TRAVEL TIME, SAFETY, ENERGY, AND AIR QUALITY IMPACTS OF FLORIDA HIGH SPEED RAIL

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and

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INTRODUCTION

This report, *Travel Time, Safety, Energy, and Air Quality Impacts of Florida High Speed Rail,* is one of three documents produced reporting on the impacts of Florida high speed rail. Two studies, with a shared executive summary, were carried out to analyze the impacts of Florida high speed rail. This initiative was undertaken during the first half of 1997, by the Center for Economic Forecasting and Analysis (CEFA) at Florida State University (Tallahassee) and the Center for Urban Transportation Research (CUTR) at the University of South Florida (Tampa). The three documents consist of two technical reports and an executive summary. The two technical reports each share introductory materials and background information then present findings in their respective areas. The technical study and executive summary titles are:

An Analysis of the Economic Impacts of Florida High Speed Rail

Travel Time, Safety, Energy, and Air Quality Impacts of Florida High Speed Rail

Executive Summary: An Analysis of the Impacts of Florida High Speed Rail

This research effort is in response to a request from the Florida Department of Transportation (FDOT) and the FLORIDA OVERLAND EXPRESS (FOX), the franchisee, to construct and operate Florida high speed rail, to support continued project planning. Thus, this effort produced an analysis that provides additional, specific technical information regarding the impacts of the FOX project based on the high speed rail plan as outlined in the FOX proposal and subsequent franchise agreement between FOX and Florida Department of Transportation. This report addresses specific impacts of interest to planners, the public and decision makers.

This report is organized to briefly describe the transportation market in Florida and the FOX plan, followed by a more substantial discussion of the methodology and findings of the analysis.

BACKGROUND

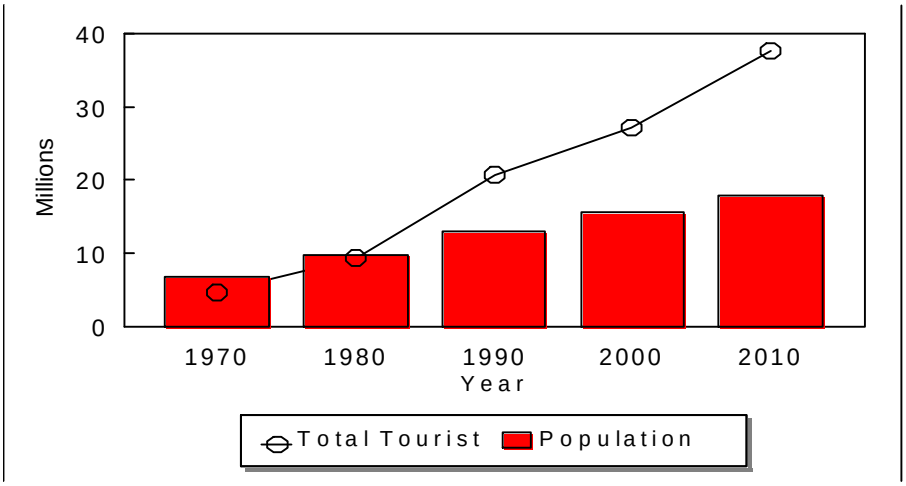
Florida has experienced population and tourism growth over the past few decades virtually unrivaled elsewhere in the United States. Population has grown from 5.0 million in 1960 to 12.9 million in 1990 and is continuing to grow at a pace roughly twice as fast as the population as the U.S. Considerable progress has been made in expanding Florida's highways, ports, airports and public transportation systems. Flat topography, the absence of freeze-thaw cycles and a relatively young existing infrastructure have helped; however, growing demand has continued to outpace the supply of new transportation capacity. As the inventory of facilities grows, the cost of maintenance requires an increasing share of revenues. Urbanization has dramatically increased costs of right-of-way for facility widening. Congestion has increased the costs of maintaining traffic flow while repairing or widening facilities and utility relocation and environmental mitigation have dramatically increased the cost for roadway expansion. The costs and consequences of unlimited expansion of Florida's roadways are more than can be borne by our environment and by the taxpayers. A number of Florida's urbanized regions are nearing the physical and environmental limits for expanding their highway and airport capacity.

Figure 1 shows the growth in total population and tourism in Florida since 1970 and projected to 2010. Between 1990 and 2010 Florida population is expected to increase by 38 percent. Population growth is expected to continue to favor the coastal and central Florida areas resulting in larger and more dense urbanized areas. Tourism is expected to grow even more rapidly with an anticipated increase of 82 percent between 1990 and 2010. The Associated Press reports that Florida had 7.2 million foreign tourists in 1995. The renowned attractions of Florida, a combination of sunshine, beaches and a huge and growing list of attractions and accommodations, will virtually assure continued attractiveness as the baby boom ages and the international population expands in numbers and has growing disposable income.

This increase in population and tourists will be facing an increasingly strained transportation system. Not only has population grown but travel per capita has increased. And the infrastructure investments have not kept pace. As shown in Figure 2, highway lane miles (LM), is forecasted to only increase 19 percent between 1990 and 2010. In that same time period vehicle miles of travel (VMT) and the number of vehicles are expected to grow dramatically. Vehicle miles of travel per highway lane mile is expected to increase 52

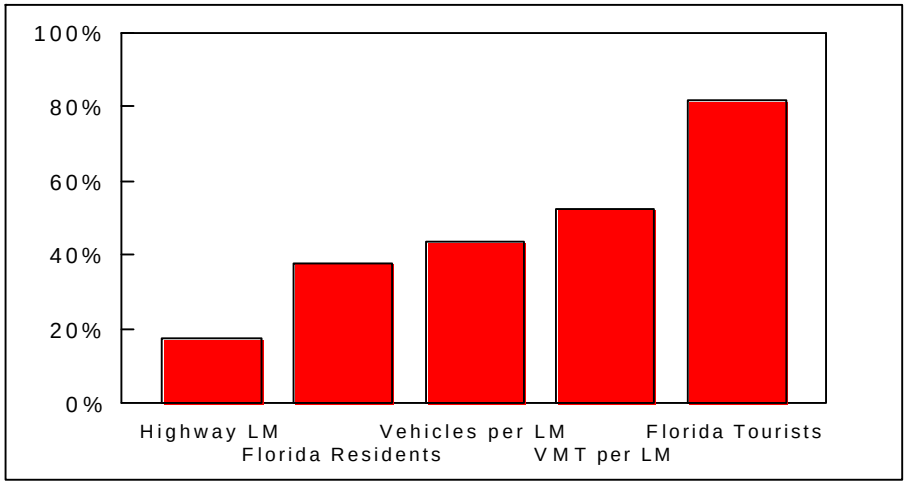
percent. Air travel expansion has also dramatically outpaced population growth and continued pressure for intercity travel capacity is expected to remain strong in Florida.

Figure 1. Population and Tourism Growth, 1990 - 2010



Source: CEFA and CUTR.

Figure 2. Travel Demand Growth, 1990 - 2010



Source: CEFA and CUTR.

The High Speed Rail Alternative

The Florida Department of Transportation has aggressively sought alternatives to meet the travel needs of Florida residents and tourists while still being responsible stewards of the environment and public resources. In this search, the prospect of implementing a high speed rail system for Florida originated in 1982 and is currently mandated by the 1992 Florida High Speed Rail Transportation Act. Florida is not alone in considering high speed rail, a number of states and regions are exploring a variety of rail technologies and corridors. A common goal is to identify markets where travel volumes and distances are such that rail services can be competitive with highway and air travel options. This may provide an opportunity to lessen the pressure on both roadway and air travel as these facilities are heavily congested in several urban areas.

As time has passed, the prospect of a high speed rail system has grown more attractive. Modern rail technology has proven itself in an increasing number of travel markets across the globe. Florida's rapid population and tourism growth, flat topography, cluster of large urbanized areas, and growing densities have created a travel market that, in part, may best be served by a transportation system that includes high speed rail. Rapid development also motivates moving ahead with a system at this time while the cost and availability of rights-of-way are still reasonable. Other motivations for moving ahead include a desire to use the investment to help shape future development near stations and to complement the growing interest in public transit as an alternative to automobile travel. A traveler choosing to travel by HSR instead of auto may be further reducing roadway travel and its negative impacts as transit alternatives might be the logical choice for travel within the urban areas visited by HSR travelers.

The proposed Florida high speed rail project is not envisioned as a single cure-all for the pressing travel congestion problems facing the state. High speed rail is, however, recognized as one of several pivotal transportation investments needed within the integrated infrastructure of the state to resolve these growing concerns.

The Florida High Speed Rail Project

In 1996, the Florida Department of Transportation entered into a public-private partnership

with FLORIDA OVERLAND EXPRESS (FOX), a consortium of four of the world's largest and most respected international engineering, construction and rail equipment companies, to implement a high speed rail system linking Tampa-Orlando-Miami. The Florida Department of Transportation and FOX are currently in the process of finalizing studies of ridership, route alignment, construction costs and financing.

The Florida High Speed Rail System is designed to provide approximately 320 miles of electrified track connecting Florida's largest urban areas. The system is intended to be an integral part of the state's overall transportation infrastructure by linking air, auto, taxi, shuttle vans, bus, and existing rail and transit systems in a way that will meet future resident and tourist travel needs. The Florida high speed rail project will serve as an important link in what may be the United States' first multi-modal transport system that includes high speed rail.

The system proposes connections with five major airports, the highway system and growing regional rail and bus transit systems across the state's largest metropolitan areas. The counties directly served by this proposed high speed rail system are forecast to contain more than 45% of the state's 15.5 million people by the year 2000 and over 58% of tourist development tax revenues are predicted to be collected in counties with direct FOX service. FOX will serve a very large share of the state's major tourism attractions including cruise ships, beaches, urban centers and theme parks.

Figure 3 is a graphic provided by FOX that indicates the system characteristics and the candidate alignments under study.

The proposed system is planned to utilize the newest generation of French TGV rail equipment. The system will consist of ten car train sets, including two power cars, seven passenger coaches and a lounge car with food service. The coach vehicles will be 61' - 4" long and 9' - 6" wide. A train set would have seating capacity for 295 passengers. The system will serve seven stations as shown in Figure 4. The peak operating speed for the system is 200 miles per hour with an average scheduled travel speeds shown in Table 1 for each station pair.

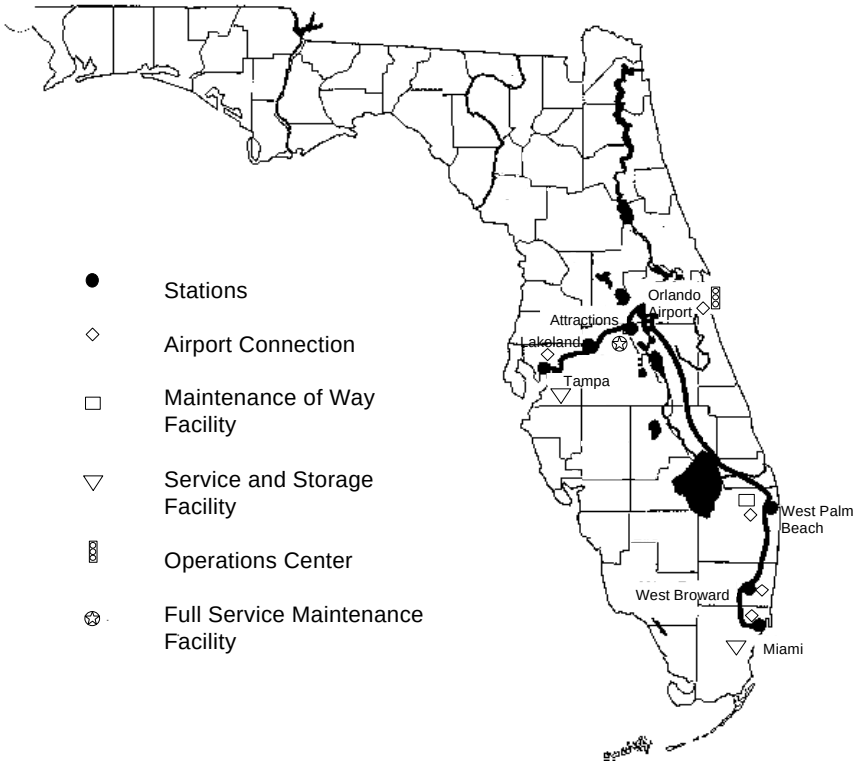
Figure 3. FOX System and Project Description

FOX's High Speed Rail

- 320 Dedicated Route Miles
- 7 Stations including 2 Airport Intermodal Facilities
- 21 Train Sets
- 295 Passengers Per Train
- Top Operating Speed 200 mph
- Trains Can Operate Every 5 Minutes
- Interconnects With Local Transit at All Stations
- Commences Operation 2004
- 5.3 Billion ($1995) Total Project Cost

Source: FOX

Figure 4. FOX Stations and Facilities



Source: FOX.

Table 1. FOX Schedule Speeds and Distances

Stations		Miami	Fort Lauderdale	West Palm Beach	Orlando Airport	Orlando Attractions	Lakeland
Tampa	*Miles*	319	286	227	84	73	32
	Minutes	145	132	113	55	37	18
Lakeland	*Miles*	287	255	196	52	41	
	Minutes	125	112	93	35	17	
Orlando Attractions	*Miles*	246	214	155	11		
	Minutes	103	90	71	13		
Orlando Airport	*Miles*	235	203	144			
	Minutes	85	72	53			

West Palm Beach	*Miles*	92	59				
	Minutes	44	23				
Fort Lauderdale	*Miles*	33					
	Minutes	17					

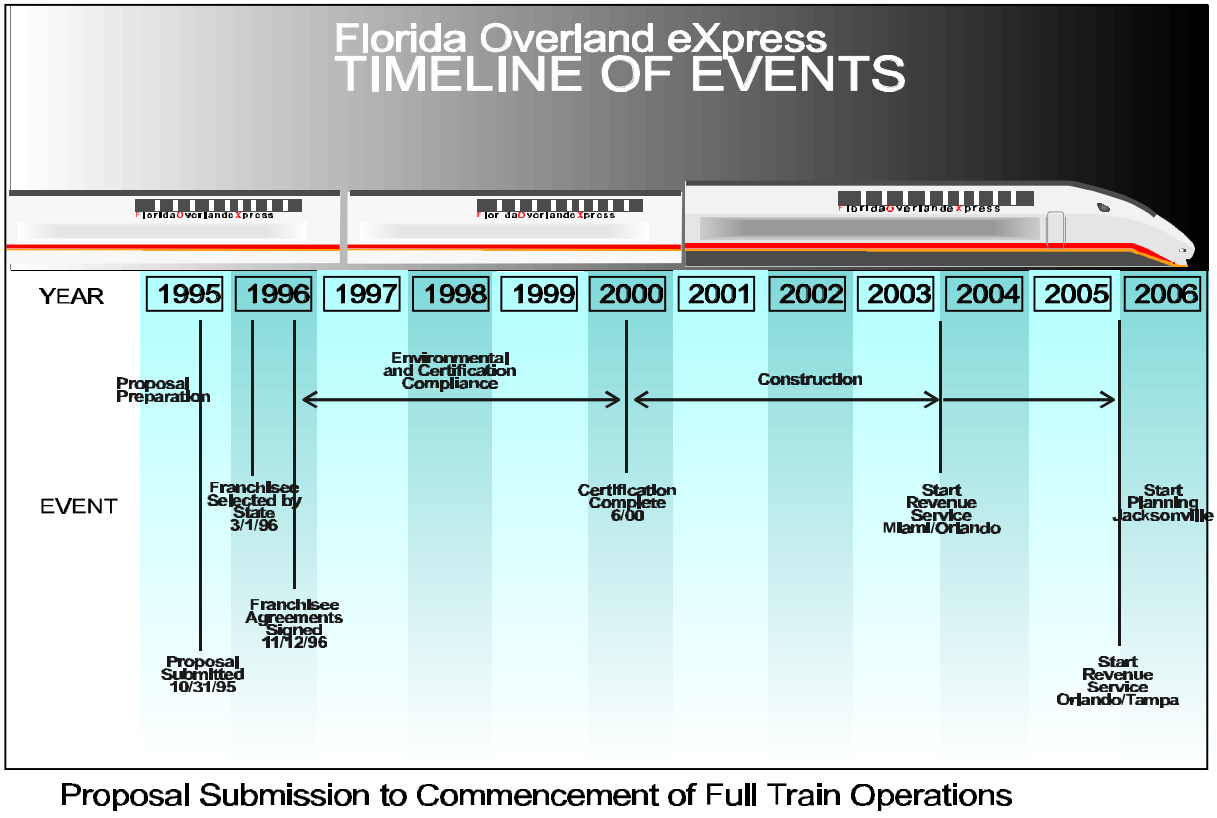
Source: FOX.

Schedules would provide service at least every hour, getting more frequent over time as demand increased. Service would be provided 365 days per year at least 18 hours per day. Fares are anticipated to be competitive with or lower than airline fares with pricing designed similar to airlines with yield management targeted to several different travel markets. Ticketing would be integrated with other ground travel and air providers.

The system would be completely grade separated with no at-grade crossings of roadways, other rail lines or pedestrian or other access. Stations would offer a full service environment with ticketing, access and egress mode services, amenities, and services designed to meet many traveler needs. Smaller in scale than commercial airports, rail stations would enable relatively quick arrival and departure times.

The schedule for the implementation of the FOX program is shown in Figure 5. The proposed schedule for Florida's high speed rail project has environmental and engineering studies on-going through 1999 and construction slated to begin in 2000. The first passengers will be able to travel from Miami to Orlando beginning in 2004.
Service would start on the Orlando to Miami leg in 2004 and in 2006 the full phase one alignment from Tampa to Miami would be in place. The prospect of future system expansion to northeast or southwest Florida and perhaps other locations has been considered; however, impacts from those facilities are not included in this analysis. Table 2 provides information developed by FOX summarizing the overall project.

Figure 5. FOX Implementation Time Line



Source: FOX.

Table 2. FLORIDA OVERLAND EXPRESS Project Summary

Source: FOX.

Impacts of Florida High Speed Rail

As a precursor to estimating the economic impacts, this study looked at the transportation benefits expected from the project. These benefits are of interest both because they subsequently contribute to economic impacts, and independently, as safety, air quality and energy use are among the important considerations in making transportation investments.

Transportation benefits accrue to persons choosing to use HSR and for non-users of the system that benefit from the presence of this transportation alternative. These benefits take two forms. The first is benefits to the HSR traveler beyond the cost of the fare including consumer surplus, safety, environmental and other savings. Second, there are economic and other savings for non-high speed rail travelers using existing transportation modes in the form of reductions in congestion and air pollution as a result of some air and auto travelers switching to this new high speed rail mode.

HSR Travel and Traveler Benefits

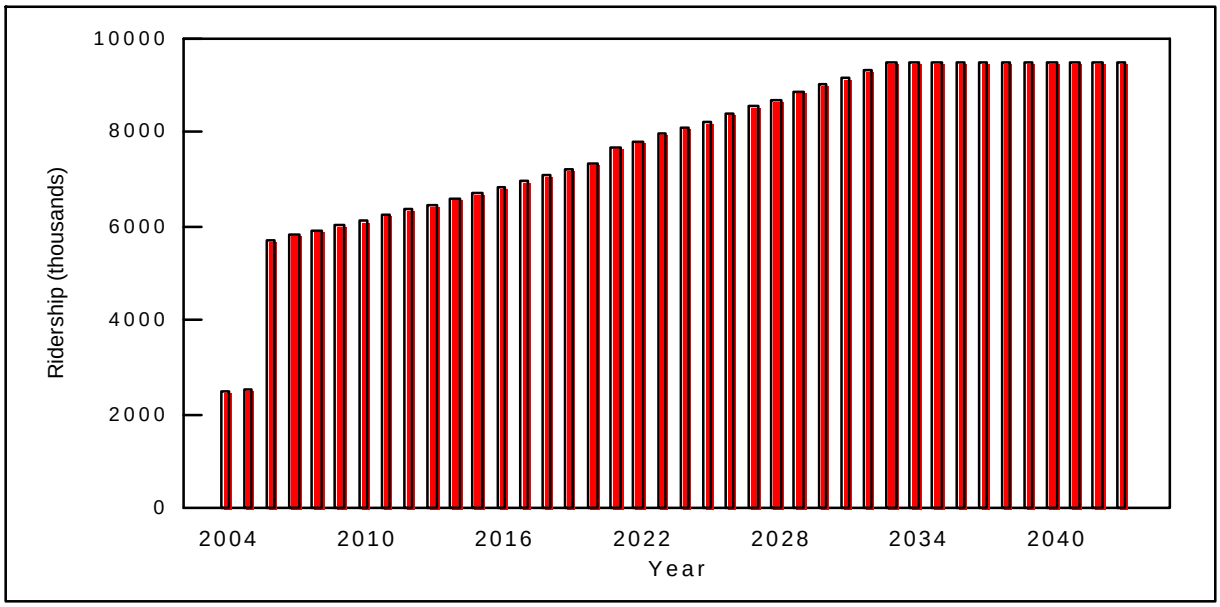
Florida High Speed Rail is projected to carry approximately 6.13 million one-way trips in the year 2010. This will result in approximately 16,780 daily trips, averaging 182 miles. Forty-six percent of the ridership will be concentrated in the Orlando-Miami segment, with 36 percent and 18 percent in the Tampa-Orlando and Tampa-Miami segments, respectively. Fifty-seven percent of these trips would be made for business purposes, the remainder being tourism and personal travel. Of the total ridership, 31 percent are estimated to shift to high speed rail from air travel, 45 percent would shift from auto, and 24 percent would be new trips induced due to the cost and convenience of high speed rail. Of intercity travel between the Florida cities served, approximately 5 percent of highway traffic will be served by high speed rail, while approximately 80 percent of air traffic will be diverted to high speed rail. HSR ridership represents about 11 percent of the total travel that starts and ends in the cities served in the Tampa-Orlando-Miami corridor.

The average fare is projected to be approximately $64 per trip or $0.35 per passenger mile in 1997 dollars. Figure 6 shows the trend of HSR ridership over the first few decades of

operation. Several studies have developed ridership forecasts for high speed rail in Florida over the past several years. The source of ridership estimates for this analysis is the ridership forecast included in the FOX Pre-Certification Post Franchise Agreement and supporting documents. This forecast utilized the extensive forecasting work that was carried out by KPMG Peat Marwick in 1993 and further modeling work carried out by SOFRERAIL, a French firm involved in high speed rail planning.

Based on that forecast, HSR will serve approximately 1.1 billion passenger miles of travel in 2010, helping meet needs in a state that currently has over 127 billion vehicle miles of travel on roadways. As portrayed by these statistics, HSR would provide a large amount of service and carry a large ridership, yet in the context of the total travel demand of the State, its role, like that of any single project, is more modest.

Figure 6. Florida High Speed Rail Ridership



Source: FOX and FDOT Pre-Certification Post Franchise Agreement (PCPFA) and supporting documents.

METHODOLOGIES

In evaluating the overall transportation impacts of the HSR project, the research team started with data on the overall travel markets and the forecasts of travel changes as a result of the implementation of HSR. This information was used along with other estimates of mode specific performance to determine estimates of overall travel benefits of HSR implementation. Accordingly, this analysis is dependent on two distinct set of data, first, that on ridership and, second, that on the mode specific performance characteristics such as accident rates.

The analysis was carried out at an aggregate level for the high speed rail system. Depending on the specific type of impact, generally 2010 was used as a reference year. However, in most cases, cumulative impacts over the time frame of the analysis were calculated. Several factors introduce uncertainty into the estimates. These uncertainties could result in the impacts being greater or less significant than forecasted. Several of these considerations are briefly discussed below.

Ridership Forecasts

As indicated earlier, this analysis is dependent on ridership forecasts carried out independently of this study. The impacts of HSR are dependent not only on the total forecasted ridership but also on the assumed prior mode of travelers and on the forecasted geographic travel pattern. In general, differences in impacts are calculated by comparing the forecasted performance to the conditions that would be expected to exist for the travelers in the absence of the new mode. Thus, for example, the energy savings will be calculated to be the change in energy consumption between HSR and auto for that segment of the market forecasted to switch from auto.

Ridership is forecasted as being from three sources: shifted from auto, shifted from air travel and induced (new travelers deciding to travel due to the new alternative). The benefits to travelers are calculated for shifted travelers. Net impacts may be different; as, for example, the energy savings for a shift of travelers from air to HSR may be partially offset by the energy consumption of the new induced travel. In general, the estimated 24% induced travel share will offset some of the energy, travel time, safety and air quality impacts of the shifted travelers. Thus, not only might changes in the total ridership change

the forecasts, but changes in the prior mode could change the estimation of impacts. Similarly, shifts in the geographic market could result in changes in the. The same number of travelers allocated differently between short and long trips would change the estimate of benefits. For example, if total ridership were the same but fewer trips were on the Tampa-Orlando segment and more on the Miami-Orlando segment, one would expect larger traveler benefits.

Finally, even subtle assumptions can have an affect on impact estimation. Do the travelers that choose high speed rail come from autos with an average occupancy of 2.2 in 1992, the average today for intercity travel in Florida, or is it more likely that they come disproportionately from single occupant vehicles? As auto operating costs are spread over more travelers in multi-occupant vehicles, one might be more inclined to see a greater shift from single occupant vehicles. This would create larger energy and environmental benefits. Unless otherwise noted, this analysis uses average conditions. As in the above case, these assumptions will impact benefits estimates.

Technology Assumptions

The energy and air quality analyses assume energy consumption and pollutant production characteristics expected to be applicable for a 2010 analysis year. For a project with an extremely long life such as the one being analyzed, one might expect significant technology changes to impact the actual performance of various modes over time. For example, looking back 25 years one would see significant differences in automobile energy efficiency, travel safety, and air pollution characteristics. It is very difficult to predict how rapidly technology changes can be expected in the future and how well they will be accepted by the marketplace. We may have a significant share of the auto fleet being powered by hybrid or electric vehicles within the time period of the franchise agreement. Yet, pure electric vehicles may not be in significant use for intercity travel for some time if ever.

A more exhaustive analysis looking at scenarios of the vehicle fleet characteristics in the areas of energy consumption, safety and air quality might be able to provide a richer understanding of the traveler benefits, particularly for more distant time periods where there remains a great deal of uncertainty regarding modal performance.

Technology changes in the aircraft industry will also impact the comparative performance of

air travel over the next several decades. Energy efficiency, safety, and pollutant production have also been changing rapidly for the air travel industry.

Modal Performance Assumptions

This analysis assumes average modal performance characteristics for both high speed rail and the alternatives over the time period of analysis. For high speed rail, international experience with the technology provides a high degree of confidence that the assumed performance characteristics will be attained. However, for the air and auto modes the actual in-service operating performance is very much subject to market demand and operating conditions. Specifically, while we know today's technologies performance capabilities, the actual in-service performance is very much affected by the levels of congestion that exist. Dramatic increases in travel time, cost, safety, energy and air quality impacts can be expected if the travel market continues to have strong growth and is not supported by new capital investment in capacity.

The assumptions used in this analysis are generally based on near term forecasts of operating conditions. However, both roadway and airport congestion can have dramatic impacts as each vehicle not only directly suffers the consequences of congestion but may be resulting in significant congestion being realized by other vehicles. For example, if high levels of airport congestion are allowed to develop, travel time, energy consumption, and pollutant production would dramatically increase. As airspace reaches saturation, each new flight may be producing impacts on travel time, energy use and pollution for several aircraft in queue waiting to use the airport. This rapid deterioration in performance as facility capacities are reached is not fully accounted for in this analysis and may be resulting in an underestimation of the benefits of implementing HSR. To fully evaluate this situation would require a detailed, context specific analysis of overall travel demand and capacity. Perhaps simulation modeling of airport congestion and performance of critical roadway links could provide a richer understanding of the importance of this issue. The extent to which the public and private sectors respond to growing travel demand will impact the extent to which critical congestion levels develop.

TRAVEL TIME IMPACTS

Time savings were estimated for those HSR passengers who will be diverted from auto and air. The estimation assumed that roadway access time was the same across all modes. The estimation accounted for the following differences among the modes:

- the difference in the total amount of time for line-haul travel between HSR and the original mode of travel; and

- the difference in the total amount of terminal time between air and HSR. It was assumed that terminal time for HSR is 18 minutes shorter per passenger trip than air. This assumption is similar to that used in earlier ridership forecasting work. It is expected that the terminal time would be less on high speed rail due to a number of factors. Airports, by virtue of the fact that they serve a multitude of destinations are much larger physically and require greater walking distances. In addition, luggage handling, security, and ticketing all would be expected to take less time in a high speed rail facility. Actual vehicle boarding would also be expected to be faster as it would not be constrained to a single entry point and narrow aisles as in aircraft boarding. With single train departures every half hour to hour, the proposed station facilities should be able to efficiently process demand. The 18 minute savings would occur partially at each end of the trip, though the greatest HSR time advantage would be expected at the boarding end of the trip.

The distances of line-haul travel for all three modes were assumed to be the same as those for HSR. Table 3 shows the distances between each station pair, based on information provided by FOX. As HSR stations are located in close proximity to or at airports, access time to the station/airport for air and rail trips would be expected to be very similar. In some cases auto access trips may be faster as they would be more direct, not necessarily having to access a central station point to begin an intercity trip. This access circuitry for air or HSR would be a relatively modest share of total travel time for longer intercity trips but could be more important for shorter trips.

The line-haul travel times (excluding terminal times) used in the estimation are shown separately in Table 4 for auto, air, and HSR. For auto, an average speed of 60 miles per hour was assumed. Posted speeds in much of the corridor are 70 MPH and typically

average free-flow freeway speeds would be a few miles above the posted speed for auto travel.

Table 3. FOX Station-Pair Distance (miles)

Stations	Miami	For Lauderdale	West Palm Beach	Orlando Airport	Orlando Attractions	Lakeland
Tampa	319	286	227	84	73	32
Lakeland	287	255	196	52	37	
Orlando Attractions	246	214	155	11		
Orlando Airport	235	203	144			
West Palm Beach	92	59				
Fort Lauderdale	33					

Source: FOX.

Urban parts of the corridor would have lower posted speeds and most probably slower travel in peak periods. Over the life of the franchise one might expect increasing congestion on at least urban parts of the roadway system. Currently I-4 between Tampa and Orlando experiences congestion and delays on a regular basis. Additional capacity for this corridor is currently under construction. Over the life of the HSR project other sections of the corridors are likely to get congested at times and operate at lower speeds. If roadway demands continue to outpace capacity expansion, auto speeds may be lower in coming decades.

For air, current schedules for flights between the cities in the HSR corridor were used. Shifts to small jets as replacement for turboprop aircraft may sightly speed air travel in-flight time, however, growing airport delays may offset that change. Airport congestion is predicted to change significantly over the coming years and could result in slower overall air travel times. Increased airport security measures could also impact air travel times by increasing terminal times.

Line-haul travel times for high speed rail were from the FOX Proposal.

These travel time differences are then multiplied by the corridor specific travel forecasts. The results of these calculations are shown in Table 5.

Table 4. Line-Haul Travel Times (minutes)

Stations	Mode	Miami	Fort Lauderdale	West Palm Beach	Orlando Airport	Orlando Attractions	Lakeland
Tampa	Auto	319	286	227	84	73	32
	Air	80	70	60	40	-	30
	FOX	145	132	113	55	37	18
Lakeland	Auto	287	255	196	52	37	
	Air	80	70	60	40	-	
	FOX	125	112	93	35	17	
Orlando Attractions	Auto	246	214	155	11		
	Air	-	-	-	-		
	FOX	103	90	71	13		
Orlando Airport	Auto	235	203	144			
	Air	70	60	50			
	FOX	85	72	53			
West Palm Beach	Auto	92	59				
	Air	20	10				
	FOX	44	23				
Fort Lauderdale	Auto	33					
	Air	20					
	FOX	17					

Source: FOX, CEFA, and CUTR.

Table 5. Travel Time Savings

Type of Impacts	Annual Impacts for 2004-2043	Cumulative Impacts for 2004-2043
Hours Saved for HSR Users from Air (millions)	-0.5	-20.5
Hours Saved for HSR Users from Auto (millions)	4.3	173.8
Total Hours Saved for HSR Users (millions)	3.8	153.3

Source: CEFA and CUTR.

SAFETY IMPACTS

Reduction in the number of fatalities, injuries, and accidents was estimated for those HSR passengers who would be diverted from auto and air. This analysis evaluated the safety consequences of the HSR investment. It did not evaluate the relative merits of HSR in improving safety compared to other transportation investments.

The estimation was based on information on fatality, injury, and accident rates per passenger mile for each mode and the amount of passenger miles that are projected to be diverted from auto and air. The fatality, injury, and accident rates used in this analysis are shown in Table 6. HSR was assumed to be free of any fatalities, injuries, or accidents, based on operating experiences in Japan and Europe in the last 15 years.

Table 6. Fatality, Injury, and Accident Rates for Auto, Air, and HSR

	Auto	Air	HSR
Fatalities per Billion Passenger Miles	10	0.1958	0
Injuries per Billion Passenger Miles	1,766	0.0545	0
Accidents per Billion Passenger Miles	1,807	0.0783	0

Source: Tables 7 and 8; FOX, and Florida Department of Highway Safety and Motor Vehicles, *1995 Florida Traffic Crash Facts*.

Information on fatality, injury, and accident rates for auto was from Florida Department of Highway Safety and Motor Vehicles (FDHSMV)'s Florida Traffic Crash Facts, 1995. The Department reported that there were 2,847 fatalities, 233,900 "non-fatal injuries," and 228,589 crashes on Florida's highways in 1995 and estimated a fatality rate of 2.2 per 100-million vehicle miles of travel. This fatality rate and the total number of fatalities were used in this analysis to estimate the total mount of vehicle travel, which in turn was used to estimate injury and accident rates per vehicle mile for auto. These rates were then converted into rates per passenger mile by using an occupancy rate of 2.2. persons per vehicle for intercity travel. This auto occupancy rate was based on FDOT's Florida High Speed and Intercity Rail Market and Ridership Study.

Information on fatality, injury, and accident rates for air was derived from the Web site of the National Transportation Safety Board (NTSB) and the 1996 U.S. Statistical Abstract. Since the numbers of fatalities, injuries, or accidents vary significantly over time for air travel, this analysis used average rates over the period 1990-1994. Also, only scheduled services were considered in the rates because information on passenger miles is not readily available for non-scheduled services.

Table 7 shows the number of passenger fatalities, serious injuries, and accidents by year and type of services (U.S. Air Carriers versus Commuter Air Carriers). Table 8 shows the amount of travel by year and type of services.

Table 7. Fatalities, Serious Injuries, and Accidents for U.S. Scheduled Air Services

	Passenger Fatalities		Serious Injuries		Accidents	
	U.S. Carrier	Commuter	U.S. Carrier	Commuter	U.S. Carrier	Commuter
1990	8	7	23	11	22	16
1991	40	99	19	30	25	22
1992	26	21	14	5	16	23
1993	0	24	7	2	22	16
1994	228	25	16	6	19	10
Total	302	176	79	54	104	87
Source	NTSB Table 3	NTSB Table 8	NTSB Table 3	US Abstract No. 989	NTSB Table 6	NTSB Table 8

Source: National Transportation Safety Board, Aviation Accident Statistics and the 1996 *U.S. Statistical Abstract*. Table numbers are shown at the bottom row of the table.

Table 8. Passenger Miles for U.S. Scheduled Airline Services (billions)

	U.S. Carriers	Commuter
1990	457.9	7.61
1991	448.0	7.80
1992	478.6	9.46
1993	489.7	10.61
1994	519.2	12.02
Total	2,393.3	47.50
Source	U.S. Abstract, No. 1039	U.S. Abstract, No. 1048

Source: 1996 U.S. Statistical Abstract. Table numbers are shown in the bottom row.

Table 9 shows the estimated safety benefits. Safety benefits to HSR users shifted from air are minimal because of the extremely low risk on air travel (See Table 6). On the other hand, safety benefits to HSR users shifted from auto are significant. A total of 5 fatalities, 380 injuries, and 389 accidents are expected to be avoided annually due to from shifts from auto to HSR travel.

Table 9. Estimated Safety Benefits

Type of Impacts	Annual Impacts for 2004-2043		Cumulative Impacts for 2004-2043	
	Auto	Air	Auto	Air
Reduced Fatalities	5	0	190	4
Reduced Injuries	380	0	15,201	1
Reduced Accidents	389	0	15,541	2

Source: CEFA and CUTR.

REDUCTIONS IN AIRCRAFT FLIGHTS AND AUTOMOBILE TRIPS

The diversion of travelers from air and highway modes to the FHSR will reduce the number of aircraft flights and automobile trips in the corridor. Table 10 shows the estimated reductions in aircraft flights and automobile trips. Figures 7 and 8 show the reductions over time for aircraft flights and automobile trips, respectively.

Table 10. Reductions in Aircraft Flights and Automobile Trips

Mode	Annual for 2004-2043	Cumulative for 2004-2043
Aircrafts Flights (thousands)	61	2,433
Automobile Trips (thousands)	1,473	58,923

Source: CEFA and CUTR.

Annual reduction in aircraft flights because of diversion of passengers to the FHSR was computed as follows:

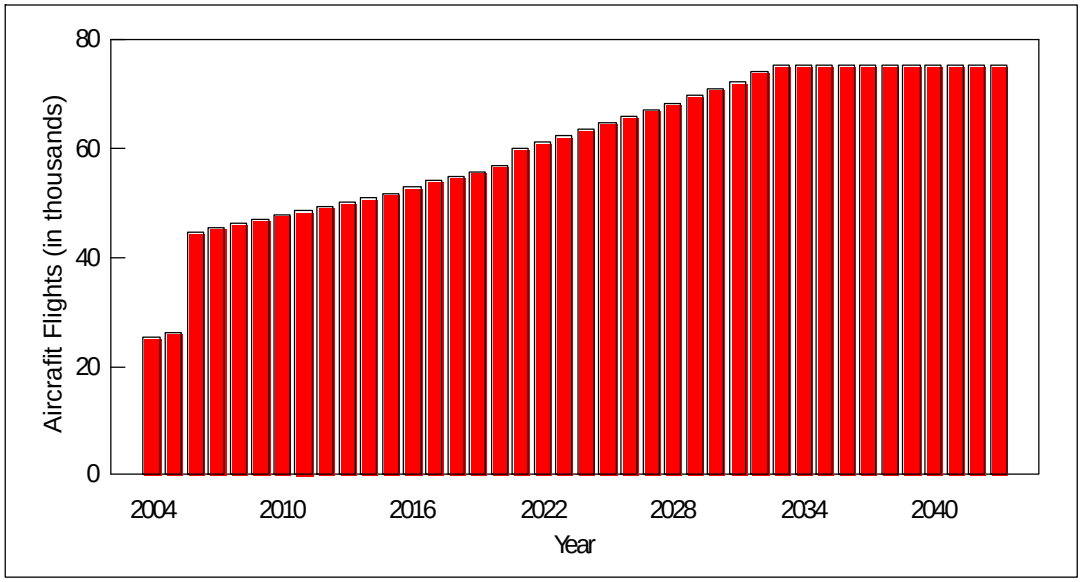
$$AF = \frac{P_{air}}{O_{air}} \quad (1)$$

where

AF = annual reduction in the number of aircraft flown
P_{air} = annual air passengers diverted to the FHSR
O_{air} = average number of passengers per aircraft

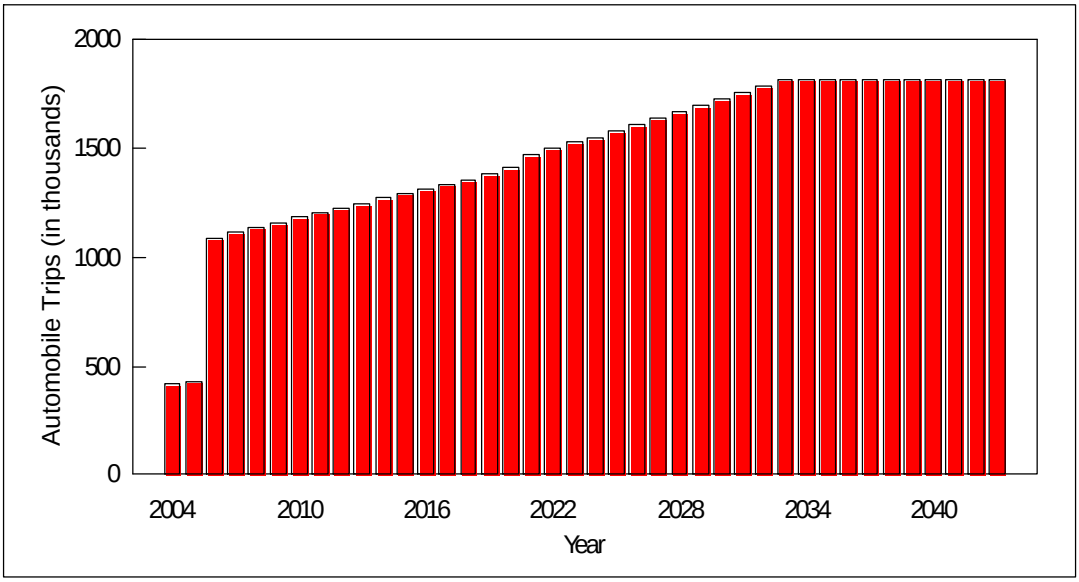
For example, the FHSR was projected to divert 1.5 million passengers from air in 2010. This diversion translates to a reduction of about 30 aircrafts, assuming an occupancy level of 32 passengers per aircraft. The level of aircraft occupancy of 32 passengers was based on an average load factor of 63 percent and an average seating capacity of 50 for flights between cities in the FHSR corridor.

Figure 7. Reduction in Aircraft Flights



Source: CEFA and CUTR.

Figure 8. Reduction in Automobile Trips.



Source: CEFA and CUTR.

Annual reduction in automobile trips because of travelers diverted to the FHSR was estimated as follows:

$$AT = \frac{VMT_{auto}}{L_{auto}} \qquad (2)$$

where

AT	=	annual reduction in the number of automobile trips
VMT_{auto}	=	annual reduction in vehicle miles of travel due to automobile passengers diverted to the FHSR
L_{auto}	=	average length of automobile trips in miles

Reduction in vehicle miles of travel was estimated with information on passenger miles diverted from automobiles and information on vehicle occupancy for intercity travel in Florida. Vehicle occupancy was derived from the 1992 Statewide Survey of Intercity Travel in Florida as shown in Exhibit D-5, Florida High Speed and Intercity Rail Market and Ridership Study: Technical Appendices, 1993. The overall occupancy was 2.2 for all purposes. Vehicle occupancy was assumed to be 1.5 and 2.5, respectively, for business and other purposes, which are consistent with the overall occupancy and the share of intercity trips for business purposes (28.5 percent) as reported in Exhibit D-1.

The number of passenger miles was estimated with data on FHSR ridership diverted from highway by station pairs and distances between station pairs. This was done for each year over 2004-2043 and for business and other purposes separately.

The average length of automobile trips for a given year was estimated by dividing the number of FHSR passenger miles diverted from automobile by the number of FHSR riders diverted from highway travel.

ENERGY IMPACTS

The energy efficiency of the automobile fleet is generally expected to continue to improve as new more efficient vehicles replace existing stock across the U.S. This analysis assumes a general 25% gain in the Florida general automobile fleet stock efficiency over the 2010 to 2035 time period with the retirement and replacement of older models with the new more efficient automobiles.

The FOX-TGV HSR energy consumption estimates were derived from the FOX Florida High Speed Rail Application. The Florida airplane energy efficiency is derived from the Florida Miami-Orlando-Tampa air carrier corridor specific information sources. These and other pertinent transportation modeling information were derived from widely accepted industry standards employing consistent and relatively conservative assumptions. The respective average energy efficiencies for each mode are identified in Table 11.

Table 11. Transportation Mode Energy Efficiencies

Transportation Mode	Year	Energy Consumption Rate (Btus/Passenger-mile)
Auto	2010	3,125
	2035	2,344
Aircraft	2010	5,446
	2035	5,446
FOX-TGV HSR	2010	1,813
	2035	1,813

Source: CEFA and CUTR.

Table 12 provides a profile of the energy, gasoline, and total fossil fuel savings for passengers diverted to HSR from the automobile and air transportation modes in Florida in 2010 and 2035. Over 1.67 trillion BTUs of energy will be saved across the corridor due to these mode switches in 2010; and 2.11 trillion BTUs will be saved in 2035. On average this is equivalent to 3.5 gallons of gasoline for each diverted passenger in 2010 and 3.0 gallons in 2035. Since the diversion of travel is to electric energy presently generated by coal and

nuclear powered plants, even greater net savings of petroleum based fuel is realized from these diversions since auto and air are exclusively fueled by petroleum based fuels. Over 386 thousand barrels of oil in 2010 and 506 thousand barrels in 2035 will be saved by diverting these passengers from auto and air to HSR travel in Florida. Much of this oil is imported. To the extent these fuels are imported, the U.S. balance of payments will be reduced by these fuel substitution effects.

Table 12. Energy Savings from Diverting Auto and Air Passengers to the FOX-HSR

	2010		2035	
	Total	Average Per Passenger	Total	Average Per Passenger
Gross Transport BTUs Saved (mil.)	1,674,333	0.36	2,111,274	0.29
Gallons of Gasoline Saved	16,277,155	3.5	21,252,253	3.0
Barrels of Oil Saved	386,361	0.083	506,006	0.070

Source: CEFA and CUTR.

AIR QUALITY IMPACTS

The air quality impacts from the implementation of the FOX high speed rail are calculated in a manner similar to the other benefits estimates. The relative energy efficiencies of the modes are applied to the diverted traffic volumes to determine the savings associated with the shifts in mode.

Table 13 summarizes emissions savings from introduction of the FOX-HSR for the years 2010 and 2035. The largest single category of emission reductions would be for carbon dioxide, with over 134,918 and 218,410 tons saved in 2010 and 2035 from auto and air passengers diverting to the HSR mode. The second largest reductions come from declines in carbon monoxide, with 21,625 and 35,006 tons saved in 2010 and 2035, respectively. The third largest savings comes from reductions in hydrocarbons, with 14,091 and 22,814 tons of annual emissions eliminated in 2010 and 2035 due to these modal shifts. Fourth, nitrogen oxides reductions would equal 770 and 1,246 tons in 2010 and 2035. An additional 101 and 164 tons of particulate matter and 38 and 62 tons of tire wear particles would be removed in 2010 and 2035 through introducing the FOX-HSR system.

Table 13. Net Reductions in Air Quality Pollutants (tons)

Year	Pollutant	Auto	Air	Total	FHSR	Net
2010	Carbon Dioxide (CO2)	69,658	65,260	134,918	41,257	93,661
	Carbon Monoxide (CO)	4,414	17,220	21,634	9	21,625
	Hydrocarbons (HC)	595	13,499	14,094	1	14,093
	Nitrogen Oxides (NOx)	307	654	961	191	770
	Particulate Matter (PM)	37	97	134	33	101
	Sulfur Dioxide (SO2)	25	145	170	287	(117)
	Tire Wear Matter	38		38		38
	Totals	75,074	96,875	171,949	41,778	130,171
2035	Carbon Dioxide (CO2)	112,765	105,645	218,410	66,789	151,621
	Carbon Monoxide (CO)	7,145	27,876	35,021	15	35,006
	Hydrocarbons (HC)	963	21,853	22,816	2	22,814
	Nitrogen Oxides (NOx)	497	1,058	1,555	309	1,246
	Particulate Matter (PM)	61	157	218	54	164
	Sulfur Dioxide (SO2)	40	235	275	465	(190)
	Tire Wear Matter	62		62		62
	Totals	121,533	156,824	278,357	67,634	210,723

Source: CEFA and CUTR.

Finally, since power plant fuel sources typically employ higher sulfur content than auto and aircraft fuels total sulfur emissions are increased by 123 tons per year while the sulfuric acid component of sulfur emissions decline by 4 tons in 2010.

Electrical Power Generation for HSR

The potential environmental and energy benefits from introduction of the HSR mode owe their existence to the use of relatively clean stationary sources of energy production. Electric power plants use diverse fuel source mixes to produce efficient energy and can employ and manage large and efficient emission control technologies. This results in substantial improvements in air pollution emissions over conventional mobile transportation technologies in all but one regulated pollutant. Across the central and south Florida peninsula 15.4% of electrical generation is from nuclear sources (virtually no air pollution) while 32% is from coal (all with regulated or controlled emissions). The remainder is from oil and natural gas (relatively modest comparative emissions). All power plant emissions used in this analysis are derived from a weighted average from the actual 1995 per megawatt hour emissions levels. A unique MWH emission factor was calculated for the five principal pollutants reported on in the Florida Department of Environmental Protection (FDEP) and Environmental Protection Agency (EPA) air emission inventory. They are Volatile Organic Compounds (VOC), Sulfur Dioxide (SO2), Nitrogen Oxides (NOx), Particulate Matter (PM), and Carbon Monoxide (CO). Carbon Dioxide (CO2) was separately calculated from separate research by the Oak Ridge National Laboratory.

Finally the average emissions per megawatt hour for each pollutant for all of the power plants in operation in Central and South Florida were calculated for 1995 from the *1997 Air Pollutant Information Systems Facility Emission Report*, Florida Department of Environmental Protection. A summary of those emission rates is provided in Table 14 with the detailed emissions data available in Appendix A. The FOX-HSR energy demands required to transport projected 2010 and 2035 ridership were then estimated. Comparisons between emissions and energy consumption for each mode were completed for all travelers diverted to the HSR mode from air and auto, and the net differences were calculated to yield net emissions and energy consumption reductions for that year.

Table 14. Power Plant Emission Factors, 1995

Pollution Category	Hydrocarbons (HC)	Carbon Monoxide (CO)	Nitrogen Oxides (NO_x)	Sulfur Dioxide (SO2)	Particulate Matters (PM)
Tons per MWH	0.01	0.29	1.89	2.84	0.33

Source: Calculated from data in FDEP's *1997 Air Pollutant Information Systems Facility Emission Report*.

Auto Emissions

Table 15 provides USEPA emission factors used to generate automobile related emissions from passengers diverted from automobile to the HSR system. The number of passengers diverted from auto to HSR in 2010 assumes a weighted average occupancy of 2.2 passengers per vehicle. These occupancies were used along with average estimated passenger trip length provided by system ridership models.

Table 15. Automobile Emission Factors

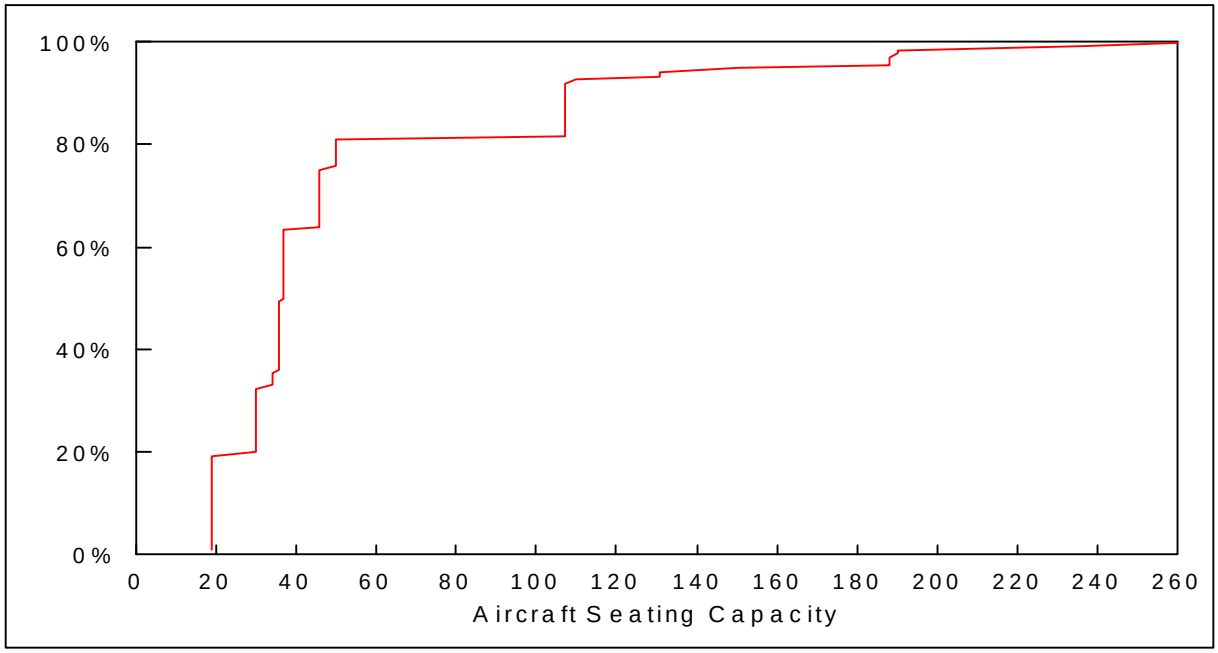
Pollution Category	Hydrocarbons (HC)	Carbon Monoxide (CO)	Nitrogen Oxides (NO_x)	Sulfur Dioxide (SO2)	Particulate Matters (PM)	Carbon Dioxide (CO_2)
Grams per vehicle mile	3.1	23	1.6	0.13	0.195	363

Source: USEPA, *1995 Annual Emissions and Fuel Consumption for an "Average" Passenger Car*.

Aircraft

A comparable analysis was generated for the air travel mode. The current and likely future fleet profile of aircraft transporting passengers between the Ft. Lauderdale, Miami, Orlando, and Tampa airports was obtained from the Web site of the airports in the corridor. Figure 9 provides a profile of the size and cumulative percent of aircraft currently originating in

Orlando flying to each of the other urban areas in the corridor. This profile includes both



direct and through aircraft flights. Over 80% of the existing aircraft operating in these

Figure 9. Cumulative Distribution of Aircraft by Number of Seats, Orlando International Airport, 1997

Source: Appendix B.

corridors are under 50 seats. An even larger percentage of the direct flights falls in the range of 19 to 30 seats. Aircraft are typically Beechcraft (19 seats), Brasilia EMB-120 (30 seats), Dash 8 (37 seats) and so forth. Table 16 contains a sample profile of the aircraft operating in these corridors. Appendix B provides more detailed information on aircraft and flight schedules for the Orlando International Airport.

The method used to estimate aircraft emissions was complicated by the different mixes of commuter aircraft operating within the Miami, Orlando, Tampa corridor. The methodology followed the recommendations in USEPA's Procedures for Emission Inventory Preparation. A standard 50 seat commuter aircraft was used with engines and related emission and fuel consumption data derived from the USEPA procedures. The estimation involved three step

described below.

Table 16. Sample Aircraft Profile

	Number of Flights per Week	Type of Aircraft	Number of Seats	Flight Duration
From Miami to:				
Ft. Lauderdale	21 11	Beechcraft Brasilia EMB-120	19 30	22.5 minutes 30 minutes
Tampa/St. Petersburg	73 36 73 69 5	Beechcraft Shorts 360 Dash 8 Saab SF-340 Alenia	19 36 37 34 46	65 minutes 70 minutes 70 minutes 65 minutes 70 minutes
West Palm Beach	28	Saab SF-340	34	35 minutes
From Tampa to:				
Ft. Lauderdale	67	737	129	?

Source: CEFA and CUTR.

Step 1. This step adjusts approach and climb out time to represent local conditions. Equation 3 below adjusts the times-in-mode, which are based on a default mixing height of 3000 feet, to an airport specific value based on the local mixing height. Equation 4 assumes the climb out mode begins with the transition from takeoff to climb out at 500 feet and continues until the aircraft exits the mixing layer.

$$T_{ja} = 4 \frac{H}{3000} \quad (3)$$

$$T_{jc} = 2.2 \frac{H - 500}{2500} \quad (4)$$

Where

T_{ja} = time in the approach mode for aircraft type j, in minutes

T_{jc} = time in the climb out mode for commercial aircraft type j, in minutes

H = mixing height for time and region of interest

Step 2. This step calculates emissions for each aircraft type with equation (5) below.

$$E_{ij} = \sum_{k} T_{jk} \frac{FF_{jk}}{1000} EI_{ijk} N_j \quad (5)$$

where

j = mode (idle, take off, climb out, or approach)

E_{ij} = emissions of pollutant i, in pounds, produced by aircraft type j for one LTO cycle

T_{jk} = time in mode for mode k, in minutes, for aircraft type j

FF_{jk} = fuel flow for mode k, in pounds per minute, for each engine used on aircraft type j (See Table 17)

EI_{ijk} = emission index for pollutant i, in pounds of pollutant per one thousand pounds of fuel, in mode k for aircraft type j (See Table 17)

N = number of engines used on aircraft type j

Step 3. This step calculates total emissions for all commercial aircraft as follows:

$$TE_i = \sum_{j} E_{ij} \, LTO_j \quad (6)$$

where

TE_i = total emissions of pollutant i, in pounds, produced by all

commercial aircraft operating in the region of interest (where j covers the range of commercial aircraft operating in the area)

LTO_j = total number of LTO cycles for aircraft type j, during the inventory period (annual data available from Airport Activity Statistics of Certificated Route Air Carriers

The final step in this emissions and energy modal comparison was to calculate total emissions for the "standard" commuter aircraft type and to sum them for total aircraft emissions in the corridor using an industry wide 63% capacity factor.

Table 17. Aircraft Fuel Rate and Emission Factors

	Idle	Take Off	Climb Out	Approach
Fuel Rates				
(LBS/hour Operation)	1.92	7.08	6.67	3.58
Emissions Rates (LBS Emissions/1000 LBS Fuel)				
Carbon Monoxide (CO)	64.00	1.01	1.20	23.02
Nitrogen Oxide (NOx)	2.43	7.81	7.00	8.37
Total Hydrocarbon (HC)	50.17	0.50	0.50	2.19
Sulfur Oxides (SOx)	0.54	0.54	0.54	0.54
Particulate (PM)	0.36	3.70	2.60	1.50

Source: Table 5-4 Modal Emissions Rates - Civil Aircraft Engines - Typical Duration For Civil PT6A-27 P&WC P.2-73 -2/80, *Procedures for Emission Inventory Preparation*, Vol. IV: Mobile Sources, USEPA, 1996.

Table 18 provides a summary of all emission reductions and estimates of savings per passenger for 2010 and 2035. These estimates indicate that the average passenger would reduce their automobile and airplane pollution loadings into the Florida atmosphere by 56 to 58 pounds per trip between 2010 and 2035 if the FOX-HSR project were in operation.

Table 18. Emissions Savings Summary

Total Emission Differences	2010		2035	
	Total	Per Passenger	Total	Per Passenger
Pounds	261,996,000	56	421,448,000	58
Tons	130,998	0.028	210,724	0.029

Source: CEFA and CUTR.

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APPENDIX A

Florida Power Plant Emissions, 1995

Table A-1. Carbon Monoxide (CO)

Facility ID	Owner/Company	Site Name	Emissions Unit Description	MW Rating	Ton/Year
710002	TECO	HOOKERS POINT STATION	UNIT #1 B+W FRONT FIRING OIL-FIRED BOILER	33	7.30
710002	TECO	HOOKERS POINT STATION	UNIT #2-B & W FRONT FIRING OIL FIRED BOILER	34	5.01
710002	TECO	HOOKERS POINT STATION	UNIT #3-B & W FRONT FIRING OIL FIRED BOILER	34	4.55
710002	TECO	HOOKERS POINT STATION	47 MW #6 OIL FIRED STEAM GENERATOR #5	47	2.13
710002	TECO	HOOKERS POINT STATION	UNIT #4- B & W FRONT-FIRED OIL FIRED BOILER	49	5.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #1	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #10. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #11. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #12. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #2. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #3. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #4. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #5. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #6. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #7. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #8. 63 MW.	63	0.50
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #9. 63 MW.	63	0.50
710002	TECO	HOOKERS POINT STATION	UNIT #6 - B & W TANGENTIAL FIRING OIL FIRED BOILER	82	6.00
710002	TECO	GANNON STATION	125MW BABCOCK&WILCOX CORP WET BOTTOM CYCLONIC FIRING TYPE BL	125	56.86
710002	TECO	GANNON STATION	UNIT #1 STEAM GENERATOR	125	56.81
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #1 165 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	156	55.70
570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FFSG POWER PLANT - UNIT #3 -FUEL OIL,NATURAL GAS,PROPAN	160	57.00
710002	TECO	GANNON STATION	UNIT #3 - B&W WET BOTTOM COAL FIRED BOILER	180	83.43
710002	TECO	GANNON STATION	UNIT#4- B&W WET BOT CYCLONIC FIR`G COAL FIR BOLR, EAST STACK	187	140.14
90006	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #1 W/LOW EXCESS AIR BURNERS&MULTI CYCLONES W/REI	225	119.76
90006	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #2 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REI	225	125.11
710002	TECO	GANNON STATION	UNIT #5 COAL FIRED BOILER	239	156.76
570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#1 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	685.10
570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#2 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	631.51
90006	FLORIDA POWER & LIGHT	RIVIERA	STEAM GENERATOR#4, LOW EXCESS AIR BURNERS&CYCLONES W/ REINJE	310	737.85
90006	FLORIDA POWER & LIGHT	RIVIERA	UNIT # 3 BOILER STACK	310	236.84
90006	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#3 W/LOW EXCESS AIR BURNERS & MULTI-CYCLONES W/RE	402	302.06
90006	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#4 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REIN	402	287.26
90006	FLORIDA POWER & LIGHT	TURKEY POINT	400 MW CLASS (440MW GROSS CAP.) STEAM GEN. UNIT	402	297.81
90006	FLORIDA POWER & LIGHT	TURKEY POINT	404 MEGAWATT UNIT#1-W/LOW EXCESS AIR BURNERS&TRANSMISSOMETER	402	265.28
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #2 408 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	402	223.41
570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #2	402	323.60
570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR,UNIT #1	402	314.25
90006	FLORIDA POWER & LIGHT	PORT EVERGLADES	GAS TURBINES ELECTRIC GENERATING UNIT #1-12	411	58.28
90006	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #1 GAS TURBINE ELECTRIC GENERATION	411	36.95
90006	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #13 GAS TURBINE ELECTRIC GENERATION	411	54.21
710002	TECO	GANNON STATION	UNIT #6 - COAL FIRED BOILER WITH ESP	414	270.07
570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #4, OPERATING ON #6 FO P	436	160.00
570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #5, OPERATING ON #6 FO	436	215.50
710002	TECO	BIG BEND STATION	UNIT #1 COAL FIRED BOILER W/RESEARCH-COTRELL ESP	445	371.39
Table A-1. Carbon Monoxide (CO) (continued)					
710002	TECO	BIG BEND STATION	UNIT #2 RILEY-STOKER COAL FIRED BOILER W/ ESP	445	366.19

710002	TECO	BIG BEND STATION	UNIT #3 RILEY-STOKER COAL-FIRED BOILER W/ ESP	445	332.19
710002	TECO	BIG BEND STATION	UNIT #4 COAL-FIRED BOILER W/ BELCO ESP PSD-FL-040	486	401.27
90006	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 1	863	5,174.58
90008	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 2	863	6,661.13
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #1 STEAM GENERATOR-FRONT-FIRED - 863 MW MAX. CAPACITY	863	2,991.43
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #2 STEAM GENERATOR-FRONT-FIRED- 863 MW CAPACITY	863	3,043.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4A	N / A	59.58
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4B	N / A	61.27
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5A	N / A	62.35
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5B	N / A	61.78
90008	FLORIDA POWER & LIGHT	LAUDERDALE	DIESEL FUEL STORAGE TANK(UNDERGROUND)	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	GASOLINE STORAGE TANK (UNDERGROUND)	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 2 HANDLING NO. 2 FUEL OIL	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 3 HANDLING LIGHT DISTILLATE FUEL OIL	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 5 HANDLING NO. 2 FUEL OIL	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	TWO GAS TURBINE DUMP TANKS	N / A	0.00
90008	FLORIDA POWER & LIGHT	CUTLER RIDGE	161.5 MW TANGENTIALLY FIRED STEAM GENERATOR #6	N / A	58.51
90008	FLORIDA POWER & LIGHT	CUTLER RIDGE	75 MW,TANGENTIALLY FIRED,STEAM GENERATOR	N / A	17.48
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3A,1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	54.08
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3B, 1 CT & 1 HRSG	N / A	52.83
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4A-1CT WITH 1 HT RCVY STEAM GENERATOR	N / A	39.41
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4B-1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	52.81
90008	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #1 (Unit A) burning No.6 fuel oil	N / A	0.15
90008	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #2 (Unit B) burning No.6 fuel oil	N / A	0.00
90008	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Miscellaneous support equipment	N / A	2.19
90008	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Wire reclamation incinerator w/afterburner	N / A	0.36
570040	ORLANDO UTILITIES COMMISSION	STANTON ENERGY CENTER	FOSSIL FUEL STEAM GENERATION UNIT #1	N / A	303.15
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-C)	N / A	10.08
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-D)	N / A	74.45
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-A	N / A	11.36
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-B	N / A	70.97
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #2	N / A	47.98
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #3	N / A	213.35
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #1	N / A	48.93
570040	ORLANDO UTILITY COMMISSION	CAPE CANAVERAL PLANT	STEAM BOILER , LOCATED IN BELCHER OIL FAC.	N / A	0.10
710002	TECO	BIG BEND STATION	BIG BEND STATION COMBUST. TURBINE #2 - FIRED BY NO. 2 FUEL O	N / A	1.93
710002	TECO	BIG BEND STATION	GAS TURBINE #1 FIRED BY #2 FUEL OIL	N / A	0.21
710002	TECO	BIG BEND STATION	GAS TURBINE #3 - WESTINGHOUSE TURBINE FIRED BY NO. 2 FUEL OI	N / A	3.26
710002	TECO	GANNON STATION	14 MW GAS FIRED TURBINE	N / A	0.16

Table A-2. Nitrogen Oxides (NOx)

Facility ID	Owner/Company	Site Name	Emissions Unit Description	MW Rating	Ton/Year
90008	FLORIDA POWER & LIGHT	ST. LUCIE NUCLEAR PLANT	4 MAIN PLANT EMERGENCY DIESEL GENERATORS	3	8.43
710002	TECO	HOOKERS POINT STATION	UNIT #1 B+W FRONT FIRING OIL-FIRED BOILER	33	97.57
710002	TECO	HOOKERS POINT STATION	UNIT #2-B & W FRONT FIRING OIL FIRED BOILER	34	67.13
710002	TECO	HOOKERS POINT STATION	UNIT #3-B & W FRONT FIRING OIL FIRED BOILER	34	60.90
710002	TECO	HOOKERS POINT STATION	47 MW #6 OIL FIRED STEAM GENERATOR #5	47	28.29
710002	TECO	HOOKERS POINT STATION	UNIT #4- B & W FRONT-FIRED OIL FIRED BOILER	49	70.77
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #1	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #10. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #11. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #12. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #2. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #3. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #4. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #5. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #6. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #7. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #8. 63 MW.	63	7.30
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #9. 63 MW.	63	7.30
710002	TECO	HOOKERS POINT STATION	UNIT #6 - B & W TANGENTIAL FIRING OIL FIRED BOILER	82	80.45
710002	TECO	GANNON STATION	125MW BABCOCK&WILCOX CORP WET BOTTOM CYCLONIC FIRING TYPE BL	125	3,452.55
710013	TECO	GANNON STATION	UNIT #1 STEAM GENERATOR	125	3,449.55
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #1 165 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	156	746.41
570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FFSG POWER PLANT - UNIT #3 -FUEL OIL,NATURAL GAS,PROPAN	160	770.00
710013	TECO	GANNON STATION	UNIT #3 - B&W WET BOTTOM COAL FIRED BOILER	180	5,090.55
810010	TECO	GANNON STATION	UNIT#4- B&W WET BOT CYCLONIC FIR`G COAL FIR BOLR, EAST STACK	187	8,587.55
90008	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #1 W/LOW EXCESS AIR BURNERS&MULTI CYCLONES W/REI	225	1,631.00
90008	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #2 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REI	225	1,703.71
810010	TECO	GANNON STATION	UNIT #5 COAL FIRED BOILER	239	8,839.99
570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#1 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	1,245.22
570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#2 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	1,148.20
90008	FLORIDA POWER & LIGHT	RIVIERA	STEAM GENERATOR#4, LOW EXCESS AIR BURNERS&CYCLONES W/ REINJE	310	3,016.25
90008	FLORIDA POWER & LIGHT	RIVIERA	UNIT # 3 BOILER STACK	310	3,186.08
90008	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#3 W/LOW EXCESS AIR BURNERS & MULTI-CYCLONES W/RE	402	4,109.00
90008	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#4 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REIN	402	3,914.72
90008	FLORIDA POWER & LIGHT	TURKEY POINT	400 MW CLASS (440MW GROSS CAP.) STEAM GEN. UNIT	402	4,051.04
90008	FLORIDA POWER & LIGHT	TURKEY POINT	404 MEGAWATT UNIT#1-W/LOW EXCESS AIR BURNERS&TRANSMISSOMETER	402	2,884.41
570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #2 408 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	402	2,993.65
570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #2	402	4,407.40
570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR,UNIT #1	402	4,286.00
90008	FLORIDA POWER & LIGHT	PORT EVERGLADES	GAS TURBINES ELECTRIC GENERATING UNIT #1-12	411	233.10
90008	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #1 GAS TURBINE ELECTRIC GENERATION	411	153.28
90008	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #13 GAS TURBINE ELECTRIC GENERATION	411	225.04
810010	TECO	GANNON STATION	UNIT #6 - COAL FIRED BOILER WITH ESP	414	15,254.55
570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #4, OPERATING ON #6 FO P	436	2,167.00

Table A-2. Nitrogen Oxides (NOx) (continued)

570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #5, OPERATING ON #6 FO	436	2,916.00
810010	TECO	BIG BEND STATION	UNIT #1 COAL FIRED BOILER W/RESEARCH-COTRELL ESP	445	20,992.74
810010	TECO	BIG BEND STATION	UNIT #2 RILEY-STOKER COAL FIRED BOILER W/ ESP	445	20,696.74
810010	TECO	BIG BEND STATION	UNIT #3 RILEY-STOKER COAL-FIRED BOILER W/ ESP	445	8,149.74
810010	TECO	BIG BEND STATION	UNIT #4 COAL-FIRED BOILER W/ BELCO ESP PSD-FL-040	486	7,236.62
90008	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 1	863	2,448.32
90008	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 2	863	3,151.76
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #1 STEAM GENERATOR-FRONT-FIRED - 863 MW MAX. CAPACITY	863	2,011.29
90008	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #2 STEAM GENERATOR-FRONT-FIRED- 863 MW CAPACITY	863	2,435.38
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4A	N / A	804.22
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4B	N / A	827.06
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5A	N / A	841.67
90008	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5B	N / A	833.94
90008	FLORIDA POWER & LIGHT	LAUDERDALE	DIESEL FUEL STORAGE TANK(UNDERGROUND)	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	GASOLINE STORAGE TANK (UNDERGROUND)	N / A	0.00
90008	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 2 HANDLING NO. 2 FUEL OIL	N / A	0.00
90012	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 3 HANDLING LIGHT DISTILLATE FUEL OIL	N / A	0.00
90012	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 5 HANDLING NO. 2 FUEL OIL	N / A	0.00
90012	FLORIDA POWER & LIGHT	LAUDERDALE	TWO GAS TURBINE DUMP TANKS	N / A	0.00
90012	FLORIDA POWER & LIGHT	CUTLER RIDGE	161.5 MW TANGENTIALLY FIRED STEAM GENERATOR #6	N / A	804.62
90012	FLORIDA POWER & LIGHT	CUTLER RIDGE	75 MW,TANGENTIALLY FIRED,STEAM GENERATOR	N / A	240.29
90012	FLORIDA POWER & LIGHT	FPL / MARTIN CO	10,000 LB/HR AUXILIARY BOILER FOR UNITS 3(A,B) AND 4(A,B)	N / A	0.03
90012	FLORIDA POWER & LIGHT	FPL / MARTIN CO	500 KW EMERGENCY DIESEL GENERATOR	N / A	0.00
90113	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3A,1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	537.98
90113	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3B, 1 CT & 1 HRSG	N / A	525.61
110036	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4A-1CT WITH 1 HT RCVY STEAM GENERATOR	N / A	392.03
110036	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4B-1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	525.33
110036	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #1 (Unit A) burning No.6 fuel oil	N / A	0.89
110036	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #2 (Unit B) burning No.6 fuel oil	N / A	1.89
110036	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Miscellaneous support equipment	N / A	10.14
110036	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Wire reclamation incinerator w/afterburner	N / A	2.69
110036	FLORIDA POWER & LIGHT	ST. LUCIE NUCLEAR PLANT	MISCELLANEOUS DIESEL DRIVEN EQUIPMENT	N / A	17.28
570039	FLORIDA POWER & LIGHT COMPANY	FLORIDA POWER & LIGHT	PACKAGE BOILER,350 HP, CLEAVER-BROOKS	N / A	0.00
570040	ORLANDO UTILITIES COMMISSION	STANTON ENERGY CENTER	FOSSIL FUEL STEAM GENERATION UNIT #1	N / A	6,190.80
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-C)	Market	Aircraft
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-D)	Miami, FL	Gulfstream
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-A	Miami, FL	Gulfstream
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-B	Tampa,	Gulfstream
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #2	Miami, FL	Gulfstream
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #3	Miami, FL	Gulfstream
570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #1	Miami, FL	Gulfstream
570040	ORLANDO UTILITY COMMISSION	CAPE CANAVERAL PLANT	STEAM BOILER , LOCATED IN BELCHER OIL FAC.	Miami, FL	Gulfstream
810010	TECO	BIG BEND STATION	BIG BEND STATION COMBUST. TURBINE #2 - FIRED BY NO. 2 FUEL O	Miami, FL	Gulfstream
810010	TECO	BIG BEND STATION	GAS TURBINE #1 FIRED BY #2 FUEL OIL	Miami, FL	Gulfstream
810010	TECO	BIG BEND STATION	GAS TURBINE #3 - WESTINGHOUSE TURBINE FIRED BY NO. 2 FUEL OI	Ft.	Gulfstream
810010	TECO	GANNON STATION	14 MW GAS FIRED TURBINE	Miami, FL	Gulfstream

Table A-3. Particulate Matter (PM)

Facility ID	Owner/Company	Site Name	Emissions Unit Description	MW Rating	Ton/Year
0850001	TECO	HOOKERS POINT STATION	UNIT #1 B+W FRONT FIRING OIL-FIRED BOILER	33	22.02
0850001	TECO	HOOKERS POINT STATION	UNIT #2-B & W FRONT FIRING OIL FIRED BOILER	34	15.17
0850001	TECO	HOOKERS POINT STATION	UNIT #3-B & W FRONT FIRING OIL FIRED BOILER	34	13.76
0850001	TECO	HOOKERS POINT STATION	47 MW #6 OIL FIRED STEAM GENERATOR #5	47	5.73
0850001	TECO	HOOKERS POINT STATION	UNIT #4- B & W FRONT-FIRED OIL FIRED BOILER	49	15.97
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #10. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #11. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #12. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #2. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #3. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #4. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #5. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #6. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #7. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #8. 63 MW.	63	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #9. 63 MW.	63	0.00
0850001	TECO	HOOKERS POINT STATION	UNIT #6 - B & W TANGENTIAL FIRING OIL FIRED BOILER	82	18.17
0850001	TECO	GANNON STATION	125MW BABCOCK&WILCOX CORP WET BOTTOM CYCLONIC FIRING TYPE BL	125	92.10
0850001	TECO	GANNON STATION	UNIT #1 STEAM GENERATOR	125	46.28
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #1 165 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	156	212.23
0570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FFSG POWER PLANT - UNIT #3 -FUEL OIL,NATURAL GAS,PROPAN	160	152.80
0850001	TECO	GANNON STATION	UNIT #3 - B&W WET BOTTOM COAL FIRED BOILER	180	101.95
0850001	TECO	GANNON STATION	UNIT#4- B&W WET BOT CYCLONIC FIR`G COAL FIR BOLR, EAST STACK	187	271.07
0110036	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #1 W/LOW EXCESS AIR BURNERS&MULTI CYCLONES W/REI	225	180.13
0110036	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #2 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REI	225	189.25
0850001	TECO	GANNON STATION	UNIT #5 COAL FIRED BOILER	239	193.36
0570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#1 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	120.16
0570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#2 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	110.80
0110036	FLORIDA POWER & LIGHT	RIVIERA	STEAM GENERATOR#4, LOW EXCESS AIR BURNERS&CYCLONES W/ REINJE	310	697.32
0110036	FLORIDA POWER & LIGHT	RIVIERA	UNIT # 3 BOILER STACK	310	766.85
0110036	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#3 W/LOW EXCESS AIR BURNERS & MULTI-CYCLONES W/RE	402	503.86
0110036	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#4 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REIN	402	398.47
0110036	FLORIDA POWER & LIGHT	TURKEY POINT	400 MW CLASS (440MW GROSS CAP.) STEAM GEN. UNIT	402	499.40
0110036	FLORIDA POWER & LIGHT	TURKEY POINT	404 MEGAWATT UNIT#1-W/LOW EXCESS AIR BURNERS&TRANSMISSOMETER	402	452.96
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #2 408 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	402	851.18
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #2	402	481.42
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR,UNIT #1	402	392.50
0110036	FLORIDA POWER & LIGHT	PORT EVERGLADES	GAS TURBINES ELECTRIC GENERATING UNIT #1-12	411	10.20
0110036	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #1 GAS TURBINE ELECTRIC GENERATION	411	6.48
0110036	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #13 GAS TURBINE ELECTRIC GENERATION	411	9.51
0850001	TECO	GANNON STATION	UNIT #6 - COAL FIRED BOILER WITH ESP	414	1,116.35
0570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #4, OPERATING ON #6 FO P	436	374.00
0570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #5, OPERATING ON #6 FO	436	456.30
0850001	TECO	BIG BEND STATION	UNIT #1 COAL FIRED BOILER W/RESEARCH-COTRELL ESP	445	1,179.40

Table A-3. Particulate Matter (PM) (continued)

0850001	TECO	BIG BEND STATION	UNIT #2 RILEY-STOKER COAL FIRED BOILER W/ ESP	445	1,160.40
0850001	TECO	BIG BEND STATION	UNIT #3 RILEY-STOKER COAL-FIRED BOILER W/ ESP	445	646.90
0850001	TECO	BIG BEND STATION	UNIT #4 COAL-FIRED BOILER W/ BELCO ESP PSD-FL-040	486	59.50
0110036	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 1	863	1,020.08
0110036	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 2	863	1,313.17
0110036	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #1 STEAM GENERATOR-FRONT-FIRED - 863 MW MAX. CAPACITY	863	352.33
0110036	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #2 STEAM GENERATOR-FRONT-FIRED- 863 MW CAPACITY	863	381.66
0110036	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4A	N / A	56.93
0110036	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4B	N / A	58.55
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5A	N / A	59.58
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5B	N / A	59.04
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	DIESEL FUEL STORAGE TANK(UNDERGROUND)	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	GASOLINE STORAGE TANK (UNDERGROUND)	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 2 HANDLING NO. 2 FUEL OIL	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 3 HANDLING LIGHT DISTILLATE FUEL OIL	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 5 HANDLING NO. 2 FUEL OIL	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	TWO GAS TURBINE DUMP TANKS	N / A	0.00
0110037	FLORIDA POWER & LIGHT	CUTLER RIDGE	161.5 MW TANGENTIALLY FIRED STEAM GENERATOR #6	N / A	7.31
0110037	FLORIDA POWER & LIGHT	CUTLER RIDGE	75 MW,TANGENTIALLY FIRED,STEAM GENERATOR	N / A	0.10
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3A,1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	18.25
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3B, 1 CT & 1 HRSG	N / A	17.83
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4A-1CT WITH 1 HT RCVY STEAM GENERATOR	N / A	13.30
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4B-1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	17.82
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #1 (Unit A) burning No.6 fuel oil	N / A	0.05
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #2 (Unit B) burning No.6 fuel oil	N / A	0.33
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Miscellaneous support equipment	N / A	0.71
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Wire reclamation incinerator w/afterburner	N / A	1.70
0570038	FLORIDA POWER & LIGHT CO	PORT CANAVERAL STORAGE FAC.	F.P.&L. OIL HEATING BOILER 400HP, VE	N / A	0.00
0570039	FLORIDA POWER & LIGHT COMPANY	PORT MANATEE OIL STORAGE	FUEL OIL HEATER "B1254". 15 MM BTU/HR MAX.	N / A	0.00
0570040	ORLANDO UTILITIES COMMISSION	STANTON ENERGY CENTER	FOSSIL FUEL STEAM GENERATION UNIT #1	N / A	40.10
0570040	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-C)	N / A	0.70
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-D)	N / A	5.13
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-A	N / A	0.78
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-B	N / A	4.91
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #2	N / A	22.74
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #3	N / A	54.55
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #1	N / A	6.09
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	LIME STORAGE SILO	N / A	0.00
0710002	ORLANDO UTILITY COMMISSION	CAPE CANAVERAL PLANT	STEAM BOILER , LOCATED IN BELCHER OIL FAC.	N / A	0.24
0850001	TECO	BIG BEND STATION	BIG BEND COAL YARD.PERMITTED UNDER PA79-12 & PSD-FL-040 P	N / A	487.11
0850001	TECO	BIG BEND STATION	BIG BEND STATION COMBUST. TURBINE #2 - FIRED BY NO. 2 FUEL O	N / A	0.63
0850001	TECO	BIG BEND STATION	BIG BEND STATION UNIT NO. 1 & NO. 2 FLY ASH SILO WITH BAGHOU	N / A	22.60
0850001	TECO	BIG BEND STATION	BIG BEND STATION UNIT NO. 1 AND NO. 2 OPEN BED TRUCK LOADOUT	N / A	2.68
0850001	TECO	BIG BEND STATION	FLY-ASH SILO FOR UNIT #3	N / A	22.60
0850001	TECO	BIG BEND STATION	FLY-ASH SILO FOR UNIT #3	N / A	2.68
0850001	TECO	BIG BEND STATION	FLYASH SILO FOR UNIT #4 P	N / A	1.00

Table A-3. Particulate Matter (PM) (continued)					
850001	TECO	BIG BEND STATION	GAS TURBINE #1 FIRED BY #2 FUEL OIL	N / A	0.07
850001	TECO	BIG BEND STATION	GAS TURBINE #3 - WESTINGHOUSE TURBINE FIRED BY NO. 2 FUEL OI	N / A	1.06
0950137	TECO	BIG BEND STATION	LIMESTONE SILO A W/ 2 BAGHOUSES. 1 IS 100% BACK-UP P	N / A	0.10
0950137	TECO	BIG BEND STATION	LIMESTONE SILO B W/ 2 BAGHOUSES. 1 IS 100% BACK-UP P	N / A	0.10
0950137	TECO	BIG BEND STATION	TRUCK UNLOADING OF LIMESTONE	N / A	0.10
0950137	TECO	BIG BEND STATION	UNIT 1 COAL BUNKER W/ROTO-CLONE	N / A	0.07
0950137	TECO	BIG BEND STATION	UNIT 2 COAL BUNKER W/ROTO-CLONE	N / A	0.07
0950137	TECO	BIG BEND STATION	UNIT 3 COAL BUNKER W/ROTO-CLONE	N / A	0.07
0950137	TECO	GANNON STATION	14 MW GAS FIRED TURBINE	N / A	0.05
0990042	TECO	GANNON STATION	COAL YARD SERVING UNITS 1-6/BARGE RRCAR UNLDG-TRNFR-STORAGE	N / A	160.52
0990042	TECO	GANNON STATION	FLY ASH SILO NO. 2 UNITS 1-4	N / A	5.26
0990042	TECO	GANNON STATION	FLYASH SILO NO. 1 FOR UNITS 5 & 6	N / A	12.70
0990042	TECO	GANNON STATION	GANNON UNITS 5 & 6, PUG MILL AND TRUCK LOADING	N / A	2.64
0990042	TECO	GANNON STATION	UNIT 1 COAL BUNKER W/ROTO-CLONE	N / A	0.01
0990042	TECO	GANNON STATION	UNIT 2 COAL BUNKER W/ROTO-CLONE	N / A	0.01
0990042	TECO	GANNON STATION	UNIT 3 COAL BUNKER W/ROTO-CLONE	N / A	0.02
0990042	TECO	GANNON STATION	UNIT 4 COAL BUNKER W/ROTO-CLONE	N / A	0.03
0990042	TECO	GANNON STATION	UNIT 5 COAL BUNKER W/ROTO-CLONE	N / A	0.03
0990042	TECO	GANNON STATION	UNIT 6 COAL BUNKER W/ROTO-CLONE	N / A	0.05

Table A-4. Particulate Matter (PM10)

Facility ID	Owner/Company	Site Name	Emissions Unit Description	MW Rating	Ton / Year
0990042	TECO	HOOKERS POINT STATION	UNIT #1 B+W FRONT FIRING OIL-FIRED BOILER	33	22.02
0990042	TECO	HOOKERS POINT STATION	UNIT #2-B & W FRONT FIRING OIL FIRED BOILER	34	15.17
0990042	TECO	HOOKERS POINT STATION	UNIT #3-B & W FRONT FIRING OIL FIRED BOILER	34	13.76
0990042	TECO	HOOKERS POINT STATION	47 MW #6 OIL FIRED STEAM GENERATOR #5	47	5.73
0990123	TECO	HOOKERS POINT STATION	UNIT #4- B & W FRONT-FIRED OIL FIRED BOILER	49	15.97
0990123	TECO	HOOKERS POINT STATION	UNIT #6 - B & W TANGENTIAL FIRING OIL FIRED BOILER	82	18.17
0990123	TECO	GANNON STATION	125MW BABCOCK&WILCOX CORP WET BOTTOM CYCLONIC FIRING TYPE BL	125	92.10
0990123	TECO	GANNON STATION	UNIT #1 STEAM GENERATOR	125	46.28
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #1 165 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	156	212.23
0570038	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FFSG POWER PLANT - UNIT #3 -FUEL OIL,NATURAL GAS,PROPAN	160	152.00
0990123	TECO	GANNON STATION	UNIT #3 - B&W WET BOTTOM COAL FIRED BOILER	180	101.95
0990123	TECO	GANNON STATION	UNIT#4- B&W WET BOT CYCLONIC FIR`G COAL FIR BOLR, EAST STACK	187	271.07
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #1 W/LOW EXCESS AIR BURNERS&MULTI CYCLONES W/REI	225	180.13
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #2 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REI	225	189.25
0990123	TECO	GANNON STATION	UNIT #5 COAL FIRED BOILER	239	193.36
0570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#1 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	120.16
0570039	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#2 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	110.80
0110037	FLORIDA POWER & LIGHT	RIVIERA	STEAM GENERATOR#4, LOW EXCESS AIR BURNERS&CYCLONES W/ REINJE	310	697.32
0110037	FLORIDA POWER & LIGHT	RIVIERA	UNIT # 3 BOILER STACK	310	766.85
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#3 W/LOW EXCESS AIR BURNERS & MULTI-CYCLONES W/RE	402	503.86
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#4 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REIN	402	398.47
0110037	FLORIDA POWER & LIGHT	TURKEY POINT	400 MW CLASS (440MW GROSS CAP.) STEAM GEN. UNIT	402	499.40
0110037	FLORIDA POWER & LIGHT	TURKEY POINT	404 MEGAWATT UNIT#1-W/LOW EXCESS AIR BURNERS&TRANSMISSOMETER	402	452.96
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #2 408 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	402	851.18
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #2	402	456.00
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR,UNIT #1	402	392.50
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	GAS TURBINES ELECTRIC GENERATING UNIT #1-12	411	10.20
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #1 GAS TURBINE ELECTRIC GENERATION	411	6.48
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #13 GAS TURBINE ELECTRIC GENERATION	411	9.51
0990123	TECO	GANNON STATION	UNIT #6 - COAL FIRED BOILER WITH ESP	414	1,116.35
0990123	TECO	BIG BEND STATION	UNIT #1 COAL FIRED BOILER W/RESEARCH-COTRELL ESP	445	1,179.40
0990123	TECO	BIG BEND STATION	UNIT #2 RILEY-STOKER COAL FIRED BOILER W/ ESP	445	1,160.40
0990123	TECO	BIG BEND STATION	UNIT #3 RILEY-STOKER COAL-FIRED BOILER W/ ESP	445	646.90
0990123	TECO	BIG BEND STATION	UNIT #4 COAL-FIRED BOILER W/ BELCO ESP PSD-FL-040	486	59.50
0110037	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 1	863	1,020.00
0110037	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 2	863	1,313.06
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #1 STEAM GENERATOR-FRONT-FIRED - 863 MW MAX. CAPACITY	863	352.33
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #2 STEAM GENERATOR-FRONT-FIRED- 863 MW CAPACITY	863	381.66
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4A	N / A	56.93
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4B	N / A	58.55
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5A	N / A	59.58
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5B	N / A	59.04
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	DIESEL FUEL STORAGE TANK(UNDERGROUND)	N / A	0.00

Table A-4. Particulate Matter (PM10) (continued)					
110037	FLORIDA POWER & LIGHT	LAUDERDALE	GASOLINE STORAGE TANK (UNDERGROUND)	N / A	0.00
110037	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 2 HANDLING NO. 2 FUEL OIL	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 3 HANDLING LIGHT DISTILLATE FUEL OIL	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 5 HANDLING NO. 2 FUEL OIL	N / A	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	TWO GAS TURBINE DUMP TANKS	N / A	0.00
0110037	FLORIDA POWER & LIGHT	CUTLER RIDGE	161.5 MW TANGENTIALLY FIRED STEAM GENERATOR #6	N / A	7.31
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3A,1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	18.25
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3B, 1 CT & 1 HRSG	N / A	17.83
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4A-1CT WITH 1 HT RCVY STEAM GENERATOR	N / A	13.30
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4B-1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	17.82
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #1 (Unit A) burning No.6 fuel oil	N / A	0.03
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #2 (Unit B) burning No.6 fuel oil	N / A	0.17
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Miscellaneous support equipment	N / A	0.71
0110037	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Wire reclamation incinerator w/afterburner	N / A	0.68
0570040	ORLANDO UTILITIES COMMISSION	STANTON ENERGY CENTER	FOSSIL FUEL STEAM GENERATION UNIT #1	N / A	39.74
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-C)	N / A	0.28
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-D)	N / A	2.05
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-A	N / A	0.31
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-B	N / A	1.94
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #2	N / A	16.12
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #3	N / A	38.70
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #1	N / A	4.32
0710002	ORLANDO UTILITY COMMISSION	CAPE CANAVERAL PLANT	STEAM BOILER , LOCATED IN BELCHER OIL FAC.	N / A	0.17
0990123	TECO	BIG BEND STATION	BIG BEND STATION COMBUST. TURBINE #2 - FIRED BY NO. 2 FUEL O	N / A	0.63
0990123	TECO	BIG BEND STATION	GAS TURBINE #1 FIRED BY #2 FUEL OIL	N / A	0.07
0990123	TECO	BIG BEND STATION	GAS TURBINE #3 - WESTINGHOUSE TURBINE FIRED BY NO. 2 FUEL OI	N / A	1.06
0990123	TECO	GANNON STATION	14 MW GAS FIRED TURBINE	N / A	0.05

Table A-5. Sulfur Dioxide (SO2)

Facility ID	Owner/Company	Site Name	Emissions Unit Description	MW Rating	Ton/Year
0990123	TECO	HOOKERS POINT STATION	UNIT #1 B+W FRONT FIRING OIL-FIRED BOILER	33	211.30
0990123	TECO	HOOKERS POINT STATION	UNIT #2-B & W FRONT FIRING OIL FIRED BOILER	34	145.61
0990123	TECO	HOOKERS POINT STATION	UNIT #3-B & W FRONT FIRING OIL FIRED BOILER	34	132.10
0990123	TECO	HOOKERS POINT STATION	47 MW #6 OIL FIRED STEAM GENERATOR #5	47	61.02
0990123	TECO	HOOKERS POINT STATION	UNIT #4- B & W FRONT-FIRED OIL FIRED BOILER	49	153.17
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #1	63	3.61
0570039	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #10. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #11. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #12. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #2. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #3. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #4. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #5. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #6. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #7. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #8. 63 MW.	63	3.61
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	COMBUSTION TURBINE #9. 63 MW.	63	3.61
0990123	TECO	HOOKERS POINT STATION	UNIT #6 - B & W TANGENTIAL FIRING OIL FIRED BOILER	82	174.59
0990123	TECO	GANNON STATION	125MW BABCOCK&WILCOX CORP WET BOTTOM CYCLONIC FIRING TYPE BL	125	3,925.30
0990123	TECO	GANNON STATION	UNIT #1 STEAM GENERATOR	125	4,043.30
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #1 165 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	156	3,247.99
0570039	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FFSG POWER PLANT - UNIT #3 -FUEL OIL,NATURAL GAS,PROPAN	160	2,437.50
0990123	TECO	GANNON STATION	UNIT #3 - B&W WET BOTTOM COAL FIRED BOILER	180	5,929.30
0990123	TECO	GANNON STATION	UNIT#4- B&W WET BOT CYCLONIC FIR`G COAL FIR BOLR, EAST STACK	187	9,963.30
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #1 W/LOW EXCESS AIR BURNERS&MULTI CYCLONES W/REI	225	1,342.04
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #2 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REI	225	1,413.68
0990123	TECO	GANNON STATION	UNIT #5 COAL FIRED BOILER	239	10,362.78
0570040	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#1 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	9.36
0570040	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#2 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	8.63
0110037	FLORIDA POWER & LIGHT	RIVIERA	STEAM GENERATOR#4, LOW EXCESS AIR BURNERS&CYCLONES W/ REINJE	310	12,762.50
0110037	FLORIDA POWER & LIGHT	RIVIERA	UNIT # 3 BOILER STACK	310	14,003.28
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#3 W/LOW EXCESS AIR BURNERS & MULTI-CYCLONES W/RE	402	3,819.19
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#4 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REIN	402	2,977.10
0110037	FLORIDA POWER & LIGHT	TURKEY POINT	400 MW CLASS (440MW GROSS CAP.) STEAM GEN. UNIT	402	3,890.92
0110037	FLORIDA POWER & LIGHT	TURKEY POINT	404 MEGAWATT UNIT#1-W/LOW EXCESS AIR BURNERS&TRANSMISSOMETER	402	3,554.60
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #2 408 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	402	13,125.16
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #2	402	6,071.00
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR,UNIT #1	402	4,749.30
0110037	FLORIDA POWER & LIGHT	PORT EVERGLADES	GAS TURBINES ELECTRIC GENERATING UNIT #1-12	411	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #1 GAS TURBINE ELECTRIC GENERATION	411	0.00
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #13 GAS TURBINE ELECTRIC GENERATION	411	0.00
1070014	TECO	GANNON STATION	UNIT #6 - COAL FIRED BOILER WITH ESP	414	18,752.30
0570039	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #4, OPERATING ON #6 FO P	436	5,885.00

Table A-5. Sulfur Dioxide (SO2) (continued)

570039	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #5, OPERATING ON #6 FO	436	7,168.00
1070014	TECO	BIG BEND STATION	UNIT #1 COAL FIRED BOILER W/RESEARCH-COTRELL ESP	445	33,311.04
1070014	TECO	BIG BEND STATION	UNIT #2 RILEY-STOKER COAL FIRED BOILER W/ ESP	445	34,223.04
1070014	TECO	BIG BEND STATION	UNIT #3 RILEY-STOKER COAL-FIRED BOILER W/ ESP	445	17,132.04
1070014	TECO	BIG BEND STATION	UNIT #4 COAL-FIRED BOILER W/ BELCO ESP PSD-FL-040	486	2,656.24
0110037	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 1	863	8,190.86
0110037	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 2	863	10,533.30
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #1 STEAM GENERATOR-FRONT-FIRED - 863 MW MAX. CAPACITY	863	4,111.71
0110037	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #2 STEAM GENERATOR-FRONT-FIRED- 863 MW CAPACITY	863	4,360.15
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4A	N / A	18.26
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4B	N / A	18.78
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5A	N / A	19.11
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5B	N / A	18.94
0110037	FLORIDA POWER & LIGHT	LAUDERDALE	DIESEL FUEL STORAGE TANK(UNDERGROUND)	N / A	0.00
0250001	FLORIDA POWER & LIGHT	LAUDERDALE	GASOLINE STORAGE TANK (UNDERGROUND)	N / A	0.00
0250001	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 2 HANDLING NO. 2 FUEL OIL	N / A	0.00
0250001	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 3 HANDLING LIGHT DISTILLATE FUEL OIL	N / A	0.00
0250001	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 5 HANDLING NO. 2 FUEL OIL	N / A	0.00
0250001	FLORIDA POWER & LIGHT	LAUDERDALE	TWO GAS TURBINE DUMP TANKS	N / A	0.00
0250001	FLORIDA POWER & LIGHT	CUTLER RIDGE	161.5 MW TANGENTIALLY FIRED STEAM GENERATOR #6	N / A	0.53
0250001	FLORIDA POWER & LIGHT	CUTLER RIDGE	75 MW,TANGENTIALLY FIRED,STEAM GENERATOR	N / A	0.23
0250001	FLORIDA POWER & LIGHT	FPL / MARTIN CO	10,000 LB/HR AUXILIARY BOILER FOR UNITS 3(A,B) AND 4(A,B)	N / A	0.06
0250001	FLORIDA POWER & LIGHT	FPL / MARTIN CO	500 KW EMERGENCY DIESEL GENERATOR	N / A	0.00
0250003	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3A,1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	19.60
0250003	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3B, 1 CT & 1 HRSG	N / A	19.15
0250003	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4A-1CT WITH 1 HT RCVY STEAM GENERATOR	N / A	14.29
0250003	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4B-1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	19.14
0250003	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #1 (Unit A) burning No.6 fuel oil	N / A	0.61
0250003	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #2 (Unit B) burning No.6 fuel oil	N / A	1.15
0250003	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Miscellaneous support equipment	N / A	1.15
0250003	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Wire reclamation incinerator w/afterburner	N / A	0.02
0570039	FLORIDA POWER & LIGHT CO	PORT CANAVERAL STORAGE FAC.	F.P.&L. OIL HEATING BOILER 400HP, VE	N / A	0.00
0570040	FLORIDA POWER & LIGHT COMPANY	FLORIDA POWER & LIGHT	PACKAGE BOILER,350 HP, CLEAVER-BROOKS	N / A	6.93
0570040	ORLANDO UTILITIES COMMISSION	STANTON ENERGY CENTER	FOSSIL FUEL STEAM GENERATION UNIT #1	N / A	3,415.90
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-C)	N / A	0.02
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-D)	N / A	0.16
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-A	N / A	0.02
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-B	N / A	0.17
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #2	N / A	529.30
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #3	N / A	885.96
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #1	N / A	62.35
0710002	ORLANDO UTILITY COMMISSION	CAPE CANAVERAL PLANT	STEAM BOILER , LOCATED IN BELCHER OIL FAC.	N / A	2.96
1070014	TECO	BIG BEND STATION	BIG BEND STATION COMBUST. TURBINE #2 - FIRED BY NO. 2 FUEL O	N / A	17.56
1070014	TECO	BIG BEND STATION	GAS TURBINE #1 FIRED BY #2 FUEL OIL	N / A	1.92
1070014	TECO	BIG BEND STATION	GAS TURBINE #3 - WESTINGHOUSE TURBINE FIRED BY NO. 2 FUEL OI	N / A	29.67
1070014	TECO	GANNON STATION	14 MW GAS FIRED TURBINE	N / A	1.47

Table A-6. Volatile Organic Compounds (VOC)

Facility ID	Owner/Company	Site Name	Emissions Unit Description	MW Rating	Ton/Year
1070014	TECO	HOOKERS POINT STATION	UNIT #1 B+W FRONT FIRING OIL-FIRED BOILER	33	1.11
1070014	TECO	HOOKERS POINT STATION	UNIT #2-B & W FRONT FIRING OIL FIRED BOILER	34	0.76
1070014	TECO	HOOKERS POINT STATION	UNIT #3-B & W FRONT FIRING OIL FIRED BOILER	34	0.69
1110071	TECO	HOOKERS POINT STATION	47 MW #6 OIL FIRED STEAM GENERATOR #5	47	0.32
1110071	TECO	HOOKERS POINT STATION	UNIT #4- B & W FRONT-FIRED OIL FIRED BOILER	49	0.80
1270009	TECO	HOOKERS POINT STATION	UNIT #6 - B & W TANGENTIAL FIRING OIL FIRED BOILER	82	0.91
1270009	TECO	GANNON STATION	125MW BABCOCK&WILCOX CORP WET BOTTOM CYCLONIC FIRING TYPE BL	125	6.56
1270009	TECO	GANNON STATION	UNIT #1 STEAM GENERATOR	125	6.56
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #1 165 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	156	8.47
0570039	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FFSG POWER PLANT - UNIT #3 -FUEL OIL,NATURAL GAS,PROPAN	160	6.00
1270009	TECO	GANNON STATION	UNIT #3 - B&W WET BOTTOM COAL FIRED BOILER	180	9.66
1270009	TECO	GANNON STATION	UNIT#4- B&W WET BOT CYCLONIC FIR`G COAL FIR BOLR, EAST STACK	187	16.28
0250003	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #1 W/LOW EXCESS AIR BURNERS&MULTI CYCLONES W/REI	225	6.83
0250003	FLORIDA POWER & LIGHT	PORT EVERGLADES	232 MW FFSG #2 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REI	225	7.18
1270009	TECO	GANNON STATION	UNIT #5 COAL FIRED BOILER	239	18.22
0570040	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#1 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	21.17
0570040	FLORIDA POWER & LIGHT COMPANY	PUTNAM POWER PLANT	#2 A & B ELECT GEN PLANT COMB CYCLE (2 CT + 2 HRB)	290	19.52
0250003	FLORIDA POWER & LIGHT	RIVIERA	STEAM GENERATOR#4, LOW EXCESS AIR BURNERS&CYCLONES W/ REINJE	310	183.51
0250003	FLORIDA POWER & LIGHT	RIVIERA	UNIT # 3 BOILER STACK	310	31.80
0570038	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#3 W/LOW EXCESS AIR BURNERS & MULTI-CYCLONES W/RE	402	25.46
0570038	FLORIDA POWER & LIGHT	PORT EVERGLADES	401 MW FFSG#4 W/LOW EXCESS AIR BURNERS&MULTI-CYCLONES W/REIN	402	21.65
0570038	FLORIDA POWER & LIGHT	TURKEY POINT	400 MW CLASS (440MW GROSS CAP.) STEAM GEN. UNIT	402	25.14
0570038	FLORIDA POWER & LIGHT	TURKEY POINT	404 MEGAWATT UNIT#1-W/LOW EXCESS AIR BURNERS&TRANSMISSOMETER	402	22.69
0570040	FLORIDA POWER & LIGHT COMPANY	FT MYERS POWER PLANT	UNIT #2 408 MW OIL-FIRED STEAM TURBINE ELECTRIC GENERATOR	402	33.96
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #2	402	18.28
0570040	FLORIDA POWER & LIGHT/CP. CAN.	CAPE CANAVERAL POWER PLANT	FOSSIL FUEL STEAM GENERATOR,UNIT #1	402	22.27
0570038	FLORIDA POWER & LIGHT	PORT EVERGLADES	GAS TURBINES ELECTRIC GENERATING UNIT #1-12	411	0.00
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #1 GAS TURBINE ELECTRIC GENERATION	411	0.00
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	522 MMBTU/HR, UNIT #13 GAS TURBINE ELECTRIC GENERATION	411	0.00
1270009	TECO	GANNON STATION	UNIT #6 - COAL FIRED BOILER WITH ESP	414	31.44
0570039	FLORIDA POWER & LIGHT CO	SANFORD POWER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #5, OPERATING ON #6 FO	436	17.80
1270009	TECO	BIG BEND STATION	UNIT #1 COAL FIRED BOILER W/RESEARCH-COTRELL ESP	445	43.25
1270009	TECO	BIG BEND STATION	UNIT #2 RILEY-STOKER COAL FIRED BOILER W/ ESP	445	42.64
1270009	TECO	BIG BEND STATION	UNIT #3 RILEY-STOKER COAL-FIRED BOILER W/ ESP	445	38.64
1270009	TECO	BIG BEND STATION	UNIT #4 COAL-FIRED BOILER W/ BELCO ESP PSD-FL-040	486	46.80
0570038	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 1	863	40.69
0570038	FLORIDA POWER & LIGHT	MANATEE PLANT	877 MW STEAM GENERATOR UNIT NO. 2	863	52.38
0570038	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #1 STEAM GENERATOR-FRONT-FIRED - 863 MW MAX. CAPACITY	863	22.49
0570038	FLORIDA POWER & LIGHT	FPL / MARTIN CO	UNIT #2 STEAM GENERATOR-FRONT-FIRED- 863 MW CAPACITY	863	30.96
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4A	N / A	0.00
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	CT 4B	N / A	0.00
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5A	N / A	0.00
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	CT 5B	N / A	0.00

Table A-6. Volatile Organic Compounds (VOC) (continued)

570038	FLORIDA POWER & LIGHT	LAUDERDALE	DIESEL FUEL STORAGE TANK(UNDERGROUND)	N / A	0.01
570038	FLORIDA POWER & LIGHT	LAUDERDALE	GASOLINE STORAGE TANK (UNDERGROUND)	N / A	0.04
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 2 HANDLING NO. 2 FUEL OIL	N / A	0.89
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 3 HANDLING LIGHT DISTILLATE FUEL OIL	N / A	0.00
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	STORAGE TANK NO. 5 HANDLING NO. 2 FUEL OIL	N / A	0.85
0570038	FLORIDA POWER & LIGHT	LAUDERDALE	TWO GAS TURBINE DUMP TANKS	N / A	0.00
0570038	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3A,1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	5.00
0570038	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 3B, 1 CT & 1 HRSG	N / A	4.90
0570038	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4A-1CT WITH 1 HT RCVY STEAM GENERATOR	N / A	3.58
0570038	FLORIDA POWER & LIGHT	FPL / MARTIN CO	COMBINED CYCLE UNIT 4B-1 CT WITH 1 HT RCVY STEAM GENERATOR	N / A	4.99
0570038	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #1 (Unit A) burning No.6 fuel oil	N / A	0.03
0570038	FLORIDA POWER & LIGHT	FPL - OSF/PDC	12.5 mmBTU/hr boiler #2 (Unit B) burning No.6 fuel oil	N / A	0.05
0570038	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Boiler fuel storage	N / A	2.90
0570038	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Miscellaneous support equipment	N / A	8.75
0570038	FLORIDA POWER & LIGHT	FPL - OSF/PDC	Wire reclamation incinerator w/afterburner	N / A	0.10
0570040	ORLANDO UTILITIES COMMISSION	STANTON ENERGY CENTER	FOSSIL FUEL STEAM GENERATION UNIT #1	N / A	36.44
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-C)	N / A	0.87
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	129MW TURBINE GENERATOR (CT-D)	N / A	6.38
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-A	N / A	0.97
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	35 MW TURBINE GENERATOR #CT-B	N / A	6.04
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #2	N / A	4.85
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR UNIT #3	N / A	12.60
0710002	ORLANDO UTILITY COMMISSION	INDIAN RIVER PLANT	FOSSIL FUEL STEAM GENERATOR, UNIT #1	N / A	2.05
0710002	ORLANDO UTILITY COMMISSION	CAPE CANAVERAL PLANT	STEAM BOILER , LOCATED IN BELCHER OIL FAC.	N / A	0.02
1270009	TECO	BIG BEND STATION	BIG BEND STATION COMBUST. TURBINE #2 - FIRED BY NO. 2 FUEL O	N / A	0.60
1270009	TECO	BIG BEND STATION	GAS TURBINE #1 FIRED BY #2 FUEL OIL	N / A	0.07
1270009	TECO	BIG BEND STATION	GAS TURBINE #3 - WESTINGHOUSE TURBINE FIRED BY NO. 2 FUEL OI	N / A	1.01
1270009	TECO	GANNON STATION	14 MW GAS FIRED TURBINE	N / A	0.05

APPENDIX B

Flight Schedules, Orlando International Airport, 1997

Table B-1. Flight Schedules

Market	Airline	Aircraft	Flight Number	Depart	Arrive	Itinerary	Days	Seats
Miami	Gulfstream	BE1	395	1640	1755	MIA-MCO	6	19
Miami	Gulfstream	BE1	416	1845	1955	FPO-MIA-MCO	6	19
Tampa	Gulfstream	BE1	185	1215	1250	MCO-TPA-JAX	6	19
Miami	Gulfstream	BE1	174	1010	1120	MCO-MIA	7	19
Miami	Gulfstream	BE1	386	930	1035	MCO-MIA	7	19
Miami	Gulfstream	BE1	407	1915	2025	MIA-MCO	7	19
Miami	Gulfstream	BE1	489	1520	1630	MIA-MCO	67	19
Miami	Gulfstream	BE1	490	1715	1820	MCO-MIA	67	19
Miami	Gulfstream	BE1	436	1115	1220	TLH-MCO-MIA-EYW	12345	19
Ft. Lauderdale	Gulfstream	BE1	188	1935	2040	MCO-FLL	1234567	19
Miami	Gulfstream	BE1	409	700	805	MCO-MIA-FPO	1234567	19
Tampa	USAir Express	BE1	5408	910	945	TPA-MCO	1234567	19
Tampa	USAir Express	BE1	5427	1400	1435	MCO-TPA	1234567	19
Tampa	USAir Express	BE1	5430	1200	1235	MCO-TPA	1234567	19
Tampa	USAir Express	BE1	5434	1630	1705	TPA-MCO	1234567	19
West Palm Beach	USAir Express	BE1	5304	1725	1815	MCO-PBI-MCO	1234567	19
West Palm Beach	USAir Express	BE1	5330	820	910	JAX-PBI-MCO	1234567	19
West Palm Beach	USAir Express	BE1	5359	1035	1125	MCO-PBI-MCO	1234567	19
West Palm Beach	USAir Express	BE1	5359	930	1020	MCO-PBI-MCO	1234567	19
West Palm Beach	USAir Express	BE1	5360	1335	1425	PBI-MCO-PBI	1234567	19
West Palm Beach	USAir Express	BE1	5360	1440	1530	PBI-MCO-PBI	1234567	19
Miami	Gulfstream	BE1	417	1950	2100	EYW-MIA-MCO	12345 7	19
Miami	Gulfstream	BE1	487	1835	1945	EYW-MIA-MCO-TLH	12345 7	19
West Palm Beach	USAir Express	BE1	5304	1830	1920	MCO-PBI-MCO	12345 7	19
West Palm Beach	USAir Express	BE1	5363	1950	2040	PBI-MCO-PBI	12345 7	19
West Palm Beach	USAir Express	BE1	5363	2100	2150	PBI-MCO-PBI	12345 7	19
Ft. Lauderdale	Comair	EM2	3320	2115	2220	MCO-FLL	7	30
Ft. Lauderdale	Comair	EM2	3410	915	1025	MCO-FLL	7	30
Ft. Lauderdale	Comair	EM2	3314	1930	2035	MCO-FLL	12345	30
Ft. Lauderdale	Comair	EM2	3316	800	905	FLL-MCO	123456	30
Ft. Lauderdale	Comair	EM2	3450	630	730	MCO-FLL	123456	30
Ft. Lauderdale	Comair	EM2	3434	920	1030	FLL-MCO	1234567	30
Ft. Lauderdale	Comair	EM2	3435	1110	1220	MCO-FLL	1234567	30
Ft. Lauderdale	Comair	EM2	3462	1245	1355	FLL-MCO	1234567	30
Miami	Comair	EM2	3420	1411	1515	PNS-MCO-MIA	1234567	30
Miami	Comair	EM2	3422	1535	1640	MIA-MCO	1234567	30
Miami	Comair	EM2	3429	1810	1915	PNS-MCO-MIA	1234567	30
Miami	Comair	EM2	3430	1935	2045	MIA-MCO	1234567	30
West Palm Beach	Comair	EM2	3389	1640	1740	MCO-PBI	1234567	30
West Palm Beach	Comair	EM2	3398	755	855	MCO-PBI	1234567	30
West Palm Beach	Comair	EM2	3399	920	1020	PBI-MCO-TLH	1234567	30
West Palm Beach	Comair	EM2	3396	1800	1900	PBI-MCO	1234567	30
Ft. Lauderdale	Comair	EM2	3433	750	900	MCO-FLL	12345 7	30
Ft. Lauderdale	Comair	EM2	3453	2000	2100	FLL-MCO	12345 7	30
Miami	American Eagle	SF3	5800	1340	1450	MCO-MIA	67	34
Miami	American Eagle	SF3	5805	1200	1315	MIA-MCO	67	34
Miami	American Eagle	SF3	5645	1815	1925	MIA-MCO	1234567	34
Miami	American Eagle	SF3	5674	650	800	MCO-MIA	1234567	34
Miami	Gulfstream	SH6	383	730	845	MIA-MCO	6	36
Miami	Gulfstream	SH6	386	930	1040	MCO-MIA	6	36
Miami	Gulfstream	SH6	417	1950	2105	EYW-MIA-MCO	6	36
Miami	Gulfstream	SH6	474	1330	1440	MCO-MIA	6	36
Miami	Gulfstream	SH6	495	1140	1250	MIA-MCO	6	36
Miami	Gulfstream	SH6	403	1020	1135	EYW-MIA-MCO	7	36
Miami	Gulfstream	SH6	484	1255	1410	MCO-MIA	7	36
Miami	Gulfstream	SH6	486	2030	2140	MCO-MIA	7	36
Miami	Gulfstream	SH6	436	1115	1220	MCO-MIA	67	36
Miami	Gulfstream	SH6	493	925	1040	MIA-MCO	67	36

Table B-1. Flight Schedules (continued)

Market	Airline	Aircraft	Flight Number	Depart	Arrive	Itinerary	Days	Seats
Miami	Gulfstream	SH6	174	1010	1120	MCO-MIA	12345	36
Miami	Gulfstream	SH6	389	830	940	MIA-MCO	12345	36
Miami	Gulfstream	SH6	396	1830	1945	TLH-MCO-MIA	12345	36
Miami	Gulfstream	SH6	483	640	750	MIA-MCO-TLH	123456	36
Miami	Gulfstream	SH6	427	1300	1415	EYW-MIA-MCO	1234567	36
Miami	Gulfstream	SH6	428	825	935	MCO-MIA-EYW	1234567	36
Miami	Gulfstream	SH6	475	1400	1515	NAS-MIA-MCO	1234567	36
Miami	Gulfstream	SH6	476	1545	1700	MCO-MIA	1234567	36
Miami	Gulfstream	SH6	395	1640	1755	MIA-MCO	12345 7	36
Miami	USAir Express	DH8	3287	800	910	TLH-MCO-MIA	6	37
Miami	USAir Express	DH8	3400	1155	1305	MIA-MCO	6	37
Miami	USAir Express	DH8	3056	700	815	EYW-MIA-MCO	12345	37
Miami	USAir Express	DH8	3460	655	805	JAX-MCO-MIA	12345	37
Miami	USAir Express	DH8	3033	1141	1251	MCO-MIA	1234567	37
Miami	USAir Express	DH8	3140	1810	1920	MIA-MCO	1234567	37
Miami	USAir Express	DH8	3271	1030	1140	MIA-MCO	1234567	37
Miami	USAir Express	DH8	3457	830	940	MCO-MIA	1234567	37
Miami	USAir Express	DH8	3458	1630	1740	MIA-MCO	1234567	37
Miami	USAir Express	DH8	3459	1800	1915	MCO-MIA	1234567	37
Miami	USAir Express	DH8	3461	850	1000	MIA-MCO	1234567	37
Miami	USAir Express	DH8	3464	1320	1435	MCO-MIA	1234567	37
Miami	USAir Express	DH8	3468	2041	2154	MCO-MIA	1234567	37
Miami	USAir Express	DH8	3469	2015	2125	MIA-MCO-JAX	1234567	37
Miami	USAir Express	DH8	3481	1405	1515	EYW-MIA-MCO	1234567	37
Miami	USAir Express	DH8	3215	1950	2059	MCO-MIA	12345 7	37
Miami	USAir Express	DH8	3257	2120	2230	MIA-MCO	12345 7	37
Miami	USAir Express	DH8	3481	1405	1515	EYW-MIA-MCO	12345 7	37
Miami	USAir Express	DH8	3482	1610	1725	MCO-MIA-EYW	12345 7	37
Miami	American Eagle	ATR	5752	555	700	MCO-MIA	12345	46
Miami	American Eagle	ATR	5800	1340	1450	MCO-MIA	12345	46
Miami	American Eagle	ATR	5805	1200	1315	MIA-MCO	12345	46
Miami	American Eagle	ATR	5646	750	900	MCO-MIA	1234567	46
Miami	American Eagle	ATR	5700	1130	1245	MCO-MIA	1234567	46
Miami	American Eagle	ATR	5701	2245	2355	MIA-MCO	1234567	46
Miami	American Eagle	ATR	5718	1115	1225	NAS-MIA-MCO	1234567	46
Miami	American Eagle	ATR	5746	1915	2030	MCO-MIA	1234567	46
Miami	American Eagle	ATR	5788	1015	1125	MCO-MIA	1234567	46
Miami	American Eagle	ATR	5789	835	945	MIA-MCO	1234567	46
Miami	American Eagle	ATR	5804	1250	1405	MCO-MIA	1234567	46
Miami	American Eagle	ATR	5828	1810	1925	MCO-MIA	1234567	46
Miami	American Eagle	ATR	5829	1630	1740	MIA-MCO	1234567	46
Miami	American Eagle	ATR	5837	1730	1845	MIA-MCO	1234567	46
Miami	American Eagle	ATR	5830	950	1100	MIA-MCO	1234567	46
Miami	American Eagle	ATR	5675	2050	2155	MIA-MCO	1234 7	46
Miami	Comair	CRJ	3873	620	715	MIA-MCO	123456	50
Miami	Comair	CRJ	3702	755	850	MCO-MIA	1234567	50
Miami	Comair	CRJ	3711	910	1005	MIA-MCO	1234567	50
Miami	Comair	CRJ	3728	1120	1215	MCO-MIA	1234567	50
Miami	Comair	CRJ	3780	1235	1330	MIA-MCO	1234567	50
Miami	Comair	CRJ	3803	1805	1900	MIA-MCO	1234567	50
Miami	Comair	CRJ	3804	1650	1745	MCO-MIA	1234567	50
Miami	Comair	CRJ	3802	1950	2050	MCO-MIA	12345 7	50
Ft. Lauderdale	Delta Express	73S	2404	2150	2240	IND-MCO-FLL	1234567	107
Ft. Lauderdale	Delta Express	73S	2484	700	750	FLL-MCO	1234567	107
Ft. Lauderdale	Delta Express	73S	2542	1625	1715	MCO-FLL	1234567	107
Tampa	Delta Express	73S	2401	1020	1100	TPA-MCO-SDF	1234567	107
Tampa	Delta Express	73S	2406	1050	1130	IND-MCO-TPA	1234567	107
Tampa	Delta Express	73S	2408	1840	1920	IND-MCO-TPA	1234567	107
Tampa	Delta Express	73S	2420	1200	1240	TPA-MCO-PVD	1234567	107
Tampa	Delta Express	73S	2539	1435	1515	TPA-MCO	1234567	107
Tampa	Delta Express	73S	2547	1325	1405	MCO-TPA	1234567	107
West Palm Beach	Delta Express	73S	2407	1150	1240	PBI-MCO-IND	1234567	107
West Palm Beach	Delta Express	73S	2410	2040	2130	SDF-MCO-PBI	1234567	107
West Palm Beach	Delta Express	73S	2417	1030	1120	PVD-MCO-PBI	1234567	107
West Palm Beach	Delta Express	73S	2525	1605	1655	PBI-MCO	1234567	107

Table B-1. Flight Schedules (continued)

Market	Airline	Aircraft	Flight Number	Depart	Arrive	Itinerary	Days	Seats
West Palm Beach	Delta Express	73S	2536	800	850	PBI-MCO	1234567	107
West Palm Beach	Delta Express	73S	2537	1445	1535	CMH-MCO-PBI	1234567	107
Tampa	Vanguard Airlines	73S	502	1700	1732	DEN-MCI-TPA-MCO	134567	110
Miami	Vanguard Airlines	733	202	1400	1455	MIA-MCO-MCI-DSM	1234567	131
Miami	Vanguard Airlines	733	281	1240	1331	MCI-MCO-MIA	1234567	131
Miami	American	72S	1485	1658	1801	MCO-MIA	1234567	150
Miami	United	757	414	630	724	CNF-GRU-MIA-MCO	1234567	188
Miami	United	757	415	2100	2155	MCO-MIA-GRU-CNF	1234567	188
Miami	American	757	1811	2110	2207	MCO-MIA	1234567	188
Tampa	America West	757	2564	2026	2103	PHX-MCO-TPA-LAS-PHX	1234567	190
Tampa	America West	757	2561	655	734	LAS-TPA-MCO-PHX-LAS	1234567	190
Miami	American	D10	1483	914	1013	MCO-MIA	1234567	237
Miami	American	AB3	903	1431	1535	MCO-MIA-CCS	1234567	267
Market	Aircraft	Flight	Flight Number	Depart	Arrive	Itinerary	Days	Seats