Research Report

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Center for Tourism

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THE IMPACT OF TOURISM ON FLORIDA'S ECONOMY: TELLING A MORE COMPLETE STORY

Executive Summary

Florida Tourism Means Business
Visitors Help Maintain and Grow a Healthy, Competitive Economy

Impacts in Brief

- **Recovery from 9/11.** Overcoming a slump that began after September 11, 2001, 85.8 million tourists visited Florida in 2005, an all-time high. Despite anticipated hurricane fears, visits for the third quarter of 2005 exceeded the same period in 2004 by 9.3%. By 2010, an estimated 97 million tourists will visit Florida.
- **Air Travel Decline.** The ratio of air to non-air visitors to Florida began declining after 1998. Before the decline, air visitors exceeded other visitors by 25%. Since 9/11, more visitors came by non-air than by air, but by 2004, air and other visitors were equal in proportion. In 2005, air visitors slightly exceeded other visitors.
- **Average Tourist Stays Five Nights.** The average tourist stays five nights and spends from $107 (non air traveler) to $163 (air traveler) per day in Florida.
- **Double Benefit from Foreign Tourists Threatened.** A foreign tourist spends twice as much as a domestic tourist. Florida TaxWatch noted that the state's economic well-being stands at great risk from the unintended consequences of national security policies and procedures imposed in reaction to terrorist attacks of 9/11. These measures have had greater effect on foreign tourists and others who arrive by air and who, according to surveys, stay longer and spend more.[1]
- **Future is Bright and Pays Well.** Econometric models predict that by 2010 direct, indirect, and induced benefits of travel will generate from $103 to $136 billion in economic output and 1.5 million to 1.8 million jobs for Florida. Econometric modeling

[1] Florida TaxWatch, *Termites in Florida's Basement: The Economic Impact of National Security Policy on Florida's Economy*, December 2005. To download: http://www.floridataxwatch.org/resources/pdf/BRIEFINGSDec2005Security.pdf

puts the average compensation, including wages and fringe benefits, of all direct and indirect tourism-related employment at $42,000.

- **Tourism Creates Jobs.** Businesses directly related to tourism account for 12% of all non-agricultural jobs in Florida—a percentage that has remained the same since 2000. This sector's employment in 2005 of 944,500 rebounded from 863,000 in 2002. Strong employment growth by eating and drinking establishments made up for shrinkage in lodging and a substantial loss of air transportation jobs.
- **Tourism Exports Some of Tax Burden.** Tourism and recreational activities of all Floridians and visitors generated $57 billion in taxable transactions in 2004 compared to $43.8 billion in 1998. The estimated tourism-related taxable transaction for 2005 is around $62 billion. As a state where destination tourism is well-established and significant (along with such states as Hawaii, California, Nevada, New York, Maine, Vermont, as well as the District of Columbia), Florida is able to export consumption taxes to non-residents to a greater extent than states that have less tourism. Florida tourists, for example, pay sales taxes into the state general fund that support programs that benefit residents almost exclusively, such as public education. Econometric models estimate that tourism and recreational activities will generate between $12 and $13.8 billion from residents and non-residents in cumulative general state taxes from 2005 through 2010.
- **Theme Parks and Sunshine Attract Tourists.** Visitors surveyed reported they sought Florida because of theme parks and a variety of attractions, warm weather, and nature activities.
- **Timeshares Hold Tourists.** Timeshare visitors stay longer. Timeshare sales nationwide grew by 21.4% from 2003 to $7.87 billion in 2004. Florida accounted for over a fourth of total annual timeshare sales nationwide. Florida had 366 timeshare resorts with 27,700 individual units in 2002.
- **Crime.** Florida's crime rate has declined steadily over the same period that tourism has substantially increased. However, a University of North Florida study estimated that the cost of tourist-related incarcerations was nearly $200 million per year. A portion of the growing population of tourists will have criminal intentions. Tourists carry valuable personal property subject to theft. Population density increases in tourist areas and enhances opportunities for crime.
- **Traffic Congestion.** Tourism does contribute to traffic congestion in tourist-affected areas and is clearly evident in south Florida where temporary residents converge in the winter. National data show that congestion is higher in Orlando and Miami but that Florida's other urban areas endure less congestion than those in other states. A 2001 University of North Florida study concluded that only a small portion of Florida's overall congestion costs was attributable to visitors.

The number of visitors to Florida reached a new record-breaking level in 2005 with nearly 86 million visitors. This number is estimated to reach between 97 million (median estimate) and 104 million (optimistic estimate) by 2010. Two econometric models used in this study estimate that, by 2010, tourist expenditures will support between 1.5–1.8 million jobs and contribute between $102 and $135 billion to Florida's economy in terms of increase in the state's output.

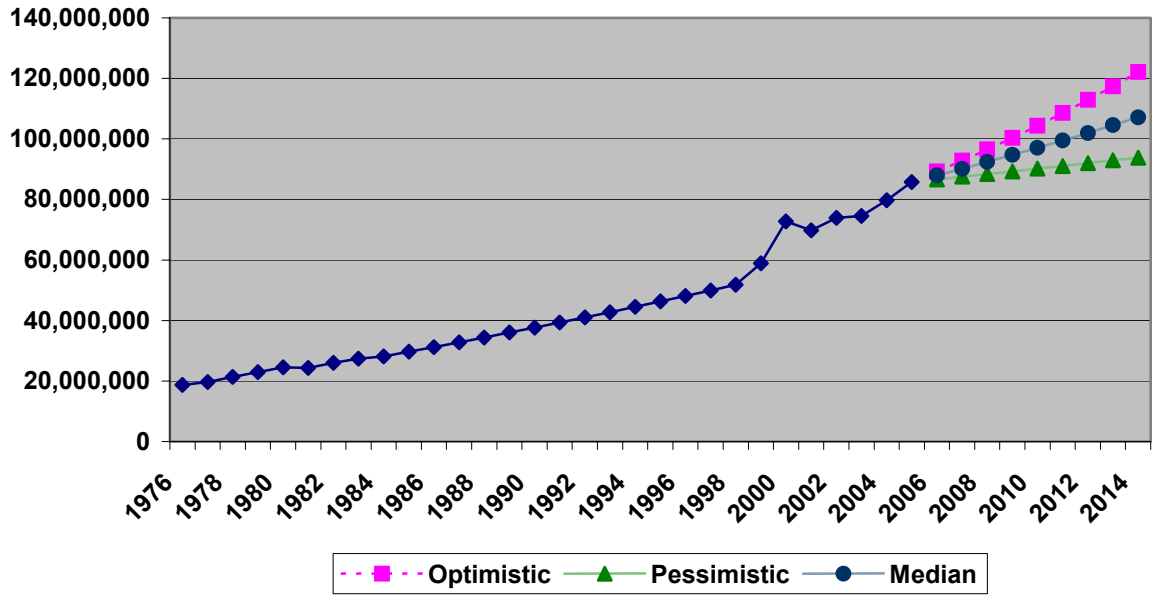
In 2000, Florida TaxWatch produced a study entitled *The Benefits and Costs of Tourism to Florida.* The following report updates and expands on that study by describing and analyzing:

► Historic and forecasted trends concerning tourism's benefits to Florida's economy including jobs, transportation improvements, and tax collections;

► Costs and impacts of tourism on public safety, traffic congestion, transportation, and the environment;

► Tourism's impact on the timeshare industry.

Figure 1. Florida's Historical and Forecasted Numbers of Tourists Continue to Trend Upward (1976–2014)



Source: ***Historic Data***—VISIT FLORIDA and Center for Economic Forecasting and Analysis (CEFA), Florida State University. ***Forecast Data***—CEFA, FSU.
Note: Some of the sharp increase between 1999 and 2000 resulted from a change in the methodology used by VISIT FLORIDA to calculate the number of tourists. The new method was recommended by George Washington University and University of North Florida experts as more accurate than the previous approach.

Figure 1 shows historical and forecasted numbers of tourists visiting Florida between 1976 and 2014. Some of the sharp increase between 1999 and 2000 resulted from a change in the methodology used by VISIT FLORIDA, the state's tourism marketing agency, to calculate tourism.[2]

[2] The new method, reported in VISIT FLORIDA'S *Florida Visitor Study* 2000, was recommended by George Washington University and University of North Florida experts as being more accurate than the previous approach.

Warfare, the Economy, and Tourism

The economic recession beginning early in 2001, the tightening of airport security after 9/11, and the wars in Afghanistan and Iraq pushed the U.S. tourism sector into its worst slump since World War II.[3] The number of visitors to Florida declined by 3.3 million in 2001 compared to the previous year. The number of visitors from all EU countries except the U.K. dropped 28% between 1999 and 2004, accounting for a quarter of a million fewer visitors. Severely declining number of affordable hotels on the beaches, rising competition from other tourist destinations such as Spain and Caribbean countries, and tight border regulations are the leading factors contributing to the decline in the number of international visitors to Florida.[4]

However, the overall upward trend resumed in 2002 and reached a record level in 2004. Economic recovery, a weak U.S. dollar, and the absence of another terrorist attack on U.S. soil are fueling tourism growth. A recent study estimates that visitors to Orlando alone will reach 55.2 million in 2007.[5] A preliminary estimate indicates that Florida reached a new record in 2005 in visitation to the state with nearly 86 million visitors.

According to a preliminary estimate from VISIT FLORIDA, the state's tourism marketing agency, 85.8 million people visited Florida in 2005 (Table 1).[6] This is 37 million more than in 1998. However, some of this increase resulted from a change in the methodology used by VISIT FLORIDA to calculate tourism. Median estimates have the number of visitors growing 16% to 92.5 million by 2010.

Table 1. Visitors to Florida (in millions)

	1998	1999	2000	2001	2002	2003	2004	2005
Total Visitors	48.7	58.9	72.8	69.5	73.9	74.6	79.7	85.8

Source: VISIT FLORIDA, *1998, 2003, and 2004 Florida Visitor Study* and 2002-2005 Florida Visitor Analysis

A survey conducted in November 2004 by YPB&R, an independent communication

[3] Wilkerson, Chad: Travel and Tourism: An overlooked Industry in the U.S. and Tenth District, Economic Review, Federal Reserve Bank of Kansas City; Third Quarter 2003.

[4] Werner, Johannes: *Obstacles*, Florida Trend, October 2005.

[5] New research forecasts local tourism, Orlando Business Journal, March 22, 2005.

[6] The visitor data used in this study are from Florida Visitor Studies published by VISIT FLORIDA, which quarterly conducts a survey to gather air traveler information at Florida's 14 largest airports. VISIT FLORIDA estimates non-air visitors based on data received from the Travel Industry Association's Travel Scope, which provides the ratio of domestic air and non-air visitors to Florida. VISIT FLORIDA's estimates and profiles of overseas visitors to Florida are derived from re-tabulation of data collected by the Tourism Industries Office of the U.S. Department of Commerce. Similarly, VISIT FLORIDA's analyses of Canadian visitors are derived from custom re-tabulations of data collected by the Canadian government through Statistics Canada.

advertising and public relations company, estimated a 5–20% decrease in the number of visitors during the hurricane season between July and September 2005.[7] However, the preliminary visitor estimate by VISIT FLORIDA for the third quarter of 2005 indicates that the number of visitors to Florida reached 21.9 million during this period, a 9.3% increase over that same period in 2004. Perhaps, by presenting inviting images of Florida's availability for spring and summer vacationers in 2005, the hurricane marketing response by VISIT FLORIDA helped to lessen the projected impact of hurricanes on Florida's tourism.[8]

Looking Ahead

Assuming continued state support, Table 2 presents three forecasts of tourism growth (as measured by number of tourists) in Florida between 2006 and 2014: optimistic (4% annual growth), median (2.5% growth) and pessimistic (1% growth).

Although projected 22% cumulative growth from 2006 to 2014 may seem high, these median estimates are based on 2.5% annual growth of tourism. The projected growth tracks closely with forecasted U.S. and Florida Gross Regional Product and personal income projections.[9]

Table 2. Florida Tourists, 2006-2014 Forecasts (in millions)

Year	Optimistic	Pessimistic	**Median**
2006	89.2	86.6	87.9
2007	92.8	87.5	90.1
2008	96.5	88.4	92.4
2009	100.4	89.3	94.7
2010	104.4	90.2	97.1
2011	108.6	91.1	99.5
2012	112.9	92.0	102.0
2013	117.4	92.9	104.5
2014	122.1	93.8	107.1

Source: Projection based on *2004 Florida Visitor Study, VISIT FLORIDA*.

Econometric Analysis

[7] http://www.ypb.com/page_loader.php?tid=v4&sid=news&pid=pressrelease&id=10, retrieved on November 10, 2004.

[8] Pitegoff, Barry, Research Guides Florida's Marketing Response to Hurricanes, Travel and Tourism Research Association News, Winter 2005.

[9] See Appendix C for comparative projections.

Telling a more complete story about Florida tourism requires consideration of indirect and induced impacts,[10] which contribute to Florida's Gross State Product via a "multiplier" effect. Indirect impacts are benefits to businesses that supply goods and services to the tourism sector; induced impacts are benefits from consumption expenditures by industry employees. Money that circulates through Florida's economy in cyclical rounds of spending comprises the total impact of tourism.

To capture tourism's indirect and induced benefits over time, this study employs a dynamic scoring model—the REMI (Regional Economic Models, Inc.). This tool captures both ongoing and prospective impacts of tourism on our economy. For comparative analysis, a more conservative annual econometric model—IMPLAN— is also used.[10]

Employment

Whereas 2005 direct tourism-related employment in Florida was 944,500 jobs, the REMI model estimates that the number was 1.7 million in 2005 and will be 1.8 million by 2010, adding indirect and induced employment (Table 3). The more conservative IMPLAN model shows 1.5 million tourism and tourism-related jobs by 2010.

Table 3. Estimates of Florida Tourism Impacts by 2010

	REMI Model	IMPLAN Model
Jobs	1.8 million	1.5 million
Compensations	$86.9 billion	$63.1 billion
Average Compensation	$47,904	$42,074
Output (GSP)	$135.7 billion	$102.8 billion

Source: Center for Economic Forecasting and Analysis, Florida State University.

State Revenue

Florida's tax revenues are generated by the purchase of goods by consumers, by corporate profits, and by other economic transactions. Table 4 shows that tourism and travel-related activities are expected to generate between $12 and $13.8 billion general state tax revenue through 2010 as a function of direct and indirect earnings.

Table 4. Impact of Tourism on Tax Revenue

[10] Appendix D of the full report describes the REMI and IMPLAN models.

Forecasting Model	Taxes Forecasted to be Paid on Tourism-Related Compensations 2005 through 2010 (in billions of 2005 dollars)
REMI	$13.8
IMPLAN	$12.0

Source: Florida TaxWatch REMI and IMPLAN Analysis.

Estimating Tourist Expenditures

Despite the importance of tourism for Florida's economy, a scientifically unreliable method is used to estimate tourism expenditures. VISIT FLORIDA uses tourism/recreation taxable sales as a proxy for that purpose. However, the tourism/recreation category includes all sales by hotels and motels, bars and restaurants, liquor stores, photo and art stores, gift shops and jewelry stores plus admissions, sporting goods and rentals to visitors and residents.

Florida TaxWatch, in an upcoming *Briefings*, explains and strongly recommends the use of a method called tourism satellite account (TSA) which is the official international standard for estimating tourism expenditures.[11] TSA was developed by the World Tourism Organization. It is used by the U.S. Bureau of Economic Analysis (BEA) at the national level, and by a growing number of states.[12]

Recommendation

A scientifically reliable method for estimating tourism expenditures called Tourism Satellite Account (TSA) is the official international standard for estimating tourism expenditures. It should be used by the State of Florida to more accurately assess and monitor the tourism sector, and establish policies to mitigate problems and seize opportunities to grow this economic sector.

Table of Contents

[11] Blake, A., Durbarry, R., Sinclair, M., and G. Sugiyarto, "Modelling Tourism and Travel using Tourism Satellite Accounts and Tourism Policy and Forecasting Models", *TTRI Discussion Paper 2001/4.*

[12] Kuhbach, P., Planting, M., and E. Strassner , "Travel and Tourism Satellite Accounts for 1998–2003", *Survey of Current Business,* September 2004.

Figures

Tables

Introduction

The number of visitors to Florida reached a new record breaking level in 2005 with nearly 86 million visitors. This number is estimated to reach between 97 million (median estimate) and 104 million (optimistic estimate) by 2010. Two econometric models used in this study estimate that, by 2010, tourist expenditures will support between 1.5 and 1.8 million jobs and contribute between $102 and $135 billion to Florida's economy in terms of increase in the state's output.

In 2000, Florida TaxWatch produced a study entitled *The Benefits and Costs of Tourism to Florida.* The following report updates and expands on that study, examining a three-part question: How has Florida tourism fared in the past, what is its status today, and what may the future hold in store for it? This report describes and analyzes

- Historic and future trends concerning benefits of tourism to Florida's economy that are associated with tourist expenditures, payment of state consumption taxes, and job creation.

- Tourism's impact on the timeshare industry

- Costs of tourism including seasonality of employment, traffic congestion, public safety, transportation, and the environment.

The forecasting and simulation models used in this study project significant ongoing, direct, and indirect benefits from Florida tourism regarding jobs, wages, output, and tax revenues. These benefits will result from increasing numbers of tourists spending more on entertainment, shopping, lodging, food, and transportation.

Impacts in Brief

- **Recovery from 9/11.** Overcoming a slump that began after September 11, 2001, 85.8 million tourists visited Florida in 2005, an all-time high. Despite anticipated hurricane fears, visits for the third quarter of 2005 exceeded the same period in 2004 by 9.3%. By 2010, an estimated 97 million tourists will visit Florida.
- **Air Travel Decline.** The ratio of air to non-air visitors to Florida began declining after 1998. Before the decline, air visitors exceeded other visitors by 25%. Since 9/11, more visitors came by non-air than by air, but by 2004 air and other visitors were equal in proportion. In 2005, air visitors slightly exceeded other visitors.
- **Average Tourist Stays Five Nights.** The average tourist stays five nights and spends from $107 (non-air traveler) to $163 (air traveler) per day in Florida.
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measures have had greater effect on foreign tourists and others who arrive by air and who, according to surveys, stay longer and spend more.[13]

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[13] Florida TaxWatch, *Termites in Florida's Basement: The Economic Impact of National Security Policy on Florida's Economy*, December 2005. To download: http://www.floridataxwatch.org/resources/pdf/BRIEFINGSDec2005Security.pdf

2001 University of North Florida study concluded that only a small portion of Florida's overall congestion costs was attributable to visitors.

Historic and Future Trends

The economic recession beginning early in 2001, the tightening of airport security after 9/11, and the wars in Afghanistan and Iraq pushed the U.S. tourism sector into its worst slump since World War II.[14] The number of visitors to Florida declined by 3.3 million in 2001 compared to the previous year. The number of visitors from all EU countries except the U.K. dropped 28% between 1999 and 2004, accounting for a quarter of a million fewer visitors. The severely declining number of affordable hotels on the beaches, rising competition from other tourist destinations such as Spain and Caribbean countries, and tight border regulations are the leading factors contributing to the decline in the number of international visitors to Florida.[15]

However, the overall upward trend resumed in 2002 and reached a record level in 2004. Economic recovery, a weak U.S. dollar, and the absence of another terrorist attack on U.S. soil are fueling tourism growth. A recent study estimates that visitors to Orlando alone will reach 55.2 million in 2007.[16] A preliminary estimate indicates that Florida reached a new record level in 2005 in visitation to the state with nearly 86 million visitors.[17]

According to a preliminary estimate from VISIT FLORIDA, the state's tourism marketing agency, 85.8 million people visited Florida in 2005 (Table 1).[18] This is 37 million more than in 1998. However, some of this increase resulted from a change in the methodology used by VISIT FLORIDA to calculate tourism. Median estimates have the number of visitors growing 16% to 92.5 million by 2010.

Table 3. Visitors to Florida (in thousands)

	1998	1999	2000	2001	2002	2003	2004	2005
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Source: VISIT FLORIDA, *1998, 2003, and 2004 Florida Visitor Study* and 2002–2005 *Florida Visitor Analysis.*

[14] Wilkerson, Chad: *Travel and Tourism: An Overlooked Industry in the U.S. and Tenth District*, Economic Review, Federal Reserve Bank of Kansas City; Third Quarter 2003.

[15] Werner, Johannes: *Obstacles*, Florida Trend, October 2005.

[16] *New Research Forecasts Local Tourism*, Orlando Business Journal, March 22, 2005.

[17] VISIT FLORIDA, Preliminary Visitor Estimates, Resident Pleasure Travel and Industry Trend Indicators For 2005Q4 and CY2005, February 15, 2006.

[18] The visitor data used in this study are from Florida Visitor Studies published by VISIT FLORIDA, which quarterly conducts a survey to gather air traveler information at Florida's 14 largest airports. VISIT FLORIDA estimates non-air visitors based on data received from the Travel Industry Association's Travel Scope, which provides the ratio of domestic air and non-air visitors to Florida. VISIT FLORIDA's estimates and profiles of overseas visitors to Florida are derived from re-tabulation of data collected by the Tourism Industries Office of the U.S. Department of Commerce. Similarly, VISIT FLORIDA's analyses of Canadian visitors are derived from custom re-tabulations of data collected by the Canadian government through Statistics Canada.

A survey conducted in November 2004 by YPB&R, an independent communication advertising and public relations company, estimated 5-20% decrease in the number of visitors during the hurricane season between July and September 2005.[19] However, the preliminary visitor estimate by VISIT FLORIDA for the third quarter of 2005 indicates that the number of visitors to Florida reached 21.9 million during this period, a 9.3% increase over that same period in 2004. Perhaps, by presenting inviting images of Florida's availability for spring and summer vacationers in 2005, the hurricane marketing response by VISIT FLORIDA helped to lessen the projected impact of hurricanes on Florida's tourism.[20] This is an indication that the state money used for tourism promotion helped the state recover from the 2004 hurricanes. Indeed, a study on the return of $20 million recovery fund allocated to VISIT FLORIDA after 9-11 to promote tourism found a $3.29: $1.00 gross return on the state investment.[21]

Tourism Forecasts

Assuming continued state support, Table 4 presents three forecasts of tourism growth (as measured by number of tourists) in Florida between 2006 and 2014: optimistic (4% annual growth), median (2.5% growth), and pessimistic (1% growth).

Although projected 22% cumulative growth from 2006 to 2014 may seem high, these median estimates are based on 2.5% annual growth of tourism. The projected growth tracks closely with forecasted U.S. and Florida Gross Regional Product and personal income projections.[22]

Table 4. Florida Tourists, 2006-2014 Forecasts (in millions)

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2006	89.2	86.6	87.9
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2011	108.6	91.1	99.5
2012	112.9	92.0	102.0
2013	117.4	92.9	104.5
2014	122.1	93.8	107.1

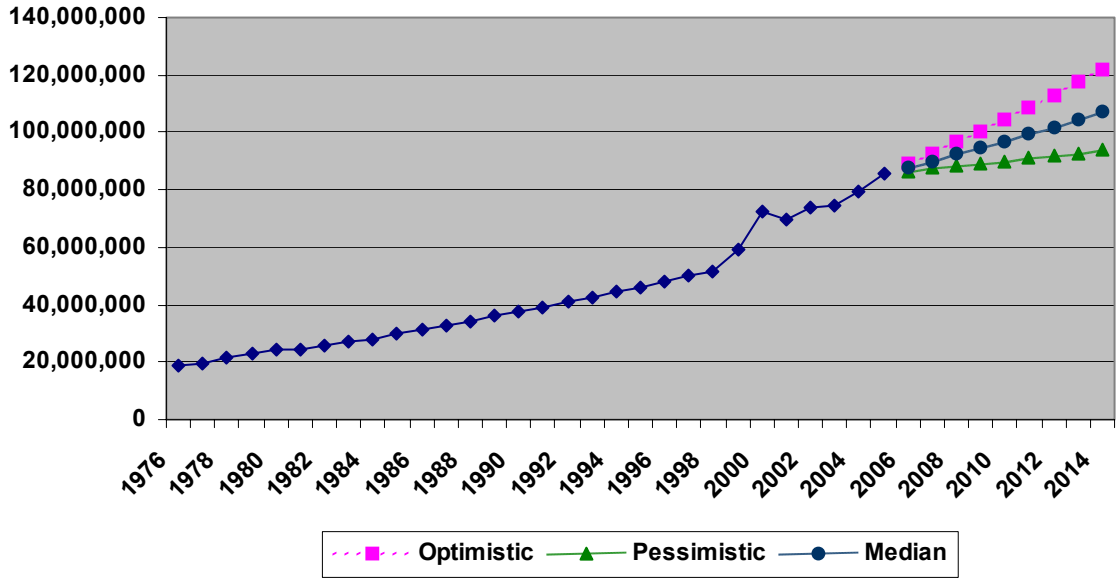
Source: Projection based on *2004 Florida Visitor Study, VISIT FLORIDA*.

[19] http://www.ypb.com/page_loader.php?tid=v4&sid=news&pid=pressrelease&id=10, retrieved on November 10, 2004.
[20] Pitegoff, Barry, *Research Guides Florida's Marketing Response to Hurricanes*, Travel and Tourism Research Association News, Winter 2005.
[21] "Update on the $20 Million Recovery Effort, presented to the Board of the Florida Commission on Tourism, Marcy 12, 2003, Visit Florida Research Department.
[22] See Appendix C for comparative projections.

The median estimate of Florida visitors is 97 million in 2010 and 107 million in 2014, representing increases of 10% and 22%, respectively, compared to 2005.

Figure 2 shows historical and forecasted numbers of tourists visiting Florida between 1976 and 2014.

Figure 2. Florida's Historical and Forecasted Numbers of Tourists Continue to Trend Upward (1976–2014)



Source: ***Historic Data***—VISIT FLORIDA and Center for Economic Forecasting and Analysis (CEFA), Florida State University. ***Forecast Data***—CEFA, FSU.
Note: Some of the sharp increase between 1999 and 2000 resulted from a change in the methodology used by VISIT FLORIDA to calculate the number of tourists. The new method was recommended by George Washington University and University of North Florida experts as more accurate than the previous approach.

There are many things attracting visitors to Florida. It is fair to sum them up in two words: sun and fun. As seen in Table 5, most of Florida's visitors come to see attractions such as theme parks, to participate in nature and cultural activities, to enjoy general sightseeing, and to join in fun activities and nightlife. To keep bringing more visitors to Florida, it is important to understand the factors making Florida an attractive destination and to retain and enhance those factors.

Table 5. Activities Florida Visitors Want to Participate in During Their Trip*

Visit attractions	87.5%
Nature activities	76.6%
Cultural activities	74.9%
General sightseeing	63.4%
Nightlife	57.9%
Play sports	48.1%
Visit friends and family	32.8%
Shopping	31.6%
Dining	26.6%
General entertainment	22.9%

Source: VISIT FLORIDA website, http://www.visitflorida.com/tools/advertising/vacact.php, retrieved January 3, 2006.
* The survey was conducted among the VISIT FLORIDA consumer website users.

Tourism Expenditures

Tourism spending and economic impacts vary according to whether visitors arrive in Florida by air and by other means of transportation (Table 6).

Table 6. Domestic Tourists' Average Daily Spending in 2004

Air Travelers		**Non-Air Travelers**	
Average daily expenditures per person:	$163.10	Average daily expenditures per person:	$107.30
Transportation	$59.70	Transportation	$19.70
Food	$30.50	Food	$27.40
Accommodations	$23.80	Accommodations	$18.20
Shopping	$21.10	Shopping	$17.00
Entertainment	$9.80	Entertainment	$19.40
Misc.	$8.10	Misc.	$5.50
Average length of stay:	5.2 nights	Average length of stay:	5.0 nights

Source: VISIT FLORIDA 2004 Florida Visitors Study.

Table 7 shows that the ratio of air to non-air visitors began declining after 1998. By 2002, primarily due to 9/11 and the 2001–02 recession, the ratio reversed as the number of non-air

visitors exceeded air visitors for two years. In 2004, the number of air visitors was virtually the same as non-air visitors. In 2005, the number of air visitors was slightly higher than the number of other visitors.

Table 7. Tourists Arriving in Florida by Air and Other Means of Transportation 1998–2005 (Visitor numbers in millions)

	1998	1999	2000	2001	2002	2003	2004	2005
Air/Non-Air	1.25	1.193	1.102	1.16	0.911	0.978	0.995	1.019
Air	27.1	32.0	38.1	37.3	36.1	36.9	39.8	43.3
Non-Air	21.6	26.8	34.6	32.2	37.8	37.7	40.0	42.5
Total	48.7	58.9	72.7	69.5	73.9	74.6	79.7	85.8

Source: VISIT FLORIDA, 1998–2004 VISIT FLORIDA Study.

Whether the 2002–2003 reversal of air to non-air visitors will reoccur depends on many factors such as economic conditions and the continued threat of terrorism. Scenarios presented in Appendix A are based on the majority of visitors continuing to arrive by air versus a return to the majority arriving by other means of transportation as was the case in 2002–2003. Both scenarios show that, absent a terrorist attack, a new war or natural disaster such as a hurricane, tourism should continue to grow, resulting in a positive benefit to Florida's economy and residents' lives.

Tourism and Timeshares

Double-digit annual growth in Florida timeshare resorts over the last two decades is a substantial factor driving tourism.[23] Indeed, our state has fully one-fourth of the total annual timeshare sales nationwide.

A 2004 study by the American Resort Development Association (ARDA) stated that Florida had 366 timeshare resorts with 27,700 individual units in 2002.[24] Despite the economic recession and aftermath of 9/11, the U.S. timeshare industry increased more than 14% in 2002. In the Orlando metro area, timeshares increased 40% between 1999 and 2002.[25] A recent ARDA study found that sales of U.S. timeshare resorts reached $7.87 billion in 2004, a 21.4% gain over the 2003 sales.[26]

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[23] Woods, Robert H: *Important Issues for a Growing Timeshare Industry*, Cornell Hotel and Restaurant Administration Quarterly, February 2001.

[24] *Economic Impact of the Timeshare Industry on the Florida Economy*, American Resort Development Association and Price Water House Coopers, 2004.

[25] *Orlando State of Market*, PowerPoint presentation prepared by Orlando/Orange County Convention and Visitors Bureau, March 2005.

[26] *State of Vacation Ownership Industry*, 2005, United States Study, American Resort Development Association.

Timeshare visitors stay longer, therefore spending more than other tourists. The 2004 ARDA study found that one million Florida timeshare vacations were taken during 2002, with average spending of $2,397 per trip. The study estimated that the timeshare industry created $7.9 billion in output, 99,500 full- and part-time jobs, and $1.1 billion in tax revenues.[27]

Static Analysis of Tourism's Impact on Florida's Economy

Studies historically have taken into account only the direct, short-term impacts of tourism on Florida's economy. Although such "snapshots" provide useful insights at given points in time, they artificially freeze the economy and tourism's relationship to it. By contrast, this study incorporates econometric tools that account for direct, indirect, and induced economic impacts of tourism's "imported funds" on Florida's economy.[28] Indirect effects include purchases of inputs made by firms that are supplying goods and services to the tourism sector. Induced tourism effects result from "re-spending" wages—that is, new employees have money to spend as a result of Florida tourism.

The following sections highlight direct, static impacts that tourism has on Floridians' employment, personal and business income, and on tax revenue generated by tourism that helps finance public and private infrastructure, cultural, recreational, and entertainment activities. These activities clearly could not be supported at current levels by the state's non-tourist economy.

Increased Employment

Increased employment is a primary benefit of tourism.[29] Table 8 shows that total travel-related employment in Florida increased by 4.4% (from 852,300 to 889,600) between 2000 and 2001. After decreasing by 3% (from 889,600 to 863,000) in late 2001 and 2002, employment increased to 874,700 (0.8%) between 2002 and 2003 and reached to 912,700 in 2004. The preliminary estimate indicates travel-related employment reached 944,500 in 2005.[30] The annual increase of 4.3% between 2003 and 2004 indicates that tourism employment has recovered its pre-recession 2001 and pre-9/11 robustness. The static near-term benchmarks indicate that tourism-related employment will continue making an important contribution to

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[27] *Economic Impact of the Timeshare Industry on the Florida Economy*, American Resort Development Association and Price Waterhouse Coopers, 2004.

[28] There are three types of economic impact: 1) Direct impact is the amount of economic activity generated by the event, or events, in question. 2) Indirect impact is the amount of economic activity generated in an economy as a result of the event. 3) Induced impact represents business activity, including increased employment to meet the demand generated by direct and indirect impacts. An aggregate multiplier determined by these three impacts measures the total economic impact of an event. For example, an aggregate economic multiplier of $3.5 would mean that for $1 spending at an event, $3.50 is generated in the economy. Subtracting the original $1.00 spent on the event (direct impact) leaves $2.50 of additional spending in economy (indirect and induced impacts).

[29] Mathieson, A. & Wall, G. (1996). Tourism: Economic and Social Impacts.. Essex, U.K.: Longman, Group Limited.

[30] VISIT FLORIDA, Preliminary Visitor Estimates, Resident Pleasure Travel and Industry Trend Indicators For 2005Q4 and CY2005, February 15, 2006.

our economy.

Table 8. Tourism's Contribution to Florida Travel-Related Employment*

Employment Category	2000	2001	2002	2003	2004	% Change 2000–04	% Change 2003–04
Air Transportation	77,600	76,600	37,300	33,300	30,800	-60.3	-7.5
Eating and Drinking Establishments	452,300	476,900	487,300	504,100	536,200	18.5	6.4
Hotels and Lodging	158,200	156,700	150,000	151,100	154,500	-2.3	2.3
Amusement and Recreation	156,800	159,900	160,000	157,800	162,800	3.8	3.2
Total Travel-Related Employment	852,300	889,600	863,000	874,700	912,700	7.1	4.3
Total Non-Agricultural Employment	7,080,600	7,197,800	7,179,700	7,261,100	7,504,000	6.0	3.3
Total Travel-Related Employment as % of All Non-Agricultural Employment	12.0%	12.1%	12.0%	12.00%	12.00%		

Source: VISIT FLORIDA, 1998–2004 VISIT FLORIDA Studies.

* Employment category names and data were changed in January 2003 when the Agency for Workforce Innovation switched from SIC codes to NAICS codes. Part of the change between 2002 and 2003 is due to this switch.

Spending and Consumption Taxes

According to the Department of Revenue, 2004 tourism and recreational activities of Florida residents and visitors generated $57 billion in taxable transactions (sales and use tax) compared to $43.8 billion in 1998. The estimated tourism-related taxable transaction for 2005 is around $62 billion. Taxable sales from tourism and recreational activities were up just $61.6 million between 2000 and 2001, and $7.4 million between 2001 and 2002, due to the recession and 9/11. Between 2002 and 2003, however, sales increased by $2.8 billion.

Estimating Tourist Expenditures

Despite the importance of tourism for Florida's economy, a scientifically unreliable method is used to estimate tourism expenditures. VISIT FLORIDA uses tourism/recreation taxable sales as a proxy for that purpose. However, the tourism/recreation category includes all sales by hotels and motels, bars and restaurants, liquor stores, photo and art stores, gift shops and

jewelry stores plus admissions, sporting goods, and rentals to visitors and residents.

Florida TaxWatch, in an upcoming *Briefings*, explains and strongly recommends the use of a method called tourism satellite account (TSA) which is the official international standard for estimating tourism expenditures.[31] TSA was developed by the World Tourism Organization. It is used by the U.S. Bureau of Economic Analysis (BEA) at the national level, and by a growing number of states.[32]

Table 9 shows, by sales category, the portions of taxable sales most influenced by tourism between 1999 and 2003.

Table 9. Taxable Transactions from Tourism/Recreation

Sales Category	1999	2000	2001	2002	2003	2004
Restaurants / Lunchrooms	$17,718,673,722	$17,976,272,377	$18,734,051,124	$20,439,269,903	$21,795,877,560	$24,128,380,867
Taverns, Nightclubs	2,225,285,398	2,231,517,758	2,284,357,332	2,394,666,506	2,371,754,069	2,529,948,563
Jewelry, Leather*	2,587,756,143	2,330,807,876	2,030,228,911			
Hotels, Apartment Houses, etc	11,349,152,183	11,593,711,527	11,232,626,604	10,878,657,744	11,975,808,186	13,678,117,005
Cigar Stands, Tobacco Supplies	94,059,485	96,593,755	105,436,944	121,404,200	123,154,399	133,799,121
Photographers, Photo Supplies	942,859,951	892,392,889	840,445,504	841,478,220	812,784,729	743,598,226
Gift, Card, Novelty Shops	2,120,048,145	2,012,381,541	2,039,639,421	2,071,340,485	2,112,645,361	2,148,015,048
Newsstands	60,066,772	54,565,960	44,791,389	44,379,944	26,512,248	26,869,324
Admissions	4,954,686,543	5,693,912,363	5,501,399,541	5,791,937,148	6,081,743,513	6,808,657,665
Holiday Season Vendors	12,942,654	13,426,557	15,764,516	16,101,467	16,199,797	21,160,773
Rental of Tangible Property	4,724,602,335	5,187,926,397	5,405,833,079	5,590,241,960	5,691,682,532	6,314,464,272
Parking Lots, Boat Dockings	386,466,670	402,391,000	412,925,635	465,447,609	473,780,546	499,139,215
TOTAL	$47,176,600,000	$48,485,900,000	$48,647,500,000	$48,654,925,186	$51,481,942,940	$57,032,150,079

Source: Florida Department of Revenue, Office of Tax Research Data as reported in VISIT FLORIDA, 1998, 2002, 2003, and 2004 *Florida Visitor Studies*.
*The sales data for the category of Jewelry and Leather were not released after 2001 because the category code was reallocated to the general category that is not considered to be a tourism/recreation category.

[31] Blake, A., Durbarry, R., Sinclair, M., and G. Sugiyarto, "Modelling Tourism and Travel using Tourism Satellite Accounts and Tourism Policy and Forecasting Models", *TTRI Discussion Paper 2001/4.*
[32] Kuhbach, P., Planting, M., and E. Strassner , "Travel and Tourism Satellite Accounts for 1998–2003", *Survey of Current Business,* September 2004.

An important benefit of tourism to Florida residents is tax revenue that exceeds tourist-related public service expenditures. This net revenue permits a higher level of government services to be enjoyed by residents than would be available without increased taxes. In effect, a portion of residents' government services burden is *exported* to tourists.

The general sales and use tax is by far the most important tax levied on tourist and resident expenditures alike. In 2003–2004, fully 65% ($17.6 billion) of the $27 billion of state revenue collected was from the sales and use tax, a significant portion of which was paid by tourists.

Gas tax revenue collected from visitors is also substantial. Assuming that nearly all gas used by residents is for in-state driving, VISIT FLORIDA estimates that non-resident driver demand for gasoline in 2001 was more than 750 million gallons or 9.8% of residents' demand of nearly seven billion gallons,[33] which generated $1.1 billion revenues based on the average price of $1.44 per gallon in 2001. State fuel tax revenues increased from $1.7 billion in 2002 to $2.1 billion in 2004.[34] Therefore, tourist-related gas tax revenue exceeded $200 million in 2004.

Transportation Benefits

Long-term benefits to Floridians result from state and local investments in transportation that are prompted, in part, by seasonal peak-load tourist traffic. Residents benefit during off-peak seasons from roads that have been upgraded to carry peak-load tourist traffic.

The most comprehensive measure of return on transportation investments is user benefits such as improved safety, time-savings, and reduced vehicle operating costs. A Florida TaxWatch 2000 report[35] cited research conducted by the Center for Urban Transportation Research at the University of South Florida showing user benefits of $2.86 for each dollar invested to maintain current conditions on state and local roads. Absent tourism-specific data, it is not possible to isolate the portion of those benefits attributable to visitor -related improvements. However, these are benefits that flow to every part of the economy, creating improved productivity and business competitiveness, higher real wages, and stronger overall economic expansion. Focusing on increased transportation-related business productivity, the research shows that each $1.00 invested in capital improvements to transportation facilities results in annual growth of $0.35 in Florida's Gross State Product—a rate of return of 35%. A significant but indeterminate amount of these benefits clearly are attributable to Florida tourism.

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[33] FLA USA VISIT FLORIDA, *Visitor Demand for Passenger Vehicle Gasoline,* presentation, 2003.

[34] State of Florida, Department of Revenue's Website, http://sun6.dms.state.fl.us/dor/taxes/distannual.html, retrieved on August 15, 2005.

[35] The Benefits and Costs of Tourism to Florida, August 2000, Florida TaxWatch. http://www.floridataxwatch.org/resources/pdf/VisitFloridafinalexsumAug2000.pdf

Econometric Analysis of Tourism's Dynamic Impact on Florida's Economy

Telling a more complete story about Florida tourism requires consideration of indirect and induced impacts, which contribute to Florida's Gross State Product via a "multiplier" effect. Indirect impacts are benefits to businesses that supply goods and services to the tourism sector; induced impacts are benefits from consumption expenditures by industry employees.[17] Money that circulates through Florida's economy in cyclical rounds of spending comprises the total impact of tourism.

To capture tourism's indirect and induced benefits over time, this study employed a dynamic scoring model—the REMI (Regional Economic Models, Inc.). This tool captures both ongoing and prospective impacts of tourism on our economy. For comparative analysis, a more conservative econometric model—IMPLAN— was also used.[36]

Indirect and Induced Impacts

Although 2005 direct tourism-related employment in Florida was 944,500 jobs, the IMPLAN model estimates that the number was 1.3 million in 2005 and will be 1.5 million by 2010, adding indirect and induced employment (Table 10). The REMI model shows 1.8 million tourism and tourism-related jobs by 2010.

Table 10. Median Estimates of Cumulative Tourism-Induced Impacts by 2010

	REMI	IMPLAN
Employment	1,815,000	1,499,475
Compensation	$86,945,230,766	$63,088,628,277
Average Compensation Rate	$47,904	$42,074
Output (GSP)	$135,730,082,783	$102,830,377,135

Source: Center for Economic Forecasting and Analysis, Florida State University.

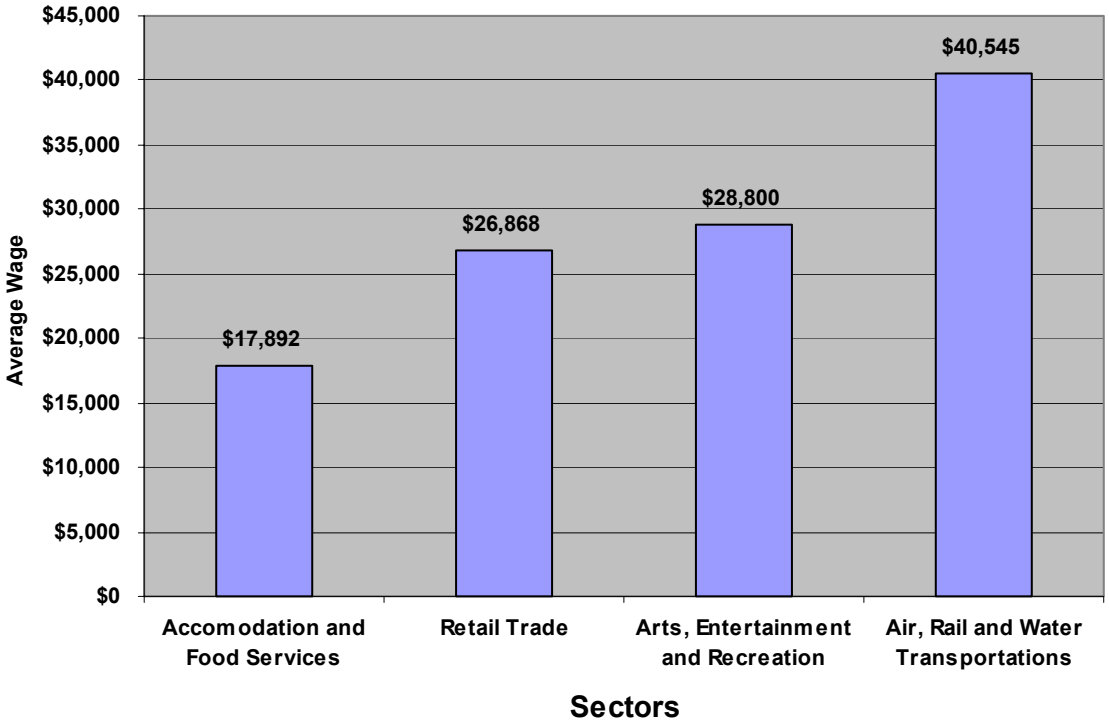
The projected compensations that each model attributes to tourism (direct/indirect and induced) by 2010 are substantial—$87.0 billion (REMI) and $63.1 billion (IMPLAN) respectively. Likewise, the average compensation, including wages and fringe benefits, of all direct and indirect tourism-related employment is projected to be $47,904 (REMI) and $42,074 (IMPLAN) by 2010. The REMI estimate is higher because it includes total labor and proprietor's income, personal contributions to social insurance, the net residence adjustment, dividends, interest and rent, and transfer payments. Output (Gross State Product) from tourism

[36] See Appendix D for a description of the REMI and IMPLAN models.

is projected to be $135.8 billion (REMI) and $102.8 billion (IMPLAN) by 2010. If the state economy grows 4% annually, the total state output will reach $688 billion in 2010, 15–20% of which will be generated by tourism.[37]

According to U.S. Census data (Figure 3), the average 2003 wage of workers in the accommodations and food services sector in 2003 was $17,892; for the retail trade sector, $26,868; for the arts, entertainment and recreation sector, $28,800; and for the air, rail and water transportation sector, $40,545. The $28,526 average for these tourism-related sectors in 2003 is lower than averages estimated by REMI and IMPLAN, which include wages and fringe benefits in sectors that are directly and indirectly affected by tourism expenditures.[38]

Figure 3. Annual Average Wage in Tourism-Related Sectors



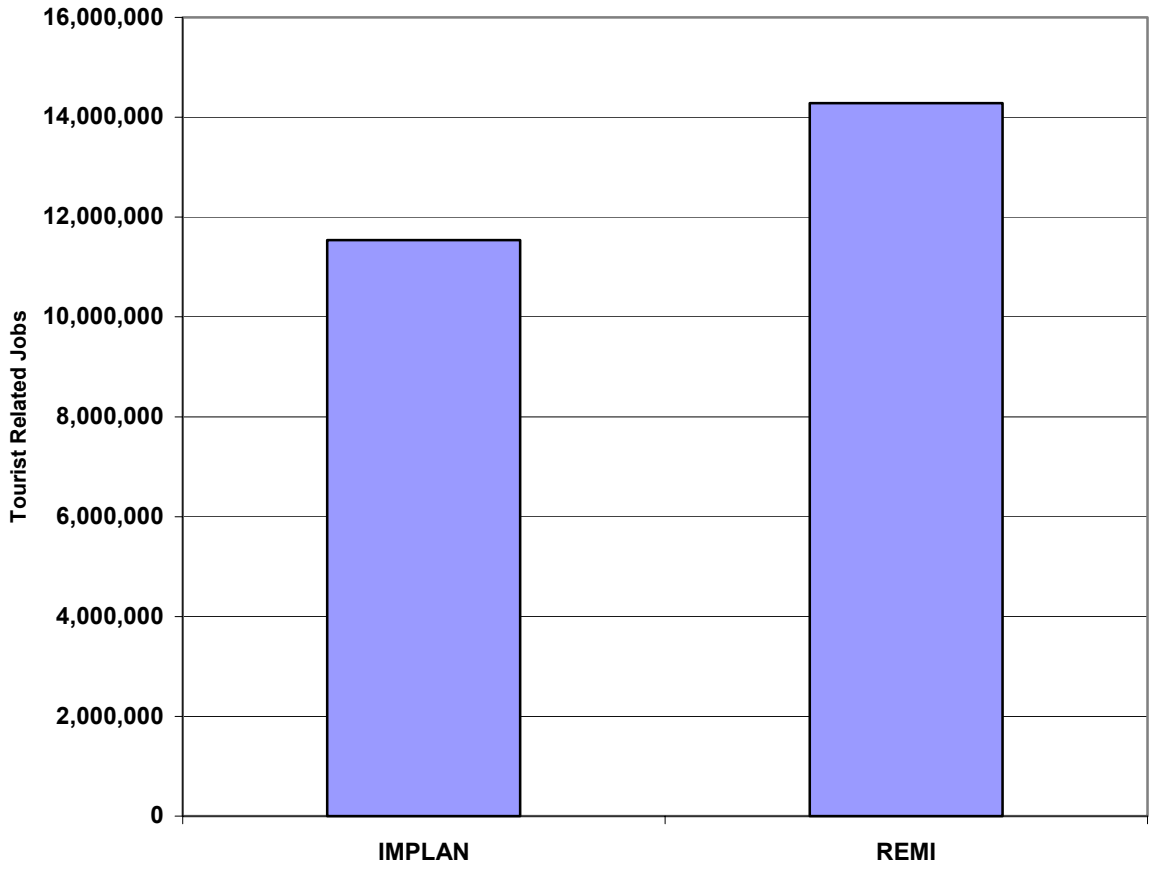
Source: U.S. Bureau of Census, LEHD Florida Labor Reports, http://lehd.dsd.census.gov/led/datatools/qwiapp.html, retrieved on April 12, 2005.
Annual estimate is based on 2003 fourth quarter data.

[37] Florida GSP was $543.8 billion in 2004 according to the U.S. Bureau of Economic Analysis. http://www.bea.gov/bea/newsrel/GSPNewsRelease.htm

[38] A listing of industry sectors included in REMI and IMPLAN analyzes is in Appendix F. IMPLAN and REMI wage estimates for 2003 were $41,800 and $43,900, respectively.

Figure 4 shows the projected cumulative economic impact of Florida tourism on tourist-related jobs from 2005 through 2012. Because these measures are cumulative over the period, care must be taken in interpreting the data. On average, annual employment in tourist and tourist-related jobs is estimated to be 1.2 million (IMPLAN) and approximately 1.4 million (REMI). Both estimates are based on the same cumulative annual average shown in Table 11 (net present value in 2005 dollars) and Figure 5 (wages and output—Gross State Product).

Figure 4. Eight-Year Cumulative Comparison of IMPLAN and REMI Florida Tourist Economic Impacts (2005–2012)



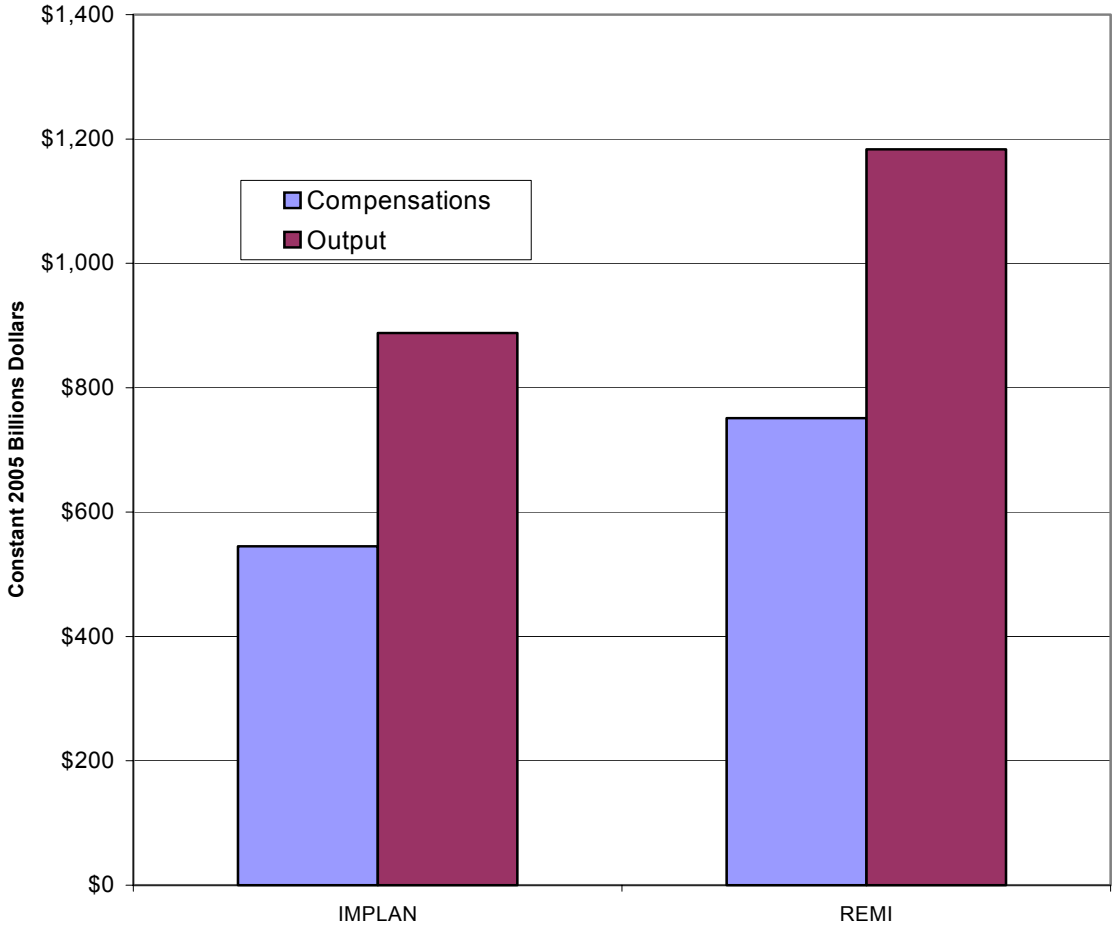
Source: Center for Economic Forecasting and Analysis, FSU and Florida TaxWatch, 2005.

Table 11. Net Present Value of Eight-Year Comparison of IMPLAN and REMI Florida Cumulative Tourist Economic Impacts (2005–2012, billions)

	IMPLAN	REMI
Compensations	$544.9	$751.3
Output	$888.0	$1000.2

Source: Center for Economic Forecasting and Analysis, Florida State University. 2005 dollars.

Figure 5. IMPLAN and REMI-Based Net Present Value[39] of Eight-Year Cumulative Impact of Tourism on Compensations and Output (Gross State Product), 2005–2012



Source: Center for Economic Forecasting and Analysis, Florida State University, and Florida TaxWatch, 2005.

[39] Net Present Value (NPV) is a way of comparing the value of money now with the value of money in the future. A dollar today is worth more than a dollar in the future because inflation erodes the buying power of the future money, whereas money available today can be invested and grow. NPV is used to estimate the present value of future revenues by using a discount rate.

Impact of Tourism on State Revenue[40]

Florida's tax revenues are generated by the purchase of goods by consumers, by corporate profits, and by other economic transactions. Table 12 shows that tourism and travel-related activities are expected to generate between $12.02 billion (IMPLAN) and $13.82 billion (REMI) general state tax revenue through 2010 as a function of direct and indirect earnings.

Table 12. Impact of Tourism on Tax Revenues

Model	Taxes Forecasted to be Paid on Tourism-Related Compensations 2005 through 2010 (in 2005 dollars)
REMI	$13.82 billion
IMPLAN	$12.02 billion

Source: Florida TaxWatch REMI and IMPLAN Analysis.
Based on a projection of state revenue collections per $1 million of output.

Tourism Costs

Tourism provides Floridians with distinct benefits: enhanced economic output, a substantial portion of state sales tax collections, and high paying jobs. At the same time, tourism comes with "costs." Notwithstanding previously noted limitations of cost data, the following sections summarize the downside of tourism (see Appendix B for the limitations of cost-benefit analysis).

Seasonality of Employment

Historically, the number of visitors to Florida has remained relatively evenly distributed throughout the year.[41] Nonetheless, tourism creates some degree of uncertainty regarding continuous, year-round employment. Cyclical variation, relatively small though it may be, requires some employers to dedicate extra resources to employee recruitment, selection, training, and retention.[42] There is also some tourism-based seasonal fluctuation in demand for goods and services such as gasoline and food.

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[40] Economic projections presented in this section are based on data that do not account for direct effects, if any , of recent gasoline and airline fuel costs increases on travel and tourism.

[41] *Trends and Conditions Report- 2003*, Office of Planning of the Florida Department of Transportation and the Center for Urban Transportation Research, University of South Florida, July 2003.

[42] Jolliffe, Lee and R. Farnsworth: *Seasonality in Tourism Employment: Human Resource Challenges*, International Journal of Contemporary Hospitality Management, 2003.

Although certain occupations are more affected by seasonality than others, Florida's total unemployment rate generally was lower between 1998 and 2004 than the U.S. average (Table 13).

Table 13. Unemployment Rate

Year	Florida	U.S
1998	4.3	4.5
1999	4.0	4.2
2000	3.6	4.0
2001	4.8	4.7
2002	5.5	5.8
2003	5.2	6.0
2004	4.6	5.5

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Public Safety

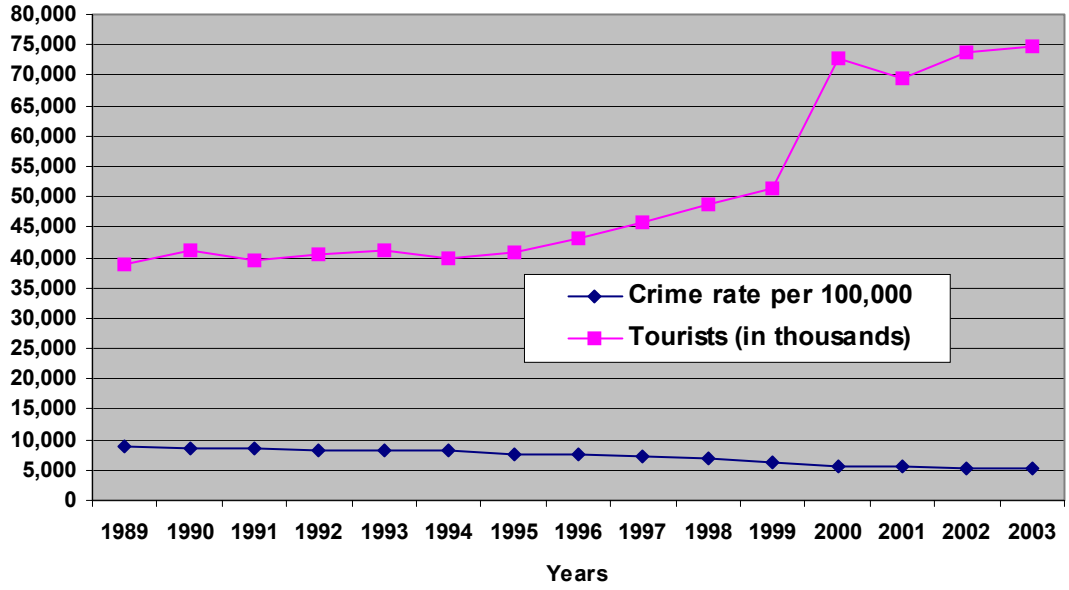
There are conflicting views as to whether tourism contributes to crime.[43]

- The tourist population, like society as a whole, includes individuals with criminal intentions. Thus, the more tourists, the more criminals. Though small in number, criminal elements among the tourist population are active.
- Tourists carry valuable personal property that provides targets for criminals.
- Population density in tourist areas enhances opportunities for criminal activity.[44]

[43] Pelfrey, W. (1998). *Tourism and Crime: Preliminary Assessment of the Relationship of Crime to the Number of Visitors at Selected Sites*, International Journal of Comparative and Applied Criminal Justice, Fall 1998, Vol. 22, No.2.

[44] Trager, K. (1990). *The Impact of Fiscal Year 1998-89 Out-of-State Tourism on the Florida Economy*. Tallahassee, FL: The Florida Legislature's Joint Legislative Management Committee.

Figure 6. Crime Rate per 100,000 and Growth of Tourism (1989–2003)



Source: Florida Department of Law Enforcement *Uniform Crime Report Data* and Center for Economic Forecasting and Analysis, Florida State University.

The above notwithstanding, 15-year data presented in Figure 6 show a continuing decrease in Florida's crime rate while tourism increased.

Nonetheless, a University of North Florida study estimated that the cost of tourist-related incarcerations in Florida was nearly $200 million per year.[45]

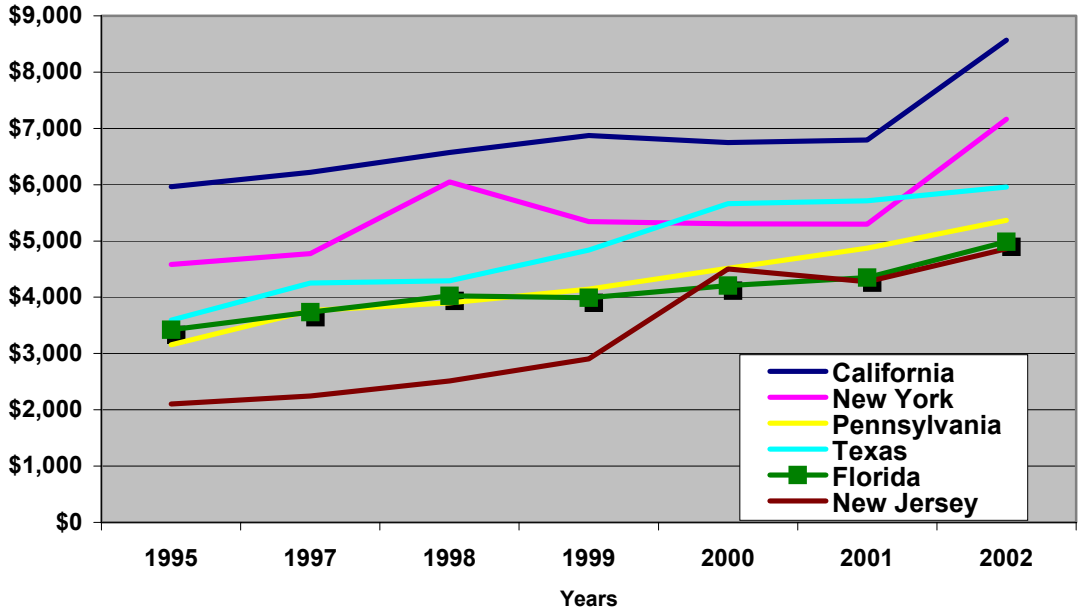
Transportation

Approximately half of Florida tourists arrive by air and half by other means of transportation. They are more likely to return if they experience safe, convenient, and efficient travel into and out of our state. As tourism continues to grow, it contributes to the unmet need of Florida's transportation system. Failure to meet this need could jeopardize tourism-dependent economic momentum and our attractive quality of life.

In terms of annual spending for highways, Florida ranked 5th with $5 billion in 2002, following California, New York, Pennsylvania, and Texas (Figure 7). However, other indicators more validly reflect the pace with which states have kept up with demand, such as the changes in all lane miles and the average daily traffic per lane.

[45] *Cost/Benefit Analysis of Tourism in Florida*, Center for Research and Consulting in Statistics, University of North Florida, June 2001.

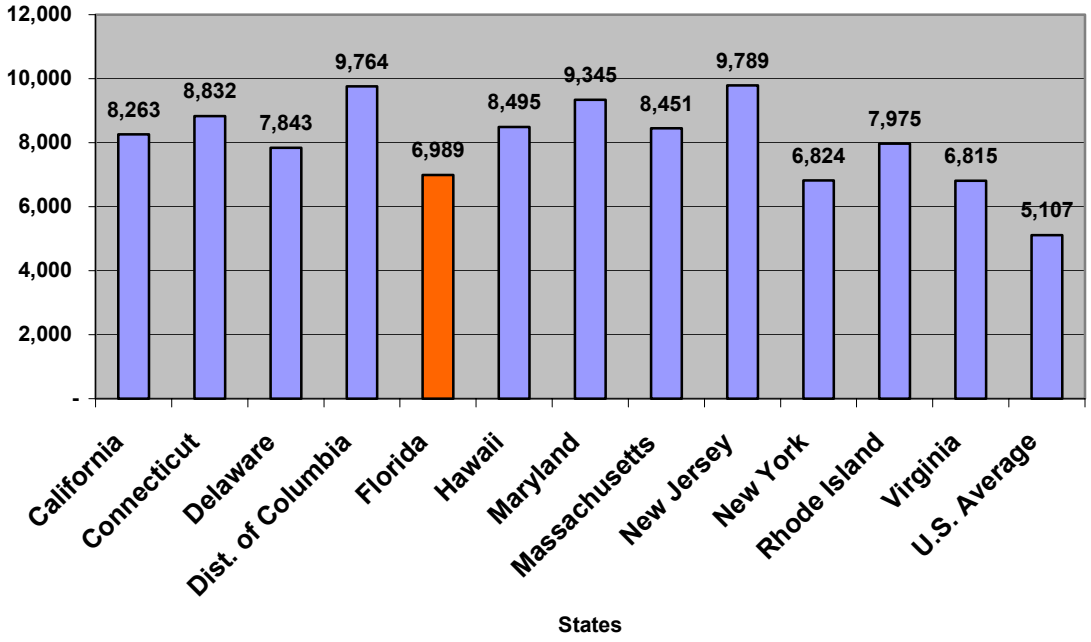
Figure 7. The Six States with High Disbursements for Highways (in millions of dollars)



Source: U.S. Department of Transportation, Federal Highway Administration

According to the transportation statistics recently released by the U.S. Department of Transportation, Florida's average daily traffic per lane was around 7,000 vehicles per lane on all principal arterials in 2004, which was 37% higher than the national average (Figure 8). This is despite the increase of lane mileage by 6.8% between 1994 and 2004, which is almost three times higher than the national average of 2.3%. As seen in Table 14, Florida ranks 6th in terms of the total lane miles, following Texas, California, Kansas, Minnesota, and Ohio. In short, the available data indicate that Florida has increased lane mileage much more rapidly than the national average and faster than all other large states except Ohio to keep up with steadily increasing daily traffic per lane.

Figure 8. The States with Highest Average Daily Traffic per Lane on All Principal Arterials in 2004



Source: U.S. Department of Transportation.

Table 14. Lane Miles Added by States 1994–2004

STATE	Total Lane Miles 1994	Total Lane Miles 2004	% Change (1994–2004)
Ohio	241,609	264,873	8.8
Florida	243,895	261,619	6.8
Georgia	232,831	246,347	5.5
Michigan	247,176	257,244	3.9
Missouri	250,271	259,807	3.7
Texas	623,269	646,247	3.6
Wisconsin	227,791	234,420	2.8
Alabama	192,558	197,892	2.7
U.S. Total	8,143,445	8,338,821	2.3
Pennsylvania	246,918	251,271	1.7
Iowa	230,627	234,256	1.5
Kansas	270,953	275,139	1.5
Minnesota	266,855	270,932	1.5
New York	237,282	240,167	1.2
Oklahoma	231,607	233,300	0.7
California	377,147	378,435	0.3

Source: U.S. Department of Transportation.

Traffic Congestion

As of 1998, tourism accounted for 10.9% of Florida vehicle miles traveled.[46] Whether driving their own cars or renting them after arriving by air, tourists contribute minimally to congestion.

Table 15 shows 2002 congestion costs (delay and extra fuel) per driver in selected urbanized areas in Florida compared to the 85 largest urbanized areas and a national average.

[46] Chu, X and Pulzin, S.: *An Application for Measuring Vehicle Travel by Visitors*, Journal of Transportation and Statistics, 2002, v.5, n.2/3.

Table 15. Traffic Congestion Costs, 2002

Urban Area	Annual Congestion Cost per Driver
Average of 85 Largest Urban Areas	**$567**
Miami-Hialeah	$512
Orlando	$486
National Average	**$435**
Tampa-St. Petersburg-Clearwater	$399
Jacksonville	$296
Sarasota-Bradenton	$187
Pensacola	$176
Cape Coral	$132

Source: Texas Transportation Institute, College Station, Texas; *2004 Urban Mobility Study*.

In 2002, congestion costs per driver in Miami and Orlando were higher than the national average but lower than the average of the nation's 85 largest urban areas. Five other Florida urban areas, including Tampa-St. Petersburg-Clearwater, were below the national average. Moreover, U.S. Census data indicate that in 2000, Floridians' average round trip to work was 26 minutes, identical to the national average.

A 2001 study at the University of North Florida estimated that the average cost per Florida driver due to congestion-related time delays and fuel consumption was $784 per year.[47] However, the same study noted that only a small portion of congestion costs could be attributed to visitors. With people moving to Florida every day, the cost of traffic congestion likely will increase.

The Environment

Though tourism has positive impacts on Florida's economy, it may negatively impact the environment in terms of air pollution, water quality, etc.[48] There is ongoing discussion in the literature regarding "sustainable tourism," defined as striking an acceptable balance between tourism-related economic activities and environmental protection.[49]

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[47] *Cost/Benefit Analysis of Tourism in Florida*, Center for Research and Consulting in Statistics, University of North Florida, June 2001.

[48] Davies, Terry and C. Sarah: *Environmental Implications of the Tourism Industry*, Discussion Paper 00-14, Resource for Future. *The Review of Regional Studies*; Vol. 23, No. 2; Fall 1993.

[49] Hunter, Colin: Sustainable Tourism and The Touristic Ecological Footprint, Environment, Development and Sustainability, 4, 2002.

Tourism's impacts typically are grouped as economic, socio-cultural, and environmental/ecological.[50] Tourism's impact on the environment, particularly in terms of costs, is difficult to ascertain. The above referenced University of North Florida study, for example, estimated that although the direct net benefit of tourism to our state was nearly $2 billion, it could not measure environmental impacts in monetary value.[51]

Assessments of economic impacts usually are context-specific. That is, they typically subject data analysis to a variety of ecological, human, and cultural benefits such as improving and maintaining native biodiversity, protecting endangered/threatened species, reducing fragmentation of habitat, maintaining/protecting the hydrologic system, reducing/avoiding air and water pollution, improving physical health and fitness, and opportunities for education and scientific research.

It is common for environmental cost considerations to be taken into account topic and site specifically rather than generally. Examples: the spread of disease/fire, invasion of exotics, increased hybridization, increased predation and soil erosion, barriers to biological movement, increased noise, lessened privacy, increased crime, and increased traffic.

It would be difficult and theoretically questionable to extrapolate site-specific results to the larger, more generalized Florida context. Evaluations of site-specific attributes of costs (or benefits) of open space cannot, without grave difficulty and prohibitive expense, take into account the full range of impacts attributable to open space, and their results consequently would be skewed and misleading. Jered B. Carr, et al. concur in their attempt to understand the benefits and costs of conservation corridors associated with greenways and trails, pointing out that "boiler-plating costs and benefits outlined in other studies is inappropriate and leads to flawed and misleading evaluations."[52]

To extrapolate site-specific results to the larger, more generalized Florida context, it would be practically imprecise, theoretically tenuous and methodologically unacceptable.

The EPA Model

The travel and tourism industry is often defined by its share of economic outputs and environmental impacts on transportation, communications, power, wholesale and retail trade, hospitality, manufacturing, and construction.

The U.S. Environmental Protection Agency (EPA) has developed a model for assessing the economic impacts of travel and tourism. Its goal is to identify and assess interrelationships among the environment, recreation and economic health, and to inform industry, government, and recreation officials about these links.

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[50] Hunter, Colin: Sustainable Tourism and The Touristic Ecological Footprint, Environment, Development and Sustainability, 4, 2002.

[51] *Cost/Benefit Analysis of Tourism in Florida*, Center for Research and Consulting in Statistics, University of North Florida, June 2001.

[52] Lindberg, K. & Johnson, R. L. (1997). *The Economic Values of Tourism's Social Impacts*. Annals of Tourism Research 24, (1), 90–116.

The EPA's approach accounts for impacts of supply sectors and activities and identifies sub-sectors to provide an understanding of relatively small segments of an industry that may have similar economic and environmental impacts. For each sub-sector, direct impacts are assessed regarding associated travel, lodging, meals, and activities themselves. Considering an industry in this way facilitates examination of drivers and barriers that influence environmental protection decisions within sub-sectors such as boating, urban/cultural attractions, hunting, skiing and snowboarding, golfing amusement/theme parks, casino gambling, conferences and conventions, waterside activities, and fishing.

To assess direct impacts of each subsector, the EPA model uses one economic indicator—data on tourism and recreation expenditures—and the following environmental indicators: water use, energy use, air emissions, solid waste generation, wastewater generation, greenhouse gas emissions and acres of land use – both alone and in combination with other sub-sector specific data, such as participation rates.

The model examines individual sub-sectors by establishing baselines, emission reduction goals and measures of progress. It also compares across sub-sectors to determine, for example, travel to a site, staying at the site, and the activity itself of a particular recreational activity that has the most and least environmental and economic impact.

The EPA model has several limitations:[53] Results are reported at the national, not state, level; the model is based on total rather than net impacts; the time period over which the data was gathered is not clear; and there is no dollar value assigned to negative impacts.

Because it includes a limited set of environmental indicators and only direct impacts, this model has a somewhat restricted view of sustainability issues associated with each sub-sector. Nonetheless, it could become a powerful tool in the EPA's efforts to examine the travel and the tourism industry, and to identify areas for cooperative programs to improve environmental performance. Eventually, the model may be augmented with indicators of sustainability to enhance its value.

Conclusion

Tourism continues to bring substantial benefits to Floridians despite setbacks from the 2001–02 recession, 9/11, the Afghanistan and Iraq wars and war on terrorism, and the 2004 and 2005 hurricanes.

Assuming continued state support, our study projects continuation of significant state tax revenue collection from tourist expenditures. It projects increasing earnings in tourism and tourism-related jobs through 2010. This report's finding that Florida's economy benefits from direct, indirect, and induced impacts of tourism (explained in footnote 28) is further reason for optimism. Currently, 1.3 million Floridians' jobs (entry through executive level) are

[53] *Cost/Benefit Analysis of Tourism in Florida*, Center for Research and Consulting in Statistics, University of North Florida, June 2001.

associated directly and indirectly with tourism. Projections show that by 2010, up to 1.8 million jobs will be associated with tourism. Tourism, therefore, is a major, if not the major employer in Florida.

Recommendation

Tourism Satellite Account (TSA) is a scientifically reliable method for estimating tourism expenditures and the official international standard for estimating tourism expenditures. TSA should be used by the State of Florida to more accurately assess and monitor the tourism sector, and for establishing policies to mitigate problems and seizing opportunities to grow this economic sector.

Special acknowledgment to Dr. Stephen Morrell, Professor of Economics and Finance, Andreas School of Business, Barry University and Florida TaxWatch Senior Research Fellow and Dr. Mark Bonn, Dedman Professor of Services and Director of Graduate Studies in Hospitality and Tourism, College of Business, Florida State University. Our thanks also to the VISIT FLORIDA Research Department for the data and reports it provided.

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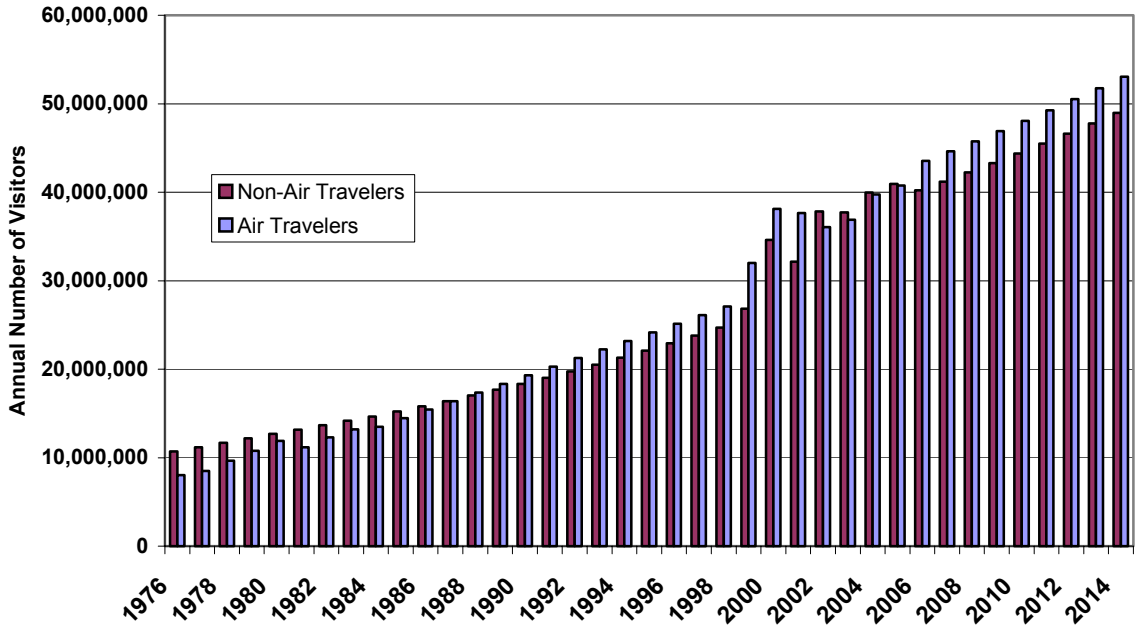
Appendix A: Tourists Arriving In Florida by Air and by Other Means of Transportation

Tourism expenditures forecasted by the Regional Economic Models, Inc. (REMI) and IMPLAN are based on two scenarios regarding the ratio of Florida tourists arriving by air and by other means of transportation. This distinction is important because it affects total tourist expenditures.

Scenario A: Continuation of Current Air-to-Non-Air Ratio Current Trend

Until 9/11, air traveling had been dominant for ten years as the preference of 52% of all visitors. 9/11 reversed this trend for two years. Figure 9 shows an econometric projection through 2014 for the number of air and non-air tourists under Scenario A, which posits that the air dominant trend after 2006, similarly to the one before 9/11. The estimate is based on three econometric projections: an optimistic view, a pessimistic view, and a median view. The optimistic view estimates a long-term growth rate of 4.0% annually following 2005; the pessimistic view estimates a 1.0% annual growth rate; and the median view estimates a more modest annual growth rate of 2.5 % after 2005. The median view, graphically portrayed here, is used as the most likely of the three alternatives.

Figure 9. Historic and Forecast Number of Florida Air and Non-Air Tourists, 1976–2014 (Scenario A, Median View)



Estimates of growth after 2005 are set at a long run annual modest growth rate of 2.5% annually after 2004.
In July 1999 Visit Florida adopted a new tourist estimation method
Source: Historic Data, Visit Florida; forecast Data, CEFA, FSU.

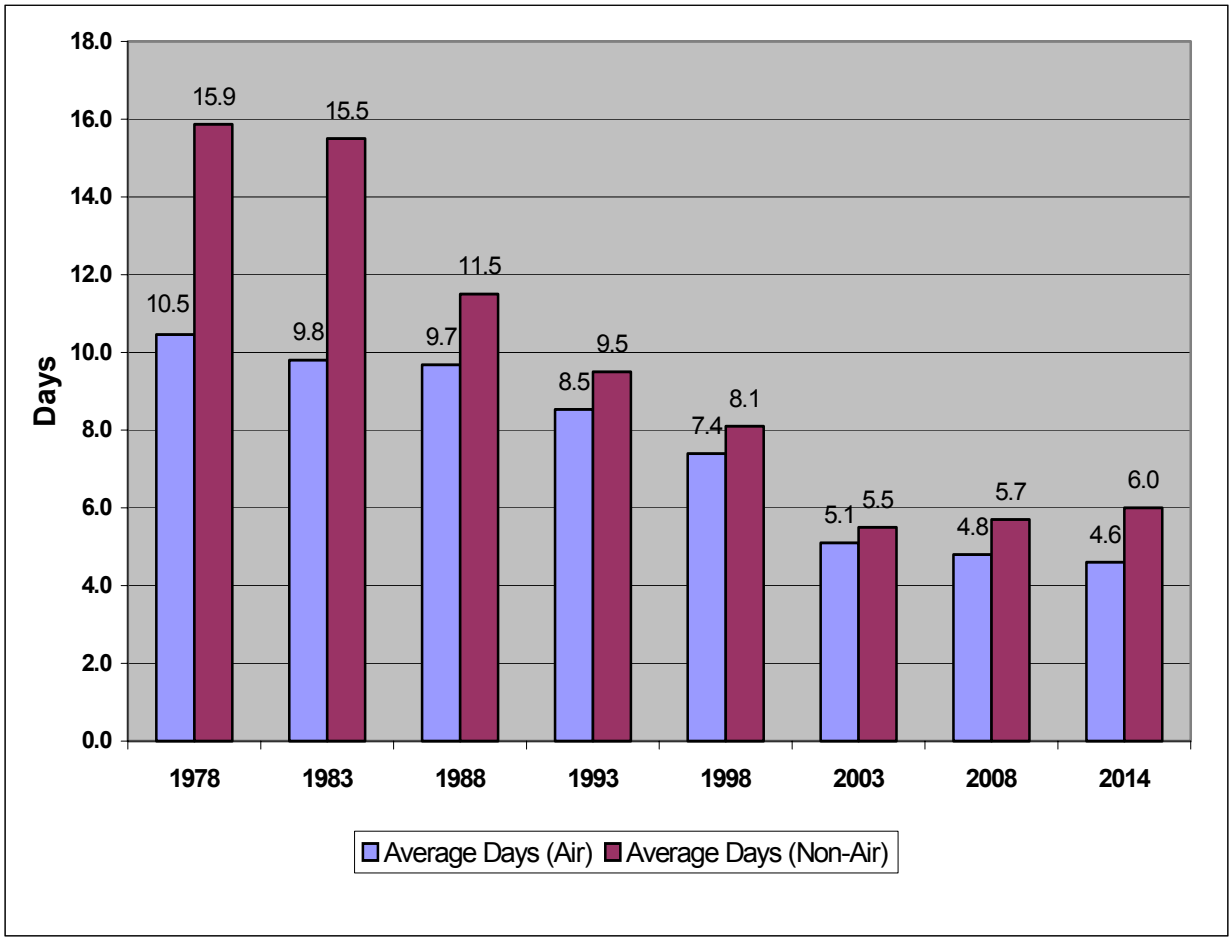
Tourism expenditures are related to the ratio of air to non-air visitors. Figure 10 shows non-air and air tourists are spending less time during their visits to Florida.

The length of stay after year 2004 was estimated based on percentage changes between 2000 and 2003, which suggest that length of stay has become stable in recent years. If the current trend continues, air visitors will stay for even shorter periods while non-air visitors will stay a bit longer than currently.

Moreover, as Table 16 shows, domestic air travelers (2004 data) spend significantly more per person while here—$163.10 per day as compared to $107.30 per day, respectively.[54]

[54] VISIT FLORIDA, 2003 Florida Visitor Study.

Figure 10. Length of Stay for Domestic Visitors



Source: VISIT FLORIDA, Florida Visitors Studies and Forecast Data, Florida TaxWatch.
Note: Estimated length of stay for 2004 to 2014 is based on the average change between 2000 and 2003, assuming that these years' trend will continue in the future.

Table 16. Domestic Tourists' Average Daily Spending in 2004

Air Travelers		Non-Air Travelers	
Average per person expenditure per day:	$163.10	Average per person Expenditure per day:	$107.30
Transportation	$59.70	Transportation	$19.70
Food	$30.50	Food	$27.40
Room	$23.80	Room	$18.20
Shopping	$21.10	Shopping	$17.00
Entertainment	$19.80	Entertainment	$19.40
Misc.	$8.10	Misc.	$5.50
Average length of stay:	5.2 nights	Average length of stay:	5.0 nights

Source: VISIT FLORIDA. 2004 Florida Visitors Study.

Scenario A: Median View of Florida Tourist Expenditures

Utilizing data generated based on average per-day expenditures and length of stay by air and non-air tourists[55] (generated under Scenario A assumptions regarding the ratio of Florida air to non-air tourists), Table 17 and Figures 11 and 12 show slightly higher tourist expenditures occurred under Scenario A due to tourists who arrived by air continuing to outnumber non-air tourists and spending more per capita during their stay.

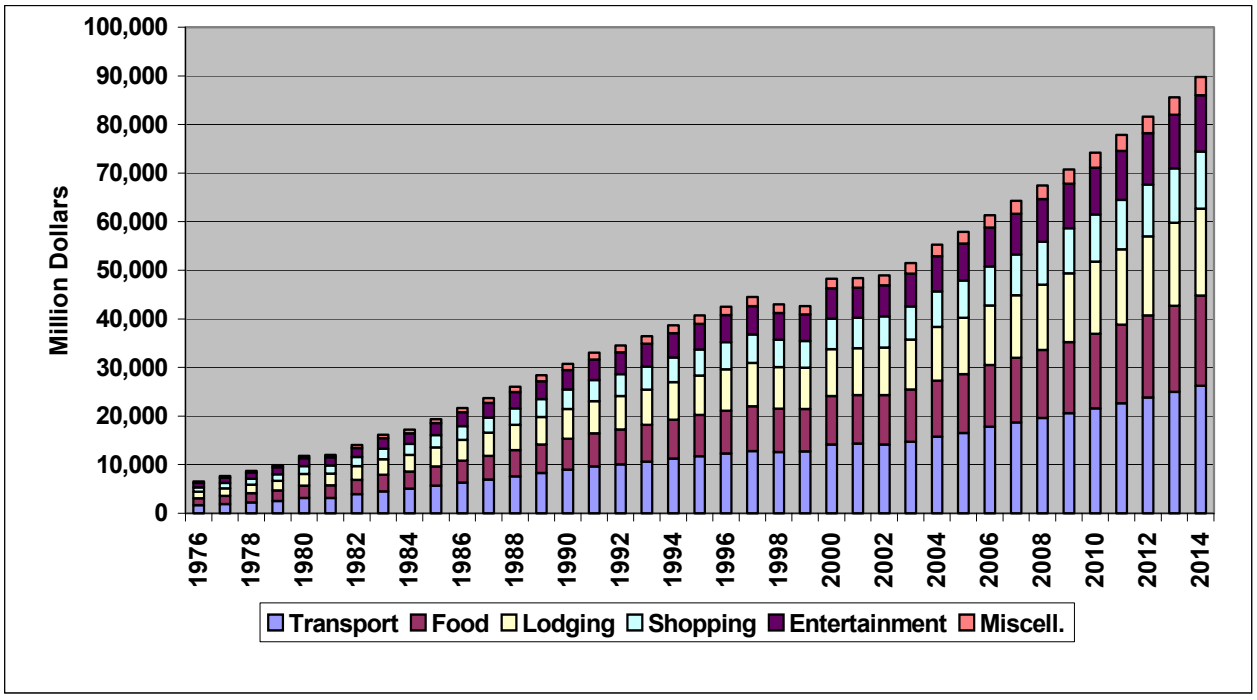
[55] The estimate is based on data for domestic visitors. International visitors stay longer but spend less money per night. According to the recent data from the U.S. Department of Commerce, average expenditures per visitor per day in the U.S. for international visitors was $93 in 2004. However, since international visitors stay longer, their total expenditures exceed that of domestic visitors. In estimating tourism expenditures in this study, international visitors are considered equivalent to domestic air travelers.

Table 17. Tourist Expenditures by Category (in millions)
(Scenario A, Median View)

Year	Transportation	Food	Lodging	Shopping	Entertainment	Misc.	Total
1976	$1,677	$1,427	$1,330	$916	$923	$283	$6,556
1980	$3,174	$2,536	$2,391	$1,620	$1,622	$506	$11,848
1990	$8,975	$6,363	$6,139	$4,024	$3,972	$1,284	$30,757
2000	$14,163	$9,966	$9,630	$6,298	$6,210	$2,012	$48,278
2010	$21,602	$15,366	$14,815	$9,720	$9,597	$3,098	$74,198
2014	$26,223	$18,564	$17,916	$11,738	$11,583	$3,745	$89,770

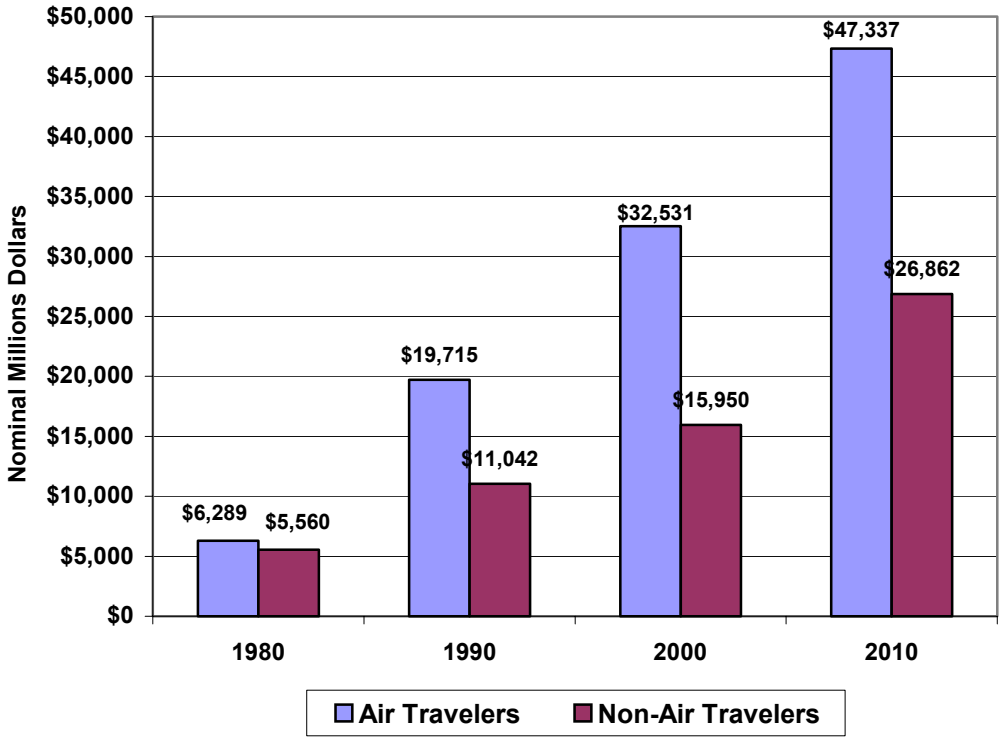
Source: ***Historic Data***, VISIT FLORIDA and Center for Economic Forecasting and Analysis (CEFA), Florida State University (FSU); ***Forecast Data***, CEFA, FSU.

Figure 11. Annual Tourist Expenditures by Category, 1976–2014
(Scenario A, Median View)



Source of Historic Data: VISIT FLORIDA. Forecast Data, CEFA, FSU.

Figure 12. Florida Tourist Expenditures, Historic and Forecast Trends (Scenario A, Median View)



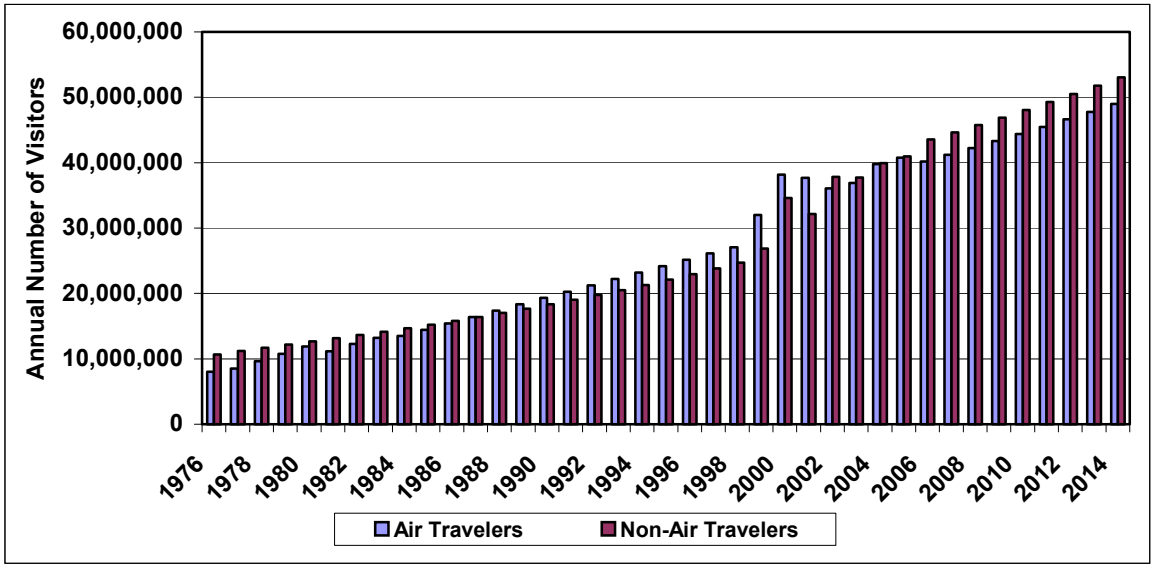
Source of Historic Data: VISIT FLORIDA. Forecast Data, CEFA, FSU.

Scenario B: Air-to-Non-Air Ratio Reversal

Historically, the number of air visitors has been higher than non-air visitors. However, the air to non-air ratio reversed for two years after 9/11. In 2002, visitors arriving by air was 5% less than non-air visitors.

Although 9/11 sharply reduced the number of air visitors, it is important to note that the decline in the ratio started several years earlier. Figure 13 projects the total number of each category of visitors if the ratio reversal occurs again, beginning in 2006.

Figure 13. Historic and Median Forecasted Number of Florida Air and Non-Air Tourists 1976–2014 (Scenario B)



Note: Estimates of growth post in 2004 are set at a long run annual modest growth rate of 2.5%
Source of Historic Data: VISIT FLORIDA.

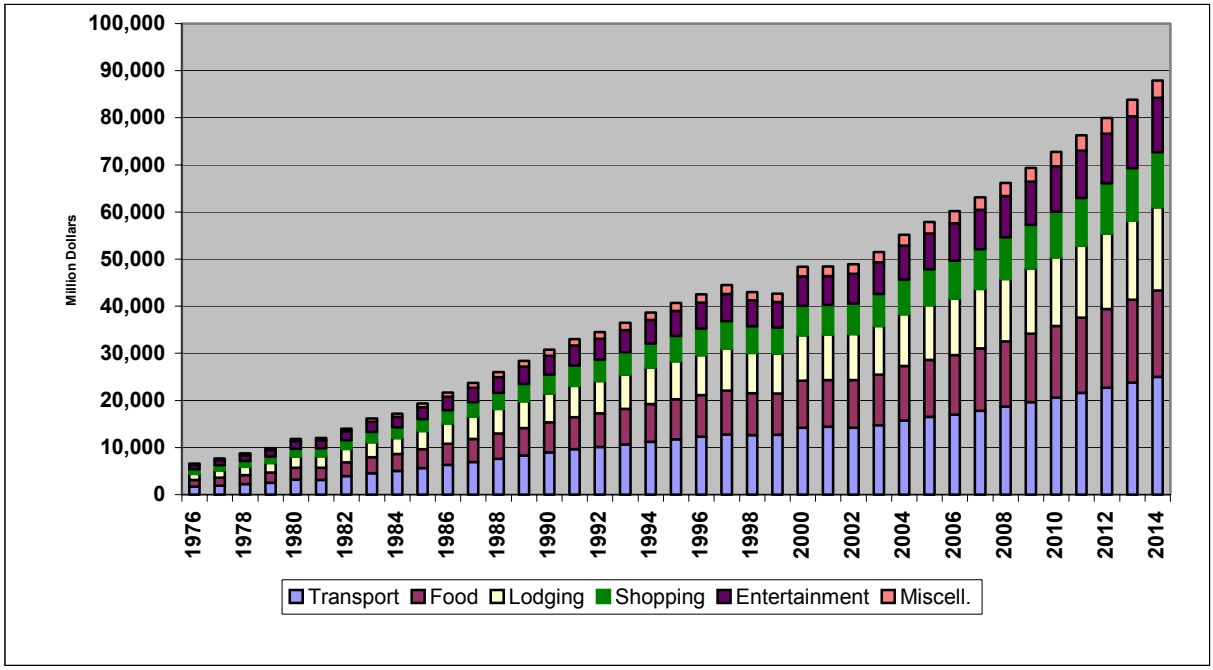
Utilizing data generated by average daily expenditures and length of stay by air and non-air tourists (Table 16 and Figure 9), it is estimated that total tourist expenditures will steadily increase over the next decade, reaching $72.7 billion in 2010, which is $1.5 billion less than under Scenario A. Table 18 and Figure 14 delineate this median estimate by major expenditure categories and Figure 15 by relative expenditures of air and non-air tourists.

Table 18. Tourist Expenditures by Category -Million Dollars- (Scenario B, Median View)

Year	Transportation	Food	Lodging	Shopping	Entertainment	Misc.	Total
1976	$1,642	$1,383	$1,391	$926	$934	$280	$6,556
1980	$3,108	$2,452	$2,503	$1,637	$1,648	$500	$11,848
1990	$8,788	$6,115	$6,445	$4,062	$4,071	$1,275	$30,757
2000	$14,089	$9,560	$10,143	$6,342	$6,350	$2,002	$48,486
2010	$20,589	$15,238	$14,576	$9,672	$9,597	$3,061	$72,732
2014	$24,981	$18,395	$17,613	$11,671	$11,574	$3,697	$87,931

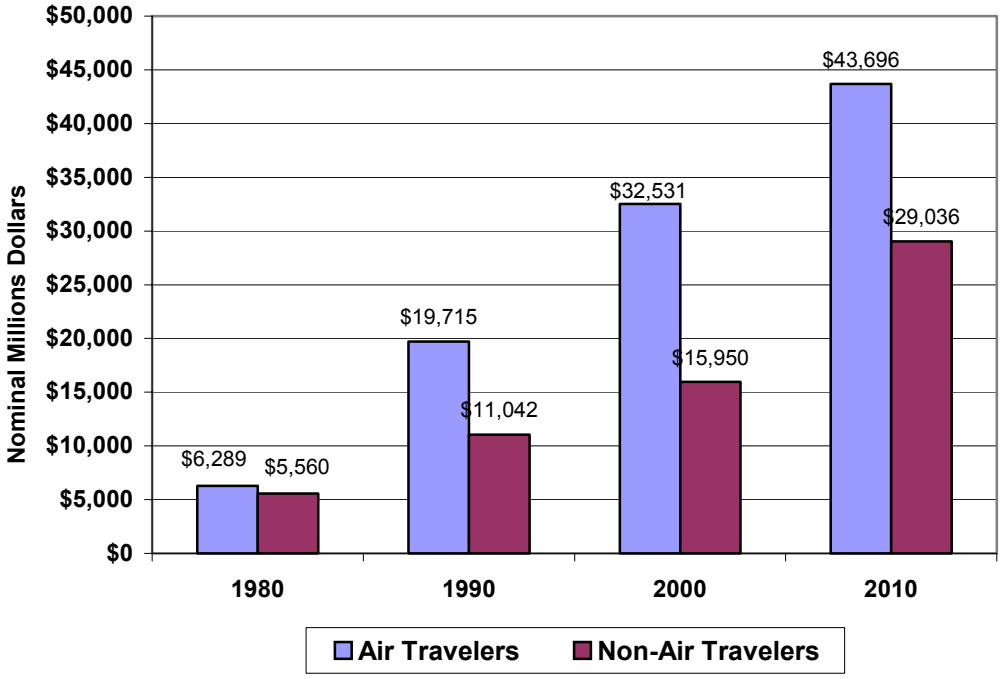
Source: ***Historic Data***, VISIT FLORIDA and Center for Economic Forecasting and Analysis, Florida State University; ***Forecast Data***, CEFA, FSU.

Figure 14. Annual Tourist Expenditures by Category, 1976–2014 (Scenario B, Median View)



Source: VISIT FLORIDA and Center for Economic Forecasting and Analysis (CEFA), Florida State University.

Figure 15. Florida Tourist Expenditures, Historic and Forecast Trends



Source: ***Historic Data***, VISIT FLORIDA and Center for Economic Forecasting and Analysis, Florida State University; ***Forecast Data***, CEFA, FSU.

Appendix B: Limitations of Cost-Benefit Analysis

Textbooks on cost-benefit analysis typically call for calculation of *all costs* and *all benefits* of tourism's impact. In the real world, however, it is possible to calculate only costs and benefits for which data are available.[56] It was anticipated, and acknowledged in the research design of this study, that some costs and benefits of tourism's impact on the quality of life in Florida may be unaccountable because of inaccurate or incomplete data.

In addition to being a data-intensive form of analysis, cost and benefit data can be very context-specific. Thus, conclusions generated by the application of cost-benefit methodology often are only very narrowly applicable to a single case or to time-specific incidences or effects. In the latter case, in order to be useful, cost-benefit data must be current.

Florida TaxWatch's search for timely, Florida-specific cost-benefit tourism data reveals that tourism studies and related data collection efforts by-and-large have been directed more toward the benefit rather than the cost side of the equation for three reasons:[57]

►Benefit-related economic impacts are relatively easy to measure, whereas physical and social cost-related impacts—particularly the latter—are difficult to subject to numerical measurement because they are difficult to quantify.

►Relatively explicit data are required to measure the economic costs and benefits of tourism. Tourism-based employment and tax-related revenue data, etc. are more easily collected than those related to cost-consequences.

►An historical emphasis on economic and related benefits of tourism may reflect a widely held belief or bias among tourism advocates that tourism, other things being equal, yields a considerable return on investment and is a positive net influence in providing jobs and improving prosperity. Conversely, these purported benefits may not be perceived by Florida residents because of a lack of widely disseminated information in the media.

Florida TaxWatch's search for tourism cost-benefit data also reveals that, although benefits are visible in the form of jobs, earnings, business output, and tax revenues, explicit data with which to measure costs are relatively invisible or indistinguishable from other cost-related impacts. This is because they tend to meld with, and are difficult to separate from, more general social and quality-of-life factors. Traffic congestion, health care needs and costs, public safety, and similar issues are all part of Floridians' daily lives. To what extent these are increased by tourists to the state is difficult to isolate.

Optimally, but subject to availability of data, a cost-benefit analysis of Florida tourism would assign quantitative values (discrete indexes and/or dollar measures) to the benefits/costs of tourism on the quality of life in Florida. Ideally, costs and benefits would also be adjusted to

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[56] Meier, K. (1984). The Limits of Benefit-Cost Analysis. In Decision-Making in the Public Sector. Lloyd Nigro, Editor. (New York: Marcel Dekker) pp. 43-64.

[57] Mathieson, A. & Wall, G. (1996). Tourism: Economic and Social Impacts. Essex, U.K.: Longman, Group Limited.

reflect the time-value of money, multiplier effects, and other macroeconomic cost/benefit impacts.

A Florida household government benefits and tax burden study conducted for Florida TaxWatch by Drs. Keith G. Baker and Craig E. Reese shows that Florida tourists consume/use far less government services than do Florida residents in a variety of government services arenas. For example, the cost-to-government side of the equation is decidedly weighted against individual Florida resident households and favors Florida tourists when it comes to the consumption/use of prisons, Medicaid, public schools and post-secondary colleges and universities, and Aid to Families with Dependent Children.[58]

[58] *Ibid.*

Appendix C: REMI Estimate of Florida GSP

1. Historic Data

REMI Forecast of Florida Gross State Product	
1980–1990	**4.6%**
1990–2002	**3.5%**
1980–2002	**3.9%**

Source: REMI.

Annual Increase in Number of Florida Tourists	
1980–1990	**4.4%**
1990–2002	**6.0%**
1980–2002	**5.3%**

Source: VISIT FLORIDA and Florida Statistical Abstract.

2. Forecast Data

U.S. Gross Domestic Product Forecast	
2001–2012	**3.0%**

Source: Florida Legislature, Office of Economic and Demographic Research.

Florida Personal Income Forecast	
2001–2012	**4.8%**

Source: Florida Legislature, Office of Economic and Demographic Research.

REMI Forecast of Annual Increase in Florida Gross State Product	
2001–2012	**2.6%**
2001–2015	**2.4%**
2001–2020	**2.2%**
2001–2030	**2.0%**
2001–2035	**2.0%**

Source: REMI.

Appendix D: REMI and IMPLAN Models

REMI

The REMI model was developed by Regional Economic Models, Inc. of Amherst, Massachusetts. It specifies commodity-trade and personal-income flows between regions in creating long-term portraits of regional economic growth. The model consists of five basic blocks: (1) output, (2) labor and capital demands, (3) population and labor supply, (4) wages, prices, and profits, and (5) market shares.

Production is categorized into 49 non-farm private industries (primarily at the two-digit S.I.C. level), three government sectors, and the farm sector. Economic relationships are given by an industry-based input-output component combined with an econometric component. The econometric specifications are derived from economic theories that are-generally neoclassical in nature. The model is dynamic, enabling it to be used both as an impact model and for forecasting.

The REMI model, as Bolton (1985) states in a review of econometric models, "is a world apart in complexity, reliance on inter-industry linkages, and modeling philosophy" from other econometric models. It may be seen as an eclectic model that links an input-output model to an econometric model. In this way, if econometric responses are suppressed, the model collapses to an input-output model.

REMI uses three sources of employment and wage and salary data: (1) Bureau of Economic Analysis (BEA) employment, wage and personal income series; (2) ES-202 establishment employment and wage and salary data; and (3) County Business Patterns (CBP) data published by the U.S Census Bureau. The BEA data are annual averages reported at the two-digit level for states and one-digit for counties. The ES-202 data, which are the foundation for BEA data, are collected monthly in conjunction with the unemployment insurance program at the two-digit level for counties and states. CBP data are collected in conjunction with Social Security programming in March of each year.

Output measures are based on regional employment data, the BEA Gross State Product series, and national output-to-employment ratios.

REMI begins by applying the national output-to-employee ratio to employment by industry. This application is adjusted by regional differences in labor intensity and total factor productivity. Regional differences are given by industry production function and unit factor costs. Total factor productivity calculations depend on industry value added in production reported in real U.S. dollars by BEA, and on adjustments by REMI to the BEA numbers.

IMPLAN

IMPLAN is an input-output model developed by the U.S. Forest Service, Department of Agriculture, in 1989. IMPLAN estimates output at the state level by using value-added data reported by BEA as proxies to allocate U.S. total gross output. IMPLAN also allocates state total gross output to counties based on county employment earnings. The use of the BEA Gross State Product series for states, and implicit assumption of uniform value

added-to-earnings ratios across counties within a state, parallels REMI's procedure. However, because of REMI's neoclassical production function, differential labor costs cause REMI's labor intensities to differ across states and counties. In addition, REMI adjusts real value added in U.S. dollars reported by BEA for differences in regional unit factor costs.[59]

Similar to REMI, IMPLAN builds its data from top to bottom. National data serve as control totals for state data. In turn, state data serve as control totals for county data. Primary sources of employment and earnings data are County Business Patterns data and BEA data.

Similar to REMI, IMPLAN assumes a uniform national production technology and uses a regional purchase coefficient approach to regionalize technical coefficients.

By contrast to REMI, IMPLAN is exclusively an input-output model. It is non-survey based, and its structure typifies that of input-output models found in the regional science literature.

The model generates two types of multipliers: Type I multipliers and what IMPLAN refers to as Type III multipliers. The difference between Type I and Type III multipliers is an induced consumption effect. IMPLAN's Type III multiplier differs from the standard Type II multiplier because the consumption function is nonlinear. That is, the marginal propensity to consume is not constant, decreasing as income in the region rises. Population completely responds to employment changes and drives consumer spending. Multipliers are generated for employment, output, value added, personal income, and total income.

For this study, the 1997 IMPLAN version is used. The greatest level of disaggregation of the model is 528 sectors. However, the industries that do not exist in the region are eliminated during user construction of the model. In addition, industries of the IMPLAN model can be aggregated into desired categories. Therefore, industries in the IMPLAN model are aggregated to match the industry classifications of the REMI model. IMPLAN uses an industry-based technology to derive its input-output coefficients. Finally, IMPLAN is a static model and cannot trace the time path of economic impacts or be readily used for forecasting as REMI can.

[59] Adapted from *Dan S. Rickman and R. Keith Schwer,"*REMI AND IMPLAN Models: The Case of Southern Nevada."

Appendix E: SICs and IMPLAN Codes

		IMPLAN		SIC		
AEA*	FHTC**	Number	Name	Number	Company	Name
	v	195	Drugs	2833	6	Medicinals and Botanicals
	v			2834	26	Pharmaceutical Preparations
	v			2835	1	In Vitro and in Vivo Diagnostic
	v			2836	1	Biological Products. Except
v	v	339	Electric Computers	3571	23	Electric Computers
v	v	340	Computer Storage Devices	3572	0	Computer Storage Devices
v	v	341	Computer Terminals	3575	0	Computer Terminals
v	v	342	Computer Peripheral Equipment	3577	9	Computer Peripheral Equipment,NEC
v	v	343	Calculating and Accounting	3578	0	Calculating and Accounting Machines
v	v	344	Type Writers and Office Machines	3579	29	Computer Peripheral Equipment
v	v	372	Telephone and Telegraph	3661	12	Telephone and Telegraph Apparatus
v	v	373	Radio and TV Communications	3663	23	Radio and TV Communications
v	v	374	Communications Equipment,	3669	12	Communications Equipment
v	v	375	Electron Tubes	3671	1	Electron Tubes
v	v	376	Printed Circuit Boards	3672	43	Printed Circuit Boards
v	v	377	Semiconductors and Related Dev	3674	18	Semiconductors and Related Devices
v	v			3675	2	Electronic Capacitors
v	v			3676	4	Electronic Resistors
v	v			3677	2	Electronic Coils and Transformers
v	v			3679	79	Electronic Components
	v	396	Stroage Batteries	3761	1	Guided Missiles and Space Vehicles
v	v	400	Search and Navigation	3812	30	Search, Navigation, Guidance
v	v	401	Laboratory Apparatus and	3821	4	Laboratory Apparatus and Furniture
v	v	402	Automatic temperature Controls	3822	16	Environmental Controls
v	v	403	Mechanical Measuring Devices	3823	13	Process Control instruments
v	v			3824	5	Fluid Meters and Counting Devices
v	v			3829	22	Measuring and Controlling Devices,
v	v	404	Instruments to Measure	3825	7	Instruments to Test/ Measure
v	v	405	Analytical Instruments	3826	4	Analytical Instruments
v	v	406	Optical Instruments and Lenses	3827	19	Optical Instruments and Lenses
	v	407	Surgical and Medical	3841	97	Surgical and Medical Instruments
	v	408	Surgical Appliances and Supplies	3842	85	Orthotic, Prosthetic, Surgical
v	v	410	X-RAY Apparatus	3844	9	X-RAY Apparatus and Tubes
v	v	411	Electromedical Apparatus	3845	18	Electromedical Equipment
v	v	413	Photographic Equipment and	3861	11	Photographic Equipment and
v	v	441	Communications Except Radio ar	4812	102	Radiotelephone Communications
v	v			4813	141	Telephone Communications or Radio
v	v			4822	24	Telegraph and Other Message
v	v			4841	81	Cable and Other Pay TV Services
v	v			4899	3l	Communications Services, NEC
v	v	475	Computer and Data Processing	7371	414	Computer Programming Services
v	v			7372	14	Prepackaged Software
v	v			7373	15	Computer Integrated Systems Design
v	v			7374	76	Computer Processing and Data
v	v			7375	5	Information Retrieval Services
v	v			7378	174	Computer Maintenance and Repair
v	v			7379	45	Computer Related Services, NEC
	v	493	Other Medical and Health Service	8071	2	Medical Laboratories
	v	506	Engineering, Agricultural	8711	4	Engineering Services
	v	509	Research, Development, and Tes	8731	8	Commercial Physical and Biological
	v			8734	4	Testing Laboratories
v		370	Radio and TV Receiving Sets	3651	9	Household Audio and Video Equip.
v		371	Phonographic Records and	3652	5	Phonographic Records and
v		378	Electronic Connectors NEC	3678	1	Electronic Connectors
v		475	Computer and Data Processing Services	7376	0	Computer Facilities Management
v				7377	0	Computer Rental and Leasing

* SIC is used by American Electronics Associations's definition of "High Tech" companies.

** SIC was used to identify candidate companies for the Florida.High. Tech 2001 corporate guide and the report

Appendix F: IMPLAN and REMI Industry Listings

IMPLAN Industry Sectors	REMI Industry Sectors
Dairy Farm Products	Logging
Poultry and Eggs	Sawmills and planning mills
Ranch Fed Cattle	Millwork, plywood, and structural members
Range Fed Cattle	Wood containers and misc. wood products
Cattle Feedlots	Wood buildings and mobile homes
Sheep- Lambs and Goats	Household furniture
Hogs- Pigs and Swine	Partitions and fixtures
Miscellaneous Livestock	Office and misc. furniture and fixtures
Cotton	Glass and glass products
Food Grains	Hydraulic cement
Feed Grains	Stone, clay, and misc. mineral products
Hay and Pasture	Concrete, gypsum, and plaster products
Grass Seeds	Blast furnaces and basic steel products
Tobacco	Iron and steel foundries
Fruits	Primary nonferrous smelting and refining
Tree Nuts	All other primary metals
Vegetables	Nonferrous rolling and drawing
Sugar Crops	Nonferrous foundries
Miscellaneous Crops	Metal cans and shipping containers
Oil Bearing Crops	Cutlery, hand tools, and hardware
Forest Products	Plumbing and electric heating equipment
Greenhouse and Nursery Products	Fabricated structural metal products
Forestry Products	Screw machine products, bolts, rivets, etc.
Commercial Fishing	Metal forgings and stampings
Agricultural- Forestry- Fishery Services	Metal coating, engraving, and allied services
Landscape and Horticultural Services	Ordnance and ammunition
Metal Mining Services	Miscellaneous fabricated metal products
Metal Ores- Not Elsewhere Classified	Engines and turbines
Coal Mining	Farm and garden machinery and equipment
Natural Gas and Crude Petroleum	Construction and related machinery
Natural Gas Liquids	Metalworking machinery and equipment
Dimension Stone	Special industry machinery
Sand and Gravel	General industrial machinery and equipment
Clay- Ceramic- Refractory Minerals- N.E.C.	Computer and office equipment
Potash- Soda- and Borate Minerals	Refrigeration and service industry machinery
Phosphate Rock	Industrial machinery, N.E.C
Chemical- Fertilizer Mineral Mining- N.E.C.	Electric distribution equipment
Nonmetallic Minerals (Except Fuels) Service	Electrical industrial apparatus
Misc. Nonmetallic Minerals- N.E.C.	Household appliances
Maintenance and Repair- Residential	Electric lighting and wiring equipment
Maintenance and Repair Other Facilities	Household audio and video equipment
Maintenance and Repair Oil and Gas Wells	Communications equipment

Meat Packing Plants
Sausages and Other Prepared Meats
Poultry Processing
Creamery Butter
Cheese- Natural and Processed
Condensed and Evaporated Milk
Ice Cream and Frozen Desserts
Fluid Milk
Canned Specialties
Canned Fruits and Vegetables
Dehydrated Food Products
Pickles- Sauces- and Salad Dressings
Frozen Fruits- Juices and Vegetables
Frozen Specialties
Flour and Other Grain Mill Products
Rice Milling
Blended and Prepared Flour
Dog- Cat- and Other Pet Food
Prepared Feeds- N.E.C
Bread- Cake- and Related Products
Cookies and Crackers
Sugar
Confectionery Products
Chocolate and Cocoa Products
Animal and Marine Fats and Oils
Shortening and Cooking Oils
Malt Beverages
Wines- Brandy- and Brandy Spirits
Distilled Liquor- Except Brandy
Bottled and Canned Soft Drinks and Water
Flavoring Extracts and Syrups- N.E.C.
Canned and Cured Seafoods
Prepared Fresh Or Frozen Fish Or Seafood
Roasted Coffee
Potato Chips and Similar Snacks
Manufactured Ice
Macaroni and Spaghetti
Food Preparations- N.E.C
Cigarettes
Cigars
Chewing and Smoking Tobacco
Broadwoven Fabric Mills and Finishing
Narrow Fabric Mills
Hosiery- N.E.C
Knit Outerwear Mills
Knit Underwear Mills
Knit Fabric Mills

Electronic components and accessories
Miscellaneous electrical equipment
Motor vehicles and equipment
Aerospace
Ship and boat building and repairing
Railroad equipment
Miscellaneous transportation equipment
Search and navigation equipment
Measuring and controlling devices
Medical equipment, instruments, and supplies
Ophthalmic goods
Photographic equipment and supplies
Watches, clocks, and parts
Jewelry, silverware, and plated ware
Toys and sporting goods
Manufactured products, N.E.C.
Meat products
Dairy products
Preserved fruits and vegetables
Grain mill products and fats and oils
Bakery products
Sugar and confectionery products
Beverages
Miscellaneous food and kindred products
Tobacco products
Weaving, finishing, yarn, and thread mills
Knitting mills
Carpets and rugs
Miscellaneous textile goods
Apparel
Miscellaneous fabricated textile products
Pulp, paper, and paperboard mills
Paperboard containers and boxes
Converted paper products except containers
Newspapers
Periodicals
Books
Miscellaneous publishing
Commercial printing and business forms
Greeting cards
Blankbooks and bookbinding
Service industries for the printing trade
Industrial chemicals
Plastics materials and synthetics
Drugs
Soap, cleaners, and toilet goods
Paints and allied products

Yarn Mills and Finishing Of Textiles- N.E.C.
Carpets and Rugs
Thread Mills
Coated Fabrics- Not Rubberized
Tire Cord and Fabric
Nonwoven Fabrics
Cordage and Twine
Textile Goods- N.E.C
Apparel Made From Purchased Materials
Curtains and Draperies
House Furnishings- N.E.C
Textile Bags
Canvas Products
Pleating and Stitching
Automotive and Apparel Trimmings
Schiffi Machine Embroideries
Fabricated Textile Products- N.E.C.
Logging Camps and Logging Contractors
Sawmills and Planning Mills- General
Hardwood Dimension and Flooring Mills
Special Product Sawmills- N.E.C
Millwork
Wood Kitchen Cabinets
Veneer and Plywood
Structural Wood Members- N.E.C
Wood Containers
Wood Pallets and Skids
Mobile Homes
Prefabricated Wood Buildings
Wood Preserving
Reconstituted Wood Products
Wood Products- N.E.C
Wood Household Furniture
Upholstered Household Furniture
Metal Household Furniture
Mattresses and Bedsprings
Wood TV and Radio Cabinets
Household Furniture- N.E.C
Wood Office Furniture
Metal Office Furniture
Public Building Furniture
Wood Partitions and Fixtures
Metal Partitions and Fixtures
Blinds- Shades- and Drapery Hardware
Furniture and Fixtures- N.E.C
Pulp Mills
Paper Mills- Except Building Paper
Agricultural chemicals
Miscellaneous chemical products
Petroleum refining
Miscellaneous petroleum and coal products
Tires and inner tubes
Rubber products and plastic hose and footwear
Miscellaneous plastics products, N.E.C
Footwear, except rubber and plastic
Luggage, handbags, and leather products, N.E.C.
Metal mining
Coal mining
Crude petroleum, natural gas and gas liquids
Oil and gas field services
Nonmetallic minerals, except fuels
Construction
Railroad
Trucking
Local and Interurban
Air Transportation
Other Transport
Communication
Public Utilities
Banking
Insurance
Credit and Finance
Real Estate
Eating and Drinking
Rest of Retail
Wholesale trade
Hotels
Pers Serv and Rep
Private Household
Non-Air Rep and Serv
Misc. Bus Serv
Amusem and Recr
Motion Pictures
Medical
Misc. Prof Serv
Education
Non-Profit Org
Agricultural services
Forestry, fishing, hunting, and trapping
State Gov't
Local Gov't

Paperboard Mills
Paperboard Containers and Boxes
Paper Coated and Laminated Packaging
Paper Coated and Laminated N.E.C.
Bags- Plastic
Bags- Paper
Die-cut Paper and Board
Sanitary Paper Products
Envelopes
Stationery Products
Converted Paper Products- N.E.C
Newspapers
Periodicals
Book Publishing
Book Printing
Miscellaneous Publishing
Commercial Printing
Manifold Business Forms
Greeting Card Publishing
Blankbooks and Looseleaf Binder
Bookbinding and Related
Typesetting
Plate Making
Alkalies and Chlorine
Industrial Gases
Inorganic Pigments
Inorganic Chemicals, N.E.C.
Cyclic Crudes- Interm. and Indus. Organic Chem.
Plastics Materials and Resins
Synthetic Rubber
Cellulosic Man-made Fibers
Organic Fibers- Noncellulosic
Drugs
Soap and Other Detergents
Polishes and Sanitation Goods
Surface Active Agents
Toilet Preparations
Paints and Allied Products
Gum and Wood Chemicals
Nitrogenous and Phosphatic Fertilizers
Fertilizers- Mixing Only
Agricultural Chemicals- N.E.C
Adhesives and Sealants
Explosives
Printing Ink
Chemical Preparations- N.E.C
Petroleum Refining

Paving Mixtures and Blocks
Asphalt Felts and Coatings
Lubricating Oils and Greases
Petroleum and Coal Products- N.E.C.
Tires and Inner Tubes
Rubber and Plastics Footwear
Rubber and Plastics Hose and Belting
Gaskets- Packing and Sealing Devices
Fabricated Rubber Products- N.E.C.
Miscellaneous Plastics Products
Leather Tanning and Finishing
Footwear Cut Stock
House Slippers
Shoes- Except Rubber
Leather Gloves and Mittens
Luggage
Womens Handbags and Purses
Personal Leather Goods
Leather Goods- N.E.C
Glass and Glass Products- Exc Containers
Glass Containers
Cement- Hydraulic
Brick and Structural Clay Tile
Ceramic Wall and Floor Tile
Clay Refractories
Structural Clay Products- N.E.C
Vitreous Plumbing Fixtures
Vitreous China Food Utensils
Fine Earthenware Food Utensils
Porcelain Electrical Supplies
Pottery Products- N.E.C
Concrete Block and Brick
Concrete Products- N.E.C
Ready-mixed Concrete
Lime
Gypsum Products
Cut Stone and Stone Products
Abrasive Products
Asbestos Products
Minerals- Ground Or Treated
Mineral Wool
Nonclay Refractories
Nonmetallic Mineral Products- N.E.C.
Blast Furnaces and Steel Mills
Electrometallurgical Products
Steel Wire and Related Products
Cold Finishing Of Steel Shapes

Steel Pipe and Tubes
Iron and Steel Foundries
Primary Aluminum
Primary Nonferrous Metals- N.E.C.
Secondary Nonferrous Metals
Copper Rolling and Drawing
Aluminum Rolling and Drawing
Nonferrous Rolling and Drawing- N.E.C.
Nonferrous Wire Drawing and Insulating
Aluminum Foundries
Brass- Bronze- and Copper Foundries
Nonferrous Castings- N.E.C.
Metal Heat Treating
Primary Metal Products- N.E.C
Metal Cans
Metal Barrels- Drums and Pails
Cutlery
Hand and Edge Tools- N.E.C.
Hand Saws and Saw Blades
Hardware- N.E.C.
Metal Sanitary Ware
Plumbing Fixture Fittings and Trim
Heating Equipment- Except Electric
Fabricated Structural Metal
Metal Doors- Sash- and Trim
Fabricated Plate Work (Boiler Shops)
Sheet Metal Work
Architectural Metal Work
Prefabricated Metal Buildings
Miscellaneous Metal Work
Screw Machine Products and Bolts- Etc.
Iron and Steel Forgings
Nonferrous Forgings
Automotive Stampings
Crowns and Closures
Metal Stampings- N.E.C.
Plating and Polishing
Metal Coating and Allied Services
Small Arms Ammunition
Ammunition- Except For Small Arms- N.E.C.
Small Arms
Other Ordnance and Accessories
Industrial and Fluid Valves
Steel Springs- Except Wire
Pipe- Valves- and Pipe Fittings
Miscellaneous Fabricated Wire Products
Metal Foil and Leaf

Fabricated Metal Products- N.E.C.
Steam Engines and Turbines
Internal Combustion Engines- N.E.C.
Farm Machinery and Equipment
Lawn and Garden Equipment
Construction Machinery and Equipment
Mining Machinery- Except Oil Field
Oil Field Machinery
Elevators and Moving Stairways
Conveyors and Conveying Equipment
Hoists- Cranes- and Monorails
Industrial Trucks and Tractors
Machine Tools- Metal Cutting Types
Machine Tools- Metal Forming Types
Industrial Patterns
Special Dies and Tools and Accessories
Power Driven Hand Tools
Rolling Mill Machinery
Welding Apparatus
Metalworking Machinery- N.E.C.
Textile Machinery
Woodworking Machinery
Paper Industries Machinery
Printing Trades Machinery
Food Products Machinery
Special Industry Machinery N.E.C.
Pumps and Compressors
Ball and Roller Bearings
Blowers and Fans
Packaging Machinery
Power Transmission Equipment
Industrial Furnaces and Ovens
General Industrial Machinery- N.E.C
Electronic Computers
Computer Storage Devices
Computer Terminals
Computer Peripheral Equipment-
Calculating and Accounting Machines
Typewriters and Office Machines N.E.C.
Automatic Merchandising Machine
Commercial Laundry Equipment
Refrigeration and Heating Equipment
Measuring and Dispensing Pumps
Service Industry Machines- N.E.C.
Carburetors- Pistons- Rings- Valves
Fluid Power Cylinders and Actuators
Fluid Power Pumps and Motors

Scales and Balances
Industrial Machines N.E.C.
Transformers
Switchgear and Switchboard Apparatus
Motors and Generators
Carbon and Graphite Products
Relays and Industrial Controls
Electrical Industrial Apparatus- N.E.C.
Household Cooking Equipment
Household Refrigerators and Freezers
Household Laundry Equipment
Electric Housewares and Fans
Household Vacuum Cleaners
Household Appliances- N.E.C.
Electric Lamps
Wiring Devices
Lighting Fixtures and Equipment
Radio and TV Receiving Sets
Phonograph Records and Tape
Telephone and Telegraph Apparatus
Radio and TV Communication Equipment
Communications Equipment N.E.C.
Electron Tubes
Printed Circuit Boards
Semiconductors and Related Devices
Electronic Components- N.E.C.
Storage Batteries
Primary Batteries- Dry and Wet
Engine Electrical Equipment
Magnetic and Optical Recording Media
Electrical Equipment- N.E.C.
Motor Vehicles
Truck and Bus Bodies
Motor Vehicle Parts and Accessories
Truck Trailers
Motor Homes
Aircraft
Aircraft and Missile Engines and Parts
Aircraft and Missile Equipment
Ship Building and Repairing
Boat Building and Repairing
Railroad Equipment
Motorcycles- Bicycles- and Parts
Complete Guided Missiles
Travel Trailers and Camper
Tanks and Tank Components
Transportation Equipment- N.E.C

Search and Navigation Equipment
Laboratory Apparatus and Furniture
Automatic Temperature Controls
Mechanical Measuring Devices
Instruments To Measure Electricity
Analytical Instruments
Optical Instruments and Lenses
Surgical and Medical Instrument
Surgical Appliances and Supplies
Dental Equipment and Supplies
X-Ray Apparatus
Electromedical Apparatus
Ophthalmic Goods
Photographic Equipment and Supplies
Watches- Clocks- and Parts
Jewelry- Precious Metal
Silverware and Plated Ware
Jewelers Materials and Lapidary Work
Musical Instruments
Dolls
Games- Toys- and Childrens Vehicles
Sporting and Athletic Goods- N.E.C.
Pens and Mechanical Pencils
Lead Pencils and Art Goods
Marking Devices
Carbon Paper and Inked Ribbons
Costume Jewelery
Fasteners- Buttons- Needles- Pins
Brooms and Brushes
Signs and Advertising Displays
Burial Caskets and Vaults
Hard Surface Floor Coverings
Manufacturing Industries- N.E.C.
Railroads and Related Services
Local- Interurban Passenger Transit
Motor Freight Transport and Warehousing
Water Transportation
Air Transportation
Arrangement Of Passenger Transportation
Transportation Services
Communications- Except Radio and TV
Radio and TV Broadcasting
Electric Services
Gas Production and Distribution
Water Supply and Sewerage Systems
Sanitary Services and Steam Supply
Wholesale Trade

Building Materials and Gardening
General Merchandise Stores
Food Stores
Automotive Dealers and Service Stations
Apparel and Accessory Stores
Furniture and Home Furnishings Stores
Eating and Drinking
Miscellaneous Retail
Banking
Credit Agencies
Security and Commodity Brokers
Insurance Carriers
Insurance Agents and Brokers
Real Estate
Hotels and Lodging Places
Laundry- Cleaning and Shoe Repair
Portrait and Photographic Studios
Beauty and Barber Shops
Funeral Service and Crematories
Miscellaneous Personal Services
Advertising
Other Business Services
Photofinishing- Commercial Photography
Services To Buildings
Equipment Rental and Leasing
Personnel Supply Services
Computer and Data Processing Services
Detective and Protective Services
Automobile Rental and Leasing
Automobile Parking and Car Wash
Automobile Repair and Services
Electrical Repair Service
Watch- Clock- Jewelry and Furniture Repair
Miscellaneous Repair Shops
Motion Pictures
Theatrical Producers- Bands Etc.
Bowling Alleys and Pool Halls
Commercial Sports Except Racing
Racing and Track Operation
Amusement and Recreation Services- N.E.C.
Membership Sports and Recreation Clubs
Doctors and Dentists
Nursing and Protective Care
Hospitals
Other Medical and Health Services
Legal Services
Elementary and Secondary Schools

Colleges- Universities- Schools
Other Educational Services
Job Trainings and Related Services
Child Day Care Services
Social Services- N.E.C.
Residential Care
Other Nonprofit Organizations
Business Associations
Labor and Civic Organizations
Religious Organizations
Engineering- Architectural Services
Accounting- Auditing and Bookkeeping
Management and Consulting Services
Research- Development and Testing Services
Local Government Passenger Transit
State and Local Electric Utilities
Other State and Local Govt Enterprises
U.S. Postal Service
Other Federal Government Enterprises
Domestic Services

Appendix G: List of Websites Consulted

WEB SITE ADDRESS	ORGANIZATION OR UNIVERSITY
http://www.msu.edu/course/prr/840/econimpact/	Michigan State University Impact Page
http://home.att.net/~bartlnet/tour.html	Top 50 state Tourism sites
http://gocalif.ca.gov/	California Tourism
http://www.dra-research.com/	Dean Runyan Associates
http://www.dot.state.fl.us/moreDOT/phone.htm	FDOT phone book page
http://www.epa.gov/ispd/define.htm	EPA Impacts of Tourism
http://www.forestry.umt.edu/itrr/	University Of Montana
http://www.tourism.umn.edu/	University of Minnesota
http://tourism.ttr.msu.edu/	Michigan State University
http://www.123world.com/	Tourist info site
http://www.panynj.gov/aviation/jfkaboutframe.html	JFK Airport info
http://www.ttra.com/	Travel and Tourism Research Assn.
http://www.world-tourism.org/	World Tourism Organization
http://www.tourismstatistics.com/	Tourism Stats on the Web
http://www.co.broward.fl.us/sunny.htm	Ft. Lauderdale Visitors
http://www.facvb.org/	Florida Association of Convention and Visitors Bureaus
http://www.fishkind.com/	Fishkind and Associates
http://www.miami-airport.com/	Miami International Airport

Other Sources Referenced

IMPLAN Professional (Version 1.1) was used for this analysis. IMPLAN (Impact Analysis for Planning) was originally developed by the U.S. Department of Agriculture's Forest Service in cooperation with the Federal Emergency Management Agency and the U.S. Department of Interior's Bureau of Land Management to assist the Forest Service in land and resource management planning. The software has been upgraded and is presently sold and maintained by the Minnesota IMPLAN Group, Inc.

Minnesota IMPLAN Group, Inc. 1997 (Feb). IMPLAN Professional User's, Analysis and Data Guide. Stillwater, MN: MIG.

REMI, Regional Economic Models, Inc., Treyz, George, I., President, Amherst, MA.

Applicable assumptions are described in the IMPLAN Users, Analysis and Data Guide, pages 87, 88.

U.S. Department of Commerce, Bureau of Economic Analysis, November 1998.

About Florida TaxWatch

Florida TaxWatch is a private, non-profit, non-partisan research institute that over its 25 year history has become widely recognized as the watchdog of citizens' hard-earned tax dollars. Its mission is to provide the citizens of Florida and public officials with high quality, independent research and education on government revenues, expenditures, taxation, public policies and programs and to increase the productivity and accountability of Florida Government.

Florida TaxWatch's empirically sound research recommends productivity enhancements and explains the statewide impact of economic and tax and spend policies and practices on citizens and businesses. Florida TaxWatch has worked diligently and effectively to help state government shape responsible fiscal and public policy that adds value and benefit taxpayers.

This diligence has yielded impressive results: since 1979, policy makers and government employees have implemented three-fourths of Florida TaxWatch's cost-saving recommendations, saving the taxpayers of Florida more than $6.2 billion--approximately $1,067 in added value for every Florida family.

The organization enjoys a credible reputation and statewide exposure with the television, radio and newspaper media, which regularly report on its research and recommendations.

Florida TaxWatch has a historical understanding of state government, public policy issues, and the battles fought in the past necessary to structure effective solutions for today and the future. It's the only statewide organization devoted entirely to Florida taxing and spending issues.

Supported by voluntary, tax-deductible memberships and grants, Florida TaxWatch is open to any organization or individual interested in helping to make Florida competitive, healthy and economically prosperous by supporting a credible research effort that promotes constructive taxpayer improvements. Members, through their loyal support, help Florida TaxWatch to bring about a more effective, responsive government that is accountable to the citizens it serves.

Florida TaxWatch is supported by all types of taxpayers -- homeowners, small businesses, large corporations, philanthropic foundations, professionals, associations, labor organizations, retirees--simply stated, the taxpayers of Florida. The officers, Board of Trustees and members of Florida TaxWatch are respected leaders and citizens from across Florida, committed to improving the health and prosperity of Florida.

With your help, Florida TaxWatch will continue our diligence to make certain your tax investments are fair and beneficial to you, the taxpaying customer who supports Florida's government. Florida TaxWatch is ever present to ensure that taxes are equitable, not excessive, that their public benefits and costs are weighed, and that government agencies are more responsive and productive in the use of your hard-earned tax dollars.

The Florida TaxWatch Board of Trustees is responsible for the general direction and oversight of the research institute and safeguarding the independence of the organization's work. In his capacity as chief executive officer, the president is responsible for formulating and coordinating policies, projects, publications and selecting the professional staff. As an independent research institute and taxpayer watchdog, the research findings and recommendations of Florida TaxWatch do not necessarily reflect the view of its members, staff or distinguished Board of Trustees, or Executive Committee and are not influenced by the positions of the individuals or organizations who directly or indirectly support the research.

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