and answer meeting, technical review and scoring of proposals, development of bids, and the bid opening. Construction is expected to take approximately 24 months.



PROJECT PARTIES

The primary grant recipient will be the Florida Department of Transportation. Other parties who are stakeholders of this project include Southwest Florida International Airport (SWFIA)/Lee County Port Authority, Lee County MPO and Florida Gulf Coast University (FGCU).



As the primary applicant for the SWFIA project, FDOT will be responsible for managing implementation of the project. FDOT is a decentralized agency charged with establishment, maintenance, and regulation of public transportation in the State of Florida. The department was formed in 1969. It absorbed the powers of the State Road Department (SRD) as well as the Florida State Turnpike Authority, which became a district within the new FDOT. The current Secretary of Transportation is Stephanie C. Kopelousos.

The Lee County Metropolitan Planning Organization (MPO) is an intergovernmental transportation planning agency created by an agreement among Lee County, Bonita Springs, Cape Coral, Fort Myers, Fort Myers Beach, Sanibel, and the Florida Department of Transportation. The MPO sets priorities among surface transportation improvement projects within Lee County for state or federal funding. In order for it to be eligible for federal funds, federal law requires that the MPO endorse a transportation improvement program identifying projects to be done over the next four years.



SWFIA is a publically-owned airport located in the southern Fort Myers area of unincorporated Lee County, Florida, United States. Its service market is Southwest Florida, particularly greater Fort Myers, Sanibel Island, Captiva Island and Naples. The airport serves as a focus city for AirTran Airways. In 2008, total passengers numbered 7,603,845. The airport is one of the top 50 busiest for passenger traffic in the U.S. as part of the Lee County Port Authority, this facility is governed by the Lee County Board of County Commissioners, who sit as the Board of Port Commissioners. The term of each port commissioner coincides with his/her regular term of office as a county commissioner.

Another major partner in the project is Florida Gulf Coast University, a member of the State University System of Florida. A comprehensive university created to address educational needs of the rapidly growing Southwest Florida population, student enrollment at FGCU has annually increased in double digits since the university opened for classes in August 1997, from approximately 2,000 students in its first year to over 11,000 today. FGCU expects undergraduate enrollment to increase to more than 15,000 students over the next five years. Recently added construction includes a solar field, Academic Building VII, an 800-car parking garage, an expansion of the student union building, and an expansion of the fine arts building.





GRANT FUNDS AND SOURCES AND USES OF PROJECT FUNDS

Requested Funding

Requested TIGER funding would enable immediate commencement of construction of this project.

FDOT, the Lee County Metropolitan Planning Organization (MPO), and the Lee County Port Authority (LCPA) continue to work in a cooperative manner to maximize funding resources for this project. To date, the state has invested approximately \$5.0 million for the Project Development and Environmental (PD&E) Study for I-75 in Lee and Collier Counties that incorporated necessary engineering and environmental analysis for the proposed connection to the airport. FDOT also subsequently funded a Systems Interchange Modification Report which was approved by the Federal Highway Administration, that formalized acceptance of preliminary work and garnered necessary federal approvals for the project to proceed further in production.

In cooperation and coordination with the FDOT, the LCPA funded design for the interchange and supporting roadway improvements as well as related infrastructure at a cost of nearly \$4.0 million. Design for the interchange has currently progressed to nearly 90 percent completion. Because the Lee MPO, LCPA and FDOT have continued to give emphasis and high priority to this project, necessary rights-of-way have been acquired through LPCA and FDOT funding mechanisms. With the LCPA's contribution of \$8.8 million and FDOT's continued investment of \$37.1 million, all necessary rights-of-way has been acquired, truly making this project "shovel ready." In addition to the monetary investment, donation of certain property rights from the LCPA to FDOT has provided added value and should be considered a matching contribution. Specifically, parcels purchased by the LCPA had limited access, noise, air and view rights donated to FDOT in order to maximize the project's success while minimizing the cost for this necessary infrastructure. All totaled, initial investments of just under \$50 million dollars in addition to in-kind services and donations have allowed this project to bring more than a 50 percent match to the requested TIGER funding amount of \$98,695,987 million.

PROJECT BENEFITS

The final notice published in the Federal Register on June 17, 2009 stated any applicant seeking a TIGER Discretionary Grant more than \$20 million but less than \$100 million must include estimates of the project's expected benefits in the five long-term outcomes identified in Section II (A) (1) (a) (State of Good Repair, Economic Competitiveness, Livability, Sustainability, and Safety) in its application. In addition, the notice states "applicants for TIGER Discretionary Grants are generally required to identify, quantify, and compare expected benefits and costs" in terms of these five long-term benefits.

Anticipated traffic volumes, current crash rates, and other serious concerns are hindering growth of commerce and effectiveness of hurricane evacuation in this area. The interchanges Daniels Parkway interchange will suffer operational failure if new system access is not constructed to the SWFIA. The proposed project (C/D system) would provide a direct route between I-75, the



primary commerce and evacuation corridor, and SWFIA. The C/D system will improve levels of service at interchanges and associated intersections.

Benefits contained within this report were derived using traffic and assumption from existing FDOT and Port Authority documents, including:

- I-75 Project Development and Environmental Study, (November 2002) and the associated July 2005 Reevaluation, FPID 406225-1-22-01.
- I-75 Systems Interchange Modification Report (SIMR-August 2002), FPID 202016-1-12-01.
- 2005 SWFIA Economic Impact Study
- 2004-2008 FDOT Off-System Crash data
- 2004 Final SWFIA Master Plan Update

In addition, other resources provided in the final notice guidance were used to derive monetary benefits.

The analysis summarizes net benefits and B/C ratio for a net present value utilizing a 7 percent discount rate scenario. Net benefits in excess of \$700 million over the 20 year time horizon are attainable when applying a discount rate of 7 percent, and the B/C ratio is 7.4.

1. PRIMARY

(a) Long Term Outcomes

State of Good Repair

Identification of the need for I-75 improvements began with preparation of an I-75 Engineering/Multi-Modal Master Plan, completed in August 1998. The master plan resulted in identification of long-range 2020 ultimate improvements needed for I-75 in Lee and Collier Counties. The 2020 ultimate improvements, comprising upgrades to interchanges and mainline roadway needed to accommodate traffic projected through the year 2020, extend from S.R. 951 in Collier County to S.R. 78 in Lee County. This segment is approximately 41.5 miles. To advance interim improvements for the interstate system, the Florida Legislature and Governor approved a \$250 million funding program titled Mobility 2000 Expansion. That program provided funds necessary for the initial project to improve the mainline roadway of I-75 from Golden Gate Parkway in Collier County to Colonial Boulevard in Lee County, approximately 30 miles along I-75. The purpose of this I-75 PD&E Study was two-fold: first, to develop concepts for the near-term initial improvements to I-75 in Lee County as part of the Mobility 2000 expansion project; and second, to determine the types of long-term improvements needed for the long-range 2030 ultimate improvements project. Local government agencies with jurisdictions within the project area include Lee County and the City of Fort Myers. As previously stated, the master plan identified the long-range 2020 ultimate improvements needed and the Lee County MPO has identified the need for this project in its Long Range Transportation Plan (LRTP).



This project improves the condition of existing facilities with an emphasis on minimizing life-cycle costs. The C/D system will reduce congestion at the existing Daniels Road interchange and the network of roadways currently used to move traffic from SWFIA to I-75. This reduction in traffic volumes will translate to lower loading (ESAL's) on existing paved facilities and can stretch the budget to resurface these existing facilities. Assuming:

- an average 10 years between resurfacing projects can be stretched to 15 years based on reduced traffic
- 24 lane-miles of affected existing pavement
- \$150,000/lane-mile resurfacing - \$3.6M affected system
- Discount rate of 7 percent
- Present value of no-build resurfacing: \$2,302,979
- Present Value of build resurfacing: \$1,177,727
- Benefit Summary: \$1,125,252 (no-build minus build)

Economic Competitiveness

Lee County, with 803.6 square miles, is the 24th largest county in the state. Its moderately sized land area and growing population have made Lee County the 10th most densely populated county in Florida. Presently, Lee County has approximately 519 persons per square mile. According to the 2001 Florida Statistical Abstract Census of Population, Housing, and Employment, the county's population was 440,888, which represents a 32 percent increase over the 1990 population of 335,113. Over the same period, the State of Florida as a whole grew 23 percent. Projected permanent population for 2030, based on the Southwest Florida Regional Planning Council forecasts, is 740,100, which represents a 68 percent increase over 2000. Population growth has been fueled by tourism acquainting future residents with the area (an active second home market) and retirement plans. The nature of this growth has resulted in Lee County having a high percentage of retirement-age persons. Approximately 25.4 percent of the population is 65 years of age or older.

In addition to its statewide significance, I-75 provides one of only a few major continuous north/south routes within Lee County. It is a designated hurricane evacuation route. Spanning the entire length of Lee County, I-75 will provide transportation service to the area by supporting the population and socioeconomic growth identified in the Lee Plan, 1999 Codification. The identification of the need for I-75 improvements began with the preparation of the master plan completed in 1998. Local government agencies with jurisdiction within the project area include Lee County and the City of Fort Myers. As previously stated, the master plan identified the long range 2030 ultimate improvements needed and the Lee County MPO has identified the need for this project in its LRTP.

The Southwest Florida International Airport is an important contributor to the region's social and economic well-being. In 2005, the airport conducted an Economic Impact Study that found Southwest Florida International Airport generated more than \$3.6 billion annually of direct and indirect revenue into the local economy as a result of airport operations. This was a 74 percent increase in contribution from a study conducted in 1999. At that time, the airport contributed \$2



billion to the region's economy. Direct impacts include economic activities that would not occur in the absence of the airport, including revenue from airlines, airport shops and restaurants, cargo handlers and other airport operations. Indirect impacts are the effects of increased employment and expenditures created by successive rounds of local spending and hiring.

The total \$3.6 billion economic output includes both direct and indirect impacts. It takes into account money spent by companies and agencies that do business at the airport, by visitors who arrive in the area via the airport, and by travel agencies within the airport's service area, according to the percentage of their business that is aviation-related.

Data showed the airport's impact on regional employment increased from 1999 to 2006 by 48 percent - from 43,940 to 64,800. At the same time, the region's payroll increased 72 percent due to the airport - from \$886 million to \$1.5 billion.

The airport directly provided more than 2,500 full-time jobs in 2005, which almost doubled the 1,400 jobs provided in 1999. Approximately 60 percent of these jobs are with airport concessions, including parking, car rental, ground transportation, food and beverage, retail and advertising operations. Employment by airlines and government agencies each account for approximately one-fifth of the total.

This study quantifies the fact that the airport's importance extends beyond moving people and cargo. Almost everyone in Southwest Florida, even those who never directly use the airport or its services, enjoys some economic benefit from airport operations. The airport's economic impact will continue to increase as the region grows. Enplanements increased by 3.5 percent annually from 1990 to 2000. The direct access to SWFIA provided by the project, along with the expansion of the new midfield terminal will likely enhance the economic benefit from airport operations.

The new terminal at Southwest Florida International Airport is completed. Part of the old terminal is seen in the upper right corner of this photo. The new terminal has 28 gates along three concourses; the third floor of the parking garage is shown on the left.



In the SWFIA 2004 Master Plan Update, one of the key issues cited for meeting the airport's long term goals is improved "Surface Roadway and Interstate Access to the New Midfield Terminal". Conservatively, this important improvement to accessibility and efficiency of SWFIA can contribute an additional 1 percent to the economic growth or \$36 million annually. It translates to a **NPV of \$381,384,512 over the 20-year design life of the project.**



Livability

The benefit of this outcome is derived from the reduction in user delay and travel time for Florida residents to access this regionally significant intermodal facility.

Implementation of the collector/distributor roadway between Alico Road and Daniels Parkway will not only provide improved operations for vehicles entering/exiting I-75 at both the Alico Road and Daniels Parkway interchanges but will also allow the six-lane local access freeway to operate at Level of Service D or better in this area. It will also facilitate improved access to/from the Southwest Florida International Airport and Florida Gulf Coast University.

Hurricane evacuation is an especially critical issue in Lee County with its multitude of barrier island communities, lengthy Gulf of Mexico coastline, and generally low-lying topography. The Lee County Division of Public Safety – Emergency Management Department and the Southwest Florida Regional Planning Council are responsible for developing plans for safe and efficient evacuation of residents in low-lying Lee County. To prevent overcrowding bridges and arterial roadways during an evacuation event, several routes have been identified throughout the county to accommodate people moving from low-lying areas to higher ground. The I-75 corridor figures prominently into evacuation plans for Lee County. The corridor is planned to move people both north and south in the event of an evacuation. Arterial roadways form the backbone of Lee County’s emergency evacuation network. The major evacuation corridors include U.S. 41, I-75, Colonial Boulevard, S.R. 80, S.R. 78, and S.R. 31. Roadway elevation is also considered when determining evacuation routes. Many county roadways are low-lying, particularly those near the shore. Their propensity to flood due to rainfall, storm surge, or tidal action causes their reliability as an evacuation route to cease often before the center of the storm reaches landfall. Most of the major evacuation corridors identified are between 12 and 14 feet above sea level. The I-75 corridor is the highest at approximately 25 feet.

“The AASHTO Redbook,” originally titled “A Manual on User Benefit Analysis of Highway and Bus-Transit Improvements” published in 1977, is the standard professional reference for benefit/cost analysis for highway improvement projects based on a systematic benefit/cost methodology to evaluate proposed projects. The 1977 AASHTO Redbook was updated in 2003 and titled “User Benefit Analysis for Highways” but commonly known as the “Redbook” as part of NCHRP Project 02-23. The distributed package includes the Redbook Wizard (a spreadsheet-based model) that prompts the user for input one step at a time and the necessary documentation to assist the user through the process.

There are three main types of input data required for the Redbook: 1) Calculated/Observed Values, 2) User-Selected Values, and 3) Default/Database Values.

Analysis highlighted in the latest version of the Red Book (“User Benefit Analysis for Highways”) was used to determine the savings on road user costs for the No-Build and the Build alternatives of the SWFIA C/D system.



Savings in Travel Time

Input data for the calculation of travel times for no build and build alternatives was extracted from the “I-75 Final Preliminary Engineering Report,” dated November 2002.

In year 2000, this segment of I-75 presented an average two-way daily traffic volume (AADT) of approximately 68,100 vehicles per day (vpd). This traffic is expected to grow to more than 137,000 vpd by year 2030, which accounts for a 3.39 percent average yearly growth rate. To accommodate this growth, and as mentioned before, a collector/distributor roadway is recommended for the segment. The study demonstrated that the implementation of the collector/distributor roadway between Alico Road and Daniels Parkway not only provides improved operations for vehicles entering/exiting I-75 at both the Alico Road and Daniels Parkway interchanges but also allows the six-lane local access freeway to operate at Level of Service D or better in this area, as the following Table 1 shows:

Table 1

Segment and Alternative Year 2030	Direction	Number of Lanes	AM Peak Hour			PM Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
I-75 between Alico Road and Daniels Parkway - NO BUILD	NB	3	6800	>45	F	9000	>45	F
	SB	3	9000	>45	F	6800	>45	F
I-75 between Alico Road and Daniels Parkway - BUILD	NB	3	3800	20.7	C	5100	29.5	D
	SB	3	4900	28	D	3700	19.9	C

Based on volume and densities provided by the analysis, differences in speeds were calculated to determine the savings in travel times. The travel times were calculated for automobiles and trucks. The existing average peak hour truck percentage on mainline I-75 are about 15 percent during the morning peak and about 13 percent during the afternoon peak. However, a 9 percent peak hour truck percentage was recommended for use by FDOT for the analysis, which also represents the midpoint value between the high end of the rural freeway design hour truck percentage (10 percent) and the high end of the urban freeway design hour truck percentage (8 percent). With these assumption, the vehicle composition of the segment for 2030 results in 123,300 vpd being automobiles and 13,700 vpd being trucks.

The following tables 2 and 3 summarize the calculations of travel time savings based on the speed differences achieved by the project.



Table 2

Inputs			
Autos		Trucks	
Average hourly wage	\$21.20 ¹	Average hourly compensation	\$18.10 ¹
Percentage of hourly wage	50% ¹	Percentage of hourly compensation	100% ¹
Average vehicle occupancy	1.2	Average vehicle occupancy	1.05
Speed without Improvement (mph)	35	Speed without Improvement (mph)	35
Speed with Improvement (mph)	62	Speed with Improvement (mph)	62
or		or	
Delay without improvement (min.)		Delay without improvement (min.)	
Delay with improvement (min.)		Delay with improvement (min.)	

1: Revised Departmental Guidance: Valuation of Travel Time in Economic Analysis, February, 2003

Table 3

Calculations			
Autos		Trucks	
Value of time per hour (wage X percentage X occupancy)	\$12.72	Value of time per hour (wage X percentage X occupancy)	\$19.01
For speed change:		For speed change:	
Time without improvement (min.)	8.229	Time without improvement (min.)	8.229
Time with improvement (min.) (1 / speed) X length X 60	4.431	Time with improvement (min.) (1 / speed) X length X 60	4.431
Travel time saved per vehicle (min.):	3.798	Travel time saved per vehicle (min.):	3.798
or		or	
For delay change:		For delay change:	
Travel time saved per vehicle (min.): (delay without - delay with)	0.000	Travel time saved per vehicle (min.): (delay without - delay with)	0.000
Value of time saved per vehicle (VOT per hour * time saved / 60)	\$0.8051	Value of time saved per vehicle (VOT per hour * time saved / 60)	\$1.2030
Value of time saved per VMT (VOT per vehicle / length)	\$0.1677	Value of time saved per VMT (VOT per vehicle / length)	\$0.2506

Based on the value of time saved per vehicle (and per vehicle type) and assuming 260 days per year (weekday only), the **annual savings on travel time yielded by the improvements are estimated to be about \$30,100,000 (\$30,095,909.49).**

Using an annual rate of return of 7 percent, the net present value of these savings amount to more than \$300 million dollars for the design life of the project (\$300,837,254.97).



Sustainability

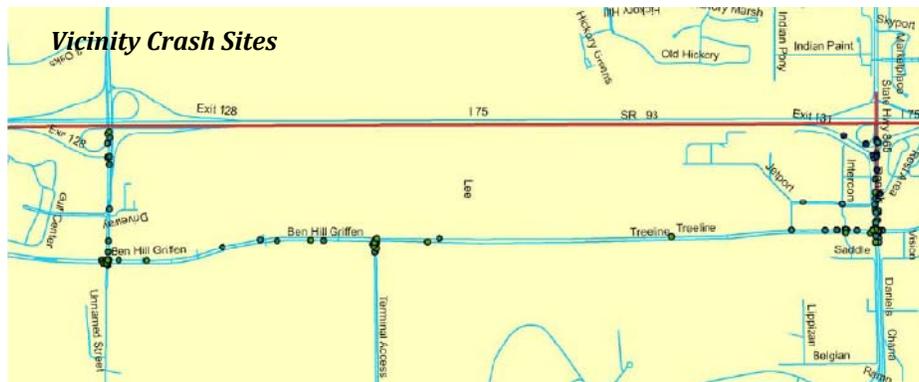
SWFIA is a major traffic generator in Lee County. The proposed project and improvements will provide direct access to the SWFIA terminal facilities, handling the majority of traffic traveling to and from the airport. These improvements will greatly reduce congestion at all of the major interchanges in the surrounding area that serve SWFIA, while also contributing to reduce greenhouse emissions as a result of vehicles idling at signalized intersections. While providing additional capacity along I-75, this project preserves the existing median for possible future multimodal purposes as outlined in the 2006 Florida Intercity Passenger Rail “Vision Plan.”

The SWFIA C/D system project also includes the preservation of essential habitat for endangered Florida Panthers by obtaining panther credits from the appropriate mitigation banks. The C/D system anticipates 90 acres of impacts of low to medium quality wetlands. These wetlands are situated near development and constantly subjected to air and surface traffic noise. The mitigation for these wetlands will occur in conservation land that will preserve a more sustainable wildlife habitat for the panther and other species. The project anticipates obtaining 750 Panther Habitat Units (PHUs). Current estimates show a \$3.6M investment toward environmental stewardship. The net gain based on the quality of the preserved land is assumed to be 50 percent of the investment. This generates \$ 1.3 million in environmental benefits

Additionally, vehicle travel time is reduced by this system. This reduction translates to a reduction of greenhouse gas emissions and fuel consumption. With the Redbook Analysis, the number of vehicle hours reduced by this improvement is 1,695,174 vehicle hours/year. With the average idling fuel consumption of 0.5 gallons/hour, the fuel consumption benefit is \$2,542,761/year. The NPV of this benefit is \$26,938,046. Additionally, based on idling calculators, **this would reduce greenhouse gas emissions by 16,919 tons per year. It has a NPV of \$5,801,000 over the life of the project. The total sustainability benefit = \$34,739,046.**

Safety

According to the FDOT crash data for these off system roadways currently connecting I-75 to the SWFIA documented between 2005 and 2008, there have been 154 vehicle property damage incidents. Due to the source of the data, the type of injury was not provided; however, in 2005, Florida had a fatality rate of 0.0104 fatalities per crash. The characteristic of the driver accessing the airport can be inherently less safe than the drivers utilizing the local roads for commerce and leisure. These drivers can be unfamiliar with the area and/or prone to speeding and running yellow or red lights to meet arriving or departing flights.





Segregation of this airport traffic from the normal local traffic will undoubtedly reduce annual traffic incidents. The following table illustrates a program developed by WSDOT to calculate benefit and costs of transportation improvements (updated in 2001). The applied reduction factors for injury, fatal and property damage only (PDO) accidents are derived from the "Informational Guide for Highway Safety Improvements"(1978). According to Table 6, the annual safety benefit of the C/D system is calculated to be \$1,173,780. The NPV of this benefit is **\$12,430,330 over a 20 year design life.**



SAFETY BENEFITS

ACCIDENT SAVINGS-SAFETY PROJECTS

SR SR 93 **Posted Speed:** 60
Project Title: Southwest Florida International Airport Collector/Distributor Access Interchange
Subject Section: MP 12.684 to MP 16.427
Length of Subject Section: 5 **Miles**
Number of Lanes: No - Build 6 **Build 6**

Safety Improvement

- 1)

Annual safety Benefits in Number of Collisions:			Three (3) Year Study Period	
Collision Type	(factor)	Total Acc.	Ann. Acc	Ann. Benefit
a) Fatality (2)	0.30	3	1.00	0.30
b) Disabling injury (5)	0.30	0	0.00	0.00
c) Evident Injury (6)	0.30	0	0.00	0.00
d) Possible Injury (7)	0.30	72	24.00	7.20
e) PDO (1)	0.30	27	9.00	2.70

Costs Per Collision(FHWA-RD-91-005)

Collision Type	Costs
a) Fatality	\$2,898,000
b) Disabling injury	\$800,000
c) Evident Injury	\$62,000
d) Possible Injury	\$40,100
e) PDO	\$5,800

Annual Safety Benefits by Costs of Collisions

a) Annual Benefit*Cost=	\$869,400
b) Annual Benefit*Cost=	\$0
c) Annual Benefit*Cost=	\$0
d) Annual Benefit*Cost=	\$288,720
e) Annual Benefit*Cost=	\$15,660
f) Total, (B) =	\$1,173,780

Service Life, (n) = 20

Salvage Value, (T) = 0

Interest Rate, (i) = 0.07

Present Worth of Cost, PWOC:

a) Present Worth Factor, PWni	0.26
b) Present Worth Factor, of a Uniform Service, SPWin	10.59

Present Worth of Benefits, PWOB = B (SPWin) \$12,430,330



The following table summarizes the cost benefits associated with the long term outcomes defined in the Notice:

Table 5

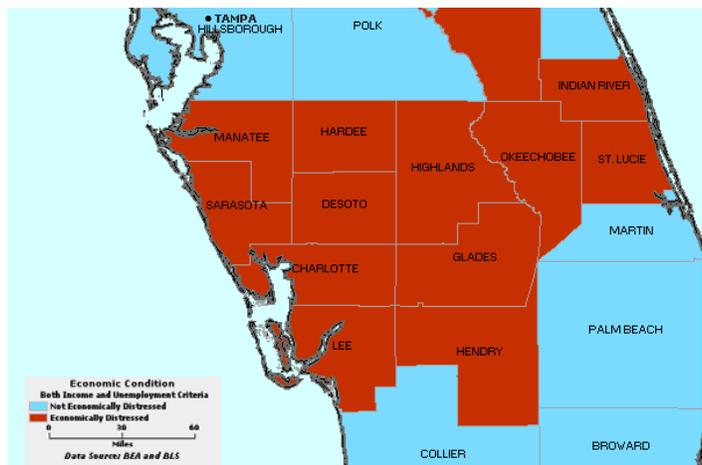
SUMMARY OF PROJECT BENEFITS –SWFIA C/D SYSTEM PROJECT		
Tiger Long-term Outcome	Calculated Benefit	Comment
State of Good Repair	\$1,125,252	Reduced Life-Cycle Cost
Economic Competitiveness	\$381,384,512	Increased GDP based on Economic Impact Study
Livability	\$300,837,255	Reduced Travel Time
Sustainability	\$34,739,046	Decreased Fuel Consumption, Environmental Stewardship
Safety	\$12,430,330	Decreased Traffic Incidents
Total Benefit	\$730,516,395	

- **PROJECT COSTS**
AS PROVIDED BY THE FDOT, THE TOTAL PROJECT COST ESTIMATED FOR THE SWFIA C/D SYSTEM IS \$99 MILLION.
- **BENEFIT TO COST RATIO**
THE CALCULATED B/C RATIO IS 7.38 USING NPV FOR A 20-YEAR DESIGN LIFE AND A 7 PERCENT DISCOUNT RATE.

Economically Distressed Area

(b) Job Creation & Economic Stimulus

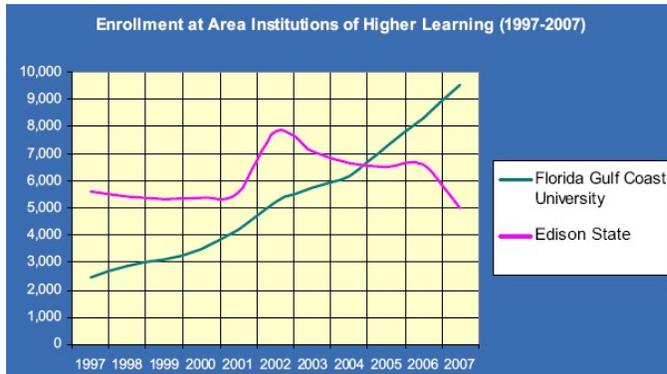
This area in Lee County has been identified as economically distressed area based upon Section 301 of the Public Works and Economic Development Act of 1965. This project will preserve jobs at the University and the airport.



In addition to preserving jobs, this project will reinvigorate the largely construction and trade-oriented workforce in Lee County. Nearly half of the area’s workforce are employed in the construction or trade industry. These jobs are primarily focused in housing construction. Due to the housing bust in Florida and economic downturn, there have been a large number of foreclosures in Southwest Florida, and residential construction has come to a virtual standstill.



Breaking ground on this project will stimulate the construction-related industry in and around Lee County for, at minimum, two years.



The proposed C/D project will enhance Florida Gulf Coast University. Florida Gulf Coast University is one of the newest universities in the United States and the tenth state university in the Florida State University System. The university opened its doors to students in August 25, 1997, and since its inception has experienced tremendous

growth. Student enrollment was almost 10,200 students in the fall 2008 or over 5,700 Full Time Equivalent (FTEs) students for the 2007-2008 academic year. In five years, the university is expected to have more than 15,000 students or 8,942 FTE students for academic year 2013-2014. FGCU draws students from outside the area and provides an opportunity for Southwest Florida residents to attend a local state university. Concurrent with student growth, university expenditures, jobs, and labor income have grown dramatically. The study found that the overall economic importance of Florida Gulf Coast University to the Charlotte, Collier, Glades, Hendry, and Lee County region for fiscal year 2007-2008 was:

- **\$389 million in overall expenditures;**
- **3,525 jobs created; and**
- **\$162 million in labor income.**

The C/D project will provide direct access to the SWFIA from I-75, which will reduce travel time to the airport for commercial and general aviation patrons. Additionally, direct access and reduced travel will have a direct benefit to goods movement. The airport handled a total of approximately 35 million pounds of air cargo in year 2000. This cargo was handled by Federal Express, United Parcel Service and Airborne Express. This project will provide a direct, safer and faster access route to the airport thereby preserving and promoting continuous use of these cargo facilities.



2. SECONDARY

(a) Innovation

The C/D system was part of the I-75 six-lane expansion project now nearly finished in Lee and Collier Counties. It was omitted because of cost when FDOT saw an innovative opportunity to accelerate the much-needed interstate capacity project. A design/build/finance (DBF) approach, used for the first time in Florida, has delivered six-lane improvements on I-75 in two counties and near the airport property.

The conventional approach to road construction involves preparation of design plans, buying land needed to build the highway, and then hiring a contractor to build the project. DBF meant construction could be done on parts of I-75 while the design team completed design plans for other segments.

The decision to widen the interstate to the inside and use existing right-of-way cut production time and budget. Adding the finance component to this DBF opportunity also has delivered extraordinary value. It has allowed FDOT to provide new lanes for drivers in just over three years while spreading payments to the team building the job over five years.

During construction, reusable materials have been recycled to the greatest extent possible, including removal and recycling existing pavement for use in the new pavement. It has reduced the volume of the materials to be hauled and disposed of and has reduced the cost to purchase materials suitable for pavement construction, as well. Other materials (guard rail, signs, drainage structures, etc.) have been salvaged and those in good condition reused for maintenance operations.

(b) Partnership

FDOT initiated this project. Other parties who are stakeholders include Southwest Florida International Airport, Florida Gulf Coast University, Lee County Port Authority and Lee County MPO.

NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENT

In 2002, a Type 2 Categorical Exclusion (CE) was prepared as part of the I-75 Project Development and Environmental (PD&E) Study for I-75 from south of Bonita Beach Road to north of S.R. 78 in Lee County. This CE (*Financial Identification Number: 406225 1 22 01/Federal Aid Project Number: 0755 068*) was independently evaluated by FDOT and FHWA, and based upon a comprehensive analysis and evaluation of need, social and environmental impacts, project alternatives, and interagency coordination, it was determined that that the project would have no significant impact on the human environment. The CE document has been approved administratively by both the FDOT (11-19-02) and FHWA (12-30-02) and is included as part of the supporting materials for this TIGER application.



FEDERAL, STATE AND LOCAL ACTIONS

Regulatory Compliance

As mentioned, the proposed project has been found to have no significant impact on the human environment, as referenced in the provided CE document. The following outcomes have been identified as a result of the project's Environmental Assessment:

- The project will not use any properties as defined by Section 4(f).
- There are no adverse impacts to the historic and archaeological properties listed or eligible for listing in the National Register of Historic Places.
- The project is within an area in attainment of all National Ambient Air Quality Standards (NAAQS), thus the transportation conformity rule (40 CFR Part 93) does not apply.
- The proposed project includes all practicable measures to minimize harm to wetlands which may result from such use. Any mitigation measures to unavoidable wetland impacts will be pursuant to Section 373.4137, Florida Statutes.
- The project is also not likely to adversely affect resources protected by the Endangered Species Act of 1973.
- No significant degradation of water quality. The proposed stormwater facility design will include, at a minimum, the water quality requirements for water quality impacts as required by the SFWMD in Rule 40E-1, 40E-4, 40E-40, 40E-41, and 40E-400, F.A.C. and the EPA. FDOT will continue to coordinate with the permitting agencies on the design of the stormwater facilities and Outstanding Florida Waters (OFW) requirements. No further water quality mitigation measures will be needed.
- Since the proposed project involves widening an existing facility with little expected right-of-way acquisition, no splitting or isolation of neighborhoods will occur. Potential direct changes to neighborhood character will not occur and would not have any disproportionately high or adverse effects on low-income or minority populations. The project will, however, provide enhanced transportation choices for local and regional populations. The project is not anticipated to harm elderly persons, handicapped individuals, non-drivers and transit-dependent individuals, or minorities. It is anticipated that the project improvements will not impact community cohesiveness. Therefore, this project is being developed to comply with Executive Order 12898, Environmental Justice, issued on February 11, 1994.

The State of Florida Department of Transportation has identified several goals and objectives through the planning process as part of the Florida Transportation Plan. These include improving safety, improving quality of life, environmental stewardship, cost-efficient maintenance and preservation of transportation assets, enhanced mobility for people and freight resulting in a stronger economy, and making sustainable transportation investments. This plan guides the development of the department's work program, which is the basis for the Transportation Improvement Plan.

Florida's Strategic Intermodal System (SIS) was established in 2003 to enhance Florida's economic competitiveness by focusing resources on transportation facilities that are considered critical to the economy and quality of life of Florida. The system consists of high-priority facilities including interstate highways, rail terminals, rail corridors, bus terminals and highways.



This includes "hub" facilities. The SIS Strategic Plan defines a "hub" as key "ports or terminals that move goods or people between Florida regions or between Florida and other markets in the United States and the rest of the world". SWFIA is listed as an SIS Passenger Hub in the State's SIS Strategic Plan. The C/D road system on I-75 is a planned SIS facility.

Regional & Local Support

This project is supported at the local, regional and state level. Local support is evident from the public involvement efforts of the PD&E. County and regional support is evidenced by the placement of the project in the Lee County MPO Transportation Improvement Program. State support is illustrated by ongoing efforts of the FDOT to improve I-75 as part of the statewide SIS system and its funding support of pre-construction planning, NEPA and design. Additionally, this project is the top priority for the Lee County MPO.