

a report on

FLORIDA TRANSPORTATION TRENDS AND CONDITIONS



TRANSPORTATION SYSTEM Roadway System



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Introduction

Florida's extensive transportation system consists of facilities and services of every mode of transport distributed throughout the state. The roadway system is composed of public and private roads for various purposes and of various designs. This report discusses public roads that are classified into the National Highway System (NHS), the State Highway System (SHS), and city and county roads. Within the SHS, the Strategic Intermodal System (SIS) is discussed. The Florida Turnpike, part of the SIS, is also discussed.

Public Roads

A public road refers to a road that is open to the public and is under the ownership of the State of Florida, county governments, municipalities, and branches of the U.S. government. Public roads do not include roads in some private subdivisions, within shopping centers or other large private areas, or inside many military installations.

A road can be classified by functional classification, ownership, or location. In terms of functional classification, a road can be categorized as a principal arterial (including Interstate highways, turnpikes and freeways, or other principal arterials), a minor arterial, an urban/rural major collector, a rural minor collector, or a local road (See Table 1). The definitions and processes used to classify roads according to the functions or services they provide is specified by the Federal Highway Administration (FHWA). The location of a road is either urban or rural, depending on whether it is inside or outside an urban area as defined by an FHWA-approved urban boundary.

Table 1 – Florida Public Road Centerline Miles by Functional Classification

	Principal Arterials			Minor Arterials	Urban/Rural Major Collectors	Rural Minor Collectors	Local	Total
	Interstate	Turnpike & Freeways	Other					
2001	1,472	455	6,448	5,720	10,117	4,103	88,985	117,301
2002	1,472	470	6,245	5,915	10,129	4,089	91,464	119,785
2003	1,471	470	6,145	6,017	10,143	4,052	92,078	120,376
2004	1,471	548	6,415	6,427	10,927	3,456	90,280	119,525
2005	1,471	550	6,414	6,431	10,915	3,352	91,423	120,556
2006	1,470	578	6,434	6,426	10,935	3,352	92,799	121,995
2007	1,471	576	6,448	6,423	10,951	3,353	92,305	121,526
2008	1,470	584	6,454	6,453	10,950	3,339	92,136	121,387
2009	1,471	770	6,294	6,485	11,072	3,337	92,017	121,446
2010	1,496	746	6,292	6,505	11,186	3,310	92,167	121,702
2011	1,496	747	6,289	6,520	11,227	3,296	92,185	121,759

Source: Florida Department of Transportation (FDOT), *Reports of Highway Mileage and Travel*, 2001–2011.

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Table 1 indicates that over the years, local roads have had the largest mileage increase. In the past decade, a total of 3,200 miles have been added to the local roads inventory, whereas rural minor collectors are declining. The urban/rural major collectors have steadily increased since 2008. Turnpikes and freeways have experienced the highest rate of increase. Changes and fluctuation in inventories of roadway centerline and lane miles are due to new construction, reclassifications, urban-rural boundary revisions, changes in ownership, and occasional changes in non-state road inventory practices that affect the data compiled into the statewide numbers.

City and county roads make up approximately 90 percent of Florida's roadway miles.

Table 2 shows that city and county roads comprise approximately 90 percent of public roadway miles, while state roads make up about 10 percent. State rural mileage has decreased from 6 percent in 2001 to 5 percent in 2011.

Table 2 – Florida Public Road Centerline Miles by Jurisdiction

	State		County	City	Total
	Rural	Urban			
2001	7,057	4,996	69,018	34,153	115,224
2002	7,058	4,995	71,095	34,546	117,694
2003	6,388	5,658	71,082	35,191	112,667
2004	6,023	6,020	70,380	35,113	117,536
2005	5,964	6,081	71,195	35,344	118,584
2006	5,968	6,101	71,327	36,506	119,902
2007	5,965	6,097	69,976	37,445	119,483
2008	5,968	6,117	69,804	37,443	119,332
2009	5,963	6,125	69,853	37,426	119,367
2010	5,964	6,121	69,865	37,548	119,498
2011	5,967	6,113	69,936	37,519	119,535

Note: Excludes roads in federal parks and forests as well as other roads not identified by ownership.

Source: FDOT, *Reports of Highway Mileage and Travel*, 2001–2011.

National Highway System

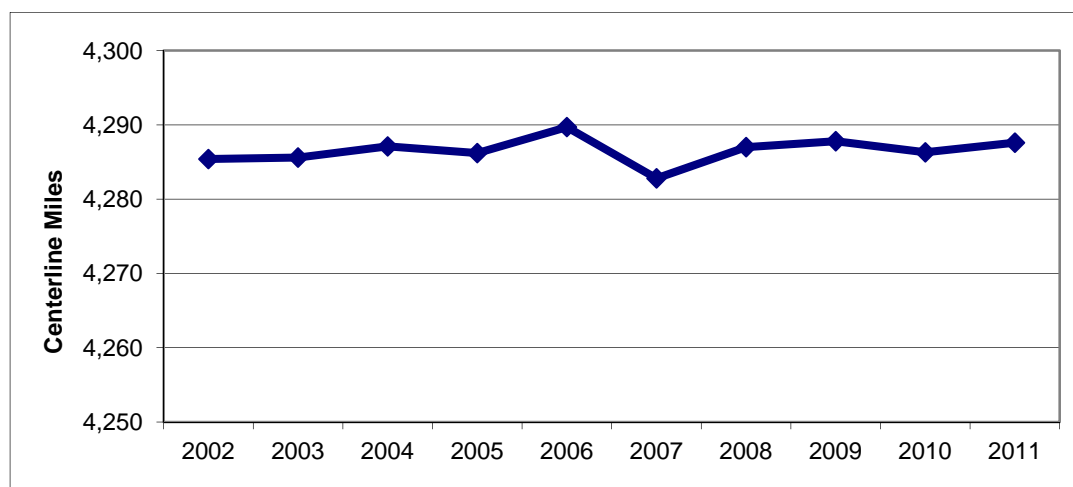
The National Highway System (NHS) is a system of roads designated by federal act in 1991 as being critical to the nation's transportation needs. The NHS was selected in consultation with appropriate State and local officials and consists of all Interstate routes, a large percentage of urban and rural principal arterials, the Strategic Highway Corridor Network (STRAHNET) and

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Strategic Highway Corridor Network Connectors and connectors to approved Intermodal Facilities. The current NHS is just under 4,290 centerline miles and, as shown in Figure 1, there have only been minor changes since its inception.

With the passage of the recent “Moving Ahead for Progress in the 21ST Century” (MAP-21) legislation, the NHS has been significantly expanded. All urban and rural principal arterials have been added to the NHS. The expanded system will include over 8,700 centerline miles.

Figure 1 – National Highway System Road Mileage in Florida



Source: FDOT, *Reports of Highway Mileage and Travel*, 2001-2011.

Florida State Highway System

The State Highway System (SHS) consists of roadways that are “under the jurisdiction of the State of Florida”. It includes roads signed as Interstate highways, turnpikes and most other toll roads, U.S. Routes, and State Roads (SR).

Over the last decade, lane miles have grown faster than centerline miles. This indicates that roads are being built wider.

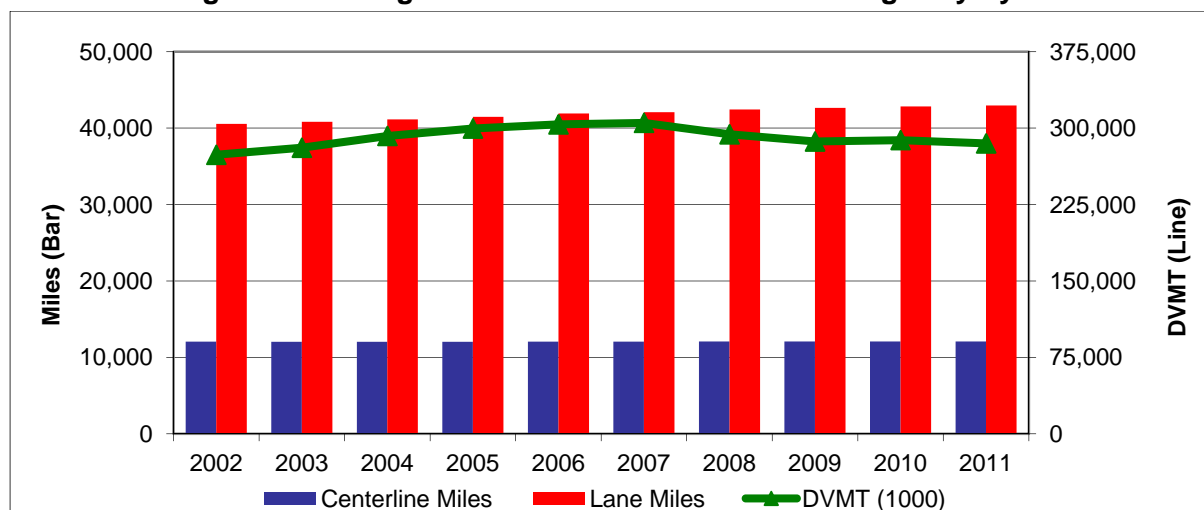
U.S. Routes and Interstate Highways are numbered using guidance from the American Association of State Highway and Transportation Officials (AASHTO). State and County Roads are numbered based on guidance provided in the Florida Administrative Code. More information on roadway numbering can be found in the *Road Jurisdiction and Numbering Handbook* (<http://www.dot.state.fl.us/planning/statistics/hwysys/jurisdictionhandbook.pdf>).

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While it only contains 10 percent of all public road length, the SHS is, nonetheless, very highly used. The centerpiece of this highway network is the Strategic Intermodal System (SIS), which is discussed in the next section.

As of 2011, the SHS had 12,076 centerline miles and 42,965 lane miles. Daily Vehicle Miles Traveled (DVMT) - the amount of travel on the roads - on the SHS had reached 284,969,200. Over the last 10 years (2002–2011), the increase in centerline miles was 0.2 percent, 5.9 percent in lane miles, and 4.1 percent in DVMT. The historical trends for centerline miles, lane miles, and DVMT are shown in Figure 2.

Figure 2 – Mileage and Traffic on Florida’s State Highway System



Source: FDOT, *Reports of Highway Mileage and Travel, 2001-2011*.

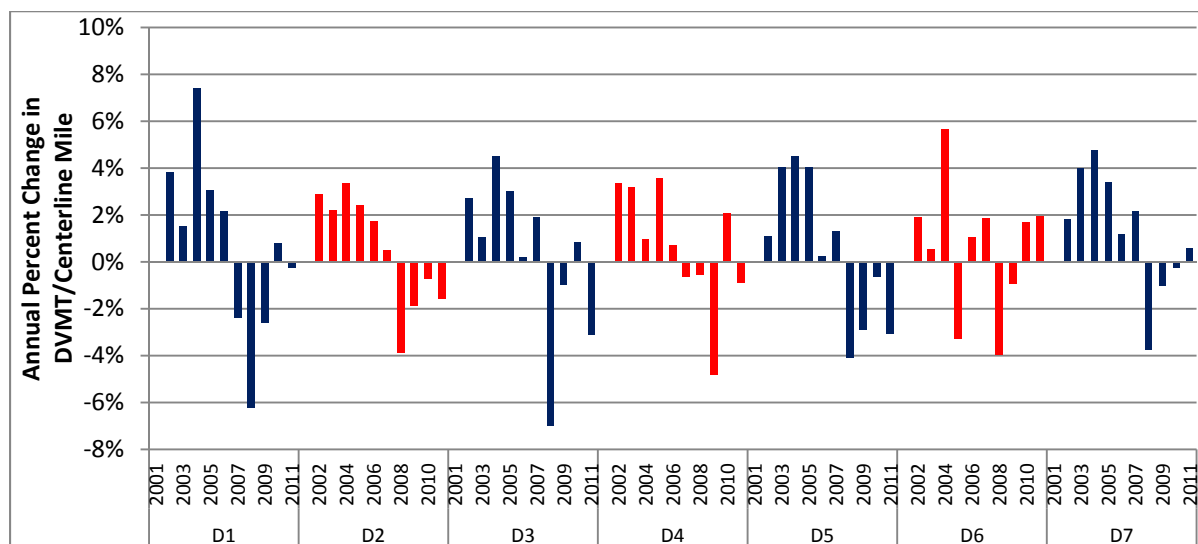
The faster growth rate of lane miles compared to centerline miles is an indication that additional lanes are being added faster than new centerline miles because existing roads are being widened (no increase in centerline miles). This is expected, as growth results in the need to expand capacity more rapidly than the need to add connectivity in the roadway network.

DVMT per lane mile Which can be calculated from the data in Figure 2, is a measure of how intensively each lane mile of roadway is used, specifically how many vehicles pass over it on an average day. From 2002 to 2007, DVMT per lane mile rose faster than centerline miles and lane miles. It increased from 6,750 to 7,251 in 2007, but has been declining since to a level of 6,633 in 2011. Thus, the intensiveness of the use of the roadway system is actually below levels in 2002.

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Figure 3 presents an analysis of the change in DVMT per centerline mileage by FDOT districts. The chart reveals some differences between districts in terms of how intensively roadways are used.

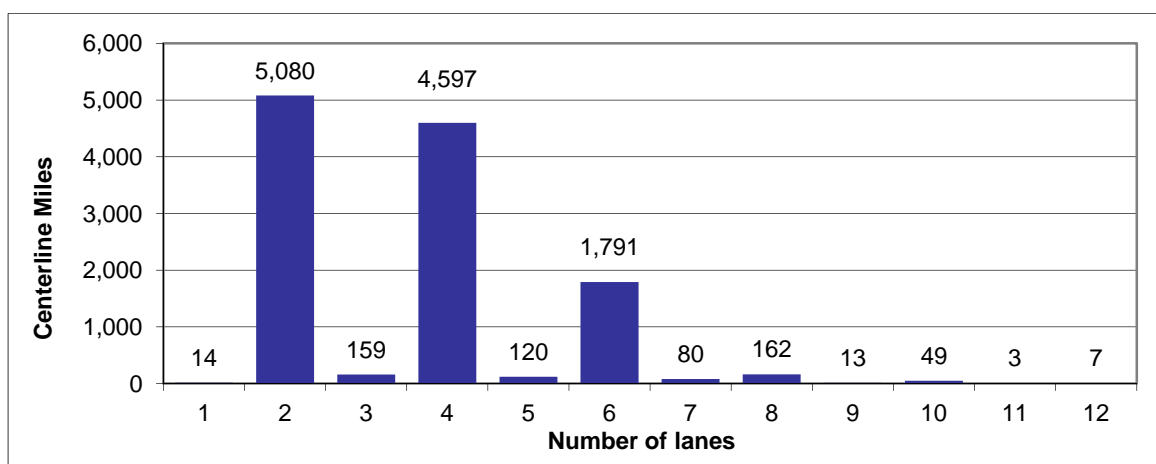
Figure 3 – Annual Percent Change of DVMT per Centerline Mile by FDOT District



Source: FDOT, *Reports of Highway Mileage and Travel, 2001-2011*.

Figure 4 uses 2011 SHS centerline mileage data to examine roadway lanes. The analysis shows that two-lane roads comprise about 42 percent of the 12,076 centerline miles on the SHS. There are 4,597 miles of four-lane roads. Collectively, two- and four-lane roads comprise about 80 percent of total centerline miles.

Figure 4 – Mileage by Number of Lanes on State Highway System (2011 Data)



Source: FDOT, 2011.

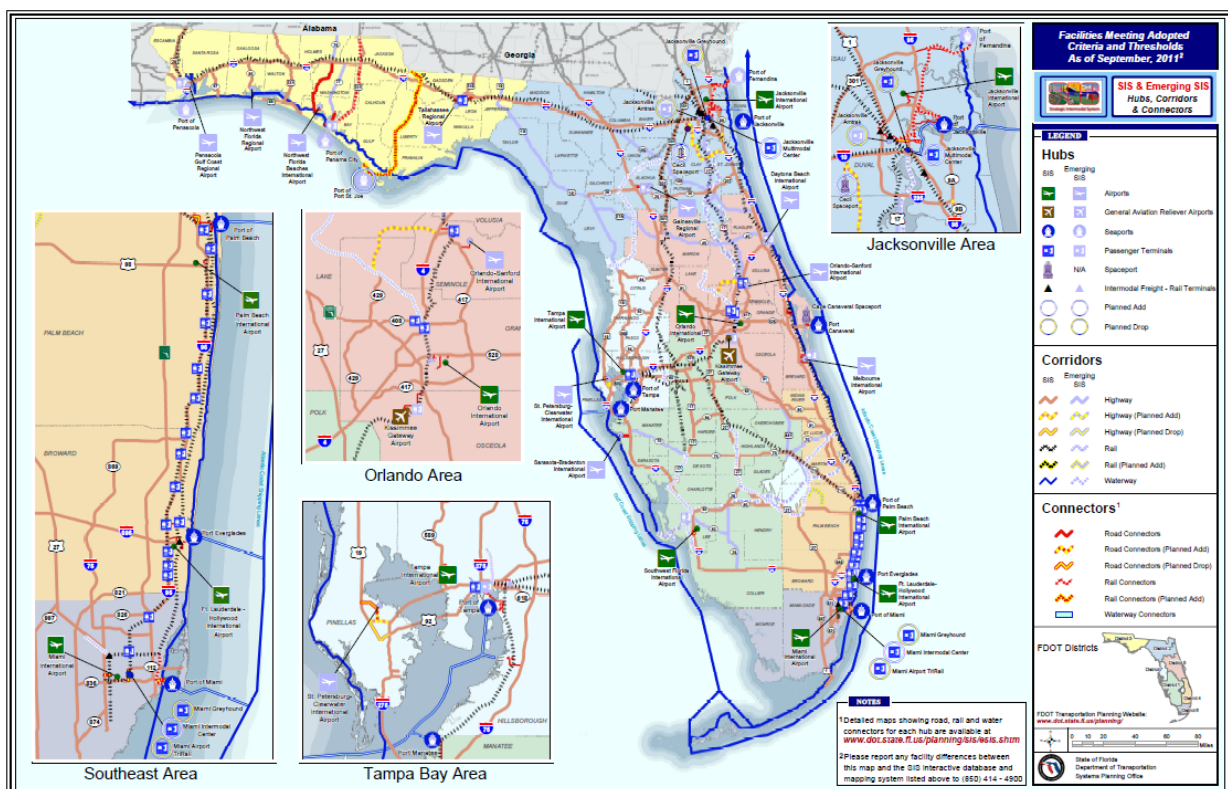
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The Strategic Intermodal System (SIS)

The SIS is a system of transportation facilities designated by the Florida Legislature as important to statewide needs. The SIS includes all Interstates, many other principal arterials, and some roads with lower classifications that are needed to connect SIS roads to important intermodal facilities. Most SIS roads are on the State Highway System.

It is estimated that the SIS handled about 158 million DVMT on an average day in 2011, out of 285 million DVMT for the entire SHS. The SIS currently carries about 55 percent of the state's daily travel on the entire SHS and approximately 30 percent of all traffic on Florida public roads. As of September 2011, there were 3,603 miles of highway designated as SIS and 762 miles designated as emerging SIS.

Figure 5 – The Florida Strategic Intermodal System



Source: FDOT, 2011.

For the entire Florida road network, the SIS carries about 55 percent of all SHS traffic and about 30 percent of all public road traffic.

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Florida's Turnpike

One important component of the SIS is Florida's Turnpike, a 460-mile system of limited-access toll highways. Florida's Turnpike mainline passes through 11 counties from North Miami to a junction with Interstate 75 in north central Florida (Figure 6). It handles the bulk of traffic leading from the central Florida area to east coast destinations in South Florida. It includes:

- 320-mile mainline consisting of :
 - 47-mile Homestead Extension of Florida's Turnpike
 - 43-mile Southern Coin System
 - 155-mile Ticket System
 - 67-mile Northern Coin System
 - 8-mile Beachline West Expressway
- 23-mile Sawgrass Expressway/Toll 869 in Broward County
- 24-mile Seminole Expressway/Central Florida Greeneway/Southern Connector Extension/Toll 417 serving Osceola, Orange and Seminole counties
- 57-mile Veterans Expressway/Suncoast Parkway/Toll 589 in West Central Florida
- 25-mile Polk Parkway/Toll 570 in Polk County
- 11-mile Daniel Webster Beltway, Part C/Toll 429 serving Orange and Osceola counties

The I-4/Selmon Expressway Connector indicated on the map is currently under construction in Tampa and is expected to be part of Florida's Turnpike system upon completion.

While making up about 3.8 percent of the centerline miles of the SHS, Florida's Turnpike carries 7.4 percent of the traffic. Turnpike traffic increased from 16,195,900 DVMT in 2002 to 21,161,100 in 2011, whereas only 9.2 centerline miles were added to the system during the same period.

Source: Florida Turnpike Enterprise, 2011.

Figure 7 displays Turnpike mileage and use of the system. While centerline miles and lane miles increased by 2.1 percent and 11.1 percent, respectively, from 2002 to 2011, the DVMT on the Turnpike grew almost 31.0 percent for the same period. Annually, the DVMT had a growth rate of 3.1 percent, whereas the lane miles increased about 1.1 percent. Centerline miles grew about 0.2 percent annually. This indicates that the travel demand on the Turnpike is growing much faster than the actual mileage.

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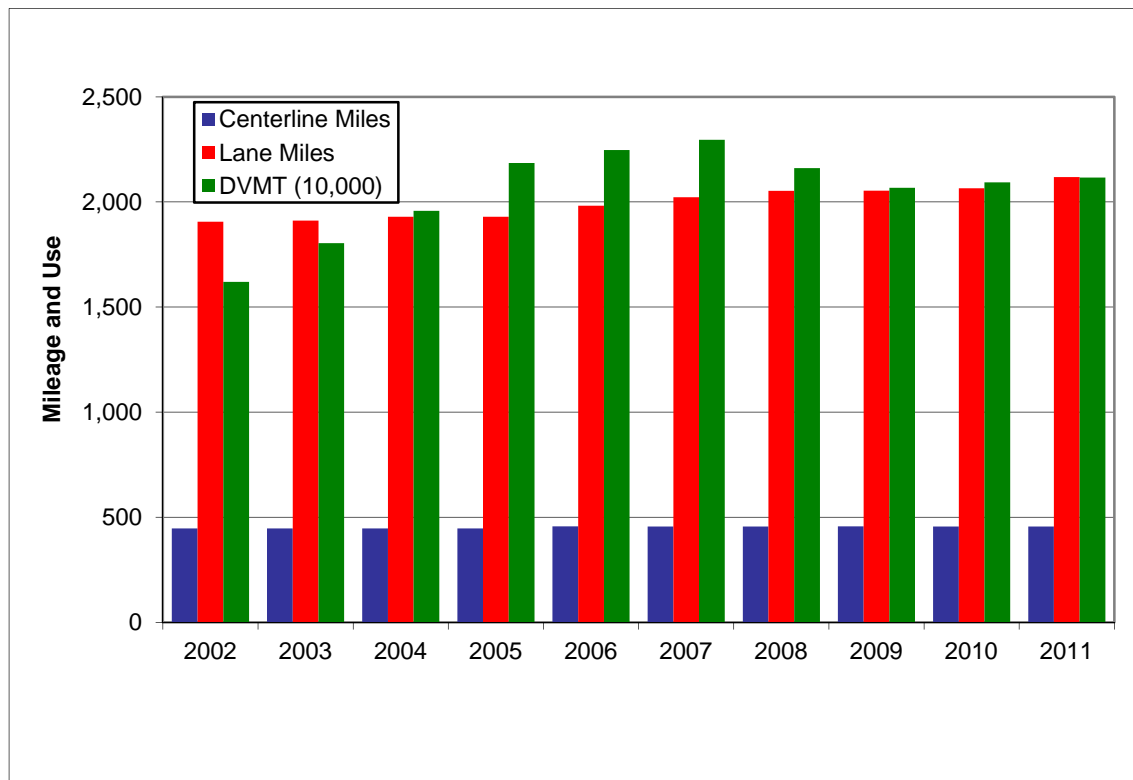
Figure 6 – The Florida Turnpike System



Source: Florida Turnpike Enterprise, 2011.

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Figure 7 – Turnpike Mileage and Use



Source: FDOT, *Reports of Highway Mileage and Travel, 2002- 2011*.

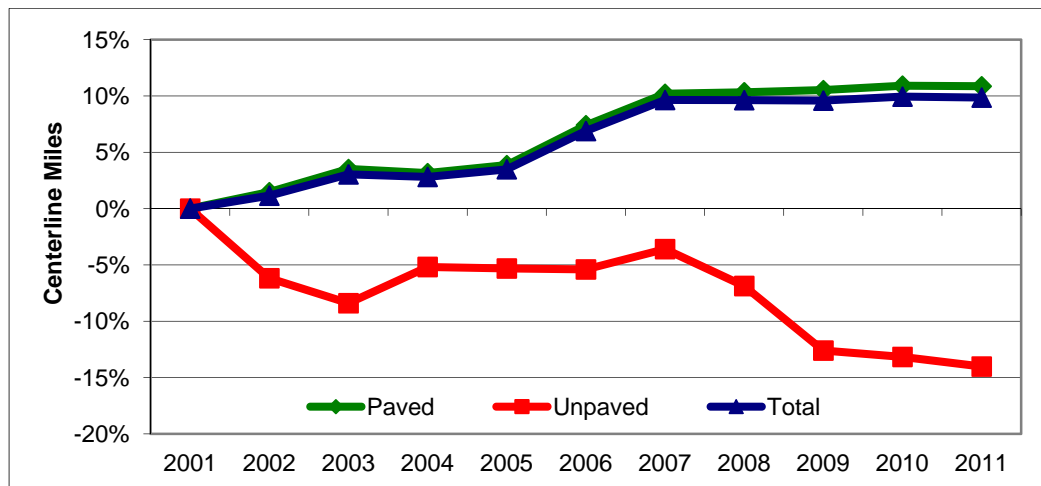
City and County Roads

Historically, city and county roads have comprised the majority of Florida's roadway system and now account for almost 88 percent of the system. Over the years, Florida's cities and counties have added road length at a faster rate than the state. This faster rate of growth could be attributed to the fact that the local governments have added more new roads and some state and private roads have been transferred to the jurisdictions of the cities/counties. From 2001 to 2011, county roads increased 1.33 percent, with an annual increase of 0.13 percent, while city roads grew by 9.85 percent, with an annual growth rate of about 1 percent.

Figure 8 and Figure 9 show that both the city and county governments have been adding paved roads over the years. This growth comprises the addition of new roads and the paving of previously unpaved roads. Unpaved road mileage is declining. Cities have had greater total mileage growth.

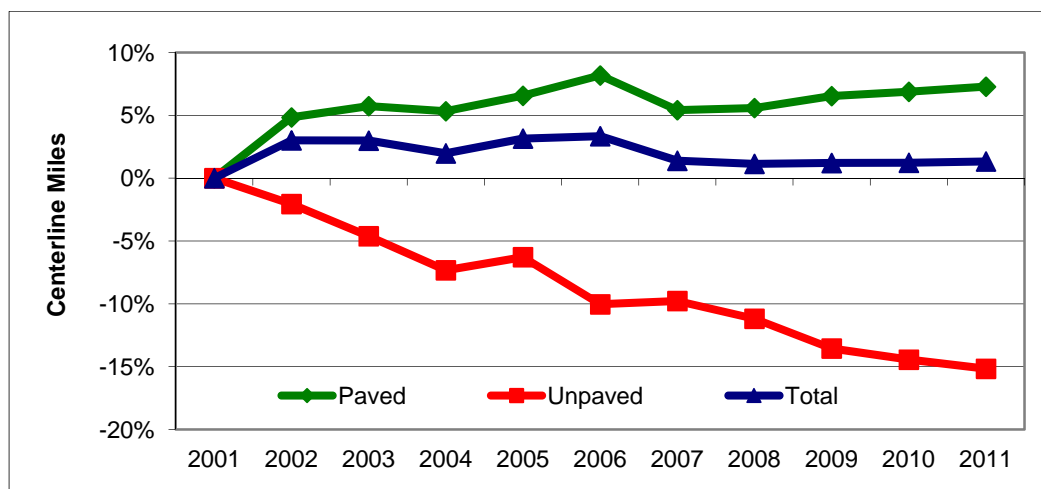
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Figure 8 – Percent Change of Paved Status on Florida's City Roads since 2001



Source: FDOT, *Reports of Highway Mileage and Travel*, 2001-2011.

Figure 9 – Percent Change of Paved Status on Florida's County Roads since 2001



Source: FDOT, *Reports of Highway Mileage and Travel*, 2001-2011.

Conclusion

The roadway system is the most dominant element of the transportation system and provides the vast majority of the mobility for people and freight. It integrates with other modes and provides access to and egress from those modes. Roadways are the most pervasive network accessing virtually all land parcels. The roadway system is a complex network with various

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elements designed to carry out two principal purposes — accessing land and providing capacity to connect places.

The ownership of the roadway system is shared among the various levels of government, with the higher levels of government generally being responsible for higher capacity elements that interconnect regions and metropolitan areas. Local interests are more focused on property access and local connectivity.

Future challenges will include maintaining and improving the existing system and expanding it in instances where new demands are not met with other elements of the overall transportation system. Though the current recession has eased congestion to some extent, a stronger economy and a quickening of population growth through immigration and migration are likely to increase future travel demand. Growing pressure on the roadway system capacity is likely to resume heightening the need to maintain the roadway system and increase capacity where needed.

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