

Traffic Congestion in Florida: Trends and Solutions

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Founded in 1971, The Road Information Program (TRIP)® of Washington, DC is a nonprofit organization that researches, evaluates and distributes condition, use and related information on highways and other transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway engineering, construction and finance; labor unions; and organizations concerned with an efficient and safe highway transportation network.

Executive Summary

The access provided by Florida's transportation system is a critical component in the quality of life for the state's 15.2 million residents and its visitors. Whether traveling to work, shopping, education or social purposes, Floridians value the ability to reach their destinations in a timely fashion. Yet the continued increase in traffic congestion in the state's largest urban areas represents a growing challenge to Florida's transportation system, impacting the livability of these communities.

This report documents travel trends and levels of congestion in Florida's largest urban areas. The study concludes with a comprehensive set of strategies to relieve traffic congestion.

The major findings of the study are:

Population growth in Florida has resulted in significant increases in usage of the state's roads and highways, which provides the vast majority of travel within the state.

- Three urban regions in Florida – Orlando, West Palm Beach and Jacksonville -- rank among the 10 areas nationally with the largest increase in vehicle travel during the last five years. The ten areas in order are Las Vegas, Charlotte, Dallas – Fort Worth, Orlando, Atlanta, West Palm Beach, Jacksonville, Houston, Raleigh and Nashville.
- From 1993 to 1998, road and highway travel increased by 31 percent in the Orlando area, by 25 percent in the West Palm Beach area and by 24 percent in the Jacksonville area.
- Highway travel in Florida has increased by 63 percent since 1985 from 88 billion miles to 144 billion miles. Highway travel in Florida is projected to increase by another 35 percent by the year 2015.
- Florida's population has increased by 35 percent since 1985 from 11.3 million people to 15.2 million people. Florida's population is projected to increase by another 22 percent by the year 2015 to 18.5 million people. The increase in population over the next 15 years is expected to increase the number of licensed drivers in the state by 2.7 million, from 12.7 million today to 15.4 million in 2015.

Increasing traffic congestion in Florida's largest urban areas is exacting a hidden toll on the state's drivers in the cost of wasted time and fuel.

- Delays due to traffic congestion have increased by an average of 82 percent in Florida's largest urban areas over approximately the last decade. The average traffic delay in Florida's largest urbanized regions increased from an additional 12 percent needed to complete a trip during rush hours because of traffic congestion in 1986 to 22 percent in 1997.
- The largest increase in average congested-related travel delays from 1986 to 1997 in Florida was in the Fort Lauderdale area, where travel delays tripled from an additional 8 percent needed to complete a trip during rush hours to 24 percent. Other travel delay increases in Florida during that period included a more than doubling in Jacksonville, from 6 to 14 percent, an increase in Miami, from 20 to 34 percent, an increase in Orlando, from 11 to 20 percent and an increase in the Tampa – St. Petersburg area from 16 to 19 percent.
- Traffic congestion is costing motorists in Florida's largest urban areas \$3.5 billion annually in lost time and additional fuel used. The total cost of traffic congestion is \$1.5 billion in the Miami area, \$605 million in the Fort Lauderdale area, \$555 million in the Orlando area, \$430 million in the Tampa area and \$360 million in the Jacksonville area.
- The additional annual cost due to traffic congestion per motorist is \$930 in the Miami area, \$515 in the Fort Lauderdale area, \$670 in the Orlando area, \$650 in the Tampa area and \$580 in the Jacksonville area.

Florida's system of roads and highways provide the majority of travel in the state for people and also for the shipment of commercial goods.

- The American Travel Survey found that of trips longer than 100 miles, one-way, beginning and ending in Florida, 95 percent were in private highway vehicles, 3 percent were by air, and 2 percent were by bus. Rail transit provided one-tenth of one percent of trips within Florida of at least 100 miles in length.
- A 1997 analysis by the U.S. Bureau of Transportation Statistics found that in Florida, 72 percent of the \$214 billion in products shipped annually from sites in the state were transported by trucks and another 17 percent by courier services, which also rely on good highways.

Relieving regional traffic congestion in Florida will require a comprehensive program that includes a balanced set of strategies, including:

- Expanding the regional capacity of the transportation system through expansion of some roads and highways, increased cost-efficient and convenient transit, and improved sidewalks and bike paths.
- Achieving improved traffic flow by improvements in the efficiency of the existing transportation system, such as improved traffic signalization, ramp metering, reverse-flow lanes, quicker accident response and improved driver information systems.
- Adopting programs to reduce the number of peak-hour vehicle trips, including telecommuting, flex-time programs and increased levels of ridesharing.
- Improving community-based planning, which includes strategies which may reduce trip lengths, including mixed-use development, improved job-housing balance and housing designed to accommodate less travel-intensive lifestyles, dependant on local market demand.

Introduction

The ability of Floridians to travel within their communities is a critical factor in their quality of life. Mobility provided by the state's transportation system allows residents and visitors to travel to work, schools, churches, shopping and tourist attractions and enables businesses to serve their customers.

The anticipated 22 percent increase in population in Florida over the next 15 years from 15.2 million people to 18.5 million people is a particular challenge in the state's urban areas, where high levels of traffic congestion are already resulting in significant inconvenience and expense in the form of travel delays and increased fuel consumption.

Specifically, 27 percent of Florida's urban freeways are congested, carrying more traffic than they were built to handle. In fact, traffic congestion in Florida's largest urban areas costs motorists an additional \$3.5 billion annually in lost time and extra fuel consumed as a result of being stuck in traffic, according to the latest annual study of congestion prepared by the Texas Transportation Institute.

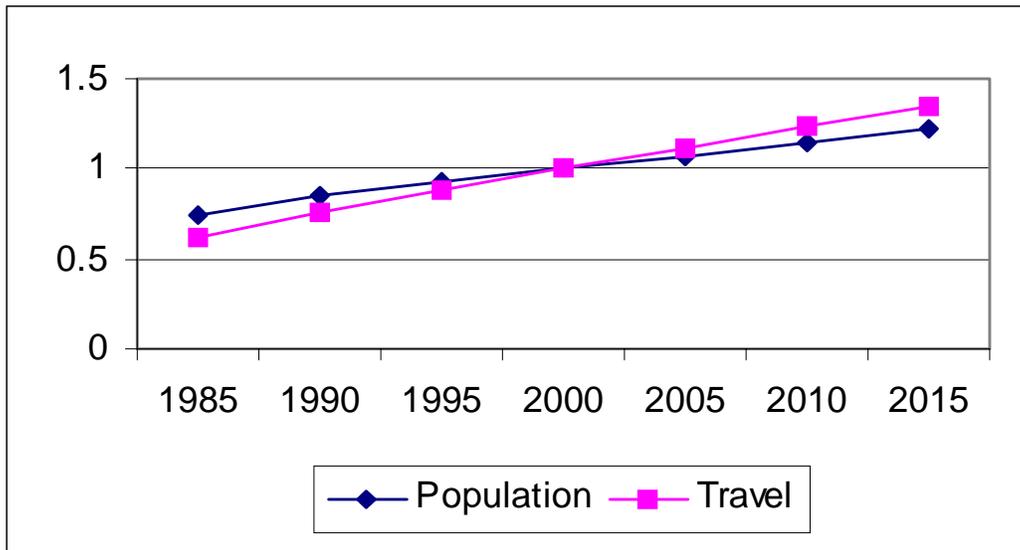
In this report, The Road Information Program (TRIP) looks at trends in travel on Florida's system of roads and highways and at the level of traffic congestion in the state's largest urban areas. The report concludes with a comprehensive set of

recommendations to relieve traffic congestion. The report is based on information from the Federal Highway Administration, the U.S. Census Bureau and the Texas Transportation Institute's latest traffic congestion study.

Urban Travel in Florida

Travel continues to increase in Florida as population increases and modern lifestyles require increased personal and commercial mobility. Highway vehicle miles of travel (VMT) in Florida since 1985 have increased 63 percent from 88 billion to 144 billion miles of annual travel. During the same period, 1985 to 2000, the state's population increased 35 percent from 11.3 million to 15.2 million. Further growth in travel on the state's roads and highways is expected to continue because of continued population increase. Florida's population is expected to increase by 22 percent over the next 15 years, reaching 18.5 million by the year 2015 – 3.3 million more residents than in 2000, according to the U.S. Census Bureau. As a result of the increased population, between 2000 and 2015, Florida is expected to add another 2.7 million licensed drivers. TRIP estimates that highway travel in Florida will increase by 35 percent over the next 15 years to 194 billion vehicle miles of travel annually by 2015, based on projected population increases in the state.

Chart 1. Population and Vehicle Travel Growth 1985 to 2000 and Projected to 2015 (1 = 100 percent of 2000 total)



Florida's major roads are also among the busiest in the nation, resulting in significant wear and tear on the state's roads and increasing the need for timely pavement repairs. The average major road in Florida, excluding local and neighborhood roads, carries 2.1 million vehicles annually per-lane – the ninth highest nationally and tied with Georgia as the busiest urban roads among the Southeastern states.

The continued increase in highway travel in Florida is consistent with the findings of the Nationwide Personal Transportation Study (NPTS), which found that average daily trips-per-person increased 10 percent between 1990 and 1995. The NPTS found that people are living further from their jobs, and that their work commutes often include several other stops, such as day care, schools, shopping or social engagements. The report also found that older Americans are increasingly mobile and that current lifestyles can be expected to fuel growing future demand for additional highway mobility.

The increase in driving reflects the tremendous reliance of Floridians on highways, not only for local neighborhood trips, but for longer trips. Data from the 1995 American Travel Survey (ATS) conducted by the U.S. Department of Transportation (DOT) indicates that Floridians depend significantly on the state's road system for their long-distance trips. The ATS found that of trips longer than 100 miles, one-way, beginning and ending in Florida, 95 percent were in private highway vehicles, 3 percent were by air, and 2 percent were by bus. Rail transit provided one-tenth of one percent of trips within Florida of at least 100 miles in length.

A 1997 analysis of commodity transport by the U.S. Bureau of Transportation Statistics (BTS) also pointed out the economic importance of the state's road system. The BTS report found that in Florida, 72 percent of the \$214 billion in products shipped annually from sites in the state were transported by trucks and another 17 percent by courier services, which also rely on good highways.

Traffic Congestion

The ability of communities to adequately address traffic congestion has a significant impact on a region's livability. The Urban Land Institute notes that traffic congestion has the potential to hinder a region's ability to attract residents and businesses and degrades local quality of life. Unchecked traffic congestion has been cited as a cause of urban sprawl by David Schulz of Northwestern University. Schulz notes that residents of congested areas often relocate to outlying areas in search of less congested communities. Thus taking steps to relieve traffic congestion can be an important component of a community's plan to manage growth in a responsible manner.

Florida's most populous areas continue to struggle to manage congestion at a time of continued significant population growth. As a result of this continued increase in population, several of Florida's urban areas rank among the nation's highest in the rate of vehicle travel growth in their communities (among the nation's 50 largest urban areas). Florida communities accounted for three out of the top ten 10 U.S. urban areas with the highest rate of vehicle travel growth, between 1993 and 1998. Orlando ranked fourth nationally, with a 31 percent increase in regional vehicle travel on its road system from 8.1 billion miles driven annually to 10.6 billion miles, trailing only Las Vegas, Charlotte and the Dallas – Fort Worth area. Similarly, the West Palm Beach area, which includes Boca Raton and most of Palm Beach County, ranked 6th nationally for travel increases with a 25 percent increase in miles driven over the last five years, and the Jacksonville area ranked seventh, with a 24 percent increase. During the same period, vehicle miles

traveled increased 15 percent in the Fort Lauderdale area, 13 percent in the Tampa – St. Petersburg area and 6 percent in the Miami region.

Chart 2. Increase in Vehicle Miles of Travel (in billions) by Largest U.S. Urban Areas 1993 to 1998

Rank	Urban Area	Percent Increase	1993 Vehicle Miles of Travel	1998 Vehicle Miles of Travel
1	Las Vegas	67	4.7	7.8
2	Charlotte	45	4.3	6.2
3	Dallas – Fort Worth	38	28.7	39.6
4	Orlando	31	8.1	10.6
5	Atlanta	28	28.6	36.7
6	West Palm Beach	25	5.9	7.4
7	Jacksonville	24	6.9	8.5
8	Houston	23	27.3	33.6
9	Raleigh	23	4.1	5.1
10	Nashville	23	6.6	8.1
23	Fort Lauderdale	15	10.4	11.9
25	Tampa – St. Petersburg	13	13	14.7
43	Miami	6	13.2	14

Every year the Texas Transportation Institute (TTI) issues a report on traffic congestion trends and impacts in the nation’s largest urban areas, including the Miami, Fort Lauderdale, Tampa – St. Petersburg, Orlando and Jacksonville areas. The report includes data on travel levels, additional costs per motorist of traffic congestion and the length of delays caused by traffic congestion. The study is based on measuring the extent of a region’s road and highway system compared to the amount of traffic occurring in each region.

The 1999 TTI study found that traffic congestion is costing motorists in Florida’s largest urban areas \$3.5 billion annually in lost time and additional fuel used. The total cost in the Miami area is \$1.5 billion annually.

Chart 3. Additional Annual Costs to Drivers Because of Traffic Congestion in Major Florida Urban Areas (in millions)

	Congestion Costs
Miami	1,515
Fort Lauderdale	605
Orlando	555
Tampa	430
Jacksonville	360

The TTI study also found that the additional annual cost of traffic congestion per driver is \$930 in the Miami area, \$670 in the Orlando region, \$650 in the Tampa – St. Petersburg region, \$580 in the Jacksonville area and \$515 per driver in the Fort Lauderdale area.

Chart 4. Additional Annual Costs Per Driver Because of Traffic Congestion in Major Florida Urban Areas

	Congestion Costs
Miami	930
Fort Lauderdale	515
Orlando	670
Tampa	650
Jacksonville	580

When roads carry more cars and trucks than they were designed to handle, traffic during peak periods becomes slower causing delays to commuters and other travelers. Traffic congestion is usually at a peak during morning and early evening hours

during weekdays, but some key routes are beginning to experience rush-hour level traffic on the weekends as most families now concentrate their shopping and social activities on Saturdays and Sundays.

The TTI report estimates the level of traffic delay occurring in each of the nation's largest urban areas. The travel delay number is based on the additional time that is necessary to complete a trip during rush hour as during non-congested periods. Miami, for example, ranks sixth nationally with a travel rate of 34, which means that a trip taken in Miami during peak travel hours will take 34 percent longer to complete than the same trip taken during non-congested periods.

The TTI study found that travel delays caused by traffic congestion in Florida's largest urban areas have increased by 82 percent over the last decade from an average of 12 percent to 22 percent additional time needed to complete a rush hour trip. The largest individual increases in travel delays during this period (1986 to 1997) were in Fort Lauderdale, where travel delays increased by 200 percent from 8 percent to 24 percent and in Jacksonville where travel delays increased by 133 percent from 6 percent to 14 percent.

Chart 5. Increase in Travel Delays Caused by Traffic Congestion in Florida's Largest Urban Areas (1986 to 1997)

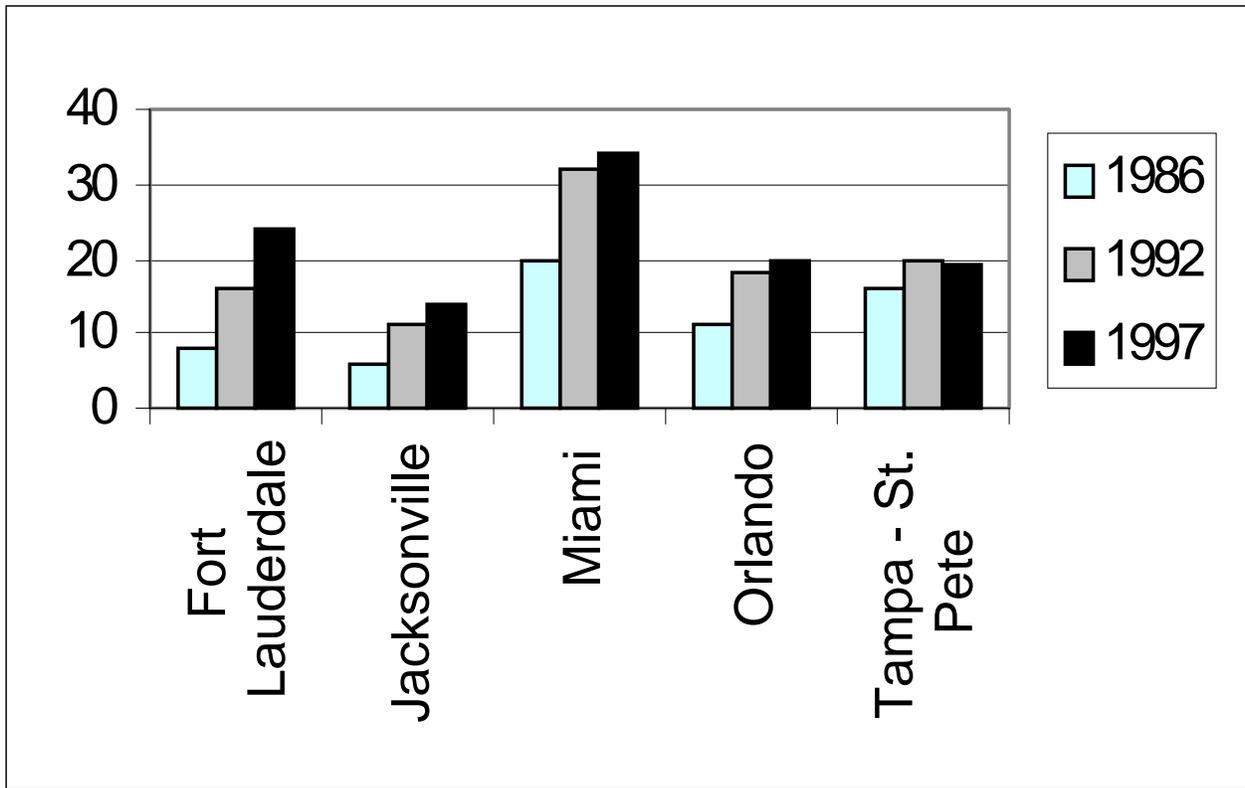


Chart 6. Increase in Travel Delays Caused by Traffic Congestion in Florida's Largest Urban Areas (1986 to 1997)

	1986 Travel Delay	1997 Travel Delay	Percent Increase
Fort Lauderdale	8	24	200
Jacksonville	6	14	133
Miami	20	34	70
Orlando	11	20	82
Tampa	16	19	19

Solutions to Traffic Congestion

Relieving traffic congestion in Florida will require a comprehensive approach, which includes strategies to increase the capacity of the region's transportation system, to improve the efficiency of the existing system and to lower some transportation demand, particularly during peak periods.

A key to minimizing regional traffic congestion is for a community's leaders to clearly identify the problem, to advocate an overall strategic solution and then to act in a coordinated fashion. The strategy also should be well-publicized and it should include some way of measuring progress towards a consistent vision of the travel improvements that a region is seeking.

(TRIP suggests that following elements of a comprehensive approach to regional traffic congestion relief.)

Expand capacity of the regional transportation system

- **Additional traffic lanes and turn lanes.** Expanded capacity, particularly on routes which are carrying significantly more travel than they were initially designed to carry, results in improved traffic flow. Additional

lanes on one route also have been found to reduce congestion on nearby routes by drawing some of the traffic from these secondary roads.

- **New roads and highway links.** New urban highway links continue to be built in some urban areas and additional road capacity may be appropriate in some regions, particularly where housing and job growth in a community have outstripped the level of service being provided by the current transportation system.
- **Additional transit service.** Increasing transit ridership can help relieve congestion, particularly along heavily-traveled corridors. Investments in additional transit that is convenient and affordable, can be an effective part of a regional congestion solution.
- **Install or improve sidewalks and bike paths.** Sidewalks and bike paths can provide an alternative to driving, particularly for shorter trips.

Improve the efficiency of the existing regional transportation system

- **Improved signalization.** Traffic speeds can be increased by 12 to 25 percent by using coordinated traffic signalization, thus improving traffic flow.
- **Improved incident management.** Many regions are improving the speed with which they can detect and respond to congestion-causing accidents and break-downs, thus reducing the time traffic is delayed.

- **Improved driver information.** Regional transportation centers which can provide drivers with “real-time” information on road conditions are having some success in reducing congestion.
- **Ramp-metering and reverse-flow lanes.** Highway ramps can be metered to insure that cars enter freeways more smoothly and the reversal of direction for some key lanes on major roads at rush hour has been effective in reducing congestion.

Reduce travel demand during peak hours

- **Promote telecommuting and flex-time.** Recent improvements in technology have greatly increased the ability of workers to telecommute, which, along with the increased use of flex-time and incentives to reduce single-occupancy vehicle commuting, can contribute to reductions in some peak-hour highway travel, thus relieving regional traffic congestion.
- **Increase ridesharing and use of high-occupancy lanes.** Although carpooling has diminished in the 1990s, the use of High Occupancy Vehicle (HOV) lanes can be effective in some metropolitan regions in allowing additional mobility on some highway corridors. Converting HOV lanes to high-occupancy/toll (HOT) lanes that allow solo motorists to also use these lanes by paying an additional toll, is relieving congestion in some communities by charging drivers for the use of underused high-occupancy lanes.

Improve community-based planning

- **Mixed-use development.** Allowing better integration of residential and commercial use may reduce some vehicle trips by placing homes and stores and other facilities closer together.
- **Improved job-housing mix.** Several studies have found that people living in communities with a better balance between homes and work sites tend to have shorter commute distances and times.
- **Accessibility-based housing.** Urban housing designed to accommodate less auto-dependent lifestyles is appropriate in communities where there is sufficient market demand for this style of housing.

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