

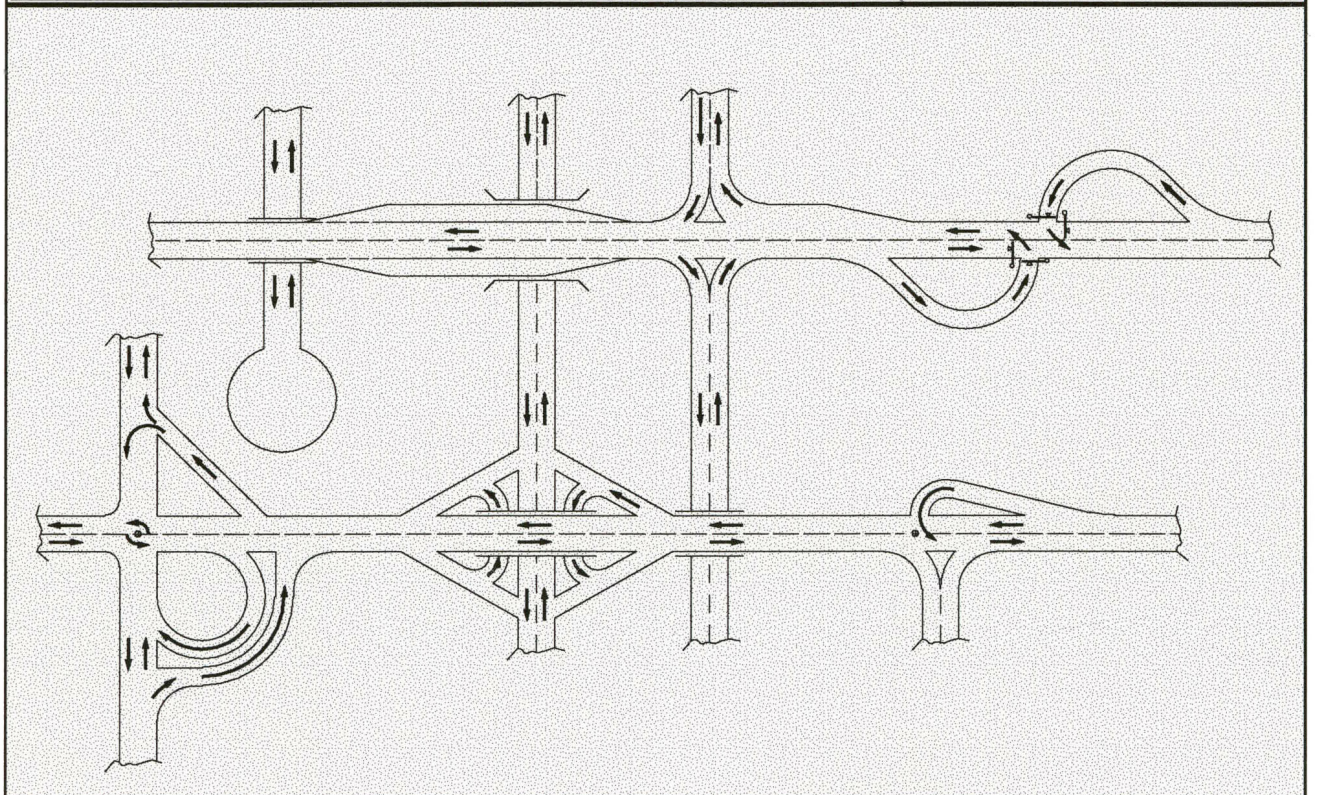
SUPERARTERIAL NETWORK STUDY

PROJECT NO. MPO-96-07



DADE COUNTY METROPOLITAN PLANNING ORGANIZATION

Technical Memorandum 3: Data Collection



Prepared by :

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Superarterial Network Study
Dade County Metropolitan Planning Organization
Project Number: E96-MPO-07

SECOND DRAFT

Technical Memorandum 3: Data Collection

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1. INTRODUCTION

1.1 Purpose

Changes in demographics and travel behavior characteristics have resulted in significant challenges for transportation decision makers, planners and practitioners throughout Dade County. Efforts to meet these challenges have had varying degrees of success and/or failure. Looking to the future, it appears that dealing with existing and evolving transportation needs will only become more difficult. Commuting in Dade County has evolved substantially over the past several years, from the more traditional commuting pattern with the central business district as the main destination, to new travel patterns with destinations increasingly dispersed throughout the County. This trend, along with tremendous growth in population, has caused a great increase in congestion in Dade County. There is therefore, an urgent need to explore ways and methods of alleviating and/or improving this situation.

The purpose of this report is to summarize geographic travel pattern, growth, and development trends in Dade County, and to address how these factors can help identify potential roadways to be included in the superarterial network. The data presented in this report summarizes existing and future conditions collected from reports and studies provided by the Florida Department of Transportation (FDOT) and the Metropolitan Planning Organization (MPO).

1.2 Background

Dade County is located along the southeast edge of the Florida Peninsula, with a total area of 2,430 square miles. It is bound by Biscayne Bay and the Atlantic Ocean on the east, the Everglades on the west, the Florida Keys to the south, and connects to metropolitan Broward County and Fort Lauderdale to the north. The natural boundaries have created a relatively narrow north-south strip of land that can be developed. Although some modifications were made over the past years by the draining and filling of wetlands, current environmental policies make it very unlikely that conservation areas located in the west area of Dade will ever be developed. In recent years, large scale suburban residential and commercial developments have been built west of SR 826 (Palmetto Expressway). As a result, extensive growth occurred in that area and in the vicinity of the Miami International Airport, creating a sizable increase of east-west commuter flow, in addition to the typical north-south travel pattern. This east-west flow is not well served by the county's existing transportation infrastructure.

2. EXISTING CONDITIONS

2.1 Levels of Congestion

In order to determine the magnitude of the congestion in the County, it is necessary to measure the levels of congestion on the County's main thoroughfares. A common method had to be developed since the Florida Department of Transportation and Dade County use different methods in determining congestion.

The State uses the following Florida Department of Transportation Level of Service (LOS) tools to measure congestion on state roads:

1. Generalized LOS Tables - FDOT's generalized LOS tables were developed based on the definitions and methodology of the 1985 HCM.
2. Arterial Planning Computer Model (ART PLAN) - Computer template using Lotus 1-2-3 software for planning level traffic analysis on interrupted flow facilities. The program has a capacity to analyze an arterial with up to 20 intersections and allows each intersection to be treated differently.
3. Arterial Table Computer Model (ART TAB) - This template is similar to ART-PLAN, but assumes the same traffic characteristics for all signalized intersections being studied.
4. Freeway Table Computer Model (FREE TAB) - produces generalized tables for freeways.

Dade County's LOS methodology is similar to FDOT's methodology, but uses Average Week Day Traffic (AWDT) to calculate LOS rather than Annual Average Traffic (AADT). In order to use a common base to evaluate congestion on both county and state roadways, the County developed the Relative Congestion Ratio (RCR) method as part of the Congestion Management Plan/Congestion Management System (CMP/CMS) study. A Relative Congestion Ratio (RCR) is defined as the ratio between the existing volume to capacity (V/C) ratio obtained from travel demand model and the maximum V/C ratio allowed according to local conditions.

$$\text{Relative Congestion Ratio} = \frac{\text{Existing V/C Ratio}}{\text{Maximum V/C Ratio Allowed}}$$

The existing V/C ratio is obtained from the model network, and the maximum V/C ratio allowed is established by the County or state standards.

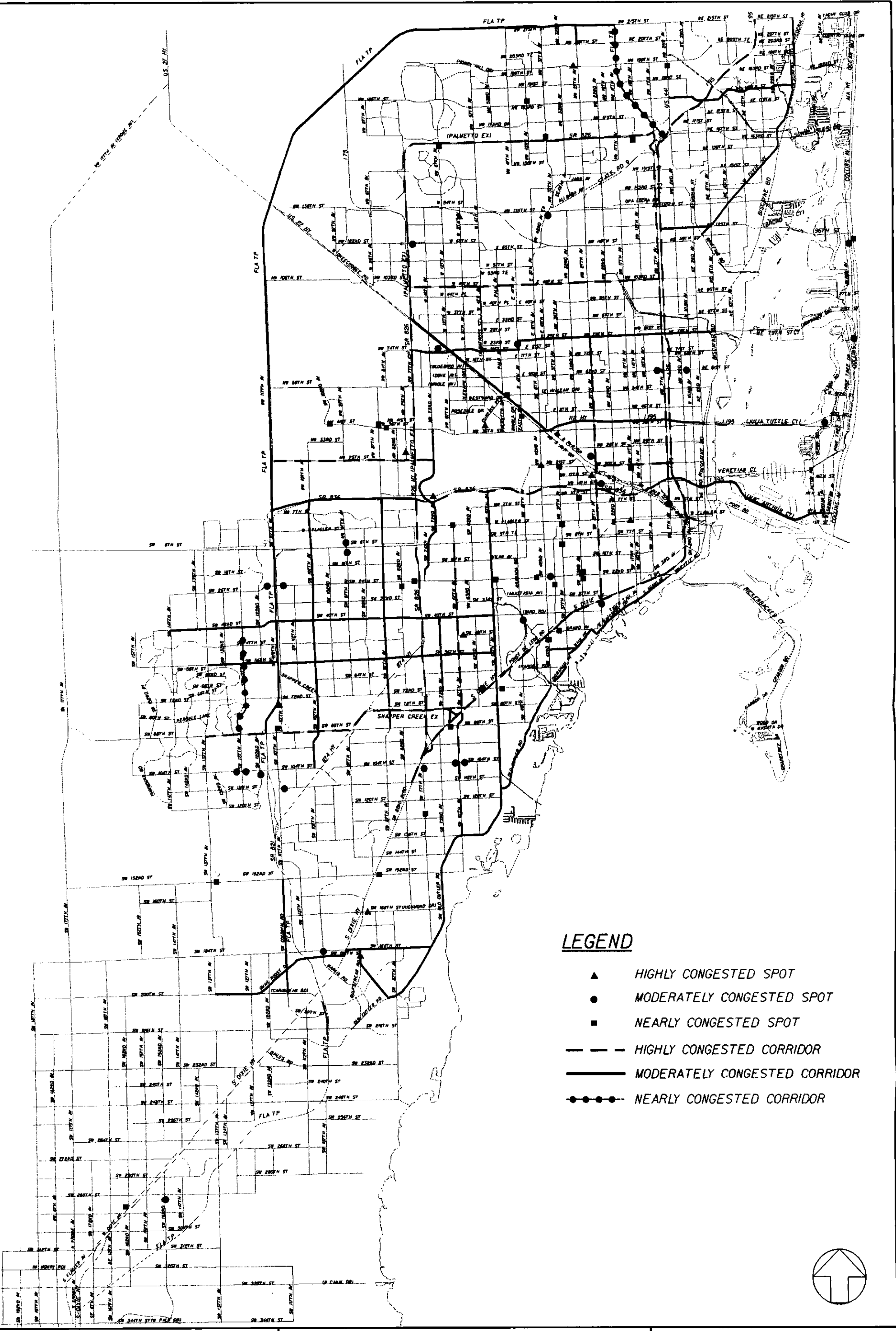
Based on the RCR measure, Dade County developed the following criteria for measuring the level of congestion on arterials and freeways:

Nearly Congested	0.9 < RCR <= 1.0
Moderately Congested	1.0 < RCR <= 1.20
Highly Congested	1.20 < RCR <= 1.50
Severely Congested	RCR > 1.51

Table 2-1 summarizes the various congested corridors in Dade County, also shown on Figure 2-1.

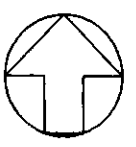
Table 2.1: Congested Corridors

	Corridor	From	To
Highly Congested Corridors			
1	SR 826 (Palmetto Express)	US 1(South Dixie Highway)	Golden Glades Interchange
2	SW 67th Avenue (Ludlam Road)	SW 136th Street	SW 8th Street
3	West 27th Avenue	US-1 (South Dixie Highway)	NW 79th Street
4	NW 7th Avenue	I-95	SR 826 (Palmetto Expressway)
5	I-95	Broward County Line	US-1 (South Dixie Highway)
6	SW 88th Street (Kendall Drive)	SW 137th Avenue	SR 874 (Don Shula Expressway)
7	SR 874 (Don Shula Expressway)	SW 88th Street (Kendall Drive)	SR 878 (Snapper Creek Parkway)
8	SR 878 (Snapper Creek Parkway)	SR 874 (Don Shula Expressway)	US-1 (South Dixie Highway)
9	US-1	SW 112th Street	I-95
10	NW 103rd Street	SR 826 (Palmetto Expressway)	NW 7th Avenue
11	SR 836 (Dolphin Expressway)	SR 826 (Palmetto Expressway)	I-95
Moderately Congested Corridors			
1	Florida Turnpike	SW 88 Street (Kendall Drive)	NW 17 Avenue
2	SW 117th Avenue	SW 200 Street	SW 152 Street (Coral Reef Drive)
3	SW 107 Avenue	SR 874	SR 836
4	SW 87 Avenue	SW 88 Street	SR 836
5	NW 72 Avenue	SW 72 Street	NW 36 Street
6	SW 57 Avenue	Old Cutler Road	SR 836
7	Ingraham/Main Highway	SW 72 Street	Grand Avenue
8	McFarlane /Bayshore Drive	Grand Avenue	SW 12 Avenue
9	Old Cutler Road	SW 200 Street	SW 72 Street (Sunset Drive)
10	W Dixie Highway	NE 125 Street	NE 215 Street
11	NE 125 Street	I-95	West Dixie Highway
12	Miami Gardens Drive	NW 2 Avenue	US-1
13	Okeechobee Road	SR 826	SR 112
14	N 74/79 Street	SR 826	US-1
15	SR 112	Okeechobee Road	NW 7 Avenue
16	SR 836	H.E.F.T	SR 826
17	I-395	I-95	Collins Avenue
18	SW 40 Street (Bird Road)	SW 147 Avenue	SW 57 Avenue
19	SW 56 Street (Miller Road)	SW 137 Avenue	SW 57 Avenue
20	Quail Roost/Caribbean Blvd.	SW 137 Avenue	Old Cutler Road
Nearly Congested			
1	SR 91 (Turnpike Connection)	Golden Glades	Florida Turnpike
2	SW 127 Avenue	SW 88 Street (Kendall Drive)	SW 40 Street (Bird Road)



LEGEND

- ▲ HIGHLY CONGESTED SPOT
- MODERATELY CONGESTED SPOT
- NEARLY CONGESTED SPOT
- HIGHLY CONGESTED CORRIDOR
- MODERATELY CONGESTED CORRIDOR
- NEARLY CONGESTED CORRIDOR



PREPARED FOR:
 DADE COUNTY METROPOLITAN PLANNING ORGANIZATION
 BY:
 PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.
 PAWA COMPLEX INTERNATIONAL INC.

SUPERARTERIAL NETWORK STUDY
 DADE COUNTY
CONGESTED CORRIDORS AND SPOTS

Figure 2.1

The following is a summary of the degree of congestion in Dade County:

Severely Congested	8 miles	Highly Congested	46 miles
Moderately Congested	141 miles	Nearly congested	45 miles

The congested spots were determined using the RCR method, and are based on roadway segments that are short (less than two miles), and isolated from congested corridors. Table 2.2 summarizes the congested spots in the County. Figure 2.1 shows the location of these spots.

Table 2.2: Congested Spots

Highly Congested Spots			
1	Miami International Airport Entrance	7	South Perimeter Road east of NW 72 Avenue (Sunset Drive)
2	SW 168 Street east of US 1	8	NW 17 Street west of NW 27 Avenue
3	Curtis Parkway North of NW 36 Street	9	SW 117 Avenue south of SW 72 Street
4	NW 79 Avenue North of NW 25 Street	10	SW 97 Avenue south of US 1
5	NW 199 Street west of NW 27 Avenue	11	SW 1 Street west of SW 17 Avenue
6	NW 62 Avenue south of Gragny Parkway	12	SW 48 Street east of SW 67 Avenue
Moderately Congested			
1	NW 37 Avenue south of NW 135 Street	16	SW 97 Avenue north of SW 8 Street
2	NW 122 Street east of SR 826	17	SW 97 Avenue south of SW 8 Street
3	Harding Avenue south of SW 92 Street	18	SW 22 Street East of 42 Street
4	NW 74 Street west of Okeechobee Road	19	SW 27 Avenue south of US 1
5	E 4 Avenue south of NW 79 Street	20	SW 72 Street west of Ponce de Leon Boulevard
6	NW 62 Street west of NW 7 Avenue	21	SW 104 Street (Killian Parkway) west of SW 127 Avenue
7	NW 62 Street west of Miami Avenue	22	SW 104 Street (Killian Parkway) east of SW 127 Avenue
8	NW 26 Street west of NW 27 Avenue	23	SW 104 Street (Killian Parkway) west of 67 Avenue
9	NW 14 Street east of NW 27 Avenue	24	SW 104 Street (Killian Parkway) east of 67 Avenue
10	W 63 Street west of Collins Avenue	25	SW 77 Avenue south of SW 104 Street
11	Alton Road south of Arthur Godfrey Road	26	SW 112 Street east of SW 117 Avenue
12	NW 7 Avenue south of NW 7 Street	27	SW 122 Avenue south of SW 104 Street
13	Alhambra south of SW 40 Street	28	SW 107 Avenue south of SW 184 Street (Eureka Drive)
14	SW 24 (Coral Way) Street west of HEFT	29	SW 152 Avenue south of SW 288 Street
15	SW 24 (Coral Way) Street east of HEFT		
Nearly Congested			
1	NW 42 Avenue (LeJeune Road) north of NW 183 Street (Miami Gardens Drive)	19	SW 24 Street west of SR 826
2	NW 2 Avenue south of NW 199 Street	20	SW 82 Avenue south of SW 24 Street
3	NW 67 Avenue south of SR 826	21	SW 22 Street east of SW 57 Avenue
4	NW 37 Avenue north of SR 826	22	SW 22 Street west of SW 42 Avenue
5	NW 12 Avenue south of SR 826	23	Madrid Avenue east of SW 57 Avenue
6	NW 62 Avenue south of Gragny Parkway	24	University Drive west of SW 42 Avenue
7	Harding Avenue south of SW 96 Street	25	SW 32 Avenue north of SW 22 Street
8	East Drive south of Okeechobee Road	26	SW 32 Avenue south of SW 22 Street
9	NW 54 Street east of Okeechobee Road	27	Grand Avenue east of US 1
10	NW 87 Avenue north of NW 41 Street	28	SW 42 Avenue south of US 1
11	NW 41 Street east of HEFT	29	SW 72 Street east of SW 57 Avenue
12	NW 87 Avenue north of NW 41 Street	30	SW 117 Avenue north of SW 88 Street
13	NW 37 Avenue south of 21 Street	31	SW 88 Street east of US 1
14	NW 17 Avenue south of NW 20 Street	32	SW 77 Avenue north of SW 128 Street
15	NW 32 Avenue south of SR 836	33	SW 152 Street east of SW 137 Avenue
16	NW 67 Avenue north of Flagler Street	34	SW 152 Street east of US 1
17	SW 37 Avenue south of Flagler Street	35	SW 97 Avenue south of SW 184 Street
18	SW 37 Avenue south of SW 8 Street	36	SW 296 Street west of US 1

2.2 Dade County Traffic Characteristics

The traffic characteristics for Dade County obtained from the 1990 Southeast Regional Planning Model-IV (SERPM), the 1994 FDOT Classification Count Summary, and the 1990 Dade County Model Validation Report are presented below. The Southeast Regional Planning model is based on the MPO County models for Dade, Broward, and Palm Beach Counties, and provided additional information such as truck distribution for Dade County.

2.2.1 Truck Trips Distribution by Time of Day

This data is based on 35 count stations in Dade County. The morning peak is found to be between 7:00 and 10 AM and afternoon peak is from 3:00 to 7:00 PM. On average, about 16 percent of daily truck trips were made during the morning peak period and about 27 and 56 percent during the afternoon peak and off-peak periods respectively. Table 2.3 summarizes the truck travel pattern in Dade County.

Table 2.3: Truck Trip Distribution by Time-of-Day

AM-Peak Hour	Off-Peak	PM-Peak Hour
16.39%	56.24%	27.37%

The 1994 Classification Counts Summary obtained from FDOT shows an average daily truck percentage on arterials ranging from 1.3 to 21 percent, and from 4 to less than 1 percent on freeways where data was collected. As can be summarized, truck traffic varies considerably by location, it is generally significantly higher in the central, northwest, and airport and airport west areas. The average truck percentage during the peak hour is approximately half of the daily truck percentages on both freeways and arterials.

2.2.2 General Trip Distribution by Time of Day

Trip distribution by time of day provides a good indication of the extent of the congestion problem by identifying the time of day and length of the congested periods. Twenty-four hour traffic counts were recorded in 1,1401 stations in Dade County. Total hourly trips were calculated by adding traffic counts observed for the same hour at all stations. Percentage of trips in time-of-day was calculated from total hourly trips and are illustrated on Table 2-4.

Figure 2.2 illustrates the trip distribution by time of day and the "peak spreading" phenomenon occurring within the county. The morning and afternoon peaks are 7:00 to 10:00 AM and 3:00 to 7:00 PM. These extended peak hour periods from the conventional 7-9 AM and 4-6 PM, are yet another indication of growing congestion in the metropolitan area. The data shows that the highest hourly volume occurs between 4:00 and 5:00 PM, and the second highest hourly volume between 7:00 and 8:00 AM. Volumes higher than 1,800,000 vph occur between 6 AM and 6 PM, with peaks during the 7 to 9 AM and the 12 to 6 PM periods. Seventy percent of the total daily trips occur between 7:00 AM and 7:00 PM, and 40 percent during the morning and afternoon peak hours.

Table 2.4: 24-Hour Traffic Count Distribution Summary

Time		Total Dade County Hourly Trips (vph)	Percent of Total Daily Trips	Period Percentage
Start	End			
0 :00	1 :00	282,913	0.84%	11.36%
1 :00	2 :00	173,586	0.52%	
2 :00	3 :00	130,806	0.39%	
3 :00	4 :00	147,733	0.44%	
4 :00	5 :00	318,881	0.95%	
5 :00	6 :00	947,498	2.82%	
6 :00	7 :00	1,814,832	5.40%	
7 :00	8 :00	2,174,739	6.47%	18.19%
8 :00	9 :00	2,046,168	6.09%	
9 :00	10 :00	1,889,518	5.63%	
10 :00	11 :00	1,905,071	5.67%	30.05%
11 :00	12 :00	1,968,276	5.86%	
12 :00	13 :00	2,008,537	5.98%	
13 :00	14 :00	2,041,746	6.08%	
14 :00	15 :00	2,171,427	6.46%	
15 :00	16 :00	2,301,624	6.85%	20.37%
16 :00	17 :00	2,383,270	7.09%	
17 :00	18 :00	2,158,556	6.43%	20.02%
18 :00	19 :00	1,787,831	5.32%	
19 :00	20 :00	1,438,191	4.28%	
20 :00	21 :00	1,211,074	3.61%	
21 :00	22 :00	1,011,375	3.01%	
22 :00	23 :00	771,714	2.30%	
23 :00	0 :00	505,782	1.51%	
Total		33,591,148	100.00%	100.00%

vph = vehicles per hour.

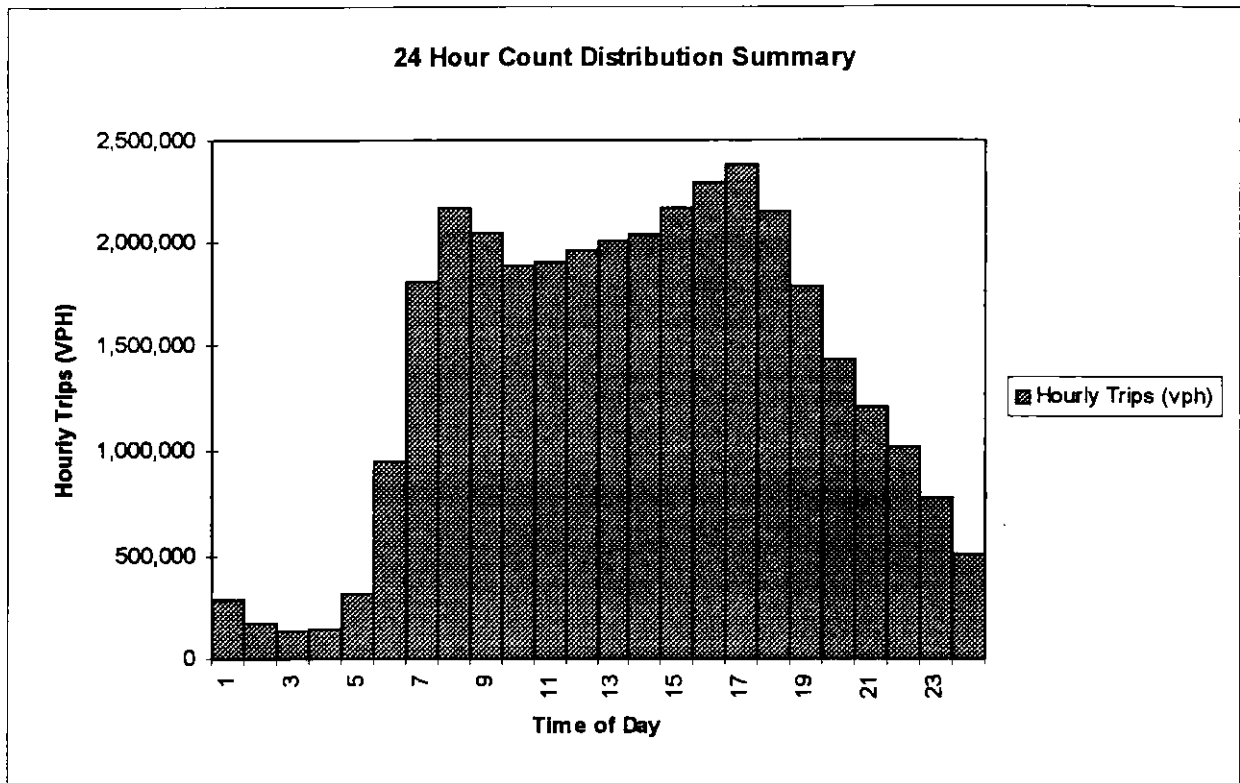


Figure 2.2: 24 Hour Count Distribution Summary

2.2.3 Initial and Constrained Speed by Facility Type

Speeds obtained from the 1990 Dade County Model Validation and the Southeast Regional Planning Model Reports give a good indication on the extent of the congestion throughout the County in the absence of actual speed surveys. Initial speed refers to design speed conditions and constrained speed refers to operational conditions, and are developed for the different types of roadway facilities in an urbanized metropolitan area. The definition for each facility type is shown on Table 2.5. Table 2.6 shows that the current volume of trips being handled by the divided arterials existing may reduce the traveling speeds by as much as 35 percent.

Regionally, speeds are reduced on all facilities by approximately 25 % during the congested periods.

Table 2.5: Definition of Facility Type

Facility Type	Definition of Facility Type
Freeway / Expressway	A facility with full control of access to give preference to through traffic (e.g., I-95, the Florida Turnpike, SR 836, etc.).
Divided Arterial and Expressway	A facility with a painted area wide enough to protect a left-turning vehicle, or with barrier or median (raised or depressed) separating opposing traffic flows, carrying most of the long trips made within and through an urban area, emphasizing traffic movement rather than land access, and carrying higher volumes than any facility except freeways. Expressways have some grade-separated intersections, fewer signals per mile than arterial, and some frontage roads (e.g. US 1, MacArthur Causeway, Crandon Blvd.).
Undivided Arterials	Similar to a divided arterial, except no painted area or physical barrier separates opposing traffic flows. Generally has more signals per mile and fewer frontage roads, serves fewer through trips, and serves more land access than divided arterial (e.g. SW 27th Ave, NW 36th St., Okeechobee Rd).
Collector	Street that "collects" traffic from local streets in the neighborhoods and channels it into the arterial system. A small amount of through traffic may be carried on collector streets, but the system primarily provides access to abutting land by carrying local traffic between or within residential neighborhoods and commercial areas, or to roadways with more capacity.
High Occupancy Vehicle (HOV) Facilities	Any facility on which traffic is restricted to a specific trip purpose, or to vehicles with a particular number of passengers (I-95 HOV lanes are the sole type of this facility in operation in Dade County).
Source: Florida Department of Transportation	

Table 2.6: Initial and Constrained Speed by Facility Type

Speeds (mph)	Freeways and Tolls	Divided Arterials	Undivided Arterials	Collectors	HOV	All Facilities
Initial	60.21	38.72	31.94	30.74	60.00	34.89
Constrained	42.29	24.24	24.98	25.35	38.94	25.84
Percent Reduction	30%	35%	22%	18%	35%	26%

2.2.4 Initial and Constrained Speed by Area Type

The initial and constrained speeds were also compared by area type in order to determine the areas with the highest level of congestion due to speed reduction. Table 2.7 shows the definition of each area type analyzed.

Table 2.7: Definition of Area Type

Area Type	Definition of Area Type
Central Business District (CBD)	An area where the predominant land use is intense business activity. Characterized by large numbers of pedestrians, commercial vehicles, loading of goods and people, a large demand for parking space, and a high degree of turnover in parking.
CBD Fringe	The portion of a municipality immediately outside the CBD. Exhibits a wide range of business activities (small businesses, light industry, warehousing, automobile service centers, and intermediate strip development, with some concentrated residential areas). Traffic in these areas generally involves trips that do not have an origin or destination within the area. Less pedestrian traffic and lower parking turnover than in the CBD. However, large parking areas servicing the CBD might be present.
Residential	An area within the influence of a municipality in which the predominant land use is residential development (small businesses may be present). Characterized by few pedestrians and low parking turnover.
Outlying Business District (OBD)	An area within the influence of a municipality that is normally separated by some distance from the CBD and its fringe area, but has the intense activity characteristic of a central area. The principal land use is business, and there may be heavy traffic or through movements, causing vehicles to operate at lower speeds than in fringe areas. Also characterized by large demand for parking and high turnover, and moderate pedestrian traffic. This category does not include off-street shopping on one side of a street only. Moderate to heavy strip development on both sides of a street should be coded OBD.
Rural	A sparsely developed area within the influence of a municipality in which the predominant land use is other than those described in the four preceding categories.
Source: Florida Department of Transportation	

Table 2.8 shows a comparison between initial and congested speeds for the different area types. The data shows that the Outlying Business Districts have the highest speed reductions followed by residential areas.

Table 2.8: Initial and Constrained Speed by Area Type

Speeds (mph)	CBD	Fringe	Residential	OBD	Rural	All Areas
Initial	26.14	31.26	35.35	34.66	34.77	34.89
Constrained	24.73	26.27	26.91	20.44	33.71	25.84
Percent Reduction	5%	16%	24%	41%	3%	26%

Comparing initial and constrained speed by both facility and area types, the impact of congestion seems to be higher on arterials providing access to commercial land uses away from the Central Business District. Most suburban areas exhibit significant levels of ever increasing congestion as reflected in the model output in Table 2.8. The greatest degradation of travel speeds are observed in

the Outlying Business District area type. It should be noted that the OBD area type and the suburbs are characterized by intense strip malls and shopping centers along their arterials.

2.3 Activity Centers

Traffic patterns are strongly influenced by the location of major attraction zones labeled as activity centers. Depending on the landuse of these centers, they can be generally divided into the following categories: special attractions, educational centers, regional retail centers, and regional hospitals. Because of their magnitude, these centers attract traffic from large, or in a number of cases, all areas of the County. Traffic is then concentrated on the arterials providing direct access to each particular center. Figure 2.3 shows the location of most of the major activity centers within Dade County, which are summarized on Table 2.9.

Table 2.9: Activity Centers

Special Attraction Centers and Areas			
1	Coconut Grove	7	Mikossukee Indian Casino
2	Miami International Airport	8	South Beach
3	Metro Zoo	9	Proplayer Park
4	Miami Seaquarium	10	Orange Bowl
5	Port of Miami	11	Miami Beach Convention Center
6	Miami Arena	12	Downtown Miami
Educational Centers			
13	Florida International University, University Park	16	Miami-Dade Community College, North Campus
14	Florida International University, Bay Vista Campus	17	University of Miami
15	Miami-Dade Community College, Kendall Campus		
Regional Retail Centers			
18	Aventura Mall	22	International Mall
19	Cutler Ridge Mall	23	The Falls
20	Dadeland Mall	24	Westland Mall
21	Florida Keys Outlet Mall	25	163rd Street Mall
Regional Hospitals and Medical Centers			
26	Baptist Hospital	33	Mercy Hospital
27	Doctor's Hospital	34	Miami Children's Hospital
28	Parkway Regional Medical Center	35	Mount Sinai Hospital
29	Hialeah Hospital	36	North Shore Hospital
30	Jackson Memorial Hospital/U.M.	37	Palmetto General Hospital
31	Cedars Hospital V.A.	38	South Miami Hospital
32	Kendall AMI		

2.3.1 Special Attraction Centers

Special attraction facilities include: entertainment centers, sports facilities, seaports and airports, and other centers. The traffic patterns in special attraction areas vary depending on the usage. For example, at South Beach and Coconut Grove, which are mainly entertainment areas, the traffic is fairly high on evenings and weekends. Sports facilities such as the Miami Arena, Joe Robbie Stadium, and the Orange Bowl sporadically generate high traffic during special events like concerts and other sporting events. The Miami International Airport and the Port of Miami generate high traffic virtually

throughout the day all year-round, with higher peaks during certain days and months of the year. Other special attractions such as the Metro Zoo, Miami Seaquarium, and the Miami Beach Convention Center generate high traffic during weekends, public holidays, and special events.

2.3.2 Educational Centers

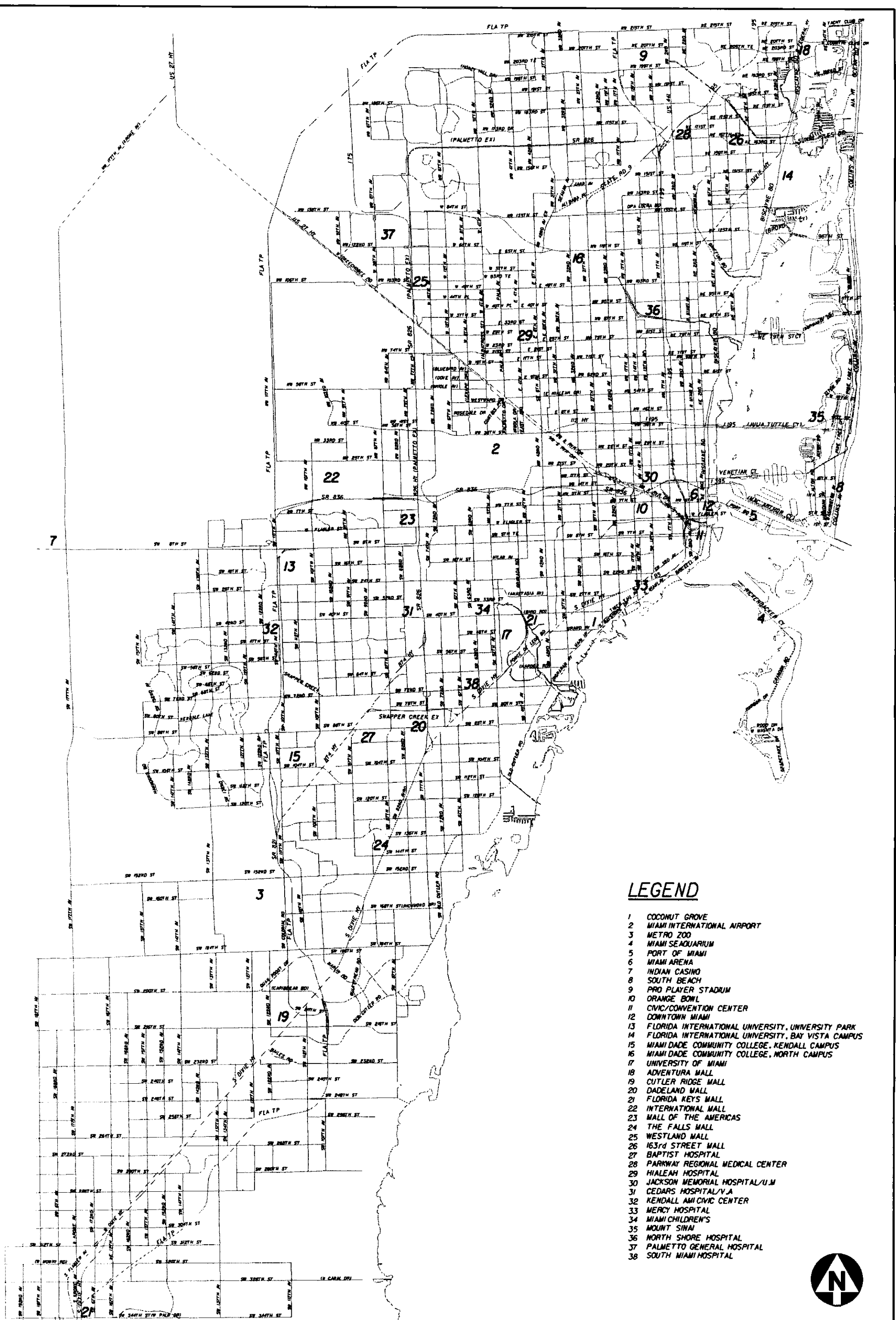
Educational centers include most universities and community colleges. While elementary, middle, and senior high schools generally generate traffic during regular peak hours, higher level, and some community-level education institutions usually generate high traffic throughout the day, including evenings, because classes are held both in the day and evenings.

2.3.3 Regional Retail Centers

Regional retail centers generate high traffic during the evening and weekend throughout the year with even higher peaks during the holiday seasons.

2.3.4 Regional Hospitals

Regional hospital traffic generation patterns depend on the size and the function of the facility. The Civic Center, where hospitals like Jackson Memorial and Cedars are located, generate high traffic during the day compared to Kendall Regional Medical Centers. This is due to high concentration of doctors' offices, special clinics, special treatment centers, and research activities. The high traffic generation occurs throughout the day, including evenings when visiting hours are in effect.



LEGEND

- 1 COCONUT GROVE
- 2 MIAMI INTERNATIONAL AIRPORT
- 3 METRO ZOO
- 4 MIAMI SEAQUARIUM
- 5 PORT OF MIAMI
- 6 MIAMI ARENA
- 7 INDIAN CASINO
- 8 SOUTH BEACH
- 9 PRO PLAYER STADIUM
- 10 ORANGE BOWL
- 11 CIVIC/CONVENTION CENTER
- 12 DOWNTOWN MIAMI
- 13 FLORIDA INTERNATIONAL UNIVERSITY, UNIVERSITY PARK
- 14 FLORIDA INTERNATIONAL UNIVERSITY, BAY VISTA CAMPUS
- 15 MIAMI DADE COMMUNITY COLLEGE, KENDALL CAMPUS
- 16 MIAMI DADE COMMUNITY COLLEGE, NORTH CAMPUS
- 17 UNIVERSITY OF MIAMI
- 18 ADVENTURA MALL
- 19 CUTLER RIDGE MALL
- 20 DADELAND MALL
- 21 FLORIDA KEYS MALL
- 22 INTERNATIONAL MALL
- 23 MALL OF THE AMERICAS
- 24 THE FALLS MALL
- 25 WESTLAND MALL
- 26 163rd STREET MALL
- 27 BAPTIST HOSPITAL
- 28 PARKWAY REGIONAL MEDICAL CENTER
- 29 HIALEAH HOSPITAL
- 30 JACKSON MEMORIAL HOSPITAL/U.M
- 31 CEDARS HOSPITAL/V.A
- 32 KENDALL AMI CIVIC CENTER
- 33 MERCY HOSPITAL
- 34 MIAMI CHILDREN'S
- 35 MOUNT SINAI
- 36 NORTH SHORE HOSPITAL
- 37 PALMETTO GENERAL HOSPITAL
- 38 SOUTH MIAMI HOSPITAL



PREPARED FOR:
DADE COUNTY METROPOLITAN PLANNING ORGANIZATION

BY:
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.
PAWA COMPLEX INTERNATIONAL INC.

SUPERARTERIAL NETWORK STUDY
DADE COUNTY
SPECIAL ATTRACTION CENTERS AND AREAS

Figure 2.3

2.4 Transit

Dade County is served by several modes of public transportation regulated by two public transit agencies:

- Metro-Dade Transit Agency (MDTA) Operating Metrobus, Metrorail and Metromover.
- Tri-County Commuter Rail Authority (Tri-Rail) operating commuter rail through Dade, Broward, and Palm Beach Counties.

This section provides background information on the services provided by the two agencies.

Metro-Dade Transit Agency (MDTA) is responsible for the planning and provision of public transit services which consist of four major components: the Metrobus fleet, the Metrorail, the Metromover, and Special Transportation Services, designed to meet the needs of the disabled riders who can not use regular transit services.

The Metrobus system has 73 routes, including one midday only, nine peak hour only routes, and six routes contracted to private operators. The Metrorail is a 21-mile light rail system extending from the Okeechobee station, its north-west terminal in Hialeah, to the Dadeland South station at its southern terminal in South Miami. Downtown area service is provided through the Government Center station where connection to the Metromover, a 4.4-mile elevated people mover, provides access to major land uses within the Central Business District. Metrorail began operation to its initial 10 stations on the south line on May 20, 1984. Five additional stations on the north line were opened in December 1984 and five in May 1985. The Tri Rail station was added to the system in March 1989.

Parking facilities, whether covered garages or open lots, are generally located in close proximity to Metrorail stations. A major concern in some key locations is that parking is not immediately adjacent to the highway, forcing drivers to negotiate local streets to reach Metrorail. Parking is available at 17 of the 21 Metrorail stations. The following stations have covered parking garages: Dadeland Mall North and South, South Miami, University of Miami, Douglas Road, and Allapatah.

Public transit is also provided by private operators called Jitneys. Jitney operators provide service on numerous roads that supplement, or partially compete with, Metrobus services. Three jitney operators (Liberty City, King Jitney and Dade Jitney) were providing public transit services prior to 1981 when the original Jitney Ordinance was adopted to regulate all jitneys operating in Dade County at that time. Another Jitney Ordinance was passed in 1985. Table 2.10 shows a listing of the present major jitney services regulated by Dade County, the number of routes operated and the general service areas. The very nature of a jitney suggests that route structures are loosely adhered to, and in most cases, they are impossible to define precisely. Therefore, the condition and routes at the time of this report may not necessarily be the same at some future period.

Table 2.10: Jitney Services

Operator	Number of Routes	Service Area
Dade Jitney	2	Northwest
Liberty City Jitney	3	Northwest
Marcello Jitney	3	Northwest
Miami Mini Service	1	Northwest
Metro Mini Bus	1	South Dade
Sun Jitney	1	Northwest
Conchita Jitney	3	North and Central Dade
Excel Transportation Inc.	1	Northeast
Miami Beach Jitney Service	1	North Dade
Spande	1	Homestead and Florida City
Zuni Transportation	1	Homestead and Florida City
Dolphin Jitney	1	Miami Beach- CBD
Fantasy Mini Bus	2	Northwest
Florida Mini Bus	1	Northeast
King Jitneys	2	Northwest
Metro Jitneys	7	Metropolitan Dade County
Mini Bus Owners Assoc.	6	Northwest Dade-Miami Beach
ORF System	2	North Miami-Miami Beach
Power Shuttle	2	North Miami
Action Jitney	1	North Dade
Mayflower Mini Bus	1	North Dade
Tri-Rail Connection	1	North Dade

The problem of unlicensed and unregulated jitney services operating along the heaviest MDTA bus routes is being addressed through enforcement of the Dade County Ordinance regulating the jitney industry.

2.4.1.1 System Operation

Metrobus operates 22 hours per day, with the first bus beginning service at 4:33 AM and the last bus returning to the garage at 2:13 AM. It should be noted that the span of services is shorter than 22 hours for most routes. Metrobus operates every day of the year. There is a total of 73 bus routes in the Metrobus system. Peak period services are from 5:30 AM to 8:30 AM and 4:30 PM to 6:30 PM. Express buses operate within the peak periods.

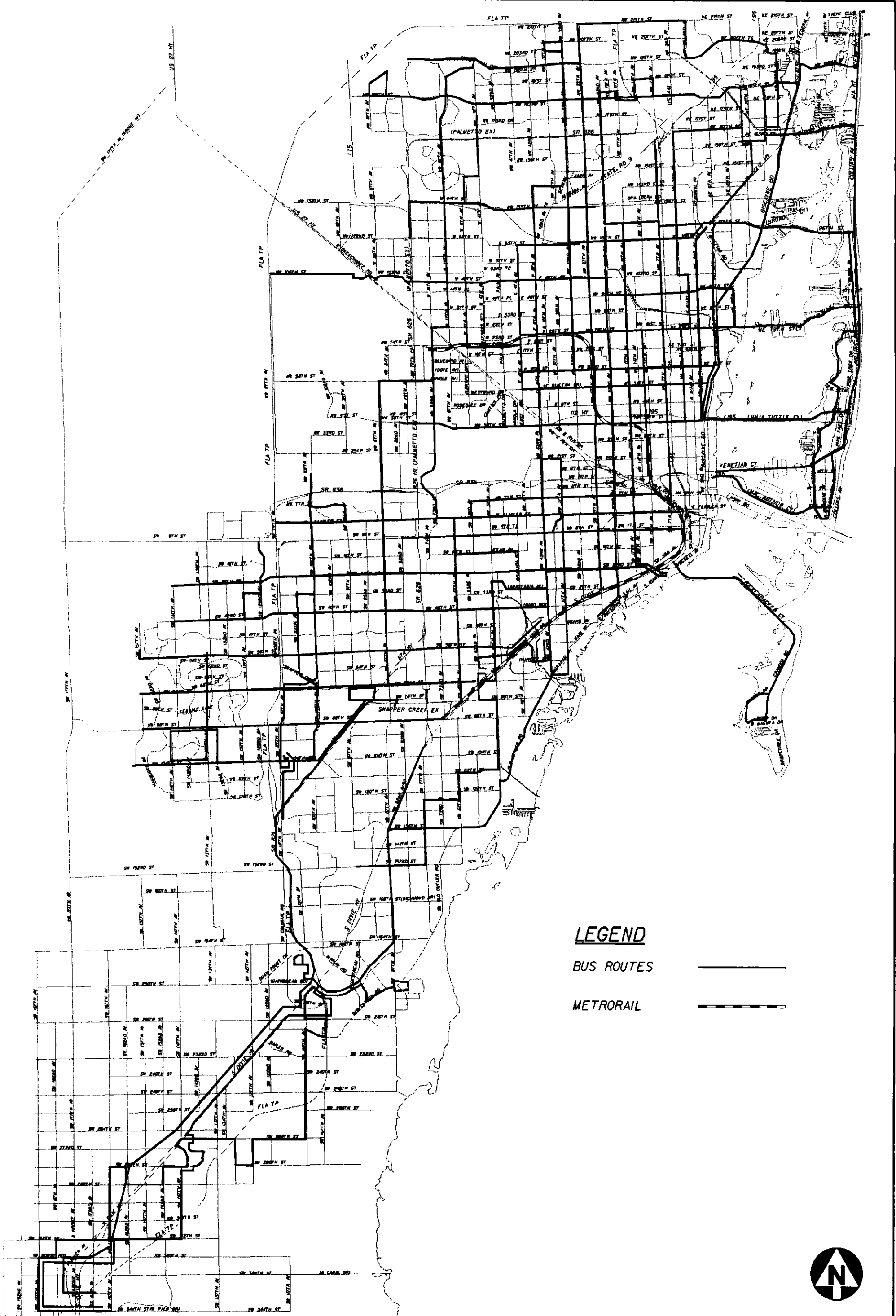
Metrorail operates every day from 5:30 AM to midnight. Metromover operates every day from 6:00 AM to midnight. Metrorail trains have a single operator on board. Metromover operation is totally automated; there is no operation on board.

In February 1997 the exclusive busway on US 1 was inaugurated.

2.4.1.2 System Performance Indicators

Metrobus operates slightly over 34 million annual miles and 2.5 million annual vehicle hours, according to Section 15 data from Fiscal Year (FY) 1995.

Figure 2.4 shows the major transit routes operated by MDTA within Dade County.



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SUPERARTERIAL NETWORK STUDY
DADE COUNTY
MAJOR TRANSIT ROUTES

Figure 2.4

3. FUTURE CONDITIONS

3.1 Development Trends

Urban pressures, including rising congestion in established areas in Central Dade, have created a westward movement of population which has resulted in what we know today as the sprawling suburbs. Over the next twenty years, the Dade County Planning Department projects that employment will increase by 45 percent, population will increase by 39 percent, school enrollment will increase by 41 percent, and occupied dwellings will increase by 31 percent. The projected population growth is expected to occur mainly in the southern and western areas of the County.

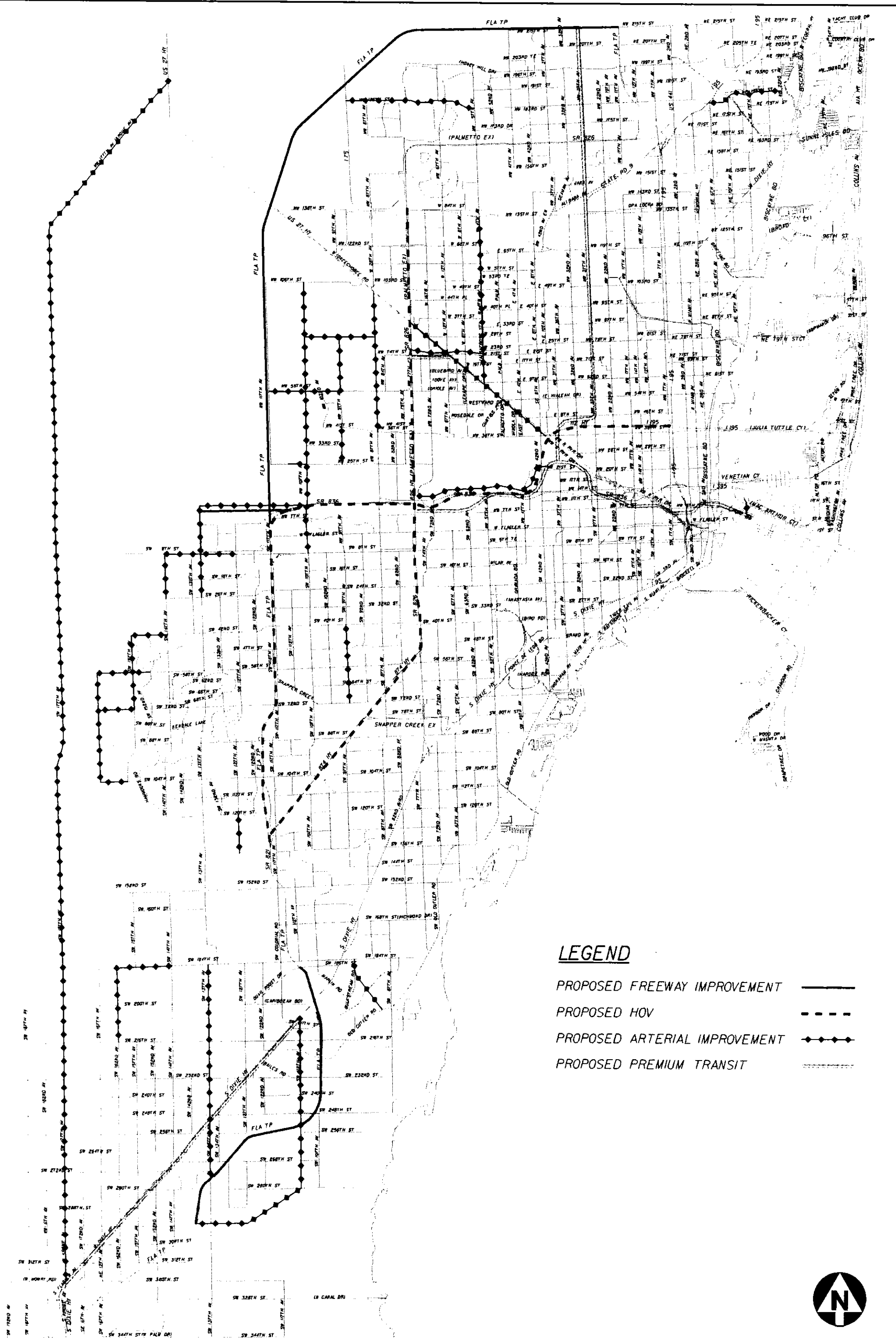
Existing residential development in Dade County varies in type and affordability from high rise condominiums to single-family homes, with examples of virtually every housing type and density spanning the range. Single-family residential lot sizes generally range from one-quarter to one-half acre, with lots in some older neighborhoods up to one acre in size. The latest trend in residential development shows a significant reduction in lot sizes resulting in higher density developments with few access and egress points. These types of development patterns create large pockets in the roadway networks where only internal development trips are served, forcing the majority of the traffic onto already congested arterials. There is no indication that this trend will not continue in the future.

As additional and comparatively less expensive land became available in the western areas of the County, large suburban developments have been created in the past decades. This trend is also expected to continue in the future, adding to the already apparent traffic congestion problems.

3.2 Proposed and Planned Transportation Improvements

The 2015 Metro Dade Long Range Transportation Plan (LRTP) addresses projected transportation needs in Dade County to the year 2015. The LRTP objectives are designed to improve transportation for residents, businesses, employees and visitors of Dade County. The projects planned include connecting major transportation centers, major cultural and civic centers, developing an innovative transportation program that eases congestion by offering alternatives to single occupant vehicles, and improving and upgrading existing infrastructure to assure the roads will be able to handle increased traffic growth. In terms of relieving congestion, several short term strategies, as well as continuing non-capital intensive approaches, include highway design and employer-based measures, such as car-pool incentives and programs that encourage the use of mass transit are identified.

The 2015 transportation plan shows a 35.2 percent increase in trips, and 33.7 percent increase in the number of personal autos compared to existing conditions. The plan lists the needs and the recommended transportation working plan that will be needed in order to meet most of these increased demands based on available funds. The improvements include widening of roads to higher numbers of lanes, limited new roadway construction, corridor improvements, and transit improvements, including Metrorail extensions. Figure 3.1 shows the major transportation improvements planned throughout Dade County.



- LEGEND**
- PROPOSED FREEWAY IMPROVEMENT
 - PROPOSED HOV
 - PROPOSED ARTERIAL IMPROVEMENT
 - PROPOSED PREMIUM TRANSIT



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SUPERARTERIAL NETWORK STUDY
 DADE COUNTY
 2015 PLANNED TRANSPORTATION
 IMPROVEMENTS

Figure 3.1

4. SUMMARY

The following is a summary of the information gathered through the data collection effort:

1. 240 miles of congested roadways, and 36 specific congested locations have been identified, ranging in congestion severity from nearly congested to severely congested.
2. Truck traffic accounts for as much as twenty percent of the total daily traffic on specific arterials within the County. Approximately 27 percent of the regional daily truck trips occur between 3:00 and 6:00 PM, the afternoon peak traffic time.
3. Dade County exhibits a high temporal commuter traffic pattern based on the fact that approximately 40 percent of the total region-wide daily trips occur during morning (7:00 to 10:00 AM) and afternoon (4:00 to 7:00 PM) peak periods. The roadways within Dade County are also heavily traveled throughout the day, approximately 30 percent of the region-wide daily trips occur between 10:00 AM and 4:00 PM, the midday period.
4. Based on model validation reports, traffic volumes account for an approximate 26 percent reduction in speed along most major arterials and freeways within the County. The percentage of speed reduction is higher on largely suburban arterials providing access to outlying business districts such as strip shopping centers.
5. A list of 39 of the major attraction centers and areas was compiled. Most of the arterials providing access to these centers show some level of congestion; many are highly congested.
6. The data show that arterials along major bus and transit routes experience some levels of congestion; again, many experience high levels of congestion.
7. Current development trends create large pockets with high density land uses forcing traffic onto already congested arterials; development areas are located along the western edge of the County. Population is expected to increase by 39 percent by the year 2015.
8. Proposed transportation improvements planned through the year 2015 will address much of the existing and foreseeable congestion problems but only within the available limited funding.

The information presented in this report clearly demonstrates an overwhelming need to improve the arterial system in Dade County. This study proposes to identify and recommend improvements to selected arterials to be part of the Superarterial Network. The goal of this network is to propose an alternative to building new roadways by capitalizing on the existing roadway system through a series of improvements in effort to alleviate and manage existing and future congestion levels within the County.

5. References

1. *Final Draft Report "Congestion Management Systems." Dade County, 1996.*
2. *Eastward Ho! Revitalizing Southeast Florida Urban Core. Report prepared by the South Florida Regional Planning Council, July 1996.*
3. *Transportation Improvement Program. Metro-Dade, 1997.*
4. *Metro-Dade Transportation Plan Long Range Element. Metro-Dade December 1995.*
5. *Southeast Regional Planning Model-IV Final Report, 1996.*
6. *1990 Dade County Model Validation Report, 1995.*
7. *FDOT Classification Counts Summary, 1994.*