V. Regional Transportation

1. Overview

In 1995, the Regional Transportation Work Group assisted in developing strategic goals and policies of the *Strategic Regional Policy Plan for South Florida*. These goals concentrated on transportation and land use planning to promote mobility and accessibility, transportation system preparedness for emergencies, and cross-jurisdictional coordination in transportation system planning. In this chapter we will examine key indicators that measure progress toward these regional strategic goals.

Our region is projected to have significant population growth over the next 20 years. This population growth has been projected to be in the 1 to 1.2 million range. As our region grows, additional demands will be placed on the transportation system. Key indicators of the system can track these growth impacts. Summarized below are several of these indicators:

- From 1992 through 1997 travel demand (i.e., daily vehicle miles traveled) has increased 18 percent, while roadway capacity increased only 5 percent. The growth in travel demand was almost four times faster than the growth in supply. Travel demand and roadway capacity is provided in Table 1 below. The travel demand growth is supported by a population increase of 7 percent during the same period and a continuing desire for people to drive alone.

TABLE 1: TRAVEL DEMAND AND ROADWAY CAPACITY

TRAVEL DEMAND	1987	1992	% change	1997	% change
Daily VMT (demand)	52,905,012	63,914,679	21%	75,368,000	18%
DVMT/Capita	17	19	10%	21	11%
ROADWAY CAPACITY					
Lane Miles (supply)	4,363	4,936	13%	5,195	5%
SYSTEM PERFORMANCE					
Demand growth/Supply growth	In 1997 demand grew 3.6 times faster than system supply (i.e., 18/5=3.6). In 1992 is was 1.6 times faster.				
Population	3,057,935	3,357,959	10%	3,579,045	7%

- Between 1980 and 1990 the percentage of people driving alone to work increased 39 percent in the Southeast Florida region. This compares to a 62 percent increase for the State of Florida and a 35 percent for the nation. The ultimate result of increasing vehicle miles traveled and driving alone is greater roadway congestion (i.e., more cars on the major roadways).

- In 1988 the Texas Transportation Institute developed a measure of congestion to apply to metropolitan areas[i]. The index provides an indication of congestion over time and a value greater than 1.0 indicates a congested roadway network. The 1998 Texas Transportation Institute Annual Report

on the 70 largest metro areas nationally, identified Miami-Hialeah as the 3rd most congested metro area with an index of 1.34. In addition, Fort Lauderdale-Hollywood-Pompano Beach ranked 31st with an index of 1.03. Furthermore, a 1998 analysis of the Texas Transportation Institute data, by the Surface Transportation Policy Project, indicates that metro areas which spent the most on building additional roadway capacity over the last 15 years did not fare any better than the areas that spent the least on capacity projects to improve congestion problems. Alternatives to private vehicle travel and roadway capacity improvements are needed.

- Carpooling, public transit and walking/biking offer alternatives to the private vehicle. While trips have been increasing for both carpooling and public transit modes, they have lost market share to the private vehicle between 1980 and 1990. These decreases are shown in Table 3. Likewise, the most recent data (1990 to 1998) for Broward County continues to show carpooling losing market share from 13 to 12 percent. However, public transit increased from 2 to 2.5 percent of the travel market for the same period.

TABLE 3: MODE MARKET SHARE

Travel Mode	1980	1990
Drive Alone	69%	75%
Carpooling	19%	15%
Walk/Bike	4%	3%
Public Transit	5%	4%

As population density increases one travel outcome will be an increase in bus availability, offering other choices for urban residents. Increased density is highly correlated with decreased dependency on the private vehicle. This will result in fewer vehicle miles traveled; therefore, increasing densification is a strategy to reduce vehicle miles traveled. However, the level of density necessary to significantly reduce vehicle miles traveled and substantial increase transit usage must be studied further.

- Transit coverage has not increased over the last few years. Passengers riding transit has been erratic from 1989 to 1998 and has generally not kept pace with the steady population increases.

- The region has maintained its status as an air quality maintenance area from 1993 to 1995. This is in light of the increasing vehicle miles traveled. Cleaner alternative fuel vehicles are increasing every year, however, there are not significant numbers operating within the region to make significant air quality improvements at this time

- Evacuation time for the most severe storms increased between 1995 and 1998 with the largest increase in Monroe County.

As we look forward to the next 20 years we need to critically review our current strategic policy framework. The increases in vehicle miles traveled, driving alone to work, and evacuation time will be exacerbated by the projected future growth. These trends must be mitigated and reversed in order to maintain quality of life in our region.

2. Assessment of Regional Transportation Goals

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety**.**

Indicator: 1) Increase in development of vacant land within designated transportation corridors and 2) Increase in land use density in land redeveloped within transportation corridors.

Proxy Indicator: Daily Vehicle Miles Traveled (DMVT) and DVMT/population.

Time Series Information:

(in 1000s)	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Broward	22,826	25,066	24,324	24,832	26,217	26,210	28,518	30,109	31,815	32,070	33,563
dvmt/pop	19.33	20.65	19.58	19.78	20.51	20.25	21.65	22.47	23.32	23.03	23.57
Miami-Dade	28,211	35,135	36,580	35,326	34,743	35,223	38,213	36,959	38,733	39,124	39,101
dvmt\pop	15.65	19.11	19.53	18.24	17.71	17.76	19.59	18.57	19.23	19.15	18.88
Monroe	1,868	2,220	2,447	2,400	2,466	2,482	2,339	2,831	2,943	2,898	2,704
dvmt/pop	25.06	28.83	30.99	30.75	31.01	30.65	28.61	34.42	35.29	34.59	31.91
Region	52,940	62,461	63,390	62,595	63,464	63,953	69,111	69,940	73,534	74,134	75,410
% change		18.0%	1.5%	-1.3%	1.4%	0.8%	8.1%	1.2%	5.1%	0.8%	1.7%
dvmt/pop	17.31	19.96	19.84	19.14	19.12	19.05	20.63	20.49	21.24	21.06	21.07
% change		15.3%	-0.6%	-3.6%	-0.1%	-0.4%	8.3%	-0.7%	3.7%	-0.8%	0.0%

Analysis

- Daily vehicle miles traveled have grown steadily over the last eleven years in the region. For the most part, this growth trend occurred in each county as well. This is an indication that mobility is being accommodated.

- When viewed on the per capita basis (i.e., DVMT/Pop.), a clear growth trend does not occur. This suggests that the growth in DVMT is closely related to the growth in population.

Implications

A continuing increase in daily vehicle miles traveled will result in an increase in congestion on many major transportation corridors. This trend implies that current development patterns and land use mixes are encouraging auto travel due to an inefficient system of land use and transportation for accessing travel needs (e.g., work, shopping, family, and recreation). We compared this increase to the population growth by looking at the daily vehicle miles travel per capita. This showed no clear trend over the eleven years, with the exception of a period of decrease between 1989 and 1992. However, with the exception of 1990 (-3.6%) these decreases were minimal, suggesting that DVMT may continue to grow but at a rate probably slightly less than the growth rate of the population.

Access is crucial for continued growth and improvements to the quality of life in South Florida. Alternatives to the private auto and increases in land use efficiencies are necessary to maintain access (i.e., stabilize daily vehicle miles traveled). If this does not occur, the current trend will mean further degradation of the transportation system from congestion, resulting in travel time delays, increased air pollution and unsafe travel conditions.

Technical Notes

1. DVMT data are for total roadways (federal/state/local) from FDOT, Traffic Statistic Section, Tallahassee, Florida.

2. 1987 1989 population, Source: Advisory Council on Intergovernmental Relations / Florida Department of Revenue / Florida Legislature, *Local Government Financial Information Handbook* (July 1990).

3. 1990 1997 populations, Sources: U.S. Department of Commerce, Bureau of the Census, *Census of Population (1970, 1980, and 1990).* University of Florida, Bureau of Economic and Business Research, *Florida Estimates of Population: April 1, 1998 (February 1999).*

4. NOTE: 1990 population includes official adjustments made by the Bureau of the Census through September 30, 1998.

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety**.**

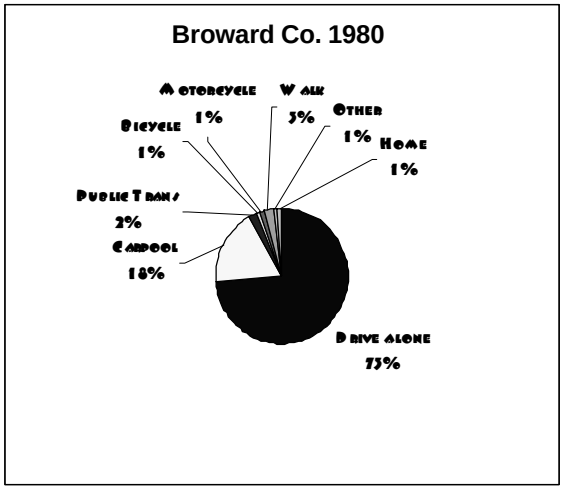
Indicator: Decrease in Single Occupancy Vehicles (SOV) mode share and increase in alternative transportation mode share from 1990 level by county.

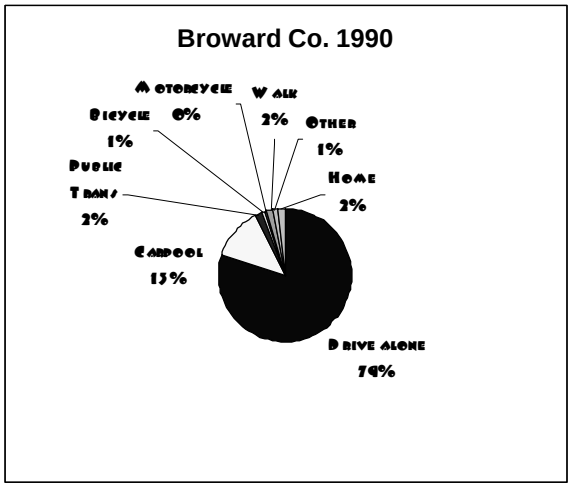
Proxy Indicator: 1) Transportation to Work by Mode.

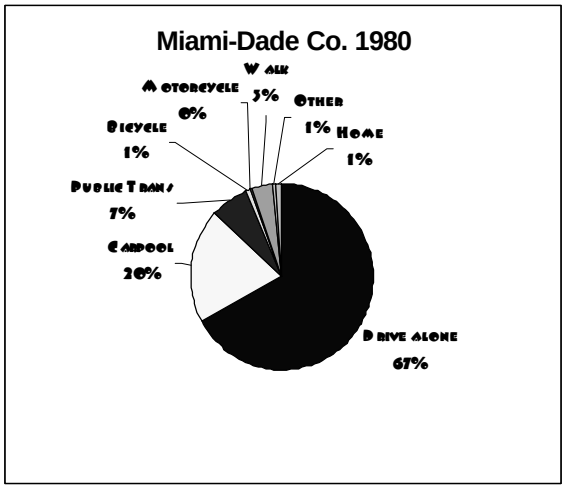
Time Series Information:

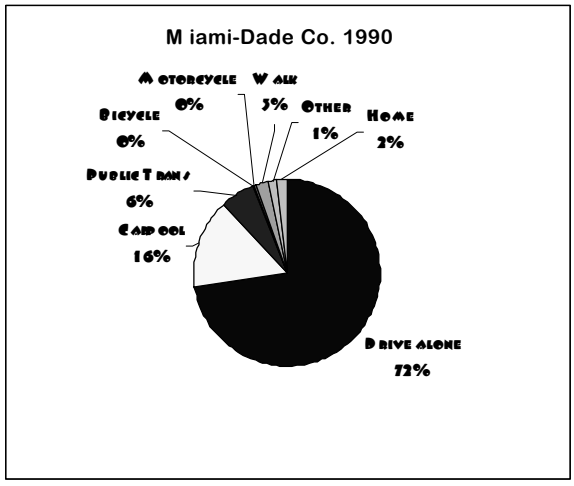
	Drive Alone	Car-pool	Public Trans	Bicycle	Motor-cycle	Walk	Other	Work at Home
Broward								
1980	312,676	76,871	8,434	3,750	3,386	11,237	2,877	5,088
1990	468,713	75,330	12,078	3,824	1,721	10,809	4,556	11,058
Miami-Dade								
1980	489,064	142,395	48,187	5,228	3,507	25,114	3,991	8,666
1990	642,669	138,328	52,162	4,263	1,408	22,454	8,621	18,091
Monroe								
1980	15,511	5,339	368	2,182	539	2,275	833	876
1990	25,404	6,307	458	2,417	784	3,101	853	1,583
Region								
1980	817,251	224,605	56,989	11,160	7,432	38,626	7,701	14,630
1990	1,136,786	219,965	64,698	10,504	3,913	36,364	14,030	30,732

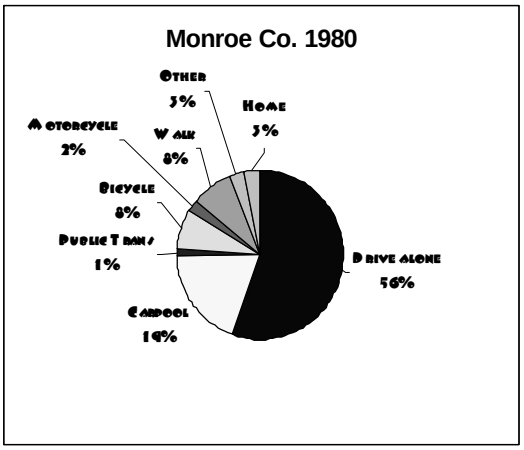
Charts

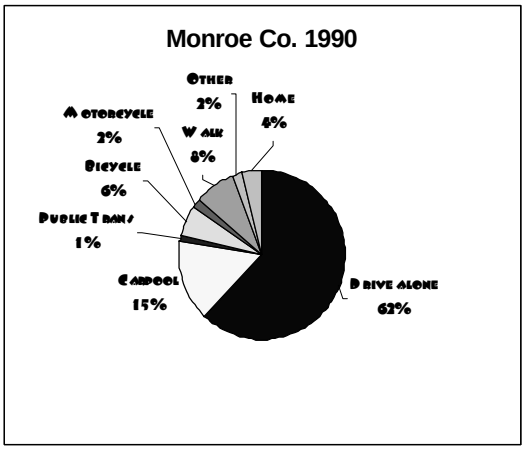


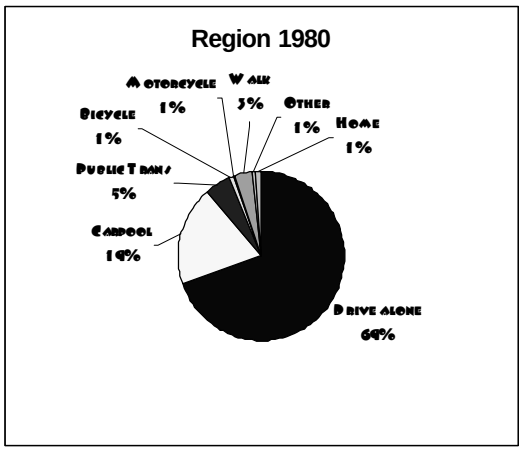


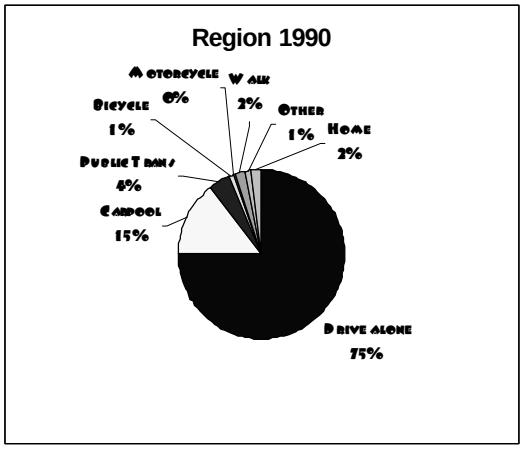












Analysis

The percentage of individuals driving alone to work (i.e., single occupancy vehicles) increased over the ten-year period from 1980 to 1990. The most recent data from the 1998 American Community Survey showed that driving alone in Broward County continued to increase 18 percent between 1990 and 1998. This is contrary to reducing reliance on the single occupancy vehicle mode and increasing higher capacity alternative modes to improve the efficiency of the transportation system.

In terms of higher capacity alternatives to SOVs, carpooling dropped from a 19% market share in 1980 to a 15% share in 1990. Likewise, public transportation for work trips dropped from a 5% market share in 1980 to a 4% share in 1990.

Implications

The implication of the driving alone trend continuing is that additional cars will be added to our already congested roadways (particularly during peak

commuter travel times: 6 9 a.m. and 4 6 p.m.) leading to further congestion and degradation of the regional transportation system.

For transit to capture more trips and therefore improve its market share, additional effective transit alternatives need to be implemented. Likewise, effective, current services need to be increased. This is possible if efficient land use strategies are implemented along with transit services to meet more of the trip needs of our growing population. If this does not occur, the current trend would indicate that the single occupancy vehicle will be the mode of choice leading to further degradation of the transportation system and quality of life in the region.

Technical Notes:

1. 1990 Census Handbook: Florida, 1994 and 1980 Census Handbook: Florida Counties, 1984 Bureau of Economic and Business Research, University of Florida, Gainesville, Florida.
2. 1998 American Community Survey Profile Broward County, July 1999, U.S. Census Bureau.

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety.

Indicator: Decrease in average travel time

Proxy Indicator: 1) Average Travel Time to Work and 2) Drive alone to work.

Time Series Information:

	1980	1990	% change
Broward			
avg. travel time (minutes)	22.60	22.95	1.57%
drive alone	312,676	468,713	49.90%
Miami-Dade			
avg. travel time (minutes)	23.70	24.80	4.63%
drive alone	489,064	642,669	31.41%
Monroe			
avg. travel time (minutes)	14.40	14.84	3.03%
drive alone	15,511	25,404	63.78%
Region			
avg. travel time (minutes)	23.10 *est.	23.82	3.11%
drive alone	817,251	1,136,786	39.10%

Analysis

- From 1980 to 1990, the average time to drive to work increased from 23.14 minutes to 23.82 minutes, an increase of 3.11%. This is higher than the state average of 20.90 minutes and 21.35 minutes, respectively[3]. Also, the regional increase is greater than the statewide increase of 2.15%.

- From 1980 to 1990, the number of individuals driving alone to work increased from 817,251 to 1,136,786, a growth rate of 39% (or 3.9% per year).

Implications

The data indicates that a decrease in travel time has not been realized between 1980 and 1990. Furthermore, the number of individuals driving alone is growing at an annual rate of about 4%. If this trend continues, it will mean greater vehicular congestion on the roadways leading to travel time delays that will continue to increase travel times.

Technical Notes

1. 1980 travel time data from 1980 Census Handbook Florida Counties, Bureau of Economic and Business Research, University of Florida, Gainesville, Florida, 1984.

2. 1990 Average Travel Time To Work is from 1990 Census of Population, Journey-to-Work, US Bureau of the Census.

3. Demographics & Commuting Trends in Florida, Center for Urban Transportation Research, 1994, Tampa, FL

NOTE: 1980 Regional Average Travel Time is estimated by multiplying the county average travel times by their percentage of regional drive lone trips and summing the results.

ADDITIONAL NOTE: In Florida one in five trips are for work (i.e., 20%) [Source: *Demographics & Commuting Trends in Florida*, Center for Urban Transportation Research, 1994, Tampa, FL]. Therefore, 80% of trip purposes are not reflected in this analysis. FDOT and the Counties of Palm Beach, Broward and Miami-Dade are conducting additional research on regional travel characteristics. When this information is available it should be reviewed for applicability to this regional indicator analysis.

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster

economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety**.**

Indicator: Increase in mass transit use and use of alternative transportation modes from 1990 levels by county.

Proxy Indicator: Annual passenger trips, passenger trip growth rate, and population growth rate.

Time Series Information:

	1990	1992	1994	1996	1998	2000	2010	2020
Broward								
Passenger trips	16,857,207	19,971,631	22,270,764	23,598,679	25,321,162	27,346,855	38,285,597	53,599,836
% change		18.5%	11.5%	6.0%	7.3%	8.0%	40.0%	40.0%
Pop	1,255,531	1,294,090	1,340,220	1,392,252	1,460,890	1,509,500	1,736,500	1,967,900
% change		3.1%	3.6%	3.9%	4.9%	3.3%	15.0%	13.3%
Miami-Dade								
Passenger trips	77,123,661	72,279,261	81,682,078	79,754,091	79,804,988	80,603,038	84,633,190	88,864,849
% change		-6.3%	13.0%	-2.4%	0.1%	1.0%	5.0%	5.0%
Pop	1,937,194	1,982,901	1,990,445	2,043,316	2,090,314	2,137,500	2,359,300	2585500
% change		2.4%	0.4%	2.7%	2.3%	2.3%	10.4%	9.6%
Monroe								
Passenger trips	238,520	227,590	269,330	275,280	335,310	342,016	376,217.71	413,839
% Change		-4.6%	18.3%	2.2%	21.8%	2.0%	10.0%	10.0%
Pop	78,024	80,968	82,252	83,789	85,646	87,500	95,900	104700
% Change		3.8%	1.6%	1.9%	2.2%	2.2%	9.6%	9.2%
Region								
Tri-Rail[1]	1,410,503	2,077,916	2,443,467	1,915,208	1,881,261	2,107,012	3,371,220	5,393,952
Passenger trips	95,629,891	94,556,398	106,665,639	105,543,258	107,342,721	110,398,921	126,666,224	148,272,476
% Change		-1.1%	12.8%	-1.1%	1.7%	2.8%	14.7%	17.1%
Pop	3,270,749	3,357,959	3,412,917	3,519,357	3,636,850	3,734,500	4,191,700	4,658,100
% Change		2.7%	1.6%	3.1%	3.3%	2.7%	12.2%	11.1%

[1] Tri-Rail is the commuter rail service between West Palm Beach in Palm Beach County to Miami in Miami-Dade County. Passenger trip data were only available for weekday service, i.e.; it does not include Saturday and Sunday passenger trip data.

Analysis

During the period 1989 to 1998 the growth in population has outpaced the growth in public transit passenger trips. Broward County Transit s passenger trips annual growth rate has exceeded the population growth rate each year with the exception of 1996 and 1998. Miami-Dade Transit Agency s passenger trips annual growth rate only exceeded the population growth rate in 1993. Since MDTA is the largest of the transit systems, plus the loss in Tri-Rail passenger trips from 1993 to 1998, created an overall situation where regional passenger trips have not kept pace with the regional population increases. A contributing factor is the level of service provided by the transit agencies. Generally, the levels of service have not been increasing; therefore passenger trips have been stagnant.

Implications

While the transit agencies are providing an alternative to the auto and other modes of travel, growth in ridership is not keeping pace with population growth. If this trend continues there will be a continuing degradation of the regional roadway system. This will lead to additional congestion on the regional transportation system. While operational and management improvements may facilitate somewhat the increased auto traffic, additional congestion will occur, working against a sustainable regional transportation network.

Technical Notes:

1. Passenger Trip data from Miami-Dade Transit Agency, Broward County Transit, Key West DOT and Tri-Rail:

   - Broward County transit data from the National Transit Database: 1987-1998, Broward County Transit.
   - Miami-Dade Transit Data from MDTA s Office of Management Services, 1985 1998, for Metrobus, Metrorail and Metromover.
   - Monroe County data is for the Key West Department of Transportation and are transit data from the National Transit Database: 1987 1997, Center for Urban Transportation Research.
   - Tri-Rail data is from the Contract Operator that monitors all records. Passenger trip data was only available for weekdays and excludes passenger trip data for weekend days. Data is available for the years 1989 through 1998.

2. 1989 population, Source: Advisory Council on Intergovernmental Relations / Florida Department of Revenue / Florida Legislature, *Local Government Financial Information Handbook* (July 1990).

3. 1990 1999 population, Source: U.S. Department of Commerce, Bureau of the Census, *Census of Population (1970, 1980, 1990).* University of Florida, Bureau of Economic and Business Research, *Florida Estimates of Population: April 1, 1998 (February, 1999).*

4. 2000, 2010 and 2020 population projections from the *South Florida Region, Resident Population Estimates and Projections,* Table Sfcpoppr.xls, 30-06-99, South Florida Regional Planning Council.

5. Passenger trip projections based on 10 year average change. For Broward this is 4% per year, Miami-Dade this is 0.5% per year and for Tri-Rail this is 6% per year. Key West DOT, Monroe County projections based on 1% average change over nine years.

6. NOTE: 1990 population includes official adjustments made by the Bureau of the Census through September 30, 1998.

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety**.**

Indicator: Decrease in average distance of residential and commercial areas to transit.

Proxy Indicator: Service area covered.

Time Series Information:

Miami-Dade:
1996: 78 percent of population and 91 percent of jobs within ¼ mile (air distance) to transit service.

Broward County:
1991: 72 percent of population and 78 percent of employment within ¼ mile to transit service.
1996: 72 percent of population and 78 percent of employment within ¼ mile to transit service.
1997: 72 percent of population and 78 percent of employment within ¼ mile to transit service.

Analysis

Based on the industry standard of ¼ mile market area (i.e., air-mile), both counties have good coverage. However, if ¼ walking mile distance were used to analyze the transit market area, the percentages would decrease.

Implications

While distance to transit is one key element of accessibility it does not tell the complete story. Transit availability is a complex product of proximity, frequency of service, timing convenience, sufficient span of service, geographic access, and safe environment.

Transit oriented developments, higher densities, and mixed used developments along major transportation corridors will improve transit s ability to compete with the private automobile as a travel option. Likewise, policies that favor high capacity options over single occupancy vehicles will provide incentives to choose transit and carpooling.

Technical Notes:

NOTE: Monroe County does not have countywide fixed route, fixed schedule transit service.

1. 1996 Transit Development Program, Miami-Dade Transit Agency.

2. Broward County Transit Development Plan for the years 1991, 1996, 1997, Broward County Transportation Planning Division and the Division of Mass Transit.

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety**.**

Indicators:

Natural Systems: Increase in use of alternative fuel vehicles from approximately 3000 in 1990.
Economic Development: Decrease in use of foreign oil for transportation purposes.

Proxy Indicator: Number of alternative fuel vehicles (AFVs) and calculation of gallons of gasoline/diesel fuel replaced.

Time Series Information:

	1996	1997 est.	1998	1999	2000 proj.	Goal
Broward						
AFVs	374	575	775	1,091	1,270	
Fuel replacement[1]	374,000	575,000	775,000	1,091,000	1,270,250	
Miami-Dade						
AFVs	161	197	232	256	280	
Fuel replacement[1]	161,000	197,000	232,000	256,000	279,750	
Monroe						
AFVs	n/a	n/a	n/a	n/a		
Fuel replacement[1]	n/a	n/a	n/a	n/a		
Region						
AFVs	535	772	1,007	1,347	1,550	24,000
Fuel replacement[1]	535,000	772,000	1,007,000	1,347,000	1,550,000	16,800,000
% Change		30.7%	23.3%	25.2%	13.1%	

[1] National Association of Fleet Administrators uses 1,000 equivalent gallons of gasoline as the standard to the annual average fuel-use for fleet vehicles. This is based on the various types of vehicles, mileage, and the average level of fuel consumption. Police

cruisers, for example, may consume more than 1,000 gallons per year while light duty trucks consume approximately 800 gallons per year.

Analysis

Alternative fuel vehicles are increasing at an annual rate of about 16%. At this rate of growth it will take 22 years to reach a goal of 24,000 AFVs in the region.

Implications

There are a small number of alternative fuel vehicles within the region at this time. These are made up of federal and state fleets currently mandated by the Energy Policy Act to purchase alternative fuel vehicles and local public fleets that see the cost and environmental benefits to purchasing these vehicles. Local public fleets will continue to purchase alternative fuel vehicles as long as there are public grant assistance and cost and environmental benefits. However, these fleets do not make up a large portion of vehicles in the region. The greatest numbers of vehicles are privately owned automobiles. Until there are benefits and availability to the general public, increases in the use of domestically produced alternative fuel will grow at a very slow rate. Hence, major decreases in use for foreign oil and decreases in vehicular pollution will not be realized until public use of alternative fuel vehicles increases substantially.

Technical Notes:

Data are from annual US Department of Energy surveys conducted by the Clean Cities Coalition of its members. Replacement gallons of gasoline and diesel are calculated using a national fleet average developed by the National Association of Fleet Administrators. AFV goals for Clean Cities are based on a region of Palm Beach, Broward and Miami-Dade Counties. Goals are 30,000 AFVs and 21,000,000 gallons of gasoline/diesel replaced. Since Palm Beach County is not within SFRPC s region for the SRPP the goals have been adjusted for this analysis to 80% based on county populations.

Goal:

5.1 To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility; in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety.

Indicators:

Natural Systems: Maintenance of attainment air quality status.

Proxy Indicator: Ozone values.

Time Series Information:

	Status	Air Quality Value	1993-95 Exceed.	Max. 1-hr Value	1995 Est. Exceed.
Region Miami-Ft. Lauderdale-W. Palm Beach	Attainment	0.111	0.00	0.106	0.00

Analysis

Air-shed is in attainment, maintenance status.

Implications

Because of maintenance status we do not fall under the regulatory requirements of the Clean Air Act. Therefore there are no restrictions on growth in the region. However, attainment status will mean the loss of Federal Transportation-Congestion Mitigation Air Quality funding upon re-designation in 2000.

Technical Notes:

NOTE: The National Ambient Air Quality standard for ozone is 0.12 parts per million daily maximum 1-hour average not to be exceeded more than once per year on average. Beginning in 2000 it will be measured on an 8-hour average.

1. Office of Air Quality Planning and Standards, US EPA, National Air Quality and Emissions Trends Report, 1995.

Goal:

5.2 To enhance the regional transportation system s role in system-wide preparedness for emergency situations.

Indicator: Improved projected clearance times for county and regional highway networks.

Proxy Indicator: Total Evacuation Time

Time Series Information:

	1995 (hrs)		1998 Projection (hrs)	
Broward	July	Nov	July	Nov
Storm Cat 4,5	7.80	9.70	8.20	10.20
Miami-Dade				
Storm Cat 4,5	12.30	15.80	13.80	17.30
Monroe				
Storm Cat 4,5	22.50	50.42	26.00	53.92
Region				
Storm Cat 4,5 (avera	14.20	25.31	16.00	27.14

Analysis

Total evacuation times have increased from 1995 to 1998. Evacuation time is a function of road capacity, travel distance, and number of vehicles needed to evacuate the population of the hazard area. If evacuation times cannot be improved, then an alternative is to provide earlier evacuation information.

Implications:

In order keep evacuation times from increasing further; as the population grows, road capacity or travel times must be reduced. This may be possible through capital and operational improvements in the transportation system.

Technical Notes:

1. South Florida Regional Planning Council. April 1996. South Florida Regional Hurricane Evacuation Study Final Report. Hollywood, Florida. Table 13 for Broward and Miami-Dade Counties and Table 12 for Monroe County.

Goal:

5.2 To enhance the regional transportation system s role in system-wide preparedness for emergency situations.

Indicator: Improved structural integrity of primary facilities used for emergency evacuations.

Proxy Indicator: Combined capacities of primary routes (vehicles per hour)

Time Series Information:

	1995
Broward	17,800
Miami-Dade	23,370
Monroe	1,893
Region	43,063

Analysis

1995 is base year of primary routes that allow vehicles to exit the counties northward.

Implications

With continued growth expected in the region and the resultant increase in passenger vehicles, the capacity of the primary evacuation routes will need to be increased in order to prevent degradation of evacuation times. Evacuation capacity can be increased as much as 35 percent by a traffic split of 90 percent in the evacuation direction and 10 percent in the other direction. Westward expansion mitigates the capacity problem by locating population away from the hazard areas and therefore eliminating the need for evacuation. However, since the westward development is at lower densities than the urban corridor it has a limited ability to mitigate this situation over the long-term. Urban infill and redevelopment in the non-hazard urban corridor (Eastward Ho! initiative) will be necessary to maintain evacuation capacity along the primary corridors in the long-term. Finally, Intelligent Transportation System applications have the potential to increase vehicle capacity in the future.

Technical Notes:

NOTE: In Broward County the primary evacuation routes are I-95, Florida s Turnpike, U.S. 27 and I-75. In Miami-Dade County the primary evacuation routes are I-95, Florida s Turnpike, U.S. 27, I-75 and US-41. In Monroe County the primary evacuation routes are US-1 and Card Sound Road.

1. South Florida Regional Planning Council. April 1996. South Florida Regional Hurricane Evacuation Study Final Report. Hollywood, Florida. Table 12 for Broward.

Goal:

5.3 To achieve a coordinated transportation system planning process across jurisdictions and across issue-areas so that barriers are minimized and consistency across the region is achieved.

Indicators: 1) Continuation of regional transportation coordination mechanisms such as the Council s Mulitmodal Regional Transportation Committee and 2) Existence of regional policy perspective within the local comprehensive plans.

Analysis

The coordination of regional policy can be facilitated by supporting and strengthening existing regional collaborative and coordinated efforts and committees. Transportation planning activities are undertaken by the two county metropolitan planning organizations (MPOs) in Broward and Miami-Dade Counties, the two Florida Department of Transportation (FDOT) District Offices, and Monroe County. To provide a forum for discussing regional transportation issues, the Council convened and supported a Multimodal Regional Transportation System Committee in the early 1990s. The Committee was also instrumental in providing a regional review of major transportation projects such as the proposed high speed rail system. The Council s effort was then elevated into a study advisory committee to look at the alternatives and feasibility of creating a regional transportation organization. This study effort resulted in the creation of a Regional Transit Organization (RTO) in late 1997 through an interlocal agreement among Broward County, Miami-Dade County, Palm Beach County and the Florida DOT. The RTO has subsequently replaced the efforts of the Multimodal Regional Transportation System Committee. The study advisory committee, leading to the establishment of the RTO, has continued as the Technical Advisory Committee (TAC) of the RTO.

The RTO s purpose is to provide for efficiencies in the delivery of existing service; provide improved services with existing resources; provide regional transit information to the public; provide a regional forum for deliberation on transit issues of mutual interest; provide a regional voice for agreed upon transit policies, plans and programs; review funding constraints and opportunities and provide recommendations on funding; provide a forum to respond to commuter concerns and travel needs in a timely manner; and to promote and work toward a seamless regional transit system. The TAC has been very active in developing and working toward implementation of a regional consumer information network and a regional joint marketing program between the transit agencies. Also, the TAC has authorized a planning subcommittee to develop a regional transit development plan. The final plan is expected in calendar year 2000.

The collaborative and coordinated planning activities have been formalized through the creation of the RTO and its committees. This is resulting in specific regional efforts and projects to improve regional mobility and access. However, the RTO does not have revenue or funding sources; therefore, it relies on the staff work of member organizations and its committee members. In a growing region, this limits the effectiveness of a volunteer organization and its ability to respond to emerging issues.

The municipalities are taking a coordinated approach with the counties and the regional planning council in developing their transportation elements of the comprehensive plans. This is resulting in better consistency between these planning processes and plans.

Technical Notes:

Regional Transit Organization. December 1997. Interlocal Agreement Among Broward County, Miami-Dade County, Palm Beach County, The Broward County Metropolitan Planning Organization, The Miami-Dade County Metropolitan Planning Organization, The Metropolitan Planning Organization of Palm Beach County, and The State of Florida Department of Transportation Relating to the Creation of a Regional Transit Organization.

End Note:

1. Texas Transportation Institute s congestion index provides a ratio of two values 1) daily vehicle miles traveled per lane for freeways and major arterials and 2) weighted DVMT per lane using realistic capacities. A value of greater than 1.0 indicates a congested network.