The Post Hurricane
Short Range Transportation Plan

Technical Report #1 Existing Data: Compilation, Review and Analysis

Prepared For:
The Dade County Metropolitan Planning Organization

February, 1994

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Prepared For

The Dade County Metropolitan Planning Organization
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Prepared By

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February 1994

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I. EXECUTIVE SUMMARY

On August 24, 1992, Hurricane Andrew caused up to $30 billion in damage to the southern part of Dade County. The impact of Hurricane Andrew immediately altered short-term development patterns throughout Dade County. Many jobs and residents were relocated within Dade County as well as to the southern portion of neighboring Broward County. These relocations have resulted in the need for a re-evaluation of the transportation facilities necessary to support the redistributed traffic, both temporary and permanent. Future transportation improvements identified in the Dade County Transportation Improvement Program (TIP) that were based on the pre-storm employment and population forecasts may be similarly effected and may have to be modified.

Barton-Aschman Associates, Inc., under contract to the Dade County Metropolitan Planning Organization has initiated the Post Hurricane Short Range Transportation Plan Study to identify the portions of the TIP that may require revision to satisfy post hurricane transportation demands. The first task of this study is to compile, review and analyze existing data. This technical report compiled the existing data under two general categories:

a. Pre- and Post-Hurricane Land-Use and Zonal Data
   - (i) Land-Use
   - (ii) Population
   - (iii) Employment

b. Pre- and Post-Hurricane Transportation Data
   (i) Highway
   (ii) Transit
   (iii) Other Modes

Fifteen different agencies were contacted to extract existing data. A number of people at each agency were interviewed either in person or by telephone. For each data category, one source was identified as the primary source for information. They were:

a.	Pre- and Post-Hurricane Land-Use and Zonal Data	-	Dade County Planning Department (Socio economic Data for 1990, 1993, 2000 and 2015 by TAZ)
b.	Pre- and Post-Hurricane Transportation Data		
	(i) Highways		
	- Turnpike	-	Florida Turnpike Authority
	- State Highways	-	FDOT
	- County Highways	-	Dade County Public Works Department
	(ii) Transit		
	- Metrobus, Metrorail, Metromover	-	MDTA
	- Jitneys	-	MDTA
	- Tri-Rail	-	Tri-County Commuter Rail Authority

Data collection activities for the other modes of transportation were not emphasized as greatly in this study due to the lack of data availability and their relatively minor impacts on the short range transportation plan. Information obtained from FEMA, the City of Homestead and Florida City Redevelopment Plans, the Homestead Air Force Base Redevelopment Plan, and the Beacon Council Economic Redevelopment Plan reports will be used to supplement the primary data sources during subsequent study tasks.

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INTRODUCTION

This technical report has been prepared as part of ***The Post-Hurricane Short Range Transportation Plan.*** This is the first in a series of eight technical reports to be presented to the MPO as part of this study. Technical Report 1 documents the Task 1 efforts of this study. Task 1 establishes a data base of socio-economic and travel information relevant to post-and pre-Hurricane Andrew conditions through compilation, review and analysis of existing data.

This technical report is divided into four sub-sections corresponding to the four subtasks of Task 1. The first subtask is "Discovery". It documents the contacts which were made and the interviews which were conducted with transportation officials to compile information that could be used in this study. The second subtask is an inventory and compilation of land-use and zonal data which was obtained from Dade County Planning Department (DCPD), The Beacon Council, The Florida Atlantic University/Florida International University (FAU/FIU) Joint Center, Federal Emergency Management Agency (FEMA) and other sources. The third subtask is an inventory and compliation of transportation data, specifically traffic count and transit ridership data provided by the Metro-Dade Transit Agency (MDTA), Florida Department of Transportation (FDOT), Dade County Public Works Department (DCPW) and other sources. The fourth subtask is a review of the socio-economic land use and transportation data to analyze the data for consistencies and applicability to this study.

1.0 "DISCOVERY"

This subtask consisted of interviews with transportation and other relevant professionals to elucidate depth, breath, availability and readiness of existing data for Short Range Transportation Plan Study use. This subtask also provided one basis for determining what new information is available or under development as later called for in Task 2 - Compilation of New Data. Table 1 lists all of the agencies contacted either by telephone or in person as a part of this data compilation effort. It also describes the data which is available and any new information that is under development.

TABLE 1
LIST OF ALL AGENCIES CONTACTED

Agency Contacts(s)/ Contact Name(s)	Telephone #	Information/ Report(s) Obtained	Format	Type of Information					Information/Report Under Development
				Land Use	Population	Employment	Traffic	Transit	
Dade County Planning (Metropolitan Div.) - Bob Usherson - Mark Woerner	(305) 375-2835	• Socio-economic data for 1990, 1993, 2000 & 2015 by TAZ (Lotus Spreadsheet)	Diskette	✓	✓	✓			
		• "Population Estimates and Projections - Post Hurricane Andrew", Dade County; 1993	Summary Report		✓				
The Beacon Council - John Cordrey - Allan Rubin	(305) 536-8000	• "Marketing Analysis of South Dade Recovery One Year After Andrew" - Behavioral Science Research; September 8, 1993.	Report			✓			
		• "Recovery of the South Dade Business Community One Year after Hurricane Andrew" - The Beacon Council; September, 1993.	Report			✓			
		• "The Economic Impact of Hurricane Andrew on Miami/Dade County Florida - One Year after the Storm" - The Beacon Council; August 30, 1993.	Report			✓			
		• "Three Reports on the Dade County Economy" - The Beacon Council; May, 1993.	Report		✓	✓			
		• "Homestead Air Force Base Re-Use and Economic Redevelopment Implementation Plan" - Arthur Anderson & Co.; January 1, 1994	Draft Report	✓	✓	✓	✓	✓	• Final Report
MDTA - David Fialkoff - Robert Pearsall - Wilson Fernandez	(305) 637-3740	• "MDTA On-Board Survey Weighted Response Frequencies", (Metrorail, Metrobus, Metromover); CUTR, July, 1993	Draft Report					✓	

TABLE 1 (Continued)
LIST OF ALL AGENCIES CONTACTED

Agency Contact(s) Contact Name(s)	Telephone #	Information/ Report(s) Obtained	Format	Type of Information					Information/Report Under Development
				Land Use	Population	Employment	Traffic	Transit	
MDTA (Continued) - David Fialkoff - Robert Pearsall - Wilson Fernandez	(305) 637-3740	• "MDTA Transit Riderhsip Report" - September, 1993	Draft Report					✓	
		• On-board FEMA van survey results - Behavioral Science Research; July 23, 1993	Report					✓	
		• South Dade van telephone survey - Behavioral Science Research; July 22, 1993	Report					✓	
		• MDTA monthly ridership data, August 1991 to September, 1993	Reports					✓	• Ongoing publications
		• 1993 Transit Development Program	Final Report					✓	• Annual Publication
FDOT - Carl Filer - David Korros - Albert Dominguez	(305) 377-5906	• 1991 and 1992 Permanent Count Stations Map and counts	Report				✓		• 1993 Map
		• Pre and post hurricane traffic counts	Report				✓		
		• 1991 LOS Map	Map				✓		• 1993 Map
		• 1992 Functional Classification Map	Map				✓		• 1993 Map
Dade County Public Works - Walter Jagemann - Harvey Bernstein - Mohamad Hassan	(305) 375-2913	• 1991 and 1992 Permanent Count Station Map and counts (AWDT)	Report/ Map				✓		• 1993 Map
		• List of 8-hour approach count locations	Report				✓		• Periodic Updates
		• Signal Location Map	Map				✓		• Periodic Updates
FEMA - Tom Mulhall - David Lawson	(305) 526-2970	• Recovery Information System (RIS)	Diskette	✓	✓	✓			• Further Socio-economic data being added to the system

TABLE 1 (Continued)
LIST OF ALL AGENCIES CONTACTED

Agency Contact(s) Contact Name(s)	Telephone #	Information/ Report(s) Obtained	Format	Type of Information					Information/Report Under Development
				Land Use	Population	Employment	Traffic	Transit	
Dade County Office of Community Development - Shawn C. Topps	(305) 375-3428	• "South Dade Neighborhood Development Concept Plan" (Moss Plan); November, 1993	Draft Summary	✓	✓	✓	✓	✓	• Final Report
The Enterprise Foundation - David Hannon	(305) 242-9954	• "A Plan for the Homestead Pioneer Center"; September, 1993	Report	✓	✓	✓	✓	✓	
		• The Plan for the Community Redevelopment Area"; July, 1993	Report	✓	✓	✓	✓	✓	
City of Florida City - Ron Muscarella - David Frank	(305) 242-0861 (305) 242-0989	• "Vision 21 Florida City's Strategic Plan"; August 10, 1993	Report	✓	✓	✓	✓	✓	
		• Comprehensive Development Master Plan	Report	✓	✓	✓	✓	✓	
		• "The Plan of Florida City"; 1992	Report	✓					
FAU/FIU Joint Center - Tom Wilson - John DeGrove - Michele Correa - Patricia Metzger	(305) 355-5255 (305) 940-5844	• South Dade Planning and Design Work Group Meeting Minutes-October, 1992 to November, 1993	Report	✓	✓	✓	✓	✓	• Monthly Meetings in progress
		• Design for a new South Dade Newsletter - April 1993 to November, 1993	Report	✓	✓	✓	✓	✓	• Ongoing Publication
		• "A Comprehensive Corridor Development Strategy for South Dade Recovery" - Joint Center; November, 1993	Draft Report	✓	✓	✓			• Final Report
Tri-Rail - Farmazan Zeinali	(305) 728-8445	• Tri-Rail schedule before and after hurricane	Brochure					✓	
		• "Tri-Rail Passenger Audit Report"	Report					✓	• Ongoing Audit
		• "Cost and Ridership Demand Estimates for the proposed Extension of Tri-Rail Service to South Dade County" - Barton-Aschman Associates, Inc.; May, 1993	Report					✓	

TABLE 1 (Continued)
LIST OF ALL AGENCIES CONTACTED

Agency Contact(s)/ Contact Name(s)	Telephone #	Information/ Report(s) Obtained	Format	Type of Information					Information/Report Under Development
				Land Use	Population	Employment	Traffic	Transit	
Tri-Rail (Continued) - Farmazan Zeinali	(305) 728-8445	• Tri-County Commuter Rail Authority Transit Development Plan, CUTR; December, 1993	Final Report	✓	✓	✓			
		• "Tri-Rail On-Board Survey Analysis", CUTR; July, 1993	Final Report					✓	
PBS&J - Jack Schnettler	(305) 592-7275	• "Homestead Air Force Base Feasibility Study Phase 1 - Assessment of Potential Civilian Aviation Use"; October, 1993	Final Report	✓	✓	✓			
		• Florida's Turnpike Homestead Extension (HEFT) Ridership Data					✓		
		• "Status of Hurricane Issues Raised in the Governor's Task Force", FDOT; October 21, 1993							
		• "Dade County Transit Corridors Transitional Analysis" Draft Corridor Evaluation Report; December, 1992	Draft report					✓	
Engineering Science - John Martin	(813) 933-4650	• "Disposal and Reuse of Homestead Air Force Base", EIS; February, 1994	Final Report	✓	✓	✓			
CUTR - Dan Boyle	(813) 974-3120	• "MDTA On-Board Survey Analysis" CUTR; November, 1993	Draft Report					✓	• Final Report
Miami Herald - Angie Muhs	(305) 350-2111	• Hurricane Related News Articles	News Clips						

2.0 INVENTORY OF LAND-USE AND ZONAL DATA: PRE- AND POST-HURRICANE

2.1 Traffic Analysis Zone (TAZ) Data

Metro-Dade's damage assessment results revealed that approximately 47,000 housing units were lost in South Dade County due to Hurricane Andrew. This assessment was based primarily on the change in property values which occurred in South Dade County. Surveys were then used to assess the changes in vacancy rates and household size. These new vacancy rate and household size estimates were applied to post-storm housing estimates to arrive at post-hurricane estimates of population. In the four months following the hurricane, it was estimated that 101,000 persons left South Dade, with an estimated 44,000 persons moving to other areas of Dade County and about 57,000 persons leaving the county altogether.

The Dade County Planning Department, under the direction of Dr. Chuck Blowers, developed population projections adjusted for Hurricane Andrew's losses from January 1990 to the Year 2015 for Dade County using the adjusted vacancy rates and the established number of households. Rebuilding rates were estimated from Metro-Dade Building and Zoning survey data and applied to household and population estimates to determine post-Andrew household and population projections for all areas of Dade County.

A detailed listing of this data by Traffic Analysis Zone (TAZ) was obtained from the Dade County Planning Department. It included population, housing and employment information for the Years 1990, 1993, 2000 and 2015. This data is available in a Lotus

spreadsheet format and will be converted into ZDATA format. The tabular summary of this data is included in Appendix A.

2.2 Economic Redevelopment and Employment Trends

The hurricane caused many businesses to close permanently, others to close temporarily, and some businesses to relocate to other areas of Dade or Broward Counties. Conversely, the devastation created significant new demands for services and products that attracted new businesses to the area. The Beacon Council, a public/ private economic development organization, prepared a series of research study reports (through Behavioral Science Research "***Marketing Analysis of South Dade Recovery One Year After Andrew***" - September 1993; Survey date: August 1993) related to the economic redevelopment of South Dade County. The surveys for these studies were conducted in three geographic zones of South Dade. The zonal boundaries (illustrated on Figure 1) were:

Zone 1: Kendall South	-	Southwest 88th Street to Southwest 152nd Street
Zone 2: Cutler Ridge	-	Southwest 152nd Street to Southwest 212th Street
Zone 3: Homestead Area	-	Southwest 212th Street to the Monroe County Line

Some of the notable findings of this study are:

- There were approximately 8,800 businesses operating in South Dade prior to Hurricane Andrew, employing some 94,600 persons.

- Approximately 21% of the businesses that were operating in South Dade prior to Hurricane Andrew are no longer in business.

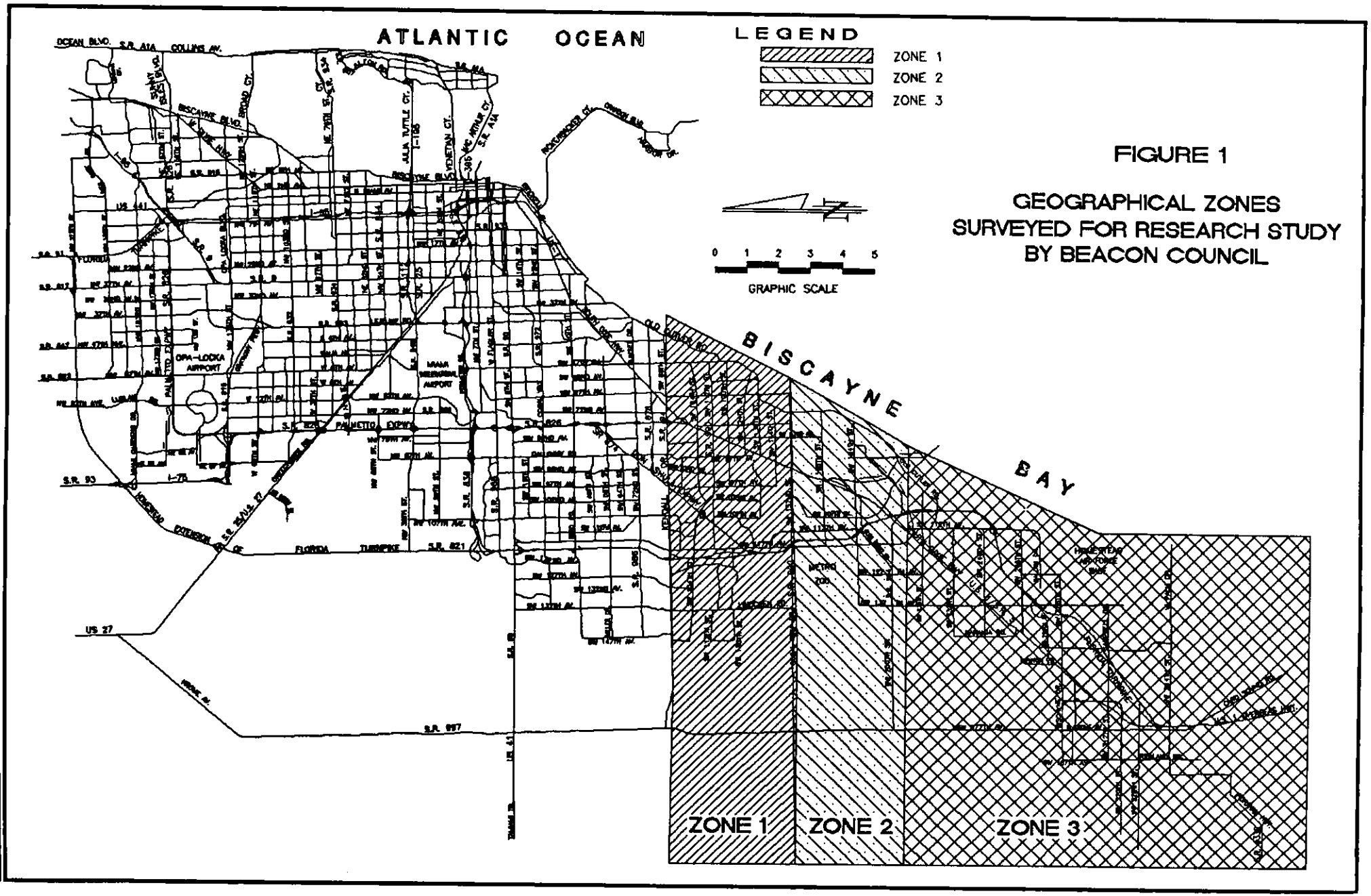


FIGURE 1

GEOGRAPHICAL ZONES
SURVEYED FOR RESEARCH STUDY
BY BEACON COUNCIL

- Surviving post-Andrew South Dade businesses currently reported full and part-time employment of approximately 75,000 persons. This represents a loss of nearly 20,000 South Dade based jobs, or 19% of the areas pre-Andrew total.

- Among the three zones in South Dade, Kendall South experienced the lowest business "death" rate, losing 10% of its businesses, while both the Cutler Ridge and Homestead areas lost approximately one-fourth of all their pre-Andrew businesses.

- A total of 280 new businesses have been established since the hurricane, generating some 2,300 new jobs for the area. This increases current employment to approximately 78,200 - still about 18% below the area's pre-Andrew employment total.

- Nearly one-half of all businesses (49%) in South Dade which were established after the hurricane were start-up or new businesses.

A detailed report of these study findings are included in Appendix A.

2.3 Housing/Community Redevelopment

The hurricane created many opportunities to reverse recent development trends through new infill projects which promote integrated, mixed-use neighborhoods and which reflect the true diversity of South Dade. Through a grant from the Florida Energy Office within the Department of Community Affairs, the Florida Atlantic University/Florida International University (FAU/FIU) Joint Center for Environmental and Urban Problems (Joint Center) is working to identify long-range strategies and options for the redevelopment

of South Dade. A portion of the Joint Center's work efforts involved the organization of the South Dade Planning and Design Work Group, which has met regularly since October 1992, to discuss specific long-range redevelopment issues in the context of sustainable development, to identify regional strategies, to support more sustainable communities, and to coordinate current long-range planning efforts. Proceedings of the South Dade Planning and Design Work Group were obtained in the form of meeting minutes and monthly newsletters.

The Joint Center is working to integrate the objectives promoted by both the state and Metro-Dade County, as well as preferences expressed by local residents (working with planning and design professionals through charrettes). This will lead to a comprehensive development strategy that focuses on full development and redevelopment within the U.S. 1 corridor where the basic infrastructure and services already exist, but which need enhancement. The issues related to strategies supporting infill development within the U.S. 1 corridor were addressed by the Joint Center through a report titled "***A Comprehensive Corridor Development Strategy for South Dade Recovery***". This report is currently in draft form. A final version of this report is anticipated to be published this year.

Another document that addresses housing/community development issues is "***The Moss Plan: South Dade Neighborhood Development Concept Plan***". This report identified specific community improvement projects in specially-targeted areas of South Dade. The eight targeted areas are shown on Figure 2. The specific community improvements range from short term improvements such as code enforcement, traffic signalization and street signage to long-term improvements, such as infill housing development.

The FEMA Recovery Information Services (RIS) is another source of information related to the pre- and post-hurricane housing situation in South Dade. In addition to

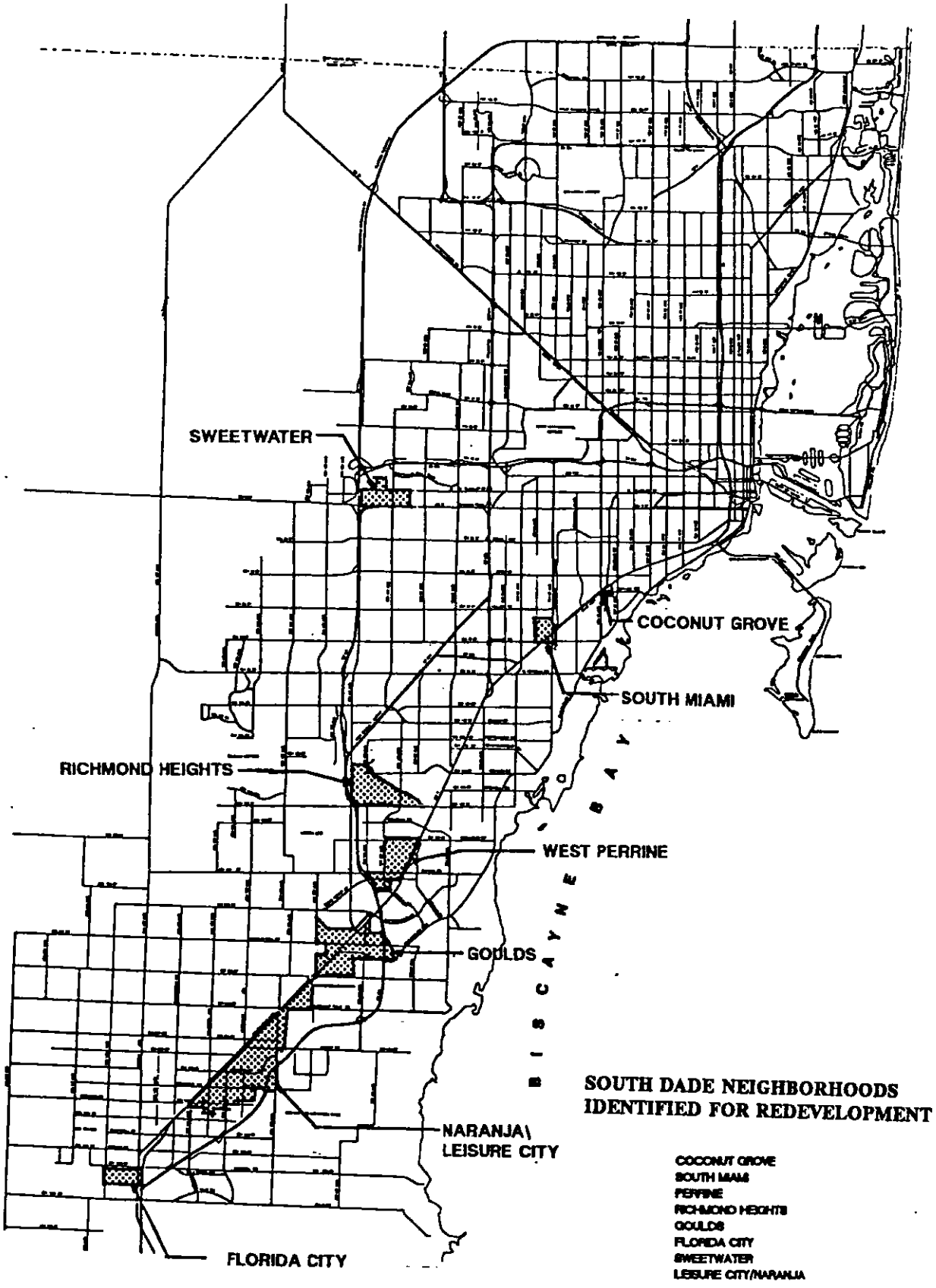


FIGURE 2: LOCATIONS OF SOUTH DADE NEIGHBORHOOD REDEVELOPMENT

Source: From "The Moss Plan: South Dade Neighborhood Development Concept Plan"

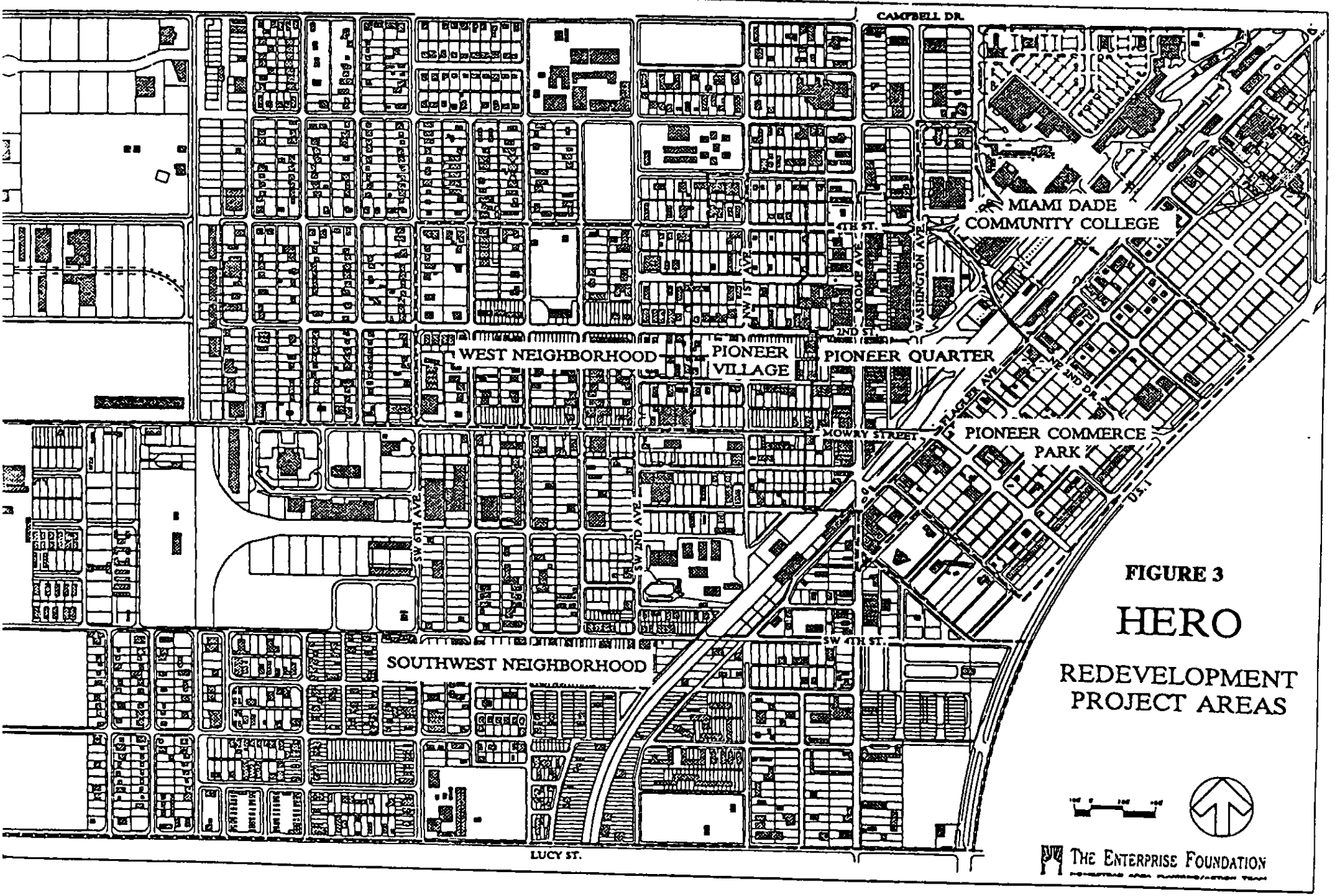
housing information, the RIS also includes population, employment and land use data from sources such as the United States Postal Service, Florida Power and Light and other local governmental agencies. This information is periodically updated by the FEMA staff. A copy of the RIS information list is included as a part of Appendix A.

2.4 Homestead Redevelopment Plan

Development in Homestead has been greatly influenced by agribusiness, the economic activities associated with Homestead Air Force Base, and (to a lesser extent) the tourism generated by traffic to and from the Keys, the Everglades and the nearby waterfront parks. When Hurricane Andrew nearly demolished the Homestead Air Force Base, it dealt a heavy blow to the Homestead economy. The 8000 persons employed at the Base contributed over $200 million annually to the area's economy. Because of a degradation in housing quality, the establishment of a Community Redevelopment Area within the City of Homestead became a necessity. In July 1993, the City of Homestead officially created the Homestead Economic and Rebuilding Organization (HERO) Redevelopment area. Figure 3 shows the HERO Redevelopment project areas. Through a number of neighborhood meetings, the needs of each project area were identified. Table 2 summarizes the HERO implementation plan.

2.5 Homestead Air Force Base (HAFB) Redevelopment/Reuse Plan

The future use of Homestead Air Force Base is a critical issue in the redevelopment of South Dade. A number of studies were conducted to determine how the base can be realigned from military to civilian use. The Beacon Council prepared a Phase I Conceptual



Source: The Plan for the Community Redevelopment Area; HERO; July, 1993

TABLE 2: FIVE YEAR ESTIMATES FOR HERO PLAN IMPLEMENTATION

7/12/93

CAPITAL / OPERATING / MANAGEMENT COSTS	1993*	1994	1995	1996	1997	TOTALS	POTENTIAL FUNDING RESOURCES (NON TIF)
1. Establishment of HERO	$50,000	$0	$0	$0	$0	$50,000	City/Enterprise
2. HERO Planning and Project Administration	$300,000	$600,000	$500,000	$300,000	$200,000	$1,900,000	State Sales Tax Revenues EDA- Technical Assist./PlanningGrants Various loans or grants, public or private
3. Pioneer Quarter **							
A. Downtown Merchandising Plan	$50,000	$0	$0	$0	$0	$50,000	EDA- Technical Assistance/Planning Grant
B. Marketing and Promotion Program	25,000	50,000	50,000	50,000	50,000	225,000	EDA- Technical Assistance/Planning Grant
C. Building Rehabilitation	500,000	2,400,000	2,400,000	2,400,000	0	7,700,000	EDA- Loan/Develop. Grant, Private, CDBG-Facade Grants, Historic Grant
D. Parking Program	0	360,000	375,000	25,000	25,000	785,000	EDA- Development Grant
E. Streetscape Improvements	600,000	600,000	0	0	0	1,200,000	Florida Department of Transportation (FDOT)- Reimbursement Grant
F. Lighting Program	0	50,000	50,000	0	0	100,000	EDA- Development Grant
G. Landscaping Program	50,000	100,000	50,000	25,000	0	225,000	EDA- Development Grant
H. Vacant Land/Building Remarketing	25,000	50,000	15,000	10,000	0	100,000	EDA- Development Grant
I. Pioneer Festival Arts Plaza	120,000	140,000	0	0	0	260,000	EDA- Development Grant, Cultural Facilities Grant Program
J. Management Program	0	50,000	50,000	50,000	50,000	200,000	EDA- Technical Assistance
Pioneer Quarter Subtotals	$1,370,000	$3,600,000	$2,990,000	$2,560,000	$125,000	$10,845,000	
4. Pioneer Commerce Park **							
A. Commerce Park Site Plan	$20,000	$0	$0	$0	$0	$20,000	EDA- Technical Assistance/Planning Grant
B. Marketing Plan	50,000	0	0	0	0	50,000	EDA- Technical Assistance/Planning Grant
C. Marketing Program	0	50,000	40,000	30,000	25,000	145,000	EDA- Technical Assistance Grant
D. Land Acquisition/Assembly	0	500,000	500,000	0	0	1,000,000	EDA- Development Grant
E. Building Rehabilitation	50,000	250,000	250,000	0	0	550,000	EDA- Revloving Loan Fund/Development Grant, Private Financing
F. Project Access & Street Improvements	0	400,000	200,000	0	0	600,000	EDA- Development Grant, FDOT- Grant, CDBG-Facilities Grant
G. Landscaping Program	10,000	30,000	30,000	10,000	10,000	90,000	EDA- Development Grant
H. Demolition Program	25,000	100,000	92,000	0	0	217,000	EDA- Development Grant, CDBG-Removal of Slum and Blight Grant,
I. Route 1 Corridor Improvements	153,000	2,350,000	0	0	0	2,503,000	FDOT Grants, Partial City Match (Use Other Funding Sources For Match)
Pioneer Commerce Park Subtotals	$308,000	$3,680,000	$1,112,000	$40,000	$35,000	$5,176,000	
5.Pioneer Village **							
A. Pioneer Village Site Plan	$25,000	$0	$0	$0	$0	$25,000	State Sale Tax Revenues
B. Land Acquisition/Assembly	0	2,125,000	0	0	0	2,125,000	State Sale Tax Revenues
C. Site Improvements/Engineering	10,000	690,000	0	0	0	700,000	State Sale Tax Revenues
D. Relocation Program	75,000	75,000	0	0	0	150,000	State Sale Tax Revenues
Pioneer Village Subtotals	$110,000	$2,890,000	$0	$0	$0	$3,000,000	
6. West Neighborhood Preservation Area **							
A. Residential Rehabilitation/Management (MOM)	$0	$760,000	$800,000	$150,000	$150,000	$1,860,000	State Sale Tax Revenues Private, CDBG- Rehab Grant, HOME
B. Temporary Relocation Assistance Program	0	75,000	75,000	0	0	150,000	HOME, CDBG
C. Land Acquisition/Assembly- Homeownership	0	80,000	80,000	0	0	160,000	HOME, CDBG
D. Neighborhood Services and Recreation Center	30,000	670,000	0	0	0	700,000	State Sale Tax Revenues
E. Sewer Service Expansion	25,000	225,000	200,000	0	0	450,000	State Sale Tax Revenues
F. Storm Drainage Improvements	0	25,000	25,000	0	0	50,000	CDBG
G. Landscaping Program	5,000	30,000	25,000	0	0	60,000	CDBG
West Neighborhood Subtotals	$60,000	$1,865,000	$1,205,000	$150,000	$150,000	$3,430,000	
7. Southwest Neighborhood Preservation Area**							
A. Residential Rehabilitation/Management	$50,000	$750,000	$750,000	$0	$0	$1,650,000	State Sale Tax Revenues Private, CDBG- Rehab Grant, HOME
B. Temporary Relocation Assistance Program	0	75,000	75,000	0	0	150,000	HOME, CDBG
C. Land Acquisition/Assembly- Homeownership	0	100,000	100,000	0	0	200,000	HOME, CDBG
D. Neighborhood Services and Recreation Center	25,000	775,000	0	0	0	800,000	State Sale Tax Revenues
E. Sewer Service Expension	25,000	225,000	200,000	0	0	450,000	State Sale Tax Revenues
F. Storm Drainage Improvements	0	50,000	50,000	0	0	100,000	CDBG
G. Landscaping Program	10,000	30,000	30,000	0	0	70,000	CDBG
South Neighborhood Subtotals	$110,000	$2,005,000	$1,205,000	$0	$0	$3,320,000	
8. Total Capital/Operating/Management Costs	$2,308,000	$14,840,000	$7,012,000	$3,060,000	$510,000	$27,720,000	

* July 1 - December 31, 1993

**See map for potential project areas

Source: The Plan for the Community Redevelopment Area; HERO; July 1993

Redevelopment Master Plan titled, "***Homestead Air Force Base Reuse and Economic Redevelopment Plan***" for the Metro-Dade Aviation Department in July, 1993. More recently, Post, Buckley, Schuh & Jernigan (PBS&J) completed a realignment study titled, "***Homestead Air Force Base Feasibility Study, Phase I: Assessment of Potential Aviation Use***" for the Metro-Dade Aviation Department. (See Figure 4). The Feasibility Study accomplished a number of objectives. The key objective related to the data collection effort for this study was the inventory and assessment of physical, environmental, and other resources at the base and within the study area bounded by Biscayne Bay, the Florida Turnpike, Palm Drive/S.W. 334th Street and S.W. 252nd Street. This inventory and assessment included existing land use data for Dade County, the City of Homestead and Florida City and post-hurricane transportation conditions and projections for roadways and railways.

An Environmental Impact Statement (EIS) for the HAFB has been completed by the firm of Engineering Science. A copy of this final report has been obtained. (See Figure 5). Additionally, the Beacon Council, with the aid of Arthur Anderson & Company, is preparing a HAFB re-use implementation plan titled, "***Homestead Air Force Base Re-Use and Economic Redevelopment Implementation Plan***". An incomplete draft of this document has been obtained from the Beacon Council. Both of these documents contain data that may be applicable later in this study.

2.6 Florida City Redevelopment Plan

Prior to the hurricane, Florida City had approximately 1800 dwelling units, 600 of which were multi-family. Following the hurricane, approximately 1200 dwelling units

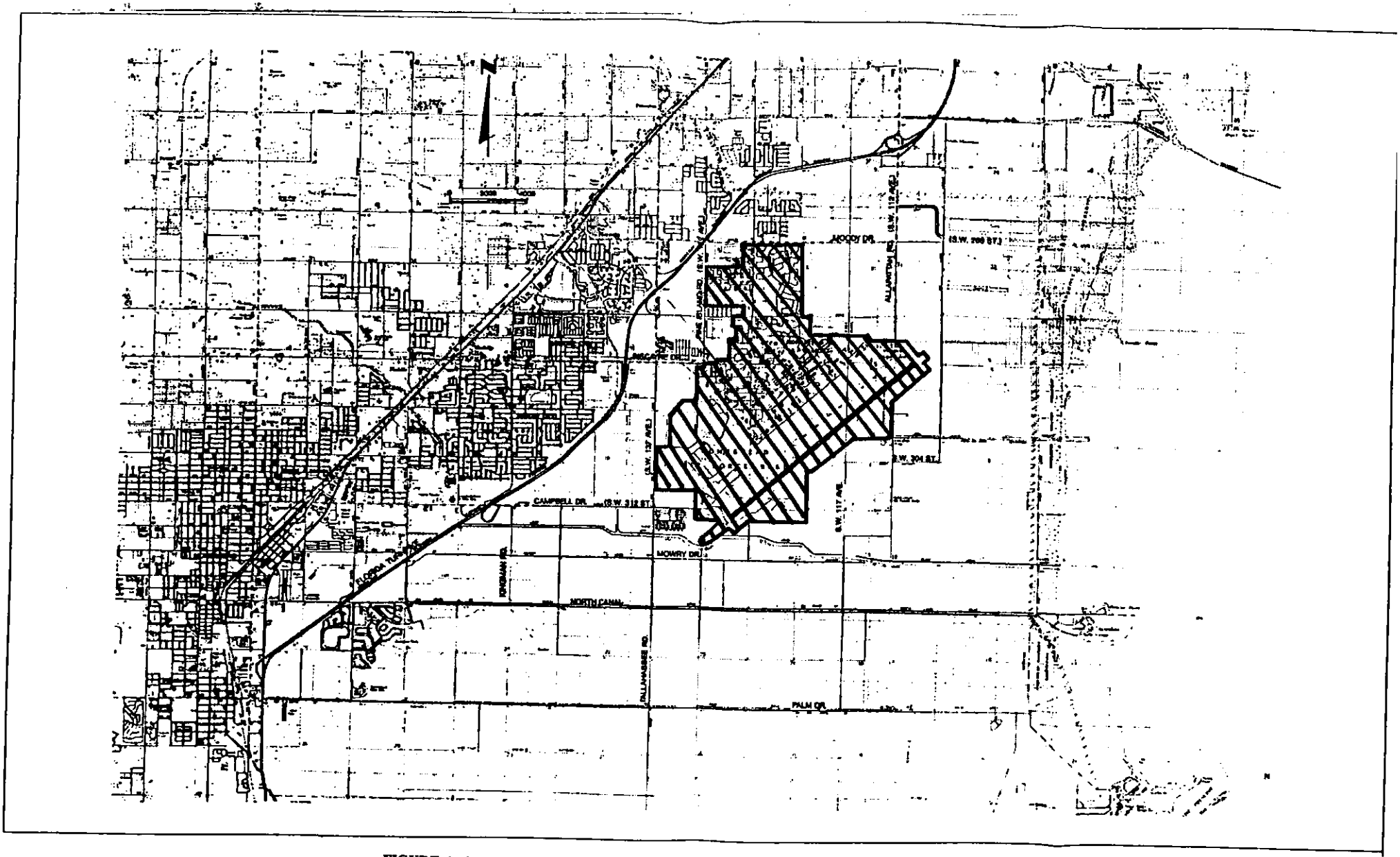


FIGURE 4: HOMESTEAD AIR FORCE BASE FEASIBILITY STUDY AREA

Source: From "Homestead Air Force Base Feasibility Study"; Post, Buckley, Schuh & Jernigan, Inc.; October, 1993

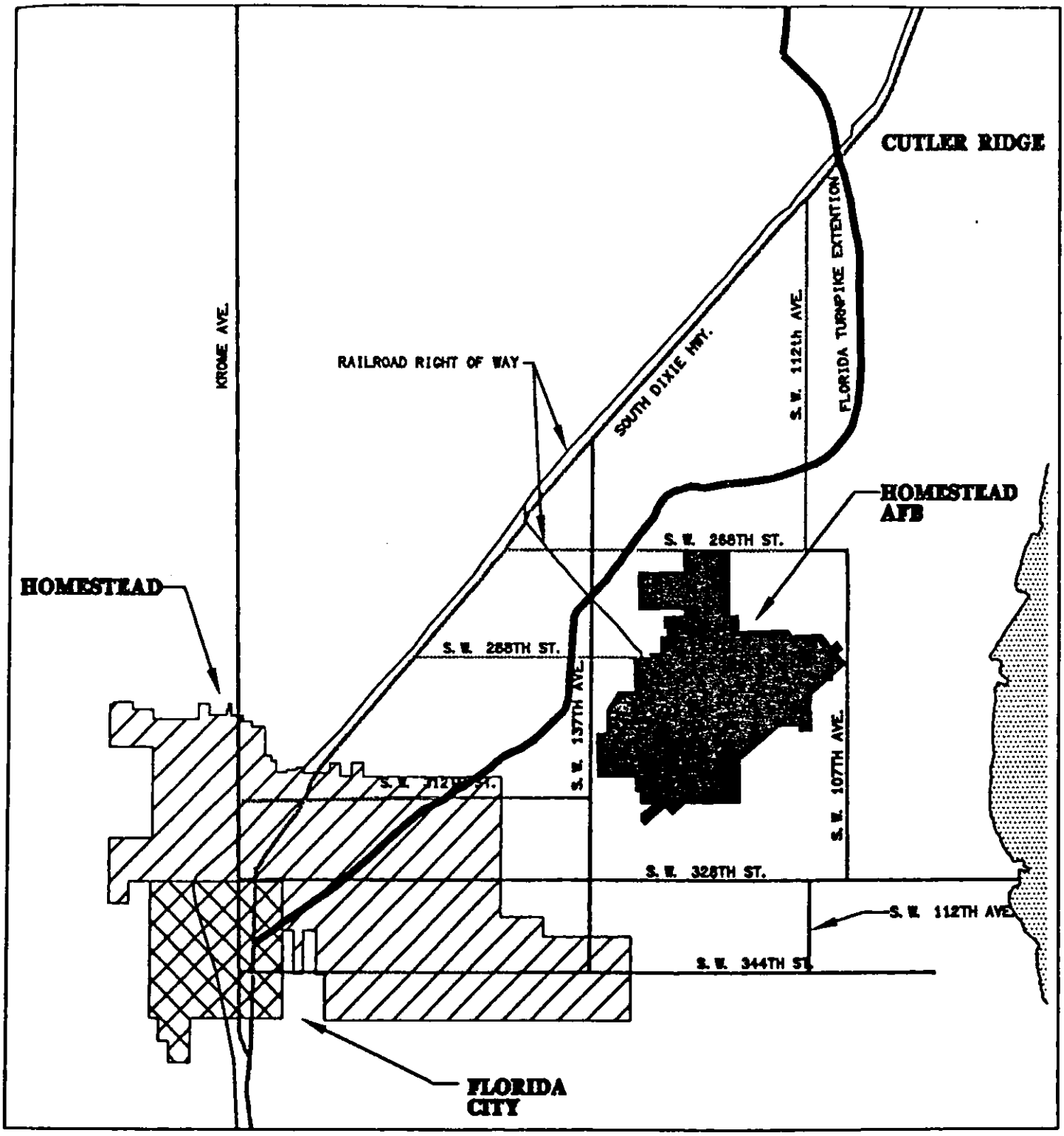


FIGURE 5: LOCATION OF HOMESTEAD AIR FORCE BASE, HOMESTEAD AND FLORIDA CITY

Source: E.I.S. Disposal and Reuse of Homestead Air Force Base, Florida; United States Air Force; February, 1994

remained habitable. As of September 1993, 830 of the damaged structures had been either repaired or rebuilt. Another 300 structures have been or will be demolished, including commercial structures. Because the city's database was destroyed by the hurricane, these numbers are based on estimates. There are a number of plans for replacing the lost housing units. There are plans to construct 246 units on 40 acres in the southern section of Florida City. Housing production should be expedited since there are many cases of people still living in substandard conditions. Masterserve, a religious organization, in conjunction with the American Steel Industry and other construction suppliers is building 199 subsidized housing units. There are joint ventures, partnerships, or housing developments, such as the Central Campesino working with a developer for rental housing. There are approximately 125 rental units, which could increase to 160, on an FPL site to be developed as a joint venture. This construction would be modular pre-fab masonry. Another modular pre-fab masonry project is Royal Homes, which will consists of approximately 100 units, providing 21 units for the elderly and 79 units as lease option. The Greater Miami Neighborhood Association is planning to construct 123 rental units. This represents a potential increase of between 793 and 828 dwelling units.

From an economic development perspective, Florida City will soon have two new shopping malls. Charter Oaks has broken ground with a 200,000 square foot, $23M project. Prime Group is about to break ground on a 250,000 square foot mall. Both are outlet malls - one on the east side of the Turnpike and the other on the west side of the Turnpike. There has been a good deal of rebuilding in the commercial area of the city, with a number of hotels and motels being rebuilt. The rebuilding and new development will bring service-related jobs to the area.

A planning study undertaken by Andres Duany and Elizabeth Plater-Zyberk Architects, Inc. described transit as a significant consideration for neighborhood commercial

redevelopment. The presence of a appropriately scheduled and regionally connected bus system within a relatively short walking distance might allow families to live with one less car. Because people will take transit if they are within five minutes of a transit stop, the plan which was developed placed all residents within five minutes of a transit stop. The study found that the number of bus routes in Florida City were minimal. Thus, the need is for one bus loop to feed an east-west line. Thus, according to the study, only two buses would be needed to satisfy the transit needs of the community.

2.7 Future Status of Farm Worker Labor Force

According to the Beacon Council Homestead Air Force Base Re-Use Plan, prior to Hurricane Andrew, 83,061 acres supported 1,623 farms and plant nurseries and 23,000 jobs in South Dade and produced $540 Million per year in sales. As a result of the storm, however, most segments of the farm industry experienced some degree of damage-- ranging from minor damage to complete destruction. This resulted in the loss of many agricultural jobs.

Further, the Beacon Council, HAFB Re-Use Plan stated that the impact of Hurricane Andrew on South Dade's crops varied considerably from crop to crop. Of the estimated 12,000 acres of land lost, the majority was in tropical fruit production. Accessory structures such offices, packing houses, equipment and irrigation systems suffered extensive damage. Nurserymen also suffered huge losses-- 95 percent of the 842 nurserymen experienced greater than 75 percent damage. While winter crop production is expected to return to pre-hurricane years in 1993-1994, nursery production is expected to recover by mid-1994, and the recovery of fruit crops is uncertain. Thus, the role that agriculture will play in the future of South Dade may be significantly reduced.

Current urban and suburban patterns of growth and development also make the future of agriculture in South Dade uncertain. According to the Metro Dade Planning Department, at the current rate of urban growth, the Dade County Urban Development Boundary (UDB) contains only enough land to accommodate projected urban growth through the Year 2013. (See Figure 6). After the Year 2013, pressure to expand the UDB will increase and urban development will begin to overtake agricultural land at a rate of 30 square miles per decade. Thus, if agriculture is to remain a significant land use in South Dade, new long term strategies must be provided for the physical and economic redevelopment of post-hurricane South Dade.

The South Dade Planning and Design Work Group is currently drafting a recovery strategy for a sustainable South Dade to focus growth and redevelopment along the U.S. 1 corridor. Preservation of rural land for agriculture is only one of the many benefits that could result from a redevelopment strategy that allows for more compact development along U.S. 1.

South Dade's agricultural industries support a large migrant and seasonal farm worker (MSFW) population. Seasonal farm workers live and work in the same county and work only seasonally (i.e. when crops are ready for harvest). Estimates of the total number of MSFW's range from 14,000 to 20,000, with a majority being male. The hurricane greatly reduced the number of job available to migrant and seasonal farm workers. However hurricane-related jobs such as debris removal and unskilled construction employed some out-of- work farm workers for a short time. Given the uncertain future of agriculture in South Dade, the number of agricultural jobs may never return to its pre-hurricane level.

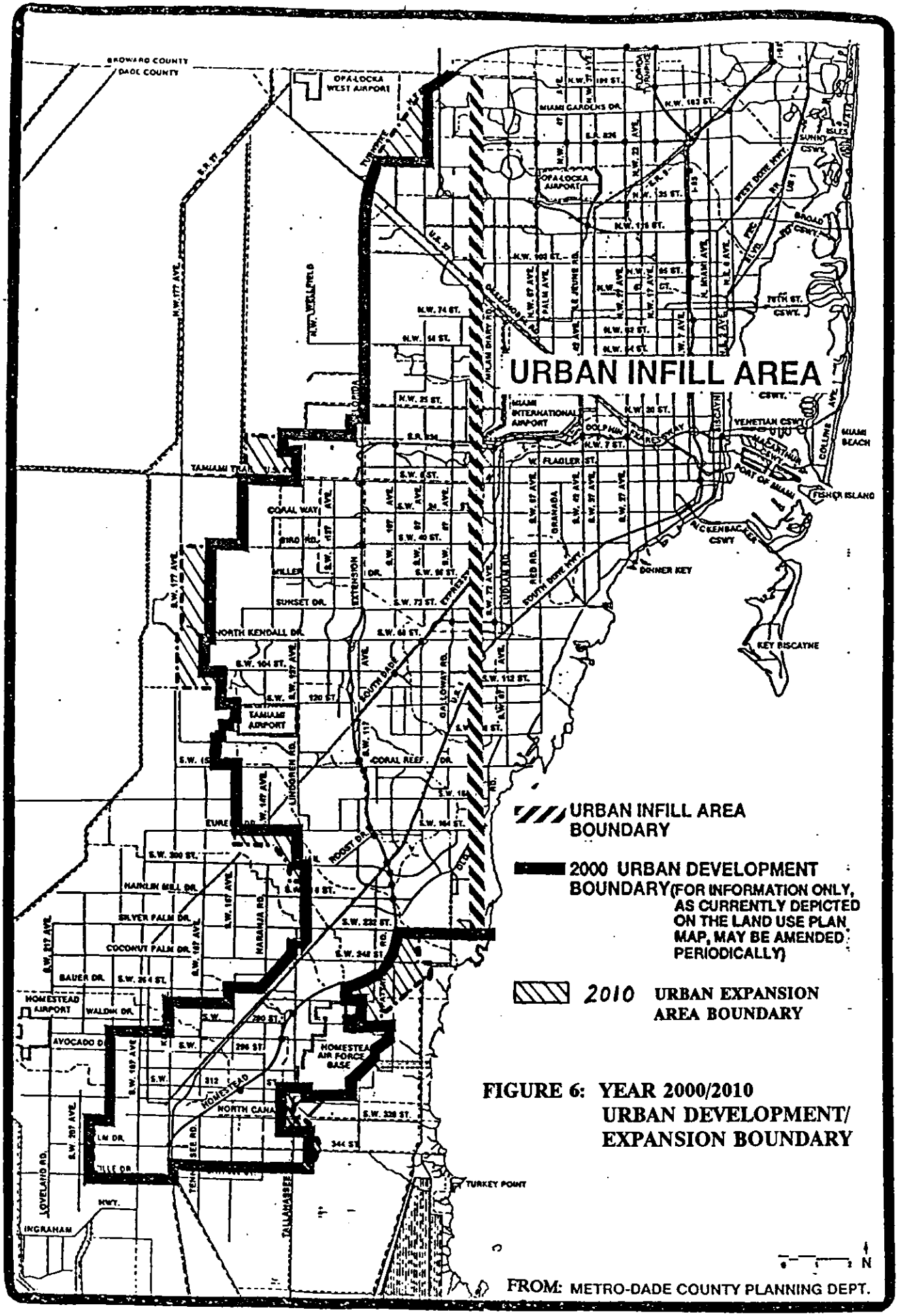


FIGURE 6: YEAR 2000/2010 URBAN DEVELOPMENT/ EXPANSION BOUNDARY

FROM: METRO-DADE COUNTY PLANNING DEPT.

Homestead and Florida City are the primary residential and employment areas for MSFWs. Many live in public housing facilities, while others live in low income housing in surrounding neighborhoods. Because Hurricane Andrew passed directly over the MSFW community, MSFW housing was especially hard hit by the storm. Furthermore, the extent of damage to housing units demonstrated that the popular practice of using mobile homes for MSFW living quarters in a hurricane-prone area is problematic.

Public housing projects which existed prior to the hurricane included the Homestead Housing Authority (HHA) Redland Center, the HHA South Dade Center, and the Everglades Community Association (ECA). As a result of the hurricane, the housing in each of the Redland and South Dade centers, which is constructed of concrete block, sustained serious damage, particularly to roofs and windows. The ECA, which consisted of mobile homes, was completely destroyed. ***The South Dade Neighborhood Redevelopment Concept Plan (The Moss Plan)*** addressed MSFW neighborhood revitalization strategies.

3.0 INVENTORY AND REVIEW OF TRANSPORTATION DATA: PRE- AND POST-HURRICANE

3.1 Highways

The highway network serves as the primary means of mobility for the population of South Dade. The destruction caused by Hurricane Andrew changed the importance and function of some highways in South Dade County. One method of quantifying these changes is by comparing traffic volume counts. Traffic volume count data was inventoried and reviewed for the HEFT, State Highway network and County Highway network. The Transportation Improvement Program (TIP) was also reviewed for proposed highway capacity improvements.

3.1.1 The Homestead Extension of the Florida Turnpike (HEFT)

The HEFT has experienced significant increases in travel demand since the hurricane. Immediately after the hurricane, the Turnpike was one of the major highways that connected South Dade with the remainder of the County. With the aid of Post, Buckley, Schuh and Jerigan, the Florida Turnpike Authority monitored traffic volumes at specific toll collection areas to measure the changes in traffic patterns before and after the hurricane. These traffic counts, as well as yearly traffic volume data for the turnpike at certain locations, has been obtained. Figure 7 summarizes the pre- and post-hurricane traffic volumes on the HEFT.

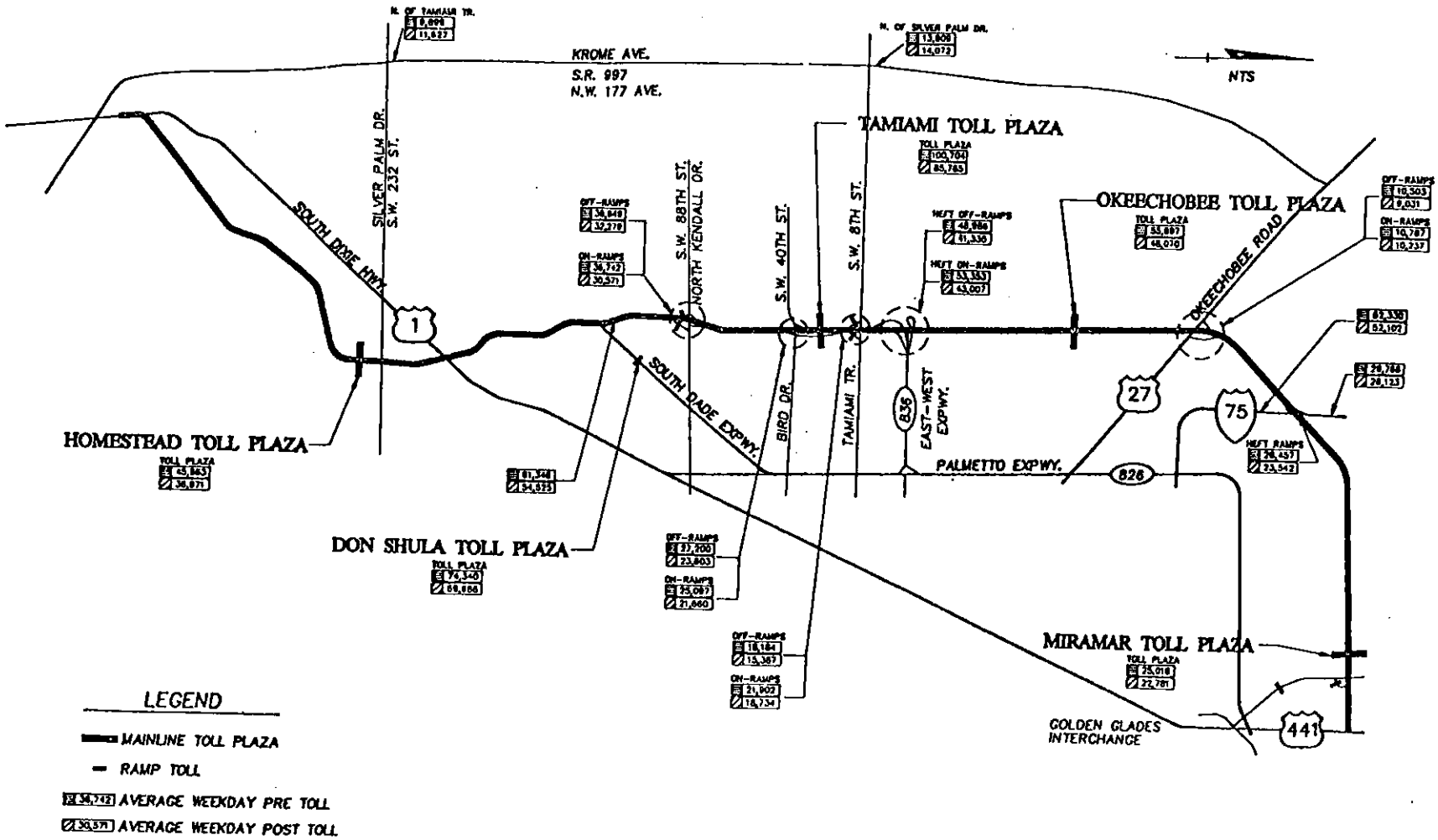


FIGURE 7: H.E.F.T. TRAFFIC VOLUME COUNTS

Source: Florida Turnpike Authority

3.1.2 State Highways

The functional classification of highways dictates the funding sources and the amount of money to be allocated for improvements. The FDOT periodically updates/revises the functional classification of the highways based on its characteristics and function as a network. The functional classification of highways in Dade County that exists and existed prior to the hurricane is represented on a map included in Appendix B.

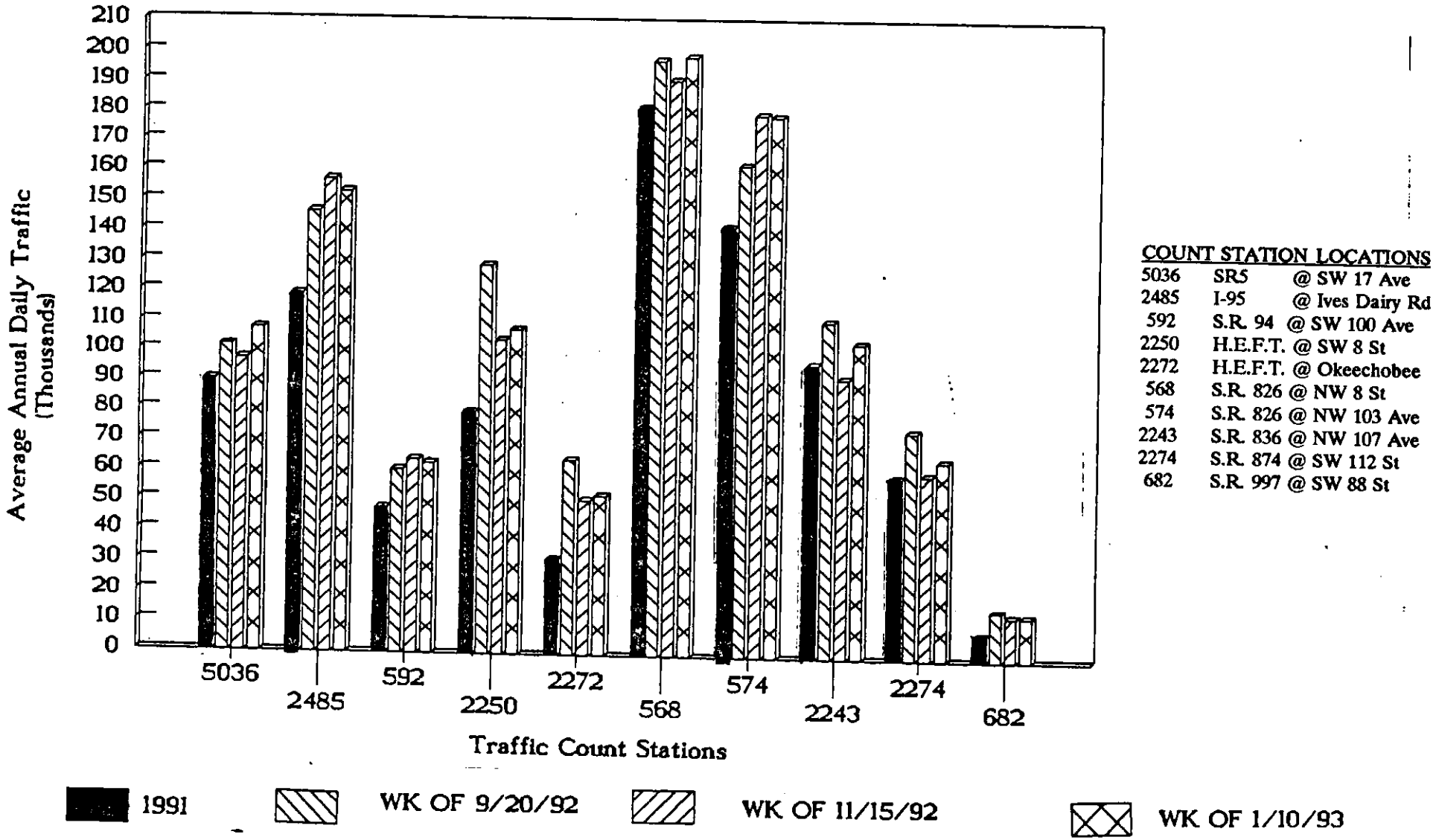
The FDOT has over 350 traffic count stations located throughout the county. Traffic counts at these stations before and after the hurricane are an indication of how traffic patterns have shifted due to the hurricane. All of the state traffic count volumes for 1992 in Dade County are included in the Appendix B. These state traffic count volumes are reported as Average Annual Daily Traffic (AADT) volumes. This is the traffic counted over the entire year divided by the number of days in the year. The traffic counts at all count locations for 1993 are yet to be published by the FDOT. However, a pre- and post-hurricane comparison at ten strategic count stations has been prepared by the FDOT. A summary of this comparison is shown on Figure 8.

3.1.3 County Highways

Another source of traffic data to document shift in the traffic patterns is the Metro-Dade County Average Weekday Daily Traffic (AWDT) count list. The county monitors traffic volumes at over 600 locations throughout the county. A list of 1992 traffic counts at these locations is included in Appendix B. 1993 traffic counts are yet to be made available by the county. Note that AWDT's provided by the county are not directly comparable to the AADT's provided by FDOT.

FIGURE 8

Normal 1991 AADT vs Post-Hurricane AADT



COUNT STATION LOCATIONS		
5036	SR5	@ SW 17 Ave
2485	I-95	@ Ives Dairy Rd
592	S.R. 94	@ SW 100 Ave
2250	H.E.F.T.	@ SW 8 St
2272	H.E.F.T.	@ Okeechobee
568	S.R. 826	@ NW 8 St
574	S.R. 826	@ NW 103 Ave
2243	S.R. 836	@ NW 107 Ave
2274	S.R. 874	@ SW 112 St
682	S.R. 997	@ SW 88 St

Source: Monitoring Post-Hurricane Traffic Data:
From FDOT District VI Planning and Programs

3.1.4 Proposed Highway Capacity Improvements

The 1994 Transportation Improvement Program (TIP) includes all of the roadway improvements for Fiscal Year 1994 to 1998 on the HEFT, State and Federal highways, and the County Roads Secondary System. This TIP has been obtained and is the document that will be evaluated for traffic volume changes which have occurred due to the effects of Hurricane Andrew. Figures 9, 10, and 11 illustrate the roadway projects proposed for capacity improvements in the 1994 TIP.

3.2 Transit

Transit services have gained increased importance in the last few years following adoption of the Intermodal Surface Transportation Efficiency Act (ISTEA) and Clean Air Act Amendments (CAAA). In Dade County, transit is of particular significance since the County was declared a non-attainment area for air quality. Furthermore, Hurricane Andrew may have more severely affected economically weaker sections of the population, possibly increasing their need for transit services. (About 15 percent of South Dade County population used some form of public transportation before the hurricane). Therefore, transit service plays a crucial role in the post-hurricane transportation system of Dade County.

Transit services in Dade County include regular local bus, heavy rail, downtown people-mover, commuter rail, and jitney components. Some of these components have been identified for expansion or changes in the 1993 Metro-Dade Transit Authority (MDTA) Transit Development Plan (TDP).

BROWARD CO.
DADE CO.

COLLIER CO.
DADE CO.

6123216
2 TO 4 LANES

6113371
4 TO 8 LANES

6114166

6113605
4 TO 8 LANES

6151840

6113290
6 TO 8 LANES

6141828
IVHS

6113642

6113828
8 TO 10 LANES

6123221
2 TO 4 LANES

6113634

6123179

6114165

6113700
4 TO 6 LANES

6141877

6123206
6123203

6123185
6123198
6123205
6123196
6123169
6114020

6123184

6113988

6123204

6113787
4 TO 6 LANES

6123178

6151882

6123212
2 TO 4 LANES

6113236
4 TO 5 LANES

6123218
2 TO 4 LANES

6114112

6114107
2 HOV LANES

6123189

6151891
6 TO 8 LANES

6151886

6114106
2 HOV LANES

6123220
2 TO 4 LANES

6113760
2 TO 4 LANES

6114105
2 HOV LANES

6151903

6151903

6123197

6114033
2 TO 4 LANES

FDOT WORK PROGRAM

PROJECTS WITH CONSTRUCTION PHASE FUNDED
1993/94 - 1997/98

- CAPACITY IMPROVEMENTS
- BRIDGE PROJECTS
- INTERCHANGE / TOLL PLAZA PROJECTS

— — — ADJUSTED 1990 CENSUS URBANIZED AREA (F/K/A FAU) BOUNDARY

..... DADE COUNTY YR. 2000 URBAN DEVELOPMENT BOUNDARY (AS OF 4/91)

L. RIOS

APRIL, 1993

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
DIVISION OF PLANNING AND PROGRAMS

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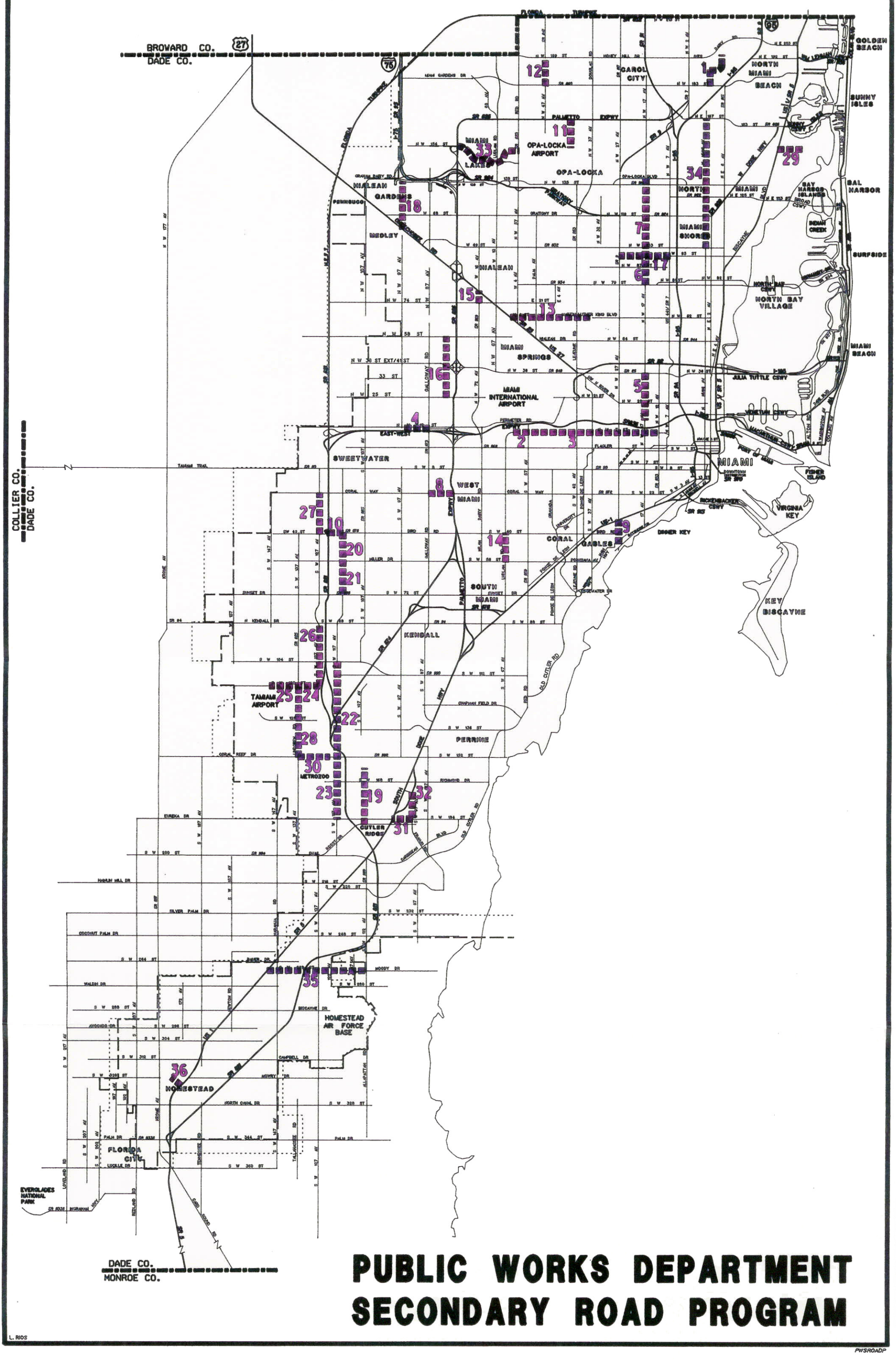
BROWARD CO.
DADE CO.
COLLIER CO.
DADE CO.
DADE CO.
MONROE CO.
GOLDEN BEACH
SUNNY ISLES
BAL HARBOR
SURFSIDE
MIAMI BEACH
NORTH MIAMI BEACH
CAROL CITY
OPA-LOCKA AIRPORT
OPA-LOCKA
MIAMI LAKES
HIALEAH GARDENS
HIALEAH
MEDLEY
MIAMI SHORES
BAY HARBOR ISLANDS
INDIAN CREEK
NORTH BAY VILLAGE
MIAMI SPRINGS
MIAMI INTERNATIONAL AIRPORT
EAST-WEST
SWEETWATER
WEST MIAMI
MIAMI
FISHER ISLAND
VIRGINIA KEY
RICKENBACKER CSWY
DINNER KEY
CORAL GABLES
SOUTH MIAMI
KENDALL
KEY BISCAYNE
TAMIAMI AIRPORT
PERRINE
METROZOO
CUTLER RIDGE
HOMESTEAD AIR FORCE BASE
HOMESTEAD
FLORIDA CITY
EVERGLADES NATIONAL PARK
TURNPIKE
FLORIDA TURNPIKE
PALMETTO EXPWY
DOLPHIN EXPWY
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I-195
I-395
I-75
I-1
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JULIA TUTTLE CSWY
VENETIAN CSWY
MACARTHUR CSWY
PORT OF MIAMI
DOWNTOWN MIAMI SR 836
BROAD CSWY
SUNNY ISLES CSWY
GRATIGNY PKWY
PENNSUCO
GRATIGNY DR
NW 135 ST
NW 119 ST
NW 103 ST
NW 95 ST
NW 87 ST
NW 79 ST
NW 74 ST
NW 64 ST
NW 58 ST
NW 38 ST
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LE JEUNE RD
DOUGLAS RD
PALM AV
RED RD
DIXIE HWY
BISCAYNE BLVD
BISCAYNE BAY
OLD CUTLER RD
CARIBBEAN BLVD
SOUTH DIXIE HWY
FLAGLER ST
SUNSET DR
MILLER DR
KENDALL DR
CORAL REEF DR
EUREKA DR
HAMLIN MILL DR
SILVER PALM DR
COCONUT PALM DR
WALDEN DR
AVOCADO DR
BECCAYHE DR
MOODY DR
CAMPBELL DR
NOMRY DR
NORTH CANAL DR
PALM DR
LUCILLE DR
CORAL WAY
CORAL REEF DR
RICHMOND DR
CHAPMAN FIELD DR
PERIMETER RD
HIALEAH DR
HIALEAH MIDDLE KING BLVD
GRAHAM BABY RD
OPA-LOCKA BLVD
MIAMI LAKES DR
MEADOW WAY
MIAMI GARDENS DR
HONEY HILL DR
TAMIAMI TRAIL
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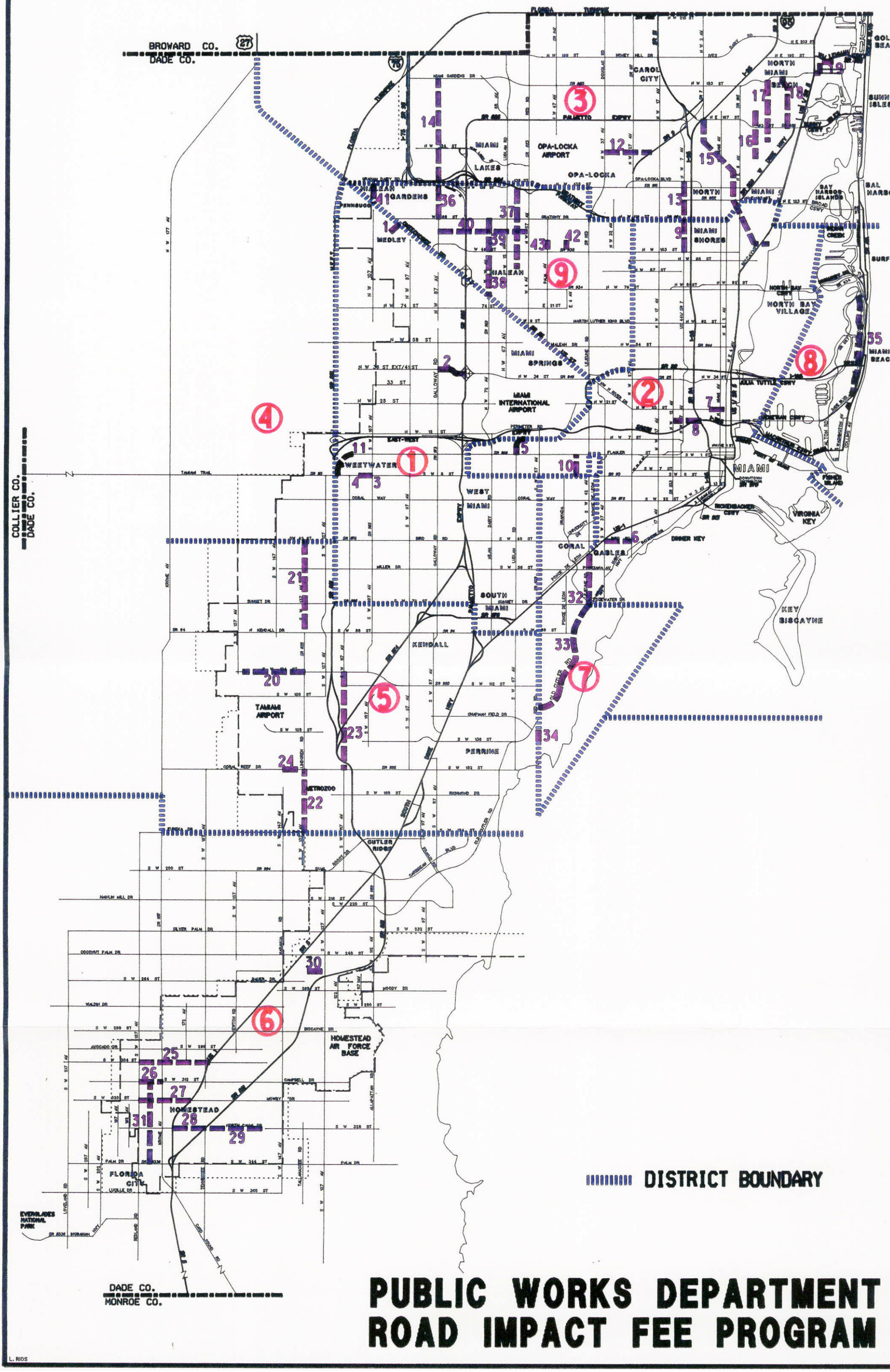
PUBLIC WORKS DEPARTMENT
SECONDARY ROAD PROGRAM
L. RIOS
PWSROADP



PUBLIC WORKS DEPARTMENT
ROAD IMPACT FEE PROGRAM

L. RIOS

3.2.1 Metrobus

Metrobus operates 73 routes, including one midday - only and nine peak hour - only routes. (See Figure 12). According to the MDTA Transit Development Plan, Metrobus operates revenue service beginning at 4:30 AM throughout the week. The total number of active MDTA buses is 574, with 505 buses required for peak operation. In addition, immediately after the hurricane, the federal government funded additional bus services to serve the hurricane-affected areas.

Under an MDTA contract with the Center of Urban Transportation Research (CUTR), Behavioral Science Research (BSR) conducted an on-board survey on Metrobus. The survey was conducted throughout May and the early part of June 1993. These surveys included two major sections: demographic information and travel behavior. These surveys also reflected the effect of hurricane-induced travel and demographic changes. Each section of the survey provided information that will be useful in identifying future performance and service needs for the Metrobus system. The CUTR report is in draft form and is anticipated to be finalized this year. A copy of this draft report has been obtained. This report identifies a 4.0 percent increase in ridership in 1993 compared to the previous year.

3.2.2 Metrorail

Metrorail is the heavy rail portion of Dade County's transit system. Metrorail provides service along 21.1 miles of rail line serving 21 stations between the Okeechobee Station in Hialeah to the northwest and the Dadeland South station to the southwest.

DADE COUNTY POINTS OF INTEREST

Airports
1 Opa-locka Airport–C7
2 Miami International Airport–I6

Attractions/ Recreational Facilities
3 Bird Kennel Club–E11
4 Calder Race Course–A8
5 Coconut Grove Playhouse–K8
6 Dade County Auditorium–K8
7 Dinner Key Auditorium –K8
8 Flagler Kennel Club–J7
9 Hialeah Pk Race Track–F6
10 Joe Robbie Stadium–A6
11 Metrozoo–R2
12 Miami Beach Convention Center–I15
13 Miami Jai-Alai–H7
14 Miami Marine Stadium–M13
15 Miami Seaquarium–N14
16 Miami Stadium–H10
17 Museum of Science –H9
18 Orange Bowl Stadium–J9
19 Pomet Jungle–P6
20 Theater of the Performing Arts–I15
21 Vizcaya–M10

Bus Terminals/ Lots
22 Golden Glades Park-Ride Lot–C10
23 Greyhound Bus Station–C14
24 Greyhound Bus Station–H7
25 Greyhound Bus Station–E16
26 Hammocks Town Ctr Park-Ride–P2
27 Homestead Park-Ride–V1
28 MDCC South Campus Park-Ride–P3
29 Metro Bus Coral Gables Terminal–L7
30 Metro Bus Downtown Terminal–K11
31 Plaza de las Americas Park-Ride–L3
32 SW 88 St/157 Ave Park-Ride–O2
33 SW 152 St/Turnpike Park-Ride–Q3
34 SW 72 St/95 Ave Park-Ride–N4
35 Sunset Drive Park-Ride–O3
36 Transways/Greyhound Bus Terminal–I11
37 West Lakes Park-Ride–O2

Government Centers
38 Fl State Emp. Agency–J9
39 General Mail Facility–I5
40 Joseph Caleb Comm Ctr–C8
41 Metro Justice Bldg–J9
42 Metro Dade Jail–J9
43 Metro Police Dept–H4
44 Metro Transit Lost & Found–K10
45 North Dade Justice Ctr–C14
46 Port of Miami –K13
47 So. Dade Gov't Center–G4
47A FDOT/FHP–I6

Hospitals
48 Kendall AMI–H3
49 Baptist Hospital–P2
50 Bascom Palmer Eye Institute/Ann Bates Leach Eye Hospital–H10
51 Humana Hospital-Biscayne–A14
52 Cedars Medical Center–I9
53 Coral Gables Hospital–M7
54 Coral Reef Hospital–Q4
55 Dade County Health Dept & Public Health Lab–I9
56 Doctors Hospital–N6
57 Hialeah Hospital–F7
58 Jackson Memorial Hospital–I9
59 Mercy Hospital–M10
60 Miami Children's Hospital–N8
61 Golden Glades Medical Ctr–B10
62 Miami Heart Institute–H15
63 Miami Lakes Hospital–H14
64 N. Dade Health Center–C8
65 North Miami General Hospital–D13
66 North Shore Hospital –F9
67 Palmetto General Hospital–D4
68 Palm Springs General Hospital–E5
69 Parkway Regional Hospital–B11
70 St. Francis Hospital–F15
71 Southeastern Medical Center–B13
72 South Miami Hospital–O6
73 South Shore Hospital–K14
74 Veterans Administration Hospital–I9
75 Victoria Hospital–J10
76 Westchester General Hospital–L5

Parks/Beaches
77 Amelia Earhart Regional Park–D7
78 Cape Florida State Park–U14
79 Crandon Pk Beach–P14
80 Greynolds Park–B14
81 Haulo Pride–V1
82 Haulover Beach Pk –C16
83 Matheson Hammock Park–P7
84 Morningside Pk –O12
85 Tamiami Park–L3
86 Tropical Park–N5

Schools/Colleges
87 Barry University–E11
88 St Thomas Univ.–C7
89 FIU North Campus–C14
90 FIU South Campus –L3
91 Fl Memorial College –C7
92 MDCC North Campus –E7
93 MDCC South Campus–P3
94 Miami Lakes Technical Education Center–C8
95 Nelson Morgan Technical Institute–R3
96 University of Miami–N6

Shopping Centers
97 Aventura Mall–B14
98 Bal Harbour Shops –O15
99 Bayside Marketplace –I16
100 Central Shopping Plaza–I7
101 Concord Shopping Center–M3
102 Cutler Ridge Mall–S4
103 Dadeland Mall–O4
104 International Mall–I4
105 Lincoln Road Mall–I15
106 Mall of the Americas–J8
107 Mayfair in the Grove–M9
108 Miracle Mile–L7
109 Northside Shopping Plaza–P9
110 Omni Int'l Mall –I12
111 Perrine Plaza–R6
112 Skyview Mall–B13
113 163 Street Mall–C13
114 The Falls Shopping Center–Q4
115 Town and Country Mall–O3
116 Westchester Shop Center–M4
117 Westland Mall–E5

METRORAIL STATIONS AND SERVING ROUTES

Dadeland South: 1, 52, 73
Dadeland North: 1, 38, 87, 38, 104, KAT, Zoobus
South Miami: 37, 48, 52, 57, 72
University: 48, 52, 56
Douglas Road: 37, 40, 42, 48, 65X, J
Coconut Grove: 27
Vizcaya: 12, 17, 24
Brickell: 6, 8, 9 Brickell Shuttle
Government Center: all downtown bus routes within walking distance
Overtown/Arena: 2, 7, A
Culmer: 77
Civic Center: F, 12, 21, 22, 32
Santa Clara: 12, 21, 22, 32, F
Allapattah: 12, 21, 36, J
Earlington Heights: 17, 22, 95
Brownsville: 27, 54
M. Luther King, Jr.: 27, 62
27 Ave/Marlins Max
Northside: 12, 21, 27, 32, L
Tri-Rail: 42, L
Hialeah: 28, 29, 37, 54, L
Okeechobee: 54, 73, 87

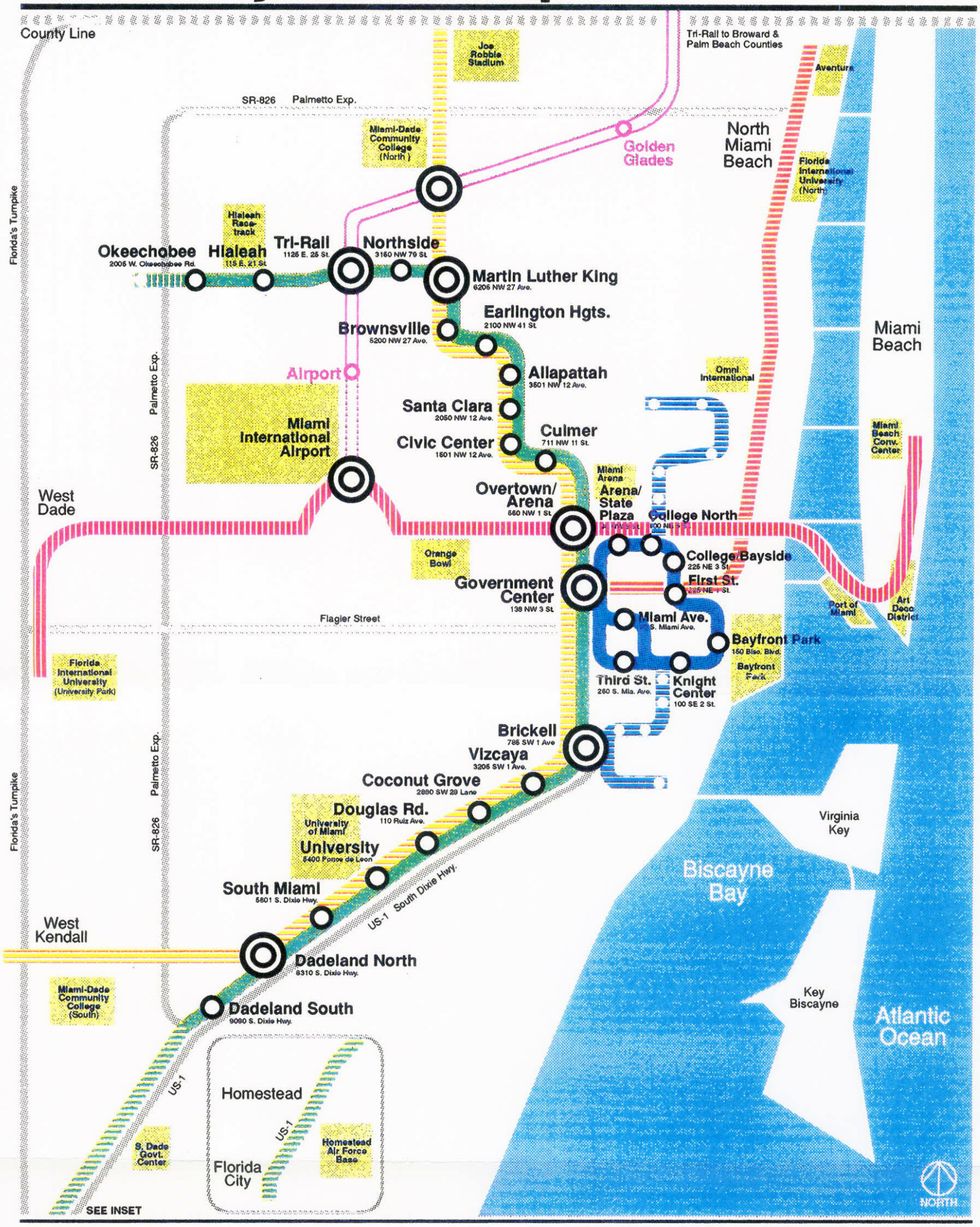
On-board surveys on Metrorail were also conducted by BSR on Tuesday, May 4, Wednesday, May 5, Thursday, May 6 and Tuesday May 11, 1993. This survey like the one for the Metrobus, comprised two major sections: demographic information and travel behavior, providing information that will be useful in identifying future performance and service needs for the Metrorail system. The Metrorail CUTR report is in draft form and is anticipated to be finalized this year. A copy of this draft report has been obtained. The report concludes that ridership increased by 6.8 percent compared to ridership one year ago. The Metrorail alignment and station locations are shown on Figure 13.

3.2.3 Metromover

Existing Metromover service includes a 1.9 mile double track loop, fully automated people-mover system that services as the downtown component of Metrorail. Behavioral Science Research conducted an on-board survey on Tuesday May 11, and Wednesday, May 12, 1993. This survey (similar to the surveys for Metrobus and Metrorail) collected demographic and travel behavior information. This information will be useful in identifying future performance and service needs for the Metromover system. The Metrorail CUTR report is also in draft form and is anticipated to be finalized this year. A copy of this draft report was obtained. The report concludes that ridership on Metromover has decreased by 30.3 percent compared to the previous year. This drop in ridership is attributed to reduced service being provided during construction activity on the Metromover extensions. The outer loop has been closed frequently. On weekends, the entire system is shutdown. The system is shutdown at 8:00 PM on weekdays. Ridership is expected to rebound when full service is resumed later this year when the extensions are scheduled to open. Figures 13 shows the Metromover alignment and extensions.

Metro System Map

METRO-DADE TRANSIT



Legend

Current System

Future Lines

Transfer Station

Green Line
Kendall to Downtown Miami and Hialeah

Blue Line (light rail)
Downtown Business District Loop

Red Line
West Dade to Downtown Miami and Miami Beach

Extensions
To Homestead/Florida City and the Palmetto Exp.

Extensions
To Omni International, Brickell Business District (Opening 1994)

Yellow Line
West Kendall to Downtown Miami and North Dade

Orange Line
Downtown Miami to North Miami Beach

Tri-Rail System
Dade, Broward and Palm Beach Counties

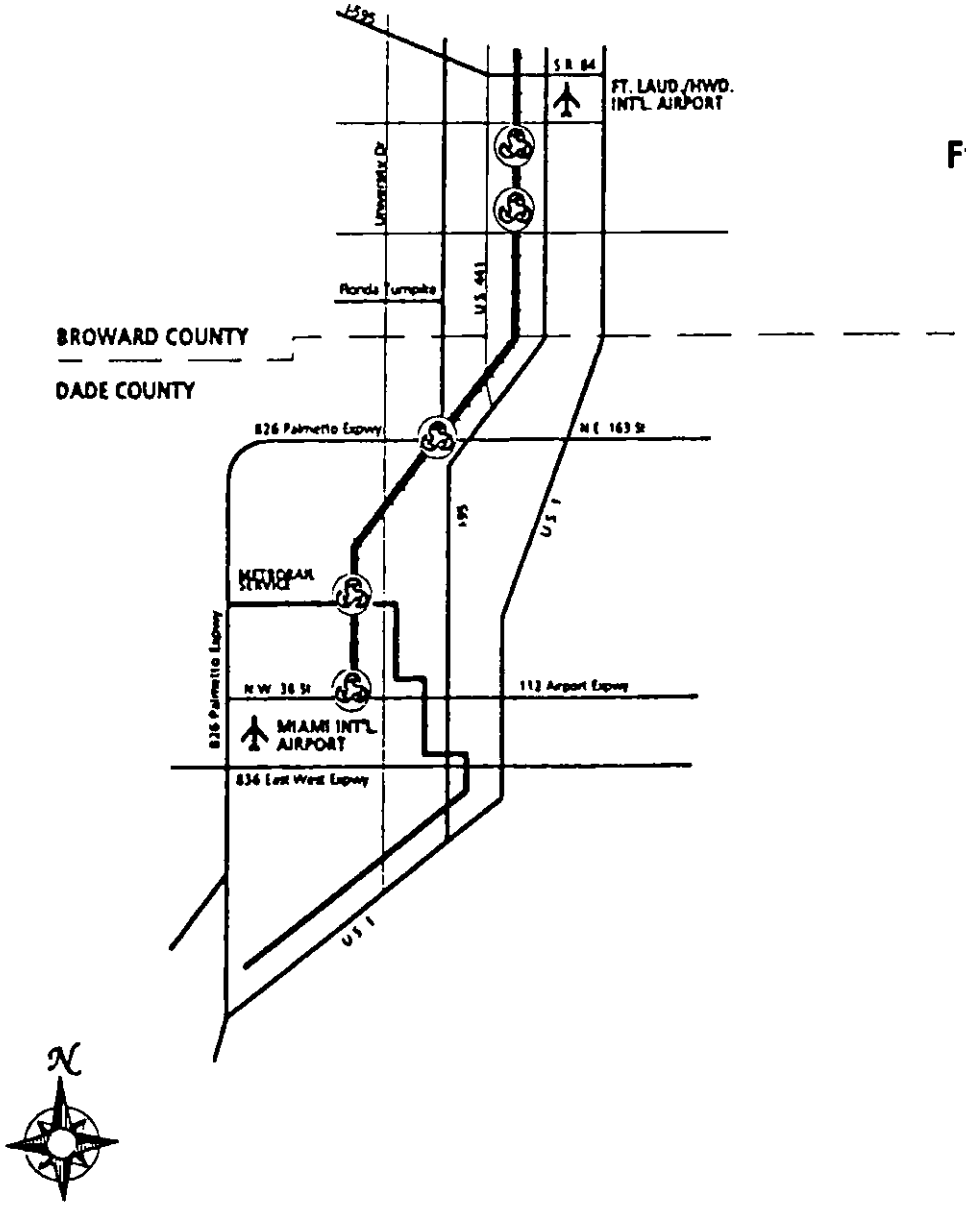
3.2.4 Tri-Rail

Tri-Rail is the commuter rail transit system that connects Palm Beach, Broward and Dade Counties. Tri-Rail shares the CSX tracks. The Tri-County Commuter Rail (TRI-Rail) system consists of 67 route miles along 15 stations. Service is offered seven days a week. Tri-Rail ridership has increased steadily since commuter rail service began in January of 1989. Ridership increased after the hurricane. A feasibility study of extending Tri-Rail service from its current terminus to South Dade County has been completed. Tri-Rail Authority provided ridership information from 1989 to 1993. A summary of this data is included in Appendix C. Figure 14 illustrates the alignment of Tri-Rail in south Broward and Dade Counties.

3.2.5 Jitneys

A FEMA-sponsored mini-van service serving South Dade County was established as a free transportation service by MDTA in September 1992, for residents adversely affected by Hurricane Andrew. Two research studies (which were conducted by Behavioral Science Research) were conducted in May-July 1993 to evaluate the mini-van service and to determine whether the service should be modified or expanded. These research efforts were also sponsored by FEMA with funds from the federal government. Both of these studies demonstrated the need to maintain the current level of van service to the South Dade County area. (A summary of findings from these two reports is included in Appendix C.) The free FEMA sponsored mini-van service has since ceased operations.

FIGURE 14: TRI-RAIL ALIGNMENT IN SOUTH BROWARD AND DADE COUNTIES



Ft. Lauderdale Airport Station

Hollywood Station

Golden Glades Station

Metrorail Station

Miami Airport Station

Source: 1993 Tri-Rail On-Board Survey Analysis; CUTR; July, 1993

3.2.6 Proposed Transit Expansion

The 1993 MDTA Transit Development Program identified a number of system improvements to the transit network. They consisted mainly of the expansion of the Metromover Service in downtown Miami, revisions to existing Metrobus routes, increases in levels of service (mostly Metrobus) and the addition of new routes to expand the geographic service area. With Metromover extensions to the Omni and Brickell areas scheduled to be inaugurated by mid-1994, some rerouting of downtown service is expected to be implemented.

Additionally, sixteen capital improvement projects are identified for the next five years and are already part of the TIP, along with the bus fleet replacement plan. One of the new routes to be added as part of the Metrobus expansion is the South Dade Busway. Phase 1 of the busway project includes the section from Dadeland to Cutler Ridge. Phase 2 extends the busway from Cutler Ridge to Homestead. At the present time, Phase 1 design and construction has been funded. Phase 2 has not been funded except for right-of-way acquisition. This project is estimated to cost $18 million. The construction is to begin in March 1994, and the busway is anticipated to be opened for public use in early 1996.

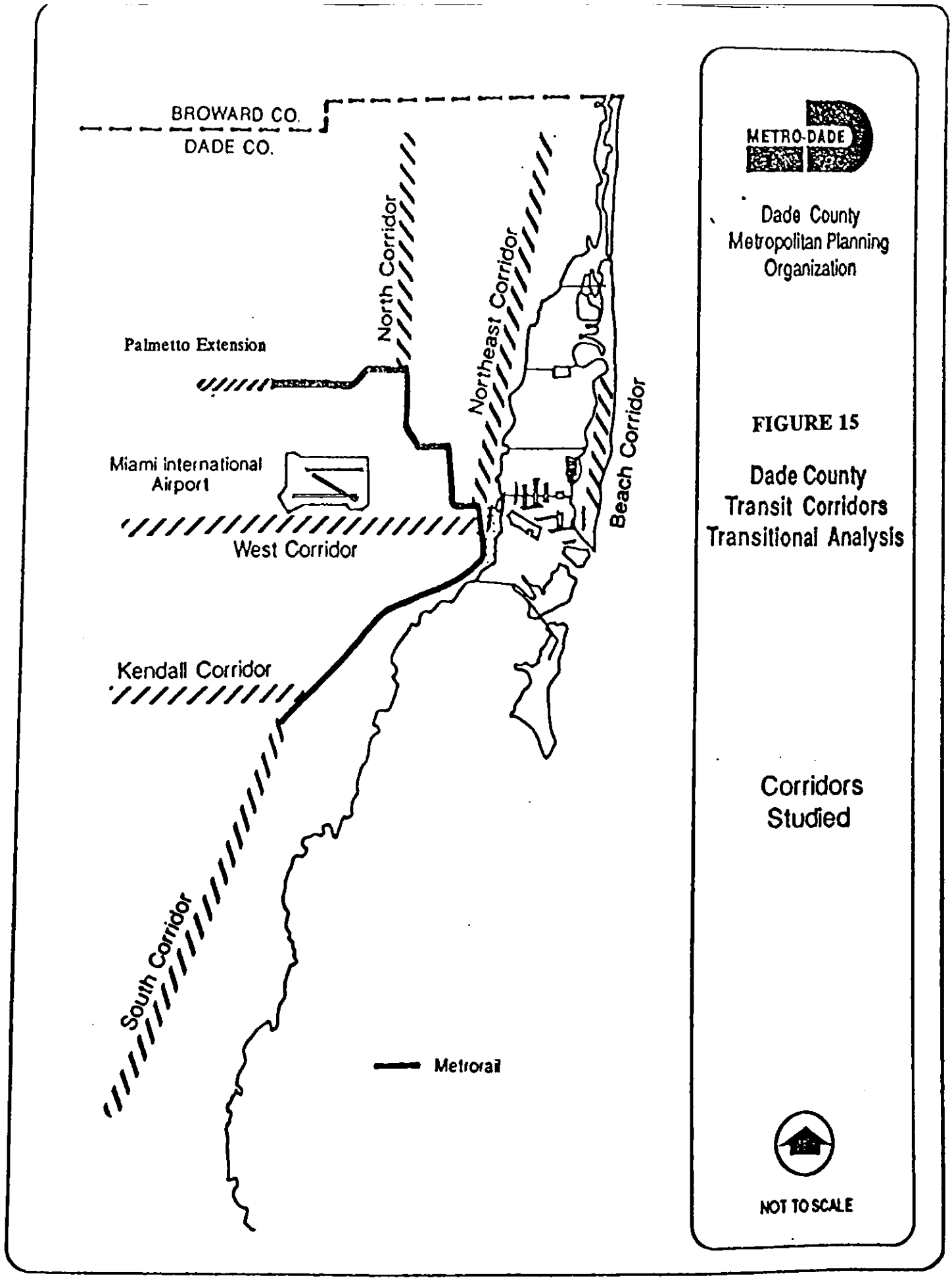
The current Metrorail North Line terminates at the Okeechobee Station and serves an industrial and commercial area along 74th Street east of Okeechobee Road. The North Line is programmed to be extended westward for a distance of approximately 1.5 miles to a new terminal station to be located in the northwest quadrant of the 74th Street - Palmetto Expressway Interchange. This proposed extension would use an existing Florida East Coast (FEC) railroad right-of-way and would cross under the Palmetto Expressway immediately north of 74th Street. The intent of this Metrorail extension would be to provide a new station more convenient to the Palmetto Expressway corridor to better serve the developing

portions of northwest Dade County and southwest Broward County. By linking the new Metrorail Station with the Palmetto Expressway and with Okeechobee Road, Metrorail could encourage additional transit ridership and provide an alternate travel choice for motorists who are currently driving on congested portions of the Palmetto Expressway.

A Transit Corridor Transitional Analysis study has been conducted by the Dade County Metropolitan Planning Organization to identify and evaluate transit alternatives in six corridors within Dade County. These six corridors were recommended for further study in the Metro Dade Year 2010 Transportation Plan proposal in 1990 by the County. This plan concludes that the future travel needs of these six corridors are beyond most roadway-oriented solutions. The transit alternatives for each of the corridors were developed by a group of consultants headed by Parsons, Brinkerhoff, Quade & Douglas, Inc., under the direction of the MPO. A draft copy of the corridor evaluation report has been obtained. Figure 15 illustrates the transitional study corridors as well as the Metrorail Palmetto Extension and the South Dade Busway.

The six corridors under study are:

- **South:** Dadeland South Metrorail Station to Homestead (19.2 miles)
- **Kendall:** Dadeland North Metrorail Station to S.W. 137th Avenue (7.5 miles)
- **North:** Dr. M. L. King, Jr. Metrorail Station to N.W. 215th Street (8.5 miles)
- **Northeast:** Downtown Miami to N.E. 199th Street (13.6 miles)
- **Beach:** Downtown Miami to 71st Street on Miami Beach (10.9 miles)



Source: From "Dade County Transit Corridors Transitional Analysis"; December 1992

- **West:** Downtown Miami to FIU at the Homestead Extension of the Florida Turnpike (HEFT) (12.1 miles) with a direct connection or branch service to Miami International Airport.

The study also evaluated a seventh corridor which combines portions of the West and Beach Corridors. This corridor was named **West-Beach** and connects FIU to Miami Beach Convention Center via downtown Miami with a direct connection or branch service to both the Airport and the Seaport (22.0 miles).

This Transit Corridors Transitional Analysis looked at transportation needs and improvements based on the Year 2010 projected land use, population and employment patterns for Dade County. These projections were based on pre-hurricane patterns. Therefore, concerns were raised as to how the hurricane may affect the outcome of the study. The report claims that, based on an assessment of the near term (next five years) and long term (five to 20 years) implication of the hurricane, the effect of the storm on the Year 2010 horizon of the study will be negligible. A list of potential Mode Technologies and a Summary Evaluation of these seven corridors are included in Appendix C.

3.3 Other Modes:

Facilities which accommodate different modes of travel in Dade County include airports, seaports, railroad corridors and freight movement corridors and terminals. Bicycle and pedestrian facilities also form a part of the multi-modal transportation system. In Dade County, a number of studies are proposed or are underway, to address these multimodal elements in the comprehensive development plan. Projects that improve airport and seaport access are of special interest to this study.

Airport

The Miami International Airport (MIA) Master Plan was updated in 1993. This Master Plan forms the basis for the update of the aviation element of the Comprehensive Development Plan that is now underway. Airport access, both internal within MIA, and regional from MIA is being determined. An airport multi-modal access facility is planned to relieve traffic congestion around MIA. This facility will be a multi-modal terminal, serving Tri-Rail, Metrorail, buses and private vehicles. It will be connected to MIA with its own fixed guideway system.

Seaport

The unified multimodal element of the Comprehensive Development Plan that is being updated will include a seaport component. The evaluation and appraisal phase of this update is underway. The possibility of seaport expansion exists but has not yet been formally documented. Therefore, at this stage, no information on seaport access and growth in traffic has been obtained.

Railroads

A railroad right-of-way study was completed in Dade County. This study assesses railroad rights-of-way for use as corridors for various transportation applications in the future.

Other Facilities

A Dade County Bicycle Plan is being developed to identify existing and potential bicycle facilities in Dade County. No information is available at this time since the plan is in its preliminary stages of development. The adequacy of pedestrian facilities are being evaluated for the Civic Center and South Beach areas of Dade County. This study is now underway, but no information is as yet available. A freight movement study will be undertaken by the Dade County MPO in 1994. The FDOT District 6 Transportation Statistics Division is developing an Intermodal Management System (IMS). The preliminary IMS database is scheduled to be completed by the end of 1994.

4.0 REVIEW AND ANALYSIS OF EXISTING DATA

The preceding two chapters reviewed the information that was collected to complete the Task 1 requirements of this study. In this chapter, the data is analyzed for its applicability to this project and compatibility between different sources in the event of multiple data sources. This analysis is presented in a matrix form on Tables 3 and 4.

A review of these two tables determined that the majority of the information collected as part of Task 1 could be used in some form for the future tasks of this project.

TABLE 3 - ANALYSIS OF LAND-USE AND ZONAL DATA

SOURCE	Type of Information			Applicable	Comments
	Land-Use	Population	Employment		
• Socio-economic Data for 1990, 1993, 2000 & 2015 by TAZ (Lotus Spreadsheet)	✓	✓	✓	Yes	Both sources are interrelated and based on 1990 Census data. They are being updated periodically.
• Recovery Information System (RIS)	✓	✓	✓	Yes	
• "Marketing Analysis of South Dade Recovery One Year After Andrew" - Behavior Science Research; September 8, 1993			✓	Yes	All these sources specifically target the hurricane impact on South Dade County. The main focus is the City of Homestead, Florida City and U.S. 1 corridor redevelopments. These reports were based on the 1990 Census data, and new household surveys. These reports could be used to validate the projections based on 1990 Census data, specifically for South Dade County
• "Recovery of the South Dade Business Community One Year After Hurricane Andrew" - The Beacon Council; September 1993			✓	Yes	
• The Economic Impact of Hurricane Andrew on Miami Dade County Florida - One Year After the Storm" - The Beacon Council; May 1993			✓	Yes	
• "Three Reports on the Dade County Economy" - The Beacon Council; May, 1993	✓	✓	✓	Yes	
• "Homestead Air Force Base Re-Use and Economic Redevelopment Implementation Plan" - Arthur Anderson & Co., January 1, 1994	✓	✓	✓	Yes	
• Tri-County Commuter Rail Authority Transit Development Plan - CUTR; December, 1993	✓	✓	✓	Yes	Report based on 1990 Census data. Also contains on-board survey data.
• South Dade Planning and Design Work Group Meeting Minutes - October, 1992 to November, 1993	✓	✓	✓	Yes	These reports were prepared based on the RIS and 1990 Census data. These sources could be used to validate the above data base, specifically for South Dade area.
• Design for a New South Dade Newsletter - April, 1993 to November, 1993	✓	✓	✓	Yes	
• "A Comprehensive Corridor Development Strategy for South Dade Recovery" - Joint Center; November, 1993	✓	✓	✓	Yes	
• "Homestead Air Force Base Feasibility Study: Phase 1 - Assessment of Potential Civilian Aviation Use" - October, 1993	✓	✓	✓	Yes	These reports were based on both existing and new data. These sources could be used to validate the projected data for South Dade.
• "Disposal and Re-Use of Homestead Air Force Base" EIS; February, 1994	✓	✓	✓	Yes	
• City of Homestead Redevelopment Plan	✓	✓	✓	Yes	
• Florida City Comprehensive Plan	✓	✓	✓	Yes	
• Florida City Redevelopment Plan	✓	✓	✓	Yes	

TABLE 4 - ANALYSIS OF TRANSPORTATION DATA

SOURCE	Type of Information			Comments
	Traffic	Transit	Applicable	
• "MDTA Transit Ridership Report" - September, 1993		✓	Yes	This transit ridership data could be used to detect the shift in transit usage before and after the hurricane.
• "MDTA/On-Board Survey Analysis" - CUTR; November, 1993		✓	Yes	
• On-Board FEMA van survey results - Behavioral Science Research; July, 1993		✓	Yes	
• South Dade van telephone survey - Behavioral Science Research; July, 1993		✓	Yes	
• MDTA monthly ridership data; August, 1991 to September, 1993		✓	Yes	
• Tri-Rail Passenger Audit Report		✓	Yes	These reports were based on surveyed boarding and alighting data. They could be used to identify ridership changes which occurred due to the hurricane.
• "Cost and Ridership Demand Estimate for the proposed Extension of Tri-Rail Service to South Dade County" - Barton-Aschman Associates, Inc.; May, 1993		✓	Yes	
• Tri-County Commuter Rail Authority Transit Development Plan - CUTR; December, 1993		✓	Yes	
• 1991 and 1992 Permanent count stations map and counts.	✓		Yes	The Dade County traffic data is presented as AWDT, the FDOT traffic data is presented as AADT. The 1992 data cannot be used because it combines the pre- and post-hurricane data.
• Pre- and post-hurricane counts at selected count stations	✓		Yes	
• 1991 LOS map	✓		Yes	
• 1992 Functional Classification Map	✓		Yes	
• List of 8-hour approach count locations	✓		Yes	
• Signal location map	✓		No	

TABLE 4 - ANALYSIS OF TRANSPORTATION DATA (Continued)

SOURCE	Type of Information			Comments
	Traffic	Transit	Applicable	
• South Dade Planning and Design Work Group Meeting Minutes - October, 1992 to November, 1993	✓	✓	No	These are secondary data. Any data extracted from these sources should be checked for accuracy.
• Design for a new South Dade Newsletter - April, 1993 to November, 1993	✓	✓	No	
• "Dade County Transit Corridors Transitional Analysis" - Draft Corridor Evaluation Report - December 1992		✓	No	This report was well underway before the hurricane.
• Florida City Redevelopment Plan	✓	✓	Yes	Specific data pertaining to South Dade County.
• "Homestead Air Force Base Re-Use and Economic Redevelopment Implementation Plan" - Arthur Anderson & Co.; January, 1994	✓	✓	Yes	
• Florida's Turnpike Homestead Extension (HEFT) Ridership Data	✓		Yes	Only source of pre- and post-hurricane HEFT Data.

APPENDIX A

POPULATION, LAND-USE, AND EMPLOYMENT DATA

1. (a) Traffic Analysis Zone Data for 1990
   (b) Traffic Analysis Zone Data for 1993
   (c) Traffic Analysis Zone Data for 2000
   (d) Traffic Analysis Zone Data for 2015

2. Beacon Council: South Dade Economic Recovery Study - Executive Summary

3. Recovery Information System (RIS) - Data

4. Miami Herald News Clips

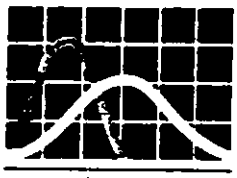
1. (a) Traffic Analysis Zone Data for 1990

1. (b) Traffic Analysis Zone Data for 1993

1. (c) Traffic Analysis Zone Data for 2000

1. (d) Traffic Analysis Zone Data for 2015

2. **Beacon Council: South Dade Economic Recovery Study - Executive Summary**



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MARKETING RESEARCH STUDY EXAMINING THE RECOVERY OF THE SOUTH DADE BUSINESS COMMUNITY ONE YEAR AFTER HURRICANE ANDREW

Prepared for
THE BEACON COUNCIL

September 8, 1993

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I. OVERVIEW

The survey research project undertaken by Behavioral Science Research (BSR) was conducted for The Beacon Council to determine the level of recovery that has taken place among the business communities of South Dade County, since August 24, 1992, when Hurricane Andrew struck the area. While the physical damage of the storm, in terms of destroyed or damaged buildings and homes has been duly recorded, there has been no measurement made of the level of economic recovery that has taken place in the approximately twelve months since August, 1992.

The purpose, then of this project, is to provide an accurate measurement of the degree to which the South Dade communities have recovered from the debilitating effects of the storm.

The hurricane caused many businesses to close temporarily, and some to relocate to another area of South Dade, or elsewhere in Dade or Broward Counties. Many businesses were closed permanently. Conversely, the devastation created significant new demands for services and products that has attracted new businesses to the area.

II. EXECUTIVE SUMMARY

- Approximately 21% of the businesses that were operating in South Dade prior to Hurricane Andrew are no longer in business; 79% remain in business.

- Among the three zones of South Dade, Kendall South experienced the lowest business "death" rate, losing 18% of its businesses, while both the Cutler Ridge and Homestead areas lost approximately one-fourth of all their pre-Andrew businesses.

- Approximately 72% of all South Dade businesses (that did not go out of business) opened within three months or less, after the hurricane, and another 15% opened within three to six months of August 24, 1992. Another 7% opened 6 to 12 months after the hurricane and 6% are still closed, but planning to open.

- Of the businesses that have remained operating in South Dade (79%), better than three-fourths (76%) were able to reopen in their original locations, 24% were forced to relocate.

- Nearly two-thirds of those businesses that were forced to relocate, opened elsewhere in South Dade, 33% reopened north of Kendall Drive in Dade County, and approximately 4%, in other South Florida locations.

- Approximately 35% of all South Dade businesses that had to relocate have done so permanently, while 65% ultimately plan to return to their original locations.

- The BSR survey revealed that 6,940, or about 80% of South Dade's pre-Andrew businesses survived the hurricane and are currently operating. Approximately 9% or some 625 of these businesses relocated outside of the South Dade area.

- There were approximately 8,800 businesses operating in South Dade prior to Hurricane Andrew, employing some 94,600 persons.

- Surviving pre-Andrew South Dade businesses currently report full and part-time employment of approximately 75,000 persons. This represents a loss of nearly 20,000 South Dade-based jobs, or 19% of the area's pre-Andrew total.

- The Kendall South area experienced the smallest loss among the three South Dade zones, losing just under 5,000 jobs, a decline of only 8%. The Cutler Ridge and Homestead area each lost approximately 28% of their pre-Andrew employment.

- Approximately 280 new businesses have opened in the South Dade area since September 1992, generating some 2,300 new jobs for the area. This increases current employment to approximately 78,200, still about 18% below the area's pre-Andrew employment total

- The income or sales of approximately 60% of all South Dade post-Hurricane businesses are either higher (32%) or about the same (27%) as pre-Andrew levels. Sales or income of 41% are lower now than they were prior to August, 1992.

- Better than one-third of all South Dade's post-Andrew businesses plan some expansion for next year; this projects to a total of nearly 7,400 new employees during the next twelve months.

- Skilled labor is the most important need among South Dade's post-Andrew businesses, followed by financing, good insurance and site/location.

- 15% of South Dade businesses received some type of financial assistance (not including insurance) to assist in their recovery from Hurricane Andrew. Of those that did receive assistance, 33% received loans from the Small Business Administration, 22% from FEMA, and 18% received Bridge Loans through The Beacon Council.

- A total of 280 new businesses have been established in the South Dade area during the period since Hurricane Andrew struck the area.

- Nearly one-half (49%) of all South Dade businesses established after Hurricane Andrew were start-up or new businesses.

- Better than one-third (37%) of South Dade's new businesses are expansions of existing businesses and 14% represent relocations of businesses from other (non-South Dade) portions of South Florida.

- Approximately 40% of all new South Dade businesses were established to take advantage of or serve a hurricane-created or generated market.

- The 280 new or post-Hurricane Andrew businesses employ some 1,770 persons on a full-time basis and close to another 500 persons on a part-time basis. Thus, the total number of persons being employed by the area's new businesses amounts to nearly 2,270.

- Nearly two out of every three new South Dade businesses (60%) anticipate expanding their business during 1994. These plans will require the employment of another 1,110 persons by these businesses during the next twelve months.

- Acquiring skilled labor and financing are the two most important needs among South Dade's new businesses. Building permits, business locations and good insurance are the other major critical needs.

- Nearly one-third of South Dade's post-Andrew businesses are engaged in the process of physically rebuilding homes and businesses in the area, as evidenced by the number of contract/builder firms comprising new businesses. Retailers comprise another 40% of the area's new businesses, much of this activity generated by the need in the local marketplace to replace home furnishings and personal belongings lost in the hurricane.

3. Recovery Information System (RIS) - Data

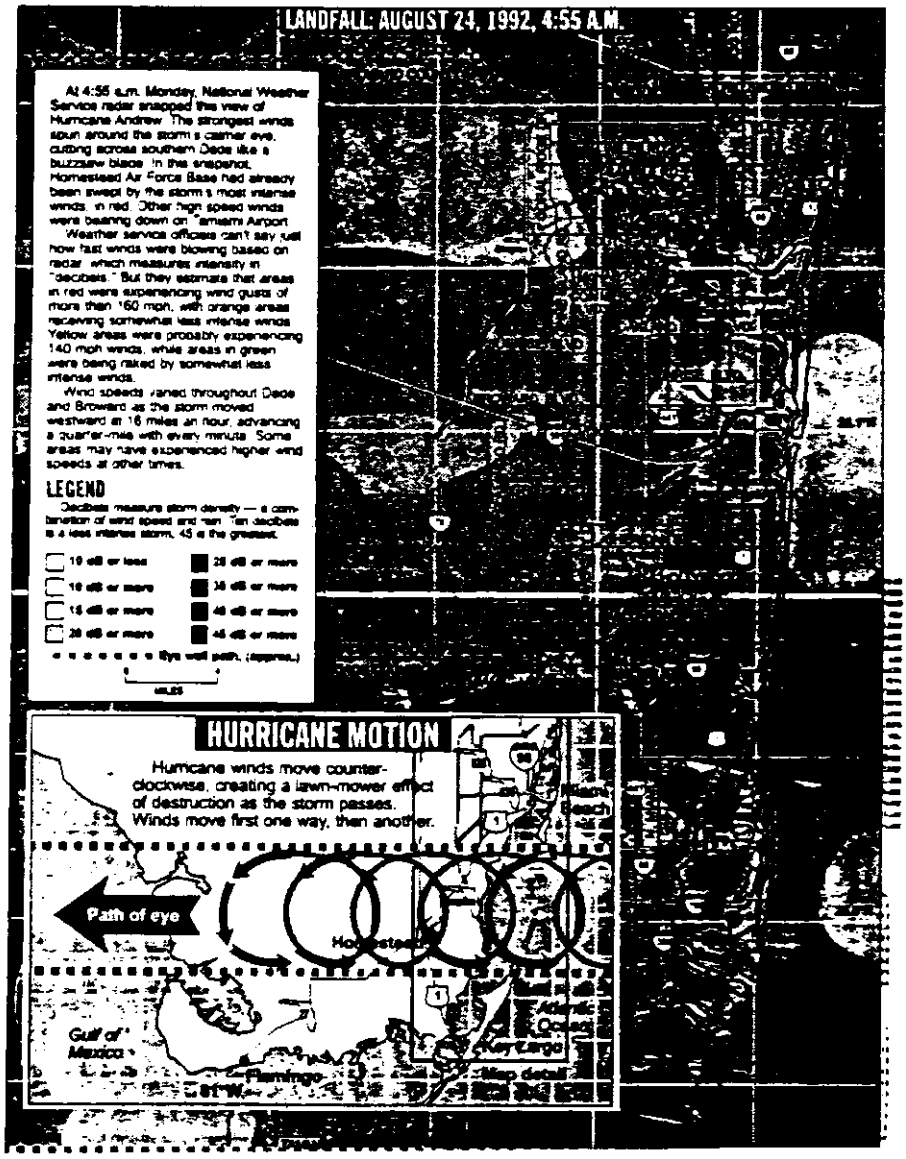
RESPONSE/RECOVERY INFORMATION SYSTEMS DATABASES

The following databases/datasets have been secured by this department, many of which are being updated on a timely basis (monthly, bi-weekly or weekly). This list is comprised of all "outside" datasets that provide the statistical and geographic foundation necessary to track the recovery of the Hurricane Andrew disaster.

FEMA: Individual Assistance applications/State
FEMA: National Flood Insurance Policy Holders
Small Business Administration - Personal/Business, Applicants/Approval
Disaster loans/ Personal/Commercial
Farmers Home Administration Data
HUD Single Family Housing - foreclosures
HUD-assisted Multi Family (Private Owned)
HUD owned Section 8 Multi Family Housing
United States Postal Service -
undeliverable addresses/forwarding addresses
Florida/State Individual Family Grants
Florida Power & Light - Active Accounts (Dade)
Florida Power & Light - Inactive Accounts
Florida Power & Light - Disconnects
Dade County Damage Assessment
Dade County Hurricane Shelters
Dade County Special Needs Individuals (for evacuations)
Dade County Official Township, Range, Section
Dade County Building Permits and Certificates of Occupancy:
for fiscal year 1990 - 1991 and for all of 1992 to date
Dade County Tax Assessors File
Dade County Secure and Demolition Structures
Dade County Solid Waste Debris Complaints
Florida City Damage Assessment
Florida City Building Permits/Certificates of Occupancy
Homestead Damage Assessment
Homestead Electric - Full Database/
Connects and Disconnects
Homestead Building Permits/Certificates of Occupancy
City of South Miami Building Permits
Broward County Hurricane Shelters

4. Miami Herald News Clips

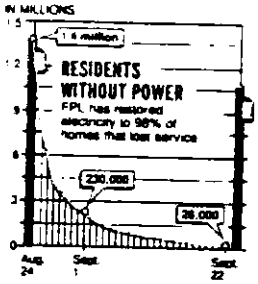
Anatomy of Andrew



OUT OF THE STORM

ONE MONTH LATER

More than 5,000 workers labored to restore electric service

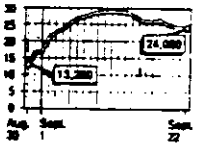


The 82nd Airborne was one of the units sending soldiers to Florida.

29,300 Peak number of soldiers in South Dade, on Sept. 11

TROOP CONCENTRATIONS

IN THOUSANDS, INCLUDES NATIONAL GUARD



DID YOU KNOW?

718,713 Gallons of drinking water were delivered by the U.S. Army Corps of Engineers.

80,000 Telephone customers lost service.

3,000 Water mains were damaged.

1,500 Recreational boats were damaged or destroyed.

ANDREW BY THE NUMBERS

Hurricane Andrew tore through South Florida on Aug. 24, changing our lives in incalculable ways

$20 billion Total property damage caused by the storm.

$7.3 billion Industry estimate for insured losses, likely to increase.

160,000 People left homeless.

86,000 People out of work.

82,000 Businesses destroyed or damaged.

28,066 Homes destroyed.

203 Hours of continuous hurricane coverage on WTVJ-Channel 4.

52 Deaths directly or indirectly caused in Florida, Louisiana and the Bahamas.

2 Stronger hurricanes have struck the United States in the past: Camille in 1969 and the unnamed storm that struck the Florida Keys in 1935.

0 Hurricanes have caused more damage.

DAMAGE TO HOMES

Single-family homes
- **8,373** Destroyed
- **37,245** With major damage
- **40,632** With minor damage

Mobile homes
- **8,974** Destroyed
- **1,100** With major damage
- **519** With minor damage

Apartments
- **10,719** Destroyed
- **13,995** With major damage
- **13,889** With minor damage

DAMAGE TO AGRICULTURE

- **$1 million** Total damage
- **$250 million** Permanent income loss.
- **$580 million** Damage to structures
- **$12.5 million** Damage to livestock and other

Mangos
- **3,500** Acres damaged.
- **$14.5 million** Damage

Limes
- **6,500** Acres damaged.
- **$66 million** Damage

Avocados
- **8,500** Acres damaged.
- **$34.1 million** Damage.

Tropical fruits
- **3,250** Acres damaged.
- **$14.1 million** Damage.

Vegetable crops
- **1,150** Acres damaged.
- **$12.9 million** Damage

Foliage/nursery industry
- **10,000** Acres damaged.
- **$280 million** Damage

ENVIRONMENT AND PARKS

Mangroves
- **10,112** Acres damaged.
- **5,800** Expected to die.

Lobster traps
- **75%** Loss in Dade County
- **$2.8 million** Estimated loss

Parks and beaches
- **$4.5 million** To renourish damaged beaches.
- **$67.6 million** Damage to local parks and marinas.
- **$7.5 million** Damage to state parks.
- **$35.3 million** Damage to Biscayne National Park, Everglades National Park
- **$15.5 million** Damage to Metro Zoo
- **$4 million** Damage to Fairchild Tropical Gardens
- **$2.4 million** Damage to Crandon Park

SCHOOLS, COLLEGES AND UNIVERSITIES

Public Schools
- **9** Destroyed
- **23** With heavy damage
- **$300 million** Estimated loss.

Colleges and Universities
- **$19 million** Damage to Florida International University
- **$17.2 million** Damage to Miami-Dade Community College.
- **$21.5 million** Damage to the University of Miami.
- **$3.6 million** Damage to University of Florida's Institute of Food and Agricultural Sciences.

POST OFFICE

- **6 million** Pieces of mail delayed or disrupted in the first two days after the storm.

HEALTH FACILITIES AND HOSPITALS

Nursing Homes
- **13** Damaged.
- **7** Evacuated.

Intermediate care facilities for developmentally disabled
- **4** Damaged.
- **4** Evacuated.

Crisis stabilization units for mentally ill
- **2** Damaged.

Hospitals
- **8** Damaged.
- **3** Evacuated.

Adult congregate living facilities
- **32** Severely damaged.

DADE DEBRIS

- **3.1 million** Cubic yards of debris.
- **15** Years worth of landfill space.

DADE SIGNAL AND SIGN DAMAGE

- **5,000** Red, yellow and green traffic lights damaged.
- **2,200** Street lights damaged.
- **1,300** Light poles damaged.

MILITARY

- **29,300** Troops deployed at peak
- **4** Tent cities erected.
- **293** Tents erected
- **204** Portable toilets installed
- **2,570** Cots available.

FLORIDA POWER AND LIGHT

Customer service loss
- **1.4 million** Total amount.
- **690,000** In Dade County.
- **470,000** In Broward County.
- **140,000** In Palm Beach County.
- **61,300** In Collier County
- **16,600** In Lee County.

Restoration workers
- **5,851** Total on the job.
- **1,007** FPL workers.
- **2,226** Contractors.
- **1,495** Support personnel.
- **1,123** Other utilities.

GOVERNMENT ASSISTANCE

As of Tuesday
- **107,756** People applied.

Temporary housing
- **29,859** Checks issued.
- **$62.4 million** Total amount.
- **$2,090** Average amount issued.

Business loans
- **113** Approved.
- **$5.2 million** Total amount.

Home loans
- **1,835** Approved.
- **$50.3 million** Total amount.

Individual Family Grants
- **15,970** Approved by the state.
- **$63 million** Total amount of checks issued.

Food stamps
- **66,616** Families receiving emergency food stamps.
- **$25.8 million** Total amount issued.

RED CROSS

- **15** Service centers in Dade.
- **31,038** Families helped at service centers.
- **7,000** Paid and volunteer workers.
- **3.5 million** Meals served.
- **5,000** People receiving medical treatment.

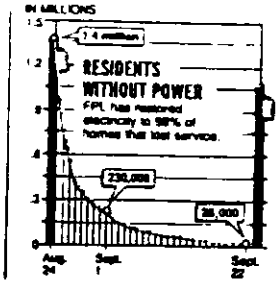
Donations
- **$65.9 million** Nationally.
- **$4.7 million** From Dade.
- **$830,000** From Broward.
- **$10 million** From the Emir of Kuwait, the largest individual donation.

SOURCES: Governor's Office, Metro-Dade government, U.S. Army Forces Command, Homestead Airforce, U.S. Department of Health and Human Services, Florida Department of Health and Rehabilitative Services, Dade County Department of Elections, American Red Cross, U.S. Postal Service, Florida Power & Light.

OUT OF THE STORM

ONE MONTH LATER

More than 5,000 workers labored to restore electric service



The 82nd Airborne was one of the units sending soldiers to Florida.

29,300 Peak number of soldiers in South Dade, on Sept. 11.

TROOP CONCENTRATIONS
IN THOUSANDS, INCLUDES NATIONAL GUARD

DID YOU KNOW?

718,713 Gallons of drinking water were delivered by the U.S. Army Corps of Engineers.

80,000 Telephone customers lost service.

3,000 Water mains were damaged.

1,500 Recreational boats were damaged or destroyed.

ANDREW BY THE NUMBERS

Hurricane Andrew tore through South Florida on Aug. 24, changing our lives in incalculable ways

$20 billion Total property damage caused by the storm.

$7.3 billion Industry estimate for insured loss losses, likely to increase.

160,000 People left homeless.

86,000 People out of work.

82,000 Businesses destroyed or damaged.

28,066 Homes destroyed.

203 Hours of continuous hurricane coverage on WTVJ-Channel 4.

52 Deaths directly or indirectly caused in Florida, Louisiana and the Bahamas.

2 Stronger hurricanes have struck the United States in the past: Camille in 1969 and the unnamed storm that struck the Florida Keys in 1935.

0 Hurricanes have caused more damage

DAMAGE TO HOMES

Single-family homes
- **8,373** Destroyed
- **37,245** With major damage
- **40,632** With minor damage.

Mobile homes
- **8,974** Destroyed.
- **1,100** With major damage
- **519** With minor damage

Apartments
- **10,719** Destroyed
- **13,995** With major damage
- **13,889** With minor damage.

DAMAGE TO AGRICULTURE

- **$1** billion Total damage
- **$250** million Permanent income loss.
- **$580** million Damage to structures.
- **$12.5** million Damage to livestock and other.

Mangos
- **3,500** Acres damaged.
- **$14.5** million Damage

Limes
- **6,500** Acres damaged.
- **$66** million Damage.

Avocados
- **8,500** Acres damaged.
- **$34.1** million Damage.

Tropical fruits
- **3,250** Acres damaged.
- **$14.1** million Damage.

Vegetable crops
- **1,150** Acres damaged.
- **$12.9** million Damage.

Foliage/nursery industry
- **10,000** Acres damaged.
- **$280** million Damage.

ENVIRONMENT AND PARKS

Mangroves
- **10,112** Acres damaged.
- **5,800** Expected to die.

Lobster traps
- **75%** Loss in Dade County.
- **$2.8** million Estimated loss.

Parks and beaches
- **$4.5** million To renourish damaged beaches.
- **$67.6** million Damage to local parks and marinas.
- **$7.5** million Damage to state parks.
- **$35.3** million Damage to Biscayne National Park, Everglades National Park
- **$15.5** million Damage to Metro Zoo.
- **$4** million Damage to Fairchild Tropical Gardens.
- **$2.4** million Damage to Crandon Park.

SCHOOLS, COLLEGES AND UNIVERSITIES

Public Schools
- **9** Destroyed.
- **23** With heavy damage.
- **$300** million Estimated loss.

Colleges and Universities
- **$19** million Damage to Florida International University.
- **$17.2** million Damage to Miami-Dade Community College.
- **$21.5** million Damage to the University of Miami.
- **$3.6** million Damage to University of Florida's Institute of Food and Agricultural Sciences.

POST OFFICE

- **6** million Pieces of mail delayed or disrupted in the first two days after the storm.

HEALTH FACILITIES AND HOSPITALS

Nursing Homes
- **13** Damaged.
- **7** Evacuated.

Intermediate care facilities for developmentally disabled
- **4** Damaged.
- **4** Evacuated.

Crisis stabilization units for mentally ill
- **2** Damaged.

Hospitals
- **8** Damaged.
- **3** Evacuated.

Adult congregate living facilities
- **32** Severely damaged.

BANK RUNS

- **3.1** million Cubic yards of debris.
- **15** Years worth of landfill space.

BANK SIGNAL AND SIGN DAMAGE

- **5,000** Red, yellow and green traffic lights damaged.
- **2,200** Street lights damaged.
- **1,300** Light poles damaged.

MILITARY

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SOURCES: Governor's Office, Metro-Dade government, U.S. Army Corps of Engineers, Federal Highway Administration, U.S. Department of Health and Human Services, Florida Department Veterans' Affairs, Dade County Department of Elections, American Red Cross, U.S. Postal Service, Florida Power & Light.

HURR

HURRICANE ANDREW

THREE TIMES MORE DESTRUCTIVE THAN ANY NATURAL DISASTER IN UNITED STATES HISTORY — LEFT 250,000 PEOPLE HOMELESS. POWER AND PHONE LINES WERE DOWN AND THE FEW REMAINING COMMUNICATIONS SYSTEMS WERE JAMMED. RELIEF ORGANIZATIONS HAD A MASSIVE COORDINATION PROBLEM.

When Hurricane Andrew blew through South Florida on Aug. 24, winds estimated as high as 200 miles per hour caused $20-$30 billion in property damage, destroyed 63,000 homes and put nearly 250,000 residents out on the street. Ninety percent of Florida City was destroyed, with no home or business left untouched. In terms of property damage, Andrew was three times more destructive than any natural disaster in United States history.

The storm overwhelmed disaster plans. Power and phone lines were down, and water and sewer systems unusable. Streets and highways were blocked. Food, water and medical supplies were in short supply. Relief agencies hurried to locate the thousands of people needing food, shelter, clothing and medical attention.

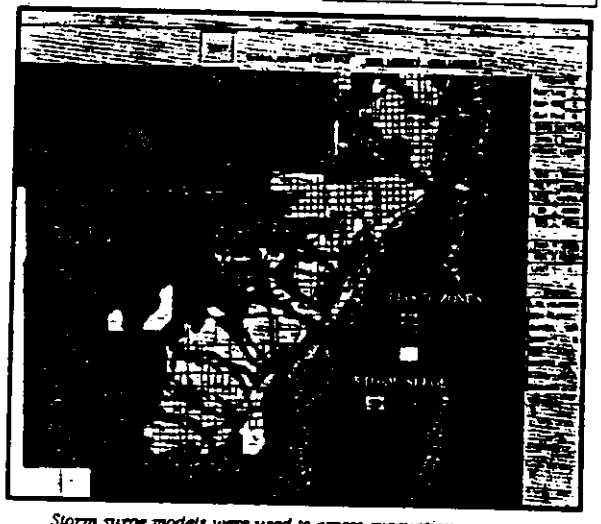
The American Red Cross was on the scene even before the winds died down — setting up food and medical service centers, mobilizing emergency response vehicles, creating shelters and converting makeshift buildings into medical facilities. The Red Cross needed information about the locations and requirements of those needing assistance, and the availability and location of food, water, medicine, clothing and sleeping facilities. The needed to communicate information between government and civilian relief organizations and help coordinate the delivery of supplies and services.

The few communication lines and cellular services still operating were jammed, and traditional radio communications were ineffective because of the distances involved. Red Cross service centers were scattered across many miles, from Florida City to Miami. Even ground communications were ruled out because of road blockages.

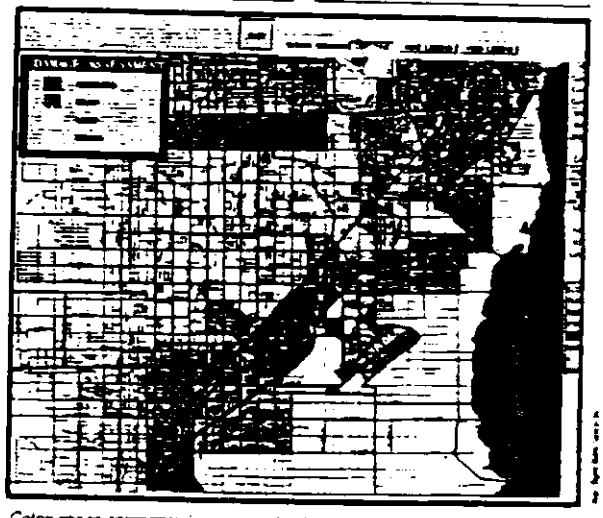
WIRELESS TO THE RESCUE

"Shortly after we set up our

See HURRICANE, page 37



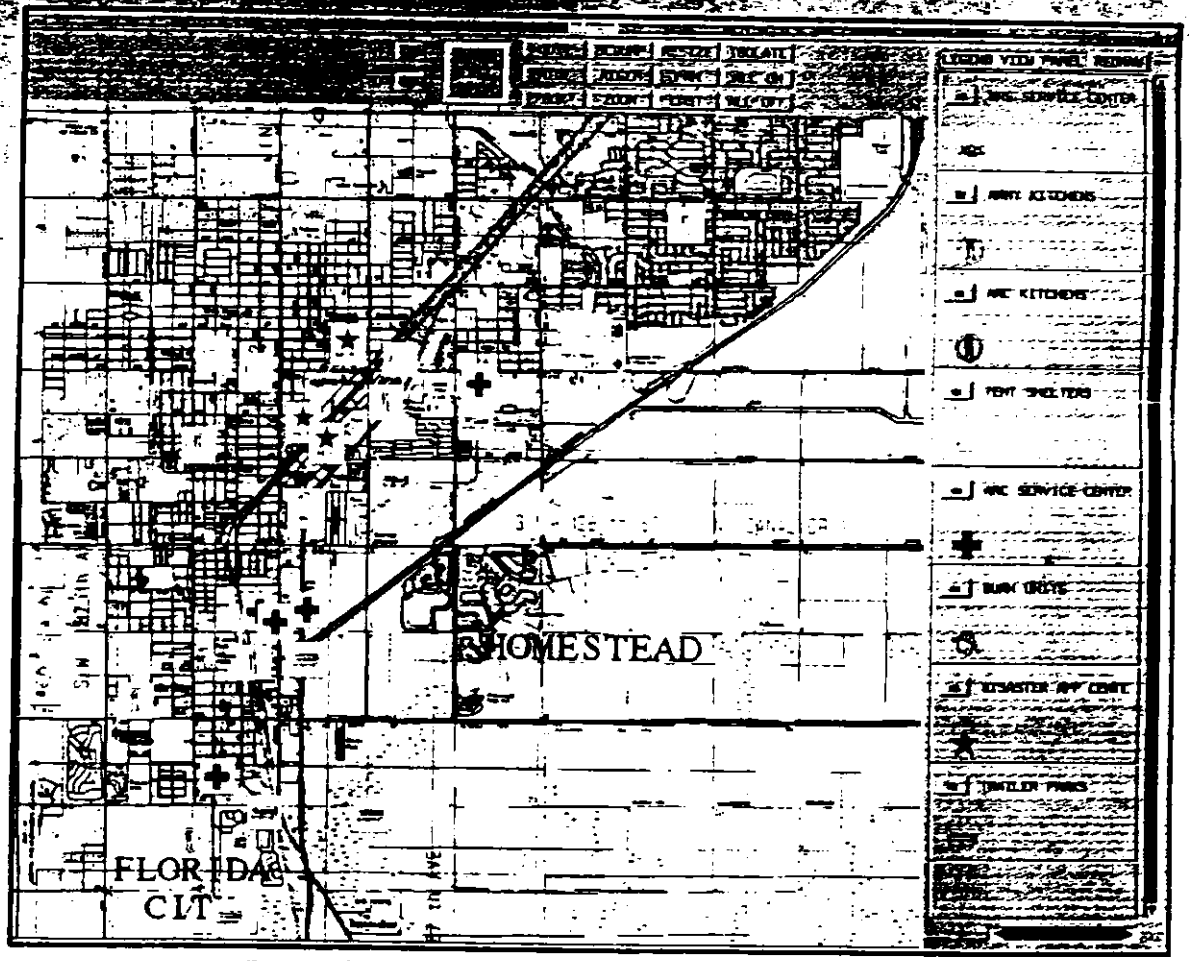
Storm surge models were used to assess evacuation scenarios and flooding.



Color coded segments inventory the damage. Red areas were completely destroyed. Orange areas had heavy damage, tan areas were moderately damaged and yellow areas experienced relatively light effects.

CAN-I

WIRES DOWN, COMMUNICATIONS UP



Homestead, Fla., was levelled by Andrew. This [illegible] locate food, fire departments, medical teams and housing for [illegible] needed them most.

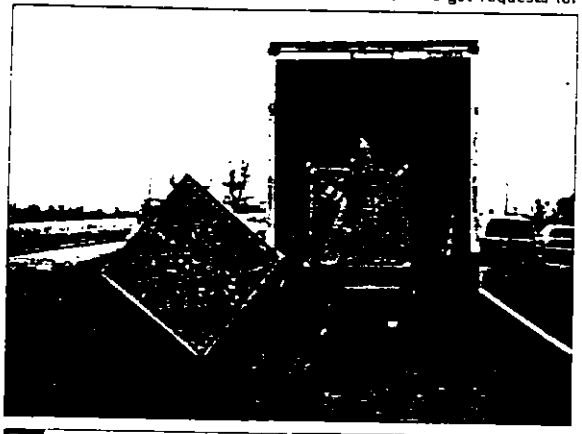
WIRES DOWN, COMMUNICATIONS UP

HURRICANE

Continued from page 9

headquarters in Miami, IBM called and offered the use of a new system called 'PCradio,' said Greg Tune, Disaster Computer Operations Officer for the Red Cross. "They came in and showed it to us, and I immediately asked how many I could get and when I could start using them. We got our first units the next day and wound up with 24 of the systems — which allowed us to maintain open, constant and instantaneous communications between headquarters, the warehouses and our 15 service centers. It was a godsend." The PCradio units communicated over the ARDIS radio data communications network.

During the first few weeks after the hurricane, the Red Cross served more than 3.5 million meals, met with 11,000 families and made 4,000 home visits. "We got requests for everything from diapers, to port-a-potties, to bottled water," said Mr. Tune. "We might be asked to find out what service center had insulin. With the new wireless technology we could send out a global message to all 24 units simultaneously, receive answers instantly and dispatch the requested supplies to the appropriate site. In previous disaster locations, we've had to contact each center individually via unreliable communication channels, which was very time-consuming. Now it's virtually instantaneous."



Distribution centers and emergency [illegible] services coordinated by wireless communications technology.

Each of the Red Cross' 15 service centers had a PCradio unit, and Miami headquarters had one for incoming and one for outgoing messages. The county Emergency Operations Center also had a unit, as did Red Cross facilities in Baton Rouge, La., and national headquarters in Arlington, Va.

Cherilyn Foglio, Red Cross Government Liaison assigned to the Dade County Emergency Operations Center, said, "We had lots of requests for services dealing with availability of space in shelters, mass care availability, etc. For a long time, we could not communicate via phone. Once we got the PCradio setup, it gave me the flexibility to communicate with mass care facilities, the State Emergency Operations Center and the warehouses. I found that I also benefited by being able to read messages instead of just hear them, because the noise level in our facilities is often so high you can miss pertinent data. You may think someone is looking for shelter space for six people, for example, when they really said they needed room for 60.

"With the technology we were able to eliminate that problem and we printed the screen. We had excellent documentation of all the transactions taking place. It was definitely a time saver."

FROM HUGO TO ANDREW

Bob Wallace — a Red Cross Computer Operations staff member and retired IBM employee who traveled from his home in Rockledge, Florida with his wife, who is a nurse, to help in the recovery efforts — "Technology has a big impact on how quickly we can respond and communicate," he said. "As late as Hurricane Hugo in 1989, Red Cross Disaster Computer Operations didn't exist. By Hurricane Andrew, we had all the computer equipment with us [illegible] which greatly participated in [illegible] disaster operations. It saved us time and the resulting impact of doing more with fewer people."

INTELLIGENT MAPS HELP HURRICANE RELIEF EFFORTS

MIAMI — In the aftermath of Hurricane Andrew, the Federal Emergency Management Agency (FEMA) used a geographic information system (GIS) to help manage the relief and recovery efforts of more than 40 civil and military agencies. InfoCAD GIS, from Digital Matrix Services Inc. of Miami, was installed in FEMA's Command and Control Center at Miami International Airport shortly after the hurricane.

Fifteen Digital Matrix Services (DMS) volunteers manned a network of eight UNIX workstations. Jack Bryan, FEMA's on-site Director of Information and Planning, said the quick arrival of the GIS was very helpful. "This capability has been the answer to a prayer."

The GIS was used to locate the best sites for kitchens, tent cities, disaster application centers, hazard mitigation locations and other location-dependent facilities. About 30 different types of maps were produced daily, including more than 100 copies of the official situation map for the 9:00 a.m. department-head briefing.

Base data was enhanced by "scan digitizing" USGS quadrangle maps, along with U.S. Army Corps of Engineers aerial photography — taken the day after the hurricane. The images, combined into seamless backdrops and registered with the existing street data, proved very useful.

Dan Cotter, a Senior Analyst with FEMA, said, "For years, we have known that GIS would be crucial in a situation like this. Having DMS show up almost unannounced, with the capabilities ready to go, has given us an extraordinary advantage in this situation, while laying a baseline for our future readiness plans."

Other vendors and agencies providing goods and services included: Analytical Surveys; CalComp; Data General, Digital Equipment Corp.; ETAK, Handmade Software, Hewlett-Packard; Louisiana Department of Natural Resources, Metro-Dade GIS, Science Applications International; and Xerox/Versatec. As this went to press, the FEMA GIS Operations Center was scheduled to continue operating through October.

TECHNICALS

PCradio units — similar to a combination laptop computer and radio transmitter/receiver — were used by the Red Cross to communicate through RF modems over the ARDIS network. ARDIS is a radio data information network developed by IBM and Motorola. Its three network hubs are linked with a system of landlines and a computer communications network. More than 1,300 base stations are located throughout the country, allowing metropolitan coverage in 8,000 cities and towns in all 50 states.

ARDIS, headquartered in Lincolnshire, Ill., provided [illegible] free air time to the Red Cross during disaster recovery efforts.

APPENDIX B

HIGHWAY DATA

1. 1992 FDOT Functional Classification Map
2. Monitoring Post-Hurricane Traffic Data
3. 1992 FDOT Traffic Volumes
4. 1992 County Traffic Volumes

1. 1992 FDOT Functional Classification Map

2. Monitoring Post-Hurricane Traffic Data

MONITORING POST - HURRICANE TRAFFIC DATA

9/02/1993

State Rd No	Count Sta No.	Local Name	1991 TRAFFIC DATA			1992 POST HURRICANE DATA -Wk of 5/19/93				1992 POST HURRICANE DATA Wk of 08/19/93			
			Total AADT	PEAK HR	PEAK DIR	Total AADT	PEAK HR	PEAK DIR	% CHANGE	Total AADT	PEAK HR	PEAK DIR	% CHANGE
5	5036	US 1 @ SW 17 Ave	89911	4:45 PM	SB	96186	8:00 AM	NB	7.20%	101092	7:45 AM	NB	12.44%
9A	2485	I - 95 @ Ives Dairy Rd	119225	3:45 PM	NB	152438	5:00 PM	NB	27.86%	119998	4:45 PM	NB	0.65%
94	592	SW 88th St @ SW 110 Ave	47812	7:45 AM	EB	58815	7:15 AM	EB	23.01%	59375	5:15 PM	WB	24.18%
821	2250	HEFT @ SW 8 St	79707	7:15 AM	NB	99926	5:00 PM	SB	25.37%	99316	7:30 AM	NB	19.68%
821	2272	HEFT @ Okeechobee	31800	5:00 PM	NB	49449	7:15 AM	SB	55.90%	37285	6:15 PM	NB	17.25%
826	568	Palmetto @ SW 8 St	181964	3:30 PM	SB	195660	4:45 PM	SB	7.53%	166765	5:15 PM	SB	-8.35%
826	574	Palmetto @ NW 103 St	142032	7:00 AM	SB	165154	6:15 AM	SB	16.28%	137508	7:15 AM	NB	-3.18%
816	2243	Dolphin @ NW 107 Ave	96784	1:30 PM	WB	104272	7:00 AM	EB	7.72%	92914	4:30 PM	WB	-3.99%
874	2274	So Dade Xway @ SW 112 St	19611	4:45 PM	SB	71833	7:00 AM	NB	30.49%	59500	7:00 AM	NB	-0.15%
997	682	SW 177th Ave @ SW 88 St	8132	4:45 PM		10765	7:00 AM	SB	28.90%	8057	5:30 PM	NB	-3.33%

Notes: 1 Monitoring Post Hurricane Traffic Counts were taken within the weeks of May 19 1993 and August 19 1993

MONITORING POST – HURRICANE TRAFFIC DATA

12/10/1992

State Rd No	Count Sta No.	Local Name	1991 TRAFFIC DATA			1992 POST-HURRICANE DATA- Wk of 9/20/92				1992 POST-HURRICANE DATA- Wk of 11/15/92			
			Total AADT	PEAK HR	PEAK DIR	Total AADT	PEAK HR	PEAK DIR	% CHANGE	Total AADT	PEAK HR	PEAK DIR	% CHANGE
5	3036	US – 1 @ SW 17 Ave	89911	4:45 PM	SB	101647	8:00 AM	SB	13.05%	97275	8:30 AM	NB	8.19%
9A	2485	I – 95 @ Ives Dairy Rd	119223	3:45 PM	NB	146549	4:30 PM	NB	22.92%	157001	4:30 PM	SB	31.68%
94	592	SW 88th St @ SW 110 Ave	47812	7:45 AM	EB	60585	4:45 PM	WB	26.72%	64014	4:45 PM	WB	33.89%
821	2250	H.E.F.T @ SW 8 St	79707	7:15 AM	NB	129203	7:15 AM	NB	62.10%	104154	7:00 AM	NB	30.67%
821	2272	H.E.F.T @ Okeechobee	31800	5:00 PM	NB	64379	4:45 PM	NB	102.45%	50754	5:00 PM	NB	59.60%
826	568	Palmetto @ SW 8 St	181964	3:30 PM	SB	197615	5:30 PM	SB	8.60%	191218	3:30 PM	SB	5.09%
826	574	Palmetto @ NW 103 St	142002	7:00 AM	SB	162738	2:15 PM	NB	14.58%	179650	7:45 AM	SB	26.49%
836	2243	Dolphin @ NW 107 Ave	96714	4:30 PM	WB	111510	4:30 PM	WB	15.30%	92133	4:30 PM	WB	– 4.74%
874	2274	So Dade Xway @ SW 112 St	59615	4:45 PM	SB	74604	4:00 PM	NB	25.14%	60425	6:15 AM	SB	1.36%
997	682	SW 177th Ave @ SW 88 St	8352	4:45 PM		16351	4:30 PM	SB	95.77%	14606	5:15 PM	SB	74.88%

Notes: 1. Post Hurricane Traffic Counts were taken within the week of September 20, 1992

2. New Monitoring Post Hurricane Traffic Counts were taken within the week of Novemberr 15, 1992

MONITORING POST – HURRICANE TRAFFIC DATA

2/18/1993

State Rd No	Count Sta No.	Local Name	1991 TRAFFIC DATA			1992 POST-HURRICANE DATA- Wk of 9/20/92				1992 POST-HURRICANE DATA- Wk of 01/10/93			
			Total AADT	PEAK HR	PEAK DIR	Total AADT	PEAK HR	PEAK DIR	% CHANGE	Total AADT	PEAK HR	PEAK DIR	% CHANGE
5	5036	US – 1 @ SW 17 Ave	89911	4:45 PM	SB	101647	8:00 AM	SB	13.05%	107697	7:45 AM	NB	19.78%
9A	2485	I – 95 @ Ives Dairy Rd	119225	3:45 PM	NB	146549	4:30 PM	NB	22.92%	152868	4:45 PM	NB	28.22%
94	592	SW 88th St @ SW 110 Ave	47812	7:45 AM	EB	60585	4:45 PM	WB	26.72%	62700	5:45 PM	WB	31.14%
821	2250	H.E.F.T @ SW 8 St	79707	7:15 AM	NB	129203	7:15 AM	NB	62.10%	107628	5:45 PM	SB	35.03%
821	2272	H.E.F.T @ Okeechobee	31800	5:00 PM	NB	64379	4:45 PM	NB	102.45%	52609	4:45 PM	NB	65.44%
826	568	Palmetto @ SW 8 St	181964	3:30 PM	SB	197615	5:30 PM	SB	8.60%	199042	5:30 PM	SB	9.39%
826	574	Palmetto @ NW 103 St	142092	7:00 AM	SB	162738	2:15 PM	NB	14.58%	179094	5:00 PM	NB	26.09%
836	2243	Dolphin @ NW 107 Ave	96714	4:30 PM	WB	111510	4:30 PM	WB	15.30%	104002	7:30 AM	EB	7.54%
874	2274	So Dade Xway @ SW 112 St	59615	4:45 PM	SB	74604	4:00 PM	NB	25.14%	65054	3:30 PM	NB	9.12%
997	682	SW 177th Ave @ SW 88 St	8352	4:45 PM		16351	4:30 PM	SB	95.77%	14670	4:30 PM	NB	75.65%

Notes: 1. Post Hurricane Traffic Counts were taken within the week of September 20, 1992

2. Monitoring Post Hurricane Traffic Counts were taken within the week of January 10, 1993

3. 1992 FDOT Traffic Volumes

4. 1992 County Traffic Volumes

APPENDIX C

TRANSIT DATA

1. **MDTA Ridership Summary By Mode**

2. **1989 to 1993 Tri-Rail Ridership Data**

3. **Cost and Ridership Demand Estimates for Proposed Extension of Tri-Rail Service to South Dade County**

4. **An Evaluation of Service Utilization and Satisfaction with FEMA Vans provided through MDTA - Executive Summary. By: Behavioral Science Research.**

5. **On-Board Ridership Profile and Opinion Survey of Emergency Fixed Route Van Service - Executive Summary By: Behavioral Science Research.**

6. **Transit Corridor Transitional Study Summary**

1. MDTA Ridership Summary By Mode

MDTA RIDERSHIP REPORT
SEPTEMBER 1993
EXECUTIVE SUMMARY

In September 1993, MDTA systemwide average weekday transit ridership (Metrobus, Metrorail, Metromover, and Paratransit) was 265,500, experiencing increases of 2.71% when compared to the previous month and of 3.83% from September 1992. Systemwide average weekend ridership was 244,500, showing a slight increase from the previous month but a decrease of 1.33% when compared to the previous year. Information by mode is as follows:

METROBUS: Weekday boardings for September 1993 averaged 208,300, experiencing an increase of 3.12% from the previous month and 3.99% when compared to the previous year. The average weekend boardings were 203,700, showing an increase of 1.60% from the previous month but a slight decrease when compared to September 1992.

METRORAIL: Weekday boardings for September 1993 averaged 47,400, experiencing an increase from both the previous month and year of 2.16% and 6.76%, respectively. Average weekend boardings were 36,200, showing an increase of 1.40% from the previous month but a decrease of 2.43% when compared to September 1992. Metrorail's systemwide average weekday parking was 4,156 cars, a slight increase when compared to the previous year.

METROMOVER: Weekday boardings for September 1993 averaged 6,200, decreasing from both the previous month and year by 6.06% and 25.30%, respectively. The average weekend boardings were 4,600, decreasing from the previous month by 40.26% and from the previous year by 30.30%. The decreases in average weekday and weekend boardings are attributable to the reduction of service resulting from the construction of the Metromover extensions.

PARATRANSIT: STS weekday boardings averaged 2,000, increasing from both the previous month and previous year by 5.26% and 53.85%, respectively. The Medicaid Program averaged 1,600, remaining constant when compared to the previous month but increasing by 14.29% when compared to September 1992. Over 80% of both STS and Medicaid boardings were by ambulatory patrons.

METROMOVER
Boardings By Station
September 1993

STATIONS	Average Weekday (1)	Average Weekend (2)	% CHANGE Previous Year Weekday	% CHANGE Previous Year Weekend
Government Center	1,407	1,976	-51.01%	-36.91%
Miami Avenue	786	367	0.64%	-33.39%
Fort Dallas	0	0	0.00%	-100.00%
Knight Center	535	203	-45.41%	-70.75%
Bayfront Park	1,776	569	-14.66%	-23.83%
First Street	287	223	1.41%	-12.20%
College/Bayside	763	847	12.54%	2.42%
College North	428	235	8.08%	-5.62%
Arena/State Plaza	198	173	11.24%	25.36%
Totals -	6,180	4,593	-25.30%	-30.30%

(1) Based on all weekdays of the month except for Labor Day. Ridership for that day was 2,501.

(2) Average Weekend represents the combined ridership for Saturday and Sunday.

METRORAIL
Boardings By Station
September 1993

Stations	Average Weekday (1)	Average Weekend (2)	% CHANGE Previous Year Weekday	% CHANGE Previous Year Weekend
Dadeland South	4,678	4,183	14.04%	-2.49%
Dadeland North	4,177	2,421	-3.27%	-13.94%
South Miami	2,664	1,457	-2.74%	-15.63%
University	1,705	1,707	21.44%	15.42%
Douglas Road	2,546	1,926	6.62%	1.10%
Coconut Grove	1,192	1,055	9.86%	10.01%
Vizcaya	980	745	11.49%	-1.32%
Brickell	1,880	1,129	6.03%	-13.69%
Government Center	9,644	7,533	0.24%	7.61%
Overtown/Arena	1,058	1,073	33.42%	-13.54%
Culmer	677	1,488	12.65%	12.13%
Civic Center	4,532	1,917	2.30%	-2.49%
Santa Clara	504	285	8.86%	-5.63%
Allapattah	1,467	1,316	12.85%	12.00%
Earlington Heights	1,037	933	14.84%	-2.81%
Brownsville	655	560	18.23%	-10.26%
Martin Luther King	1,167	1,118	23.23%	9.72%
Northside	1,795	1,865	-0.55%	-45.45%
Tri-Rail	1,699	943	68.38%	141.18%
Hialeah	1,237	1,141	8.03%	3.45%
Okeechobee	2,103	1,410	-0.61%	4.14%
Totals -	47,397	36,205	6.76%	-2.43%

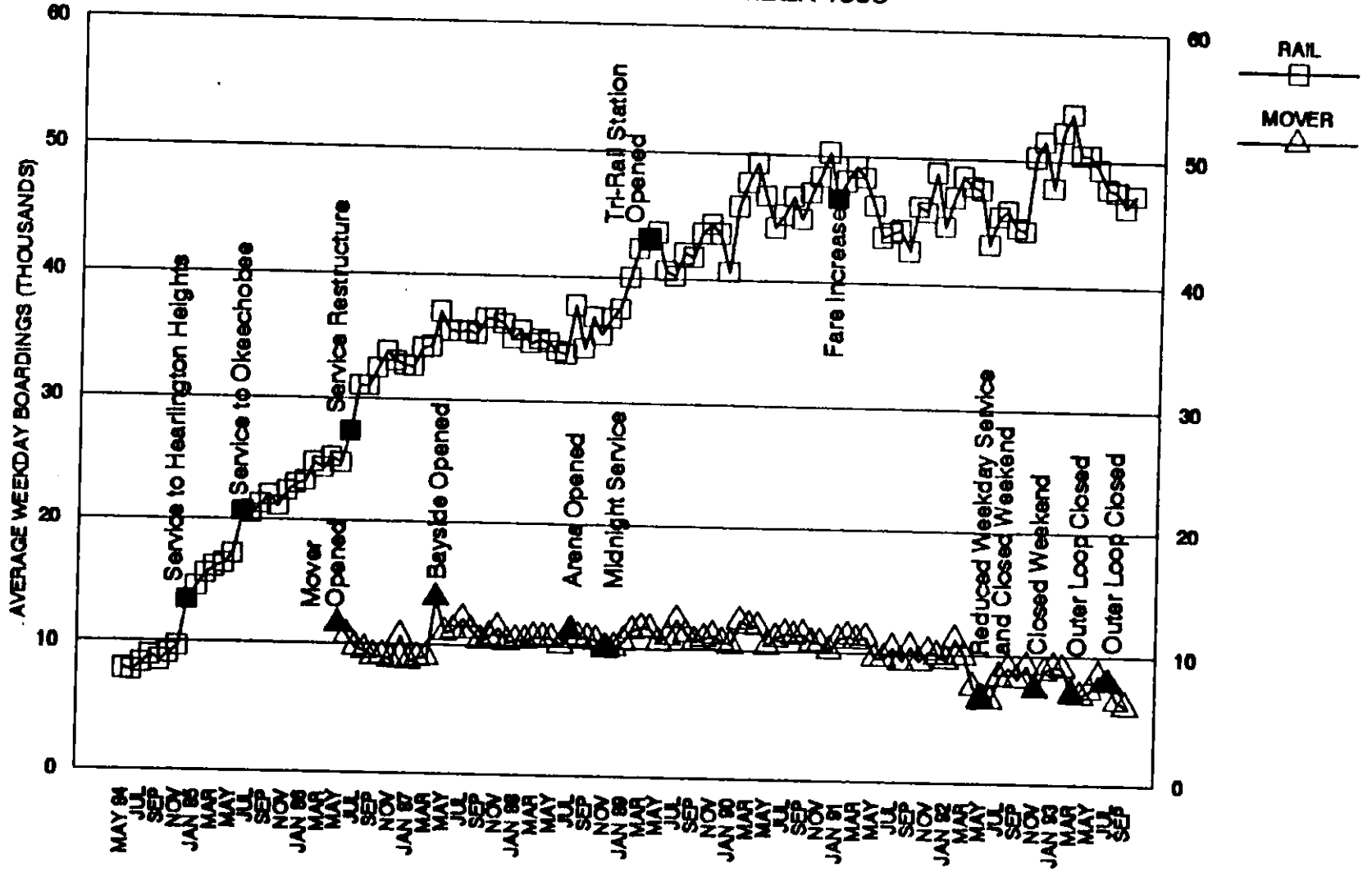
(1) Based on all weekdays of the month except Labor Day. Ridership for that day was 17,560.

(2) Average Weekend represents the combined ridership for Saturday and Sunday.

METRORAIL & METROMOVER

Average Weekday Boardings

MAY 1984 - SEPTEMBER 1993



METROBUS
Average Weekday Boardings
Comparison to Previous Month

ROUTE	JUN/92	JUL/92	% DIFF	ROUTE	JUN/92	JUL/92	% DIFF
11	10,459	15,841	51.5%	77	7,412	8,002	8.0%
C	3,090	4,550	47.2%	54	2,182	2,344	7.4%
L	7,542	10,341	37.1%	32	3,654	3,920	7.3%
7	3,173	4,131	30.2%	73	2,199	2,358	7.2%
ZOOBUS	43	55	28.6%	J	4,577	4,867	6.3%
K	3,875	4,916	26.9%	75	3,027	3,190	5.4%
8	6,158	7,738	25.7%	37	3,265	3,420	4.8%
M	1,533	1,906	24.3%	42	818	855	4.6%
S	9,724	12,067	24.1%	52/56	2,405	2,513	4.5%
BISC MAX	991	1,229	24.0%	83	3,415	3,551	4.0%
10	1,851	2,272	22.7%	W	739	766	3.6%
H	4,238	5,166	21.9%	B/CON	408	421	3.3%
9	3,850	4,653	20.9%	95EX	1,207	1,242	2.9%
16	3,622	4,378	20.9%	24	4,578	4,706	2.8%
3	7,015	8,381	19.5%	6	162	166	2.4%
T	1,840	2,183	18.6%	65EX	125	127	1.8%
29	340	402	18.2%	91	702	710	1.2%
28	567	670	18.1%	57/72	1,152	1,162	0.9%
12	2,573	3,024	17.5%	V	337	339	0.5%
F	1,097	1,257	14.6%	33	2,093	2,099	0.3%
88	2,198	2,518	14.5%	1	2,999	3,002	0.1%
E	564	644	14.2%	87	958	954	-0.4%
21	1,950	2,209	13.3%	TRI-MIA	364	360	-1.2%
22	3,920	4,376	11.6%	40	2,127	2,085	-2.0%
48	627	699	11.4%	KAT	1,571	1,526	-2.9%
62	4,640	5,158	11.2%	71	1,073	1,041	-3.0%
B	1,115	1,235	10.7%	R	371	358	-3.4%
35/70	2,161	2,382	10.2%	38EX	403	388	-3.6%
36	3,112	3,430	10.2%	A	398	380	-4.6%
2	3,251	3,580	10.1%	27 MAX	463	421	-9.0%
17	4,510	4,927	9.2%	TRI-36 ST	73	65	-11.1%
G	2,564	2,788	8.7%	80	457	372	-18.7%
27	7,379	7,985	8.2%	BREEZE	N.A.	342	N.A.

METROBUS
Average Weekday Boardings
Comparison to Previous Year

ROUTE	JUL/91	JUL/92	% DIFF
S	7,184	12,067	68.0%
11	11,567	15,841	37.0%
7	3,074	4,131	34.4%
C	3,410	4,550	33.4%
E	488	644	32.0%
8	6,056	7,738	27.8%
L	8,470	10,341	22.1%
10	1,874	2,272	21.2%
16	3,638	4,378	20.3%
3	7,078	8,381	18.4%
35/70	2,057	2,382	15.8%
33	1,834	2,099	14.4%
H	4,531	5,166	14.0%
ZOOBUS	49	55	12.9%
88	2,241	2,518	12.3%
22	3,935	4,376	11.2%
28	605	670	10.7%
K	4,468	4,916	10.0%
T	2,471	2,183	-11.7%
48	801	699	-12.8%
65EX	151	127	-15.8%
38EX	507	388	-23.4%
R	474	358	-24.4%
TRI-36 ST	96	65	-32.4%

10% INCREASE TO PREVIOUS YEAR

10% DECREASE TO PREVIOUS YEAR

METROBUS
Average Weekday Boardings
Comparison to Previous Month

ROUTE	AUG/93	SEP/93	% DIFF
80	89	206	131.5%
BREEZE	212	319	50.1%
BKL BRIDGE	358	531	48.4%
75	3,054	4,037	32.2%
V	404	495	22.5%
71	1,105	1,335	20.9%
28	685	816	19.1%
1	2,187	2,599	18.8%
27 MAX	522	605	15.9%
52/56	1,925	2,221	15.3%
48	571	657	15.2%
17	4,876	5,565	14.1%
21	2,250	2,563	13.9%
32	3,678	4,152	12.9%
83	3,966	4,427	11.6%
KAT	1,344	1,478	10.0%
27	8,074	8,741	8.3%
T	1,930	2,089	8.2%
65EX	148	160	7.8%
77	8,614	9,239	7.3%
10	2,248	2,399	6.7%
62	5,199	5,534	6.5%
FLAG MAX	1,657	1,761	6.2%
BISC MAX	1,957	2,076	6.1%
33	2,270	2,405	6.0%
K	4,816	5,087	5.6%
73	2,541	2,670	5.1%
G	2,674	2,797	4.6%
J	4,674	4,866	4.1%
91	770	800	4.0%
B	1,117	1,159	3.8%
42	864	895	3.6%
54	3,052	3,160	3.6%
57/72	1,133	1,172	3.5%
2	4,074	4,212	3.4%

ROUTE	AUG/93	SEP/93	% DIFF
R	340	351	3.4%
88	2,473	2,554	3.2%
22	4,285	4,411	2.9%
L	11,764	12,084	2.7%
12	3,143	3,225	2.6%
B/CON	345	353	2.4%
40	2,510	2,569	2.4%
E	848	866	2.0%
24	4,695	4,773	1.7%
8	7,840	7,965	1.6%
9	4,120	4,175	1.3%
37	3,838	3,888	1.3%
87	1,077	1,091	1.3%
3	8,726	8,779	0.6%
29	498	501	0.6%
W	698	700	0.2%
H	4,937	4,941	0.1%
95EX	1,503	1,503	0.0%
A	364	363	-0.1%
M	1,860	1,847	-0.7%
11	15,509	15,393	-0.7%
TRI-MIA	594	581	-2.2%
16	4,818	4,662	-3.3%
S	13,456	12,959	-3.7%
36	3,657	3,509	-4.0%
F	1,014	967	-4.6%
TRI-36 ST	109	103	-5.1%
C	4,116	3,879	-5.8%
7	4,239	3,941	-7.0%
35/70	1,896	1,548	-18.3%
6	123	91	-26.0%
ZOOBUS	24	10	-58.1%
38EX	1,503	370	-75.4%
MOVER SHUTTLE	N.A.	110	N.A.

METROBUS
Average Weekday Boardings
Comparison to Previous Year

ROUTE	SEP/92	SEP/93	% DIFF
BREEZE	154	319	106.9%
V	254	495	94.9%
BISC MAX	1,160	2,076	78.9%
65EX	95	160	68.2%
27 MAX	386	605	56.8%
TRI-MIA	411	581	41.4%
71	965	1,335	38.4%
B	878	1,159	32.1%
28	622	816	31.1%
40	1,979	2,569	29.8%
54	2,526	3,160	25.1%
95EX	1,248	1,503	20.4%
83	3,680	4,427	20.3%
E	720	866	20.2%
1	2,195	2,599	18.4%
75	3,425	4,037	17.9%
77	7,904	9,239	16.9%
73	2,337	2,670	14.3%
17	4,874	5,565	14.2%
L	10,673	12,084	13.2%
21	2,276	2,563	12.6%
57/72	1,052	1,172	11.4%
S	11,704	12,959	10.7%
91	725	800	10.4%
9	4,933	4,175	-15.4%
B/CON	442	353	-20.1%
6	118	91	-22.7%
29	651	501	-23.0%
F	1,347	967	-28.2%
35/70	2,308	1,548	-32.9%
80	362	206	-43.1%
ZOOBUS	18	10	-43.7%
38EX	1,775	370	-79.2%

10% INCREASE TO PREVIOUS YEAR

10% DECREASE TO PREVIOUS YEAR

2. 1989 to 1993 Tri-Rail Ridership Data

TRI-RAIL PASSENGER AUDIT REPORT
Off Counts for CY 1989

NORTHBOUND

STATIONS	01/89	02/89	03/89	04/89	05/89	06/89	07/89	08/89	09/89	10/89	11/89	12/89	1989 TOTAL	% of Total
Miami Airport	0	0	0	0	0	13	0	0	0	0	0	0	13	0%
Metrorail	73	14	86	62	45	7	5	7	20	7	7	2	335	0%
Golden Glades	435	314	523	565	655	416	373	358	377	384	242	230	4,872	1%
Hollywood	1,626	1,247	2,738	2,627	2,711	2,236	2,083	2,226	2,067	2,131	1,599	1,628	24,919	7%
Ft Laud Airport	31	0	351	0	495	757	695	875	874	1,046	861	900	6,885	2%
Ft Lauderdale	4,246	3,252	6,183	5,852	6,098	3,695	2,936	3,473	2,929	3,103	2,456	2,411	46,634	13%
Cypress Creek	0	0	0	0	0	1,575	2,932	3,415	3,335	3,840	3,093	2,850	21,040	6%
Pompano Beach	1,979	1,413	3,088	2,813	2,766	2,388	1,871	2,061	1,914	2,181	2,155	2,069	26,698	7%
Deerfield Beach	2,001	1,590	3,257	2,731	2,863	2,346	2,206	2,465	2,206	2,341	2,265	2,437	28,708	8%
Boca Raton	3,832	2,726	4,997	4,415	4,382	2,822	2,498	3,104	2,603	3,112	3,937	3,348	41,776	12%
Delray Beach	1,077	728	1,602	1,363	1,478	1,424	1,281	1,694	1,375	1,597	1,402	1,374	16,395	5%
Boyton Beach	0	0	0	0	0	4	0	58	25	19	10	410	526	0%
Lake Worth	2,006	1,554	3,403	2,683	3,003	2,651	2,269	2,744	2,396	2,485	2,349	2,283	29,826	8%
Palm Beach Airport	1,121	1,128	1,561	1,377	1,392	1,514	1,513	2,090	1,851	2,118	2,089	1,768	19,522	5%
West Palm Beach	8,945	5,570	10,516	9,366	9,126	6,954	6,429	6,623	5,393	6,957	6,581	7,327	89,787	25%
Totals	27,372	19,536	38,305	33,854	35,014	28,802	27,091	31,193	27,365	31,321	29,046	29,037	357,936	100%

SOUTHBOUND

STATIONS	01/89	02/89	03/89	04/89	05/89	06/89	07/89	08/89	09/89	10/89	11/89	12/89	TOTAL	% of Total
West Palm Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Palm Beach Airport	36	28	33	25	32	8	22	18	10	5	31	45	293	0%
Lake Worth	255	168	310	378	408	232	191	201	204	234	386	436	3,403	1%
Boyton Beach	4	0	0	0	6	0	8	0	0	0	0	153	171	0%
Delray Beach	320	208	504	436	660	495	400	511	445	454	510	416	5,359	2%
Boca Raton	944	695	1,331	1,141	1,284	1,211	1,053	1,297	1,140	1,332	1,229	1,087	13,744	4%
Deerfield Beach	772	450	985	717	901	742	789	897	701	841	723	722	9,240	3%
Pompano Beach	962	661	1,394	979	1,182	927	772	889	689	806	780	870	10,911	3%
Cypress Creek	6	0	112	0	43	657	1,107	1,383	1,131	1,408	1,336	1,424	8,607	3%
Ft Lauderdale	3,411	2,171	4,212	3,707	3,891	3,014	2,634	2,695	2,313	2,566	2,457	2,357	35,428	10%
Ft Laud Airport	3	0	277	0	525	1,009	1,132	1,280	1,289	1,472	1,551	1,411	9,949	3%
Hollywood	3,288	1,993	4,170	3,276	3,177	2,660	2,590	2,997	2,299	2,564	2,651	2,688	34,353	10%
Golden Glades	2,897	1,726	3,197	2,644	2,803	2,442	2,515	2,984	2,465	3,034	3,088	2,714	32,509	9%
Metrorail	7,770	6,250	12,061	11,247	11,954	9,483	9,028	10,554	9,896	11,759	10,682	10,532	121,216	35%
Miami Airport	5,751	4,323	7,847	5,596	5,353	4,303	3,947	4,700	3,848	4,568	4,261	4,310	58,807	17%
Totals	26,419	18,673	36,433	30,146	32,219	27,183	26,188	30,406	26,430	31,043	29,685	29,165	343,990	100%
GRAND TOTAL	53,791	38,209	74,738	64,000	67,233	55,985	53,279	61,599	53,795	62,364	58,731	58,202	701,926	

TRI-RAIL PASSENGER AUDIT REPORT
On Counts for CY 1989

NORTHBOUND

STATIONS	01/89	02/89	03/89	04/89	05/89	06/89	07/89	08/89	09/89	10/89	11/89	12/89	1989 TOTAL	% of Total
Miami Airport	5,736	6,654	8,201	6,388	6,047	4,487	4,030	4,781	3,996	4,898	4,511	4,543	50,024	14%
Metrorail	5,192	6,487	10,264	10,229	10,991	8,925	9,082	10,374	9,234	11,063	9,658	10,014	104,506	28%
Golden Glades	3,300	3,260	3,560	3,321	3,021	2,630	2,644	3,104	2,796	2,955	3,304	2,943	51,512	14%
Hollywood	3,987	4,062	4,573	4,281	3,933	3,024	2,783	3,199	2,705	2,749	2,849	2,786	39,006	11%
Ft Laud Airport	6	0	387	0	584	965	1,093	1,222	1,282	1,369	1,432	1,435	17,310	5%
Ft Lauderdale	5,128	4,680	5,713	5,392	5,134	3,735	2,653	3,019	2,636	2,915	2,621	2,438	36,188	10%
Cypress Creek	0	0	0	0	0	962	1,324	1,552	1,250	1,581	1,319	1,459	20,294	6%
Pompano Beach	1,341	1,459	1,744	1,308	1,474	1,100	907	1,025	767	1,037	866	1,030	12,584	3%
Deerfield Beach	952	987	1,178	850	1,194	812	790	867	746	810	729	793	10,708	3%
Boca Raton	1,116	1,398	1,503	1,363	1,480	1,227	1,115	1,259	1,156	1,289	1,163	1,000	15,069	4%
Delray Beach	323	625	687	517	683	572	435	570	540	451	443	404	6,250	2%
Boyton Beach	0	0	0	0	0	50	0	0	0	0	7	78	135	0%
Lake Worth	246	332	465	308	449	275	217	200	248	204	134	99	3,177	1%
Palm Beach Airport	45	44	30	9	24	25	18	11	9	0	10	5	230	0%
West Palm Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Totals	27,372	29,988	38,305	33,966	35,014	28,789	27,091	31,183	27,365	31,321	29,046	29,027	368,467	100%

SOUTHBOUND

STATIONS	01/89	02/89	03/89	04/89	05/89	06/89	07/89	08/89	09/89	10/89	11/89	12/89	TOTAL	% of Total
West Palm Beach	7,686	6,032	8,715	7,401	7,763	5,332	5,548	5,671	4,301	5,621	5,813	6,115	75,998	21%
Palm Beach Airport	928	1,174	1,273	1,181	1,301	1,414	1,499	2,003	1,756	2,033	2,019	1,931	18,512	5%
Lake Worth	2,213	3,232	4,154	3,264	3,099	2,832	2,631	3,213	2,572	2,954	2,586	2,970	35,720	10%
Boyton Beach	0	0	0	0	3	0	3	21	0	0	0	539	566	0%
Delray Beach	1,168	1,357	1,681	1,404	1,539	1,579	1,460	1,945	1,519	1,815	1,783	1,686	18,936	5%
Boca Raton	3,087	3,523	4,360	3,503	3,530	2,706	2,294	2,805	2,190	2,708	2,934	2,959	36,599	10%
Deerfield Beach	2,473	3,135	3,605	2,803	2,982	2,534	2,262	2,463	2,049	2,361	2,483	2,631	31,781	9%
Pompano Beach	2,140	2,758	3,296	2,655	3,079	2,243	1,858	2,074	2,362	2,640	2,612	2,183	29,900	8%
Cypress Creek	8	0	98	0	33	1,501	2,570	3,234	3,279	4,020	3,206	2,711	20,660	6%
Ft Lauderdale	3,590	4,614	5,544	4,721	4,826	3,559	3,020	3,248	2,969	3,226	2,884	2,410	44,611	13%
Ft Laud Airport	1	0	210	0	448	679	626	774	760	943	890	889	6,220	2%
Hollywood	2,122	2,540	3,008	2,979	3,094	2,308	2,130	2,461	2,363	2,454	2,198	1,985	29,642	8%
Golden Glades	590	424	491	485	496	478	286	413	305	252	259	156	4,635	1%
Metrorail	413	109	152	77	26	18	0	30	5	16	18	0	864	0%
Miami Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Totals	26,419	28,898	36,587	30,473	32,219	27,183	26,187	30,355	26,430	31,043	29,685	29,165	354,644	100%
GRAND TOTAL	53,791	58,886	74,892	64,439	67,233	55,972	53,278	61,538	53,795	62,364	58,731	58,192	723,111	

TRI-RAIL PASSENGER AUDIT REPORT
Off Counts for CY 1990

NORTHBOUND

STATIONS	01/90	02/90	03/90	04/90	05/90	06/90	07/90	08/90	09/90	10/90	11/90	12/90	1990 TOTAL	% of Total
Miami Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Metrorail	14	30	0	8	6	16	24	1	20	22	2	5	148	0%
Golden Glades	339	351	340	451	406	484	570	712	661	781	715	692	6,502	1%
Hollywood	2,219	2,108	2,929	2,802	2,655	2,312	2,528	3,108	2,804	3,409	3,208	3,120	33,202	5%
Ft Laud Airport	1,332	1,422	1,839	1,881	2,055	1,771	1,951	2,078	1,758	2,259	2,000	1,687	22,033	3%
Ft Lauderdale	3,377	3,441	4,348	4,123	4,475	4,266	4,510	5,544	4,716	5,821	5,186	4,937	54,744	8%
Cypress Creek	3,858	3,827	4,425	4,233	4,725	4,122	4,471	5,519	4,670	6,005	6,300	5,898	58,053	8%
Pompano Beach	2,848	2,945	3,495	3,409	3,405	3,268	3,426	4,139	3,247	4,239	4,090	3,693	42,204	6%
Deerfield Beach	3,714	3,589	4,345	4,139	4,315	4,003	4,231	4,990	4,103	5,240	4,830	4,399	51,898	7%
Boca Raton	5,065	5,183	6,243	5,559	5,572	5,211	5,353	6,182	5,452	6,526	6,298	5,778	68,422	10%
Delray Beach	1,961	1,922	2,422	2,563	2,938	2,381	2,362	2,929	2,237	2,586	2,752	2,647	29,700	4%
Boyton Beach	1,860	2,435	2,914	3,151	3,385	3,557	3,553	4,306	3,428	4,143	4,190	3,775	40,697	6%
Lake Worth	3,319	3,356	4,218	4,997	4,826	4,523	4,740	5,342	4,306	5,673	5,914	5,409	56,623	8%
Palm Beach Airport	2,568	2,643	3,213	3,223	3,735	3,775	3,712	4,396	3,584	4,432	4,668	4,351	44,300	6%
West Palm Beach	11,831	13,483	12,305	14,674	14,622	14,761	15,355	20,047	16,025	19,426	19,236	18,951	190,716	27%
Totals	44,305	46,735	53,036	55,213	57,120	54,450	56,786	69,293	57,011	70,562	69,389	65,342	699,242	100%

SOUTHBOUND

STATIONS	01/90	02/90	03/90	04/90	05/90	06/90	07/90	08/90	09/90	10/90	11/90	12/90	TOTAL	% of Total
West Palm Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Palm Beach Airport	93	61	109	18	27	39	46	49	25	14	44	31	556	0%
Lake Worth	504	377	502	116	117	165	165	296	637	866	809	672	5,226	1%
Boyton Beach	364	456	537	481	513	433	452	626	867	1,053	967	882	7,631	1%
Delray Beach	771	665	823	804	744	744	733	869	928	1,111	1,089	971	10,252	1%
Boca Raton	1,585	1,484	1,525	1,627	1,771	1,659	1,688	2,206	2,501	3,483	3,296	2,879	25,704	4%
Deerfield Beach	1,049	1,022	1,165	1,274	1,388	1,420	1,502	1,752	1,561	1,981	2,175	1,965	18,254	3%
Pompano Beach	1,299	1,337	1,443	1,578	1,693	1,591	1,896	1,944	1,681	2,096	2,228	2,817	21,603	3%
Cypress Creek	2,390	2,191	2,716	2,634	3,049	3,118	3,008	3,682	3,262	4,318	3,887	3,390	37,645	5%
Ft Lauderdale	3,471	3,413	3,943	4,232	4,896	4,215	4,272	5,169	4,748	6,191	5,715	5,251	55,516	8%
Ft Laud Airport	2,128	2,129	2,739	2,585	2,497	2,518	2,584	3,042	2,515	3,400	3,107	2,953	32,197	5%
Hollywood	3,671	3,640	4,451	4,269	4,184	4,064	4,273	4,908	4,427	5,755	4,947	4,668	53,257	8%
Golden Glades	3,905	4,034	4,660	4,484	4,621	4,717	5,131	6,465	5,140	7,136	7,247	8,312	65,852	9%
Metrorail	17,967	19,680	24,135	24,811	24,472	21,739	23,426	28,783	20,441	23,952	24,951	26,020	280,377	40%
Miami Airport	6,327	6,276	6,697	6,489	6,684	6,716	6,872	8,764	7,575	9,072	9,103	8,683	89,258	13%
Totals	45,524	46,765	55,445	55,402	56,656	53,138	56,048	68,555	56,308	70,428	69,565	69,494	703,328	100%

GRAND TOTAL	89,829	93,500	108,481	110,615	113,776	107,588	112,834	137,848	113,319	140,990	138,954	134,836	1,402,570	

TRI-RAIL PASSENGER AUDIT REPORT
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NORTHBOUND

STATIONS	01/90	02/90	03/90	04/90	05/90	06/90	07/90	08/90	09/90	10/90	11/90	12/90	1990 TOTAL	% of Total
Miami Airport	6,962	6,637	7,760	7,587	7,123	7,124	7,810	9,444	7,384	8,942	8,586	8,290	93,649	13%
Metrorail	14,740	17,428	21,930	23,230	24,034	22,581	23,200	28,291	20,477	25,751	26,547	24,807	273,016	39%
Golden Glades	4,197	4,105	4,838	4,878	4,941	4,977	5,274	6,286	5,123	6,576	6,444	5,631	63,270	9%
Hollywood	4,536	4,480	5,588	4,913	4,835	4,647	4,817	5,630	4,958	5,804	5,585	5,695	61,488	9%
Ft Laud Airport	2,220	2,135	2,763	2,345	2,480	2,228	2,371	3,018	2,521	3,172	2,776	2,745	30,774	4%
Ft Lauderdale	3,622	3,800	4,641	4,088	4,729	4,202	4,162	5,153	4,661	5,881	5,416	5,338	55,693	8%
Cypress Creek	2,406	2,350	2,456	2,475	2,881	2,757	2,643	3,506	3,201	3,708	3,121	2,923	34,427	5%
Pompano Beach	1,541	1,576	1,781	1,658	1,710	1,777	1,856	2,096	1,770	2,150	2,509	2,904	23,328	3%
Deerfield Beach	1,245	1,440	1,470	1,064	1,289	1,196	1,531	1,682	1,498	1,846	2,127	1,816	18,204	3%
Boca Raton	1,558	1,474	1,646	1,710	1,755	1,758	1,856	2,272	2,928	3,679	3,423	2,878	26,937	4%
Delray Beach	777	761	640	760	695	688	688	823	911	1,133	945	916	9,737	1%
Boyton Beach	332	359	414	393	527	405	464	739	981	1,143	1,034	861	7,652	1%
Lake Worth	134	173	99	86	94	99	98	341	578	731	749	519	3,701	1%
Palm Beach Airport	35	17	6	26	27	11	16	12	20	46	127	19	362	0%
West Palm Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Totals	44,305	46,735	56,032	55,213	57,120	54,450	56,786	69,293	57,011	70,562	69,389	65,342	702,238	100%

SOUTHBOUND

STATIONS	01/90	02/90	03/90	04/90	05/90	06/90	07/90	08/90	09/90	10/90	11/90	12/90	TOTAL	% of Total
West Palm Beach	10,546	10,343	11,111	10,374	10,184	10,230	10,664	13,128	10,562	12,952	13,316	13,176	136,586	19%
Palm Beach Airport	2,758	2,655	3,032	3,268	3,585	3,638	3,625	4,536	3,665	4,915	4,600	4,568	44,845	6%
Lake Worth	4,255	4,459	5,241	5,287	5,495	4,908	5,316	6,073	4,984	6,431	6,290	6,529	65,268	9%
Boyton Beach	2,431	2,931	3,436	3,631	3,764	3,500	3,734	4,729	3,660	4,647	4,507	4,714	45,684	6%
Delray Beach	2,333	2,441	2,819	2,719	3,111	2,632	2,768	3,266	2,328	2,893	2,892	3,243	33,445	5%
Boca Raton	4,472	4,660	5,370	5,523	5,467	5,025	5,077	6,185	5,690	7,120	6,893	6,687	68,169	10%
Deerfield Beach	3,754	4,078	5,223	5,135	5,122	4,825	5,000	6,266	4,867	6,368	6,026	6,150	62,814	9%
Pompano Beach	3,044	3,071	3,440	3,838	4,064	3,615	3,802	4,522	3,671	4,614	4,276	4,115	46,072	7%
Cypress Creek	3,839	3,875	4,780	4,902	5,036	4,738	5,105	6,438	5,488	6,645	6,966	6,687	64,499	9%
Ft Lauderdale	3,618	3,569	4,500	4,605	4,617	4,372	5,018	6,393	5,498	6,486	6,453	6,299	61,428	9%
Ft Laud Airport	1,370	1,572	2,043	1,923	2,294	1,977	2,120	2,448	1,945	2,502	2,376	2,451	25,021	4%
Hollywood	2,754	2,792	4,050	3,765	3,466	3,186	3,293	3,972	3,295	4,048	4,166	4,191	42,978	6%
Golden Glades	309	318	395	431	450	492	524	595	595	783	769	682	6,343	1%
Metrorail	41	1	5	1	1	0	2	4	2	24	35	2	118	0%
Miami Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Totals	45,524	46,765	55,445	55,402	56,656	53,138	56,048	68,555	56,250	70,428	69,565	69,494	703,270	100%

GRAND TOTAL	89,829	93,500	111,477	110,615	113,776	107,588	112,834	137,848	113,261	140,990	138,954	134,836	1,405,508	

TRI-RAIL PASSENGER AUDIT REPORT
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NORTHBOUND

STATIONS	01/91	02/91	03/91	04/91	05/91	06/91	07/91	08/91	09/91	10/91	11/91	12/91	1991 TOTAL	% of Total
Miami Airport	0	0	0	0	0	0	199	0	48	274	0	12	533	0%
Metrorail	14	20	7	0	5	16	0	38	7	53	42	2	204	0%
Golden Glades	785	539	646	672	623	662	776	1,006	711	959	894	865	9,138	1%
Hollywood	3,920	3,695	3,587	3,565	3,686	3,357	3,630	3,912	3,381	3,960	3,842	3,899	44,434	5%
Ft Laud Airport	2,195	2,025	2,054	2,109	2,171	2,066	2,158	2,534	2,113	2,431	2,333	2,283	26,472	3%
Ft Lauderdale	5,958	5,960	5,822	6,129	6,319	5,935	6,513	6,706	5,653	6,870	6,413	6,455	74,733	8%
Cypress Creek	5,937	5,568	6,300	6,281	6,124	5,900	6,377	6,305	5,437	6,391	5,971	5,595	72,186	8%
Pompano Beach	4,650	4,393	4,463	4,723	4,424	3,900	4,049	4,502	4,156	4,705	4,417	4,463	52,845	6%
Deerfield Beach	5,280	5,070	5,288	5,480	5,081	4,409	4,960	5,545	4,413	5,024	4,818	4,925	60,293	7%
Boca Raton	7,376	6,831	6,919	7,069	7,505	7,192	7,749	7,493	6,454	7,268	7,033	7,017	85,906	10%
Delray Beach	3,355	3,559	3,882	3,520	182	0	0	502	2,348	3,292	3,264	3,513	27,417	3%
Boyton Beach	4,855	5,316	5,019	5,273	5,017	4,698	5,194	5,390	4,018	4,653	4,396	4,401	58,230	6%
Lake Worth	6,833	7,051	6,972	7,126	6,277	5,445	5,907	6,612	5,696	7,037	6,595	7,101	78,652	9%
Palm Beach Airport	5,418	5,113	4,991	5,385	4,908	4,536	4,980	5,250	4,488	5,321	4,776	5,057	60,223	7%
West Palm Beach	23,203	22,034	22,720	22,834	20,779	16,839	19,704	20,434	18,478	21,387	20,389	23,278	252,079	28%
Totals	79,779	77,174	78,670	80,166	73,101	64,955	72,196	76,229	67,401	79,625	75,183	78,866	903,345	100%

SOUTHBOUND

STATIONS	01/91	02/91	03/91	04/91	05/91	06/91	07/91	08/91	09/91	10/91	11/91	12/91	TOTAL	% of Total
West Palm Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Palm Beach Airport	38	48	39	34	35	18	11	33	29	50	49	54	438	0%
Lake Worth	797	846	783	859	1,010	683	284	685	1,365	1,667	1,255	1,227	11,461	1%
Boyton Beach	1,131	1,088	1,154	1,114	1,453	1,015	843	1,071	1,461	1,839	1,513	1,434	15,116	2%
Delray Beach	1,438	1,157	1,287	1,297	57	0	6	224	890	1,264	1,189	1,296	10,105	1%
Boca Raton	3,384	3,491	3,463	3,712	3,887	2,704	2,449	2,833	3,220	4,283	3,398	3,326	40,150	4%
Deerfield Beach	2,567	2,470	2,607	2,775	2,768	2,150	2,278	2,448	2,145	2,651	2,123	2,110	29,092	3%
Pompano Beach	2,483	2,305	2,361	2,521	2,398	1,837	2,021	2,210	1,855	2,253	2,095	2,004	26,343	3%
Cypress Creek	4,155	4,022	4,016	4,438	4,456	4,051	4,349	4,207	3,722	4,403	3,869	3,850	49,538	5%
Ft Lauderdale	6,470	6,220	6,584	7,252	7,436	6,413	7,126	7,514	5,938	7,131	6,726	6,695	81,505	9%
Ft Laud Airport	3,614	3,452	3,470	3,789	3,669	3,034	3,248	3,463	2,942	3,405	3,020	3,014	40,120	4%
Hollywood	5,775	5,566	5,936	6,454	6,081	4,963	5,352	5,739	4,728	5,636	5,410	5,058	66,698	7%
Golden Glades	7,385	7,370	7,361	7,579	7,161	5,867	6,574	6,566	5,941	6,584	6,722	6,686	81,796	9%
Metrorail	33,035	34,038	33,388	32,993	26,230	25,114	29,147	29,788	27,674	31,269	30,743	37,277	370,696	40%
Miami Airport	10,089	9,030	9,052	9,435	9,814	8,323	9,436	9,376	7,947	8,976	7,964	8,397	107,839	12%
Totals	82,361	81,103	81,501	84,252	76,455	66,172	73,124	76,157	69,857	81,411	76,076	82,428	930,897	100%

GRAND TOTAL	162,140	158,277	160,171	164,418	149,556	131,127	145,320	152,386	137,258	161,036	151,259	161,294	1,834,242	

TRI-RAIL PASSENGER AUDIT REPORT
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NORTHBOUND

STATIONS	01/91	02/91	03/91	04/91	05/91	06/91	07/91	08/91	09/91	10/91	11/91	12/91	1991 TOTAL	% of Total
Miami Airport	9,625	8,870	9,682	10,103	10,013	8,299	9,365	9,596	7,815	8,757	8,422	8,741	109,288	12%
Metrorail	31,404	32,633	31,624	32,132	25,650	24,113	28,177	28,820	23,971	28,454	28,065	32,708	347,751	38%
Golden Glades	6,740	6,010	6,486	6,531	6,165	5,749	6,631	6,714	5,596	6,399	6,407	6,226	75,654	8%
Hollywood	6,264	6,136	6,333	6,740	6,004	5,287	5,898	6,085	5,262	6,018	5,847	5,645	71,519	8%
Ft Laud Airport	3,418	3,082	3,063	3,409	3,194	2,668	2,833	3,292	2,729	3,129	2,909	2,692	36,418	4%
Ft Lauderdale	6,303	6,044	6,436	6,609	7,044	6,614	7,375	7,829	6,632	8,017	7,349	6,902	83,154	9%
Cypress Creek	3,631	3,192	3,657	3,697	3,931	3,593	4,088	4,286	3,724	4,242	4,112	3,899	46,052	5%
Pompano Beach	2,508	2,233	2,294	2,315	2,375	1,999	2,226	2,496	2,065	2,481	2,259	2,305	27,556	3%
Deerfield Beach	2,704	2,253	2,474	2,217	2,268	1,895	1,939	2,153	1,839	2,217	2,057	2,055	26,071	3%
Boca Raton	4,027	3,845	3,858	3,573	4,073	2,992	2,349	2,814	3,668	4,425	3,512	3,427	42,563	5%
Delray Beach	1,307	1,110	1,007	1,025	68	0	10	233	961	1,447	1,173	1,213	9,554	1%
Boyton Beach	1,144	1,013	985	1,032	1,597	1,126	943	1,277	1,647	2,053	1,664	1,691	16,172	2%
Lake Worth	674	731	761	765	898	577	312	605	1,372	1,756	1,333	1,261	11,045	1%
Palm Beach Airport	30	22	9	18	62	43	50	29	120	224	68	103	778	0%
West Palm Beach	0	0	0	0	0	0	0	0	0	24	6	10	40	0%
Totals	79,779	77,174	78,669	80,166	73,342	64,955	72,196	76,229	67,401	79,643	75,183	78,878	903,615	100%

SOUTHBOUND

STATIONS	01/91	02/91	03/91	04/91	05/91	06/91	07/91	08/91	09/91	10/91	11/91	12/91	TOTAL	% of Total
West Palm Beach	15,319	14,519	15,785	15,892	14,703	12,311	13,662	14,760	13,698	15,537	14,726	15,977	176,889	19%
Palm Beach Airport	5,747	5,299	5,614	5,265	5,023	4,429	5,052	5,179	4,359	5,201	4,621	4,937	60,726	7%
Lake Worth	7,624	7,763	7,735	7,689	6,647	6,124	6,728	7,205	6,705	7,898	7,593	8,446	88,157	9%
Boyton Beach	5,892	6,011	5,720	5,776	5,845	4,965	5,684	5,861	4,522	5,120	4,637	5,129	65,162	7%
Delray Beach	3,714	3,863	4,219	4,012	202	0	32	624	2,224	3,073	3,215	3,686	28,864	3%
Boca Raton	8,212	8,234	7,610	8,576	9,306	8,310	8,766	8,857	8,185	9,566	7,733	7,927	101,282	11%
Deerfield Beach	7,461	7,774	7,457	8,146	7,429	5,779	6,550	6,549	5,410	6,077	5,655	6,165	80,452	9%
Pompano Beach	4,959	4,925	4,733	5,259	4,827	4,306	4,829	4,891	4,410	5,025	4,720	5,249	58,133	6%
Cypress Creek	7,417	7,500	7,662	8,172	8,256	6,262	6,880	6,943	6,232	7,114	6,759	7,060	86,257	9%
Ft Lauderdale	7,372	7,347	7,259	7,463	6,592	6,435	6,733	6,769	6,108	7,253	7,218	7,507	84,056	9%
Ft Laud Airport	2,738	2,633	2,494	2,534	2,579	2,452	2,605	2,584	2,468	2,917	2,649	2,835	31,488	3%
Hollywood	5,039	4,508	4,451	4,671	4,423	4,121	4,751	5,044	4,745	5,697	5,567	6,430	59,447	6%
Golden Glades	850	723	759	682	605	654	850	1,014	737	898	953	946	9,671	1%
Metrorail	17	4	3	79	18	24	2	40	54	35	30	93	399	0%
Miami Airport	0	0	0	36	0	0	0	0	0	0	0	0	36	0%
Totals	82,361	81,103	81,501	84,252	76,455	66,172	73,124	76,320	69,857	81,411	76,076	82,387	931,019	100%
GRAND TOTAL	162,140	158,277	160,170	164,418	149,797	131,127	145,320	152,549	137,258	161,054	151,259	161,265	1,834,634	

TRI-RAIL PASSENGER AUDIT REPORT
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NORTHBOUND

STATIONS	01/92	02/92	03/92	04/92	05/92	06/92	07/92	08/92	09/92	10/92	11/92	12/92	1992 TOTAL	% of Total
Miami Airport	0	53	0	0	0	0	0	0	24	39	29	0	145	0%
Metrorail	320	2	0	19	8	21	1	5	16	169	35	7	603	0%
Golden Glades	1,096	837	847	864	793	968	719	666	1,075	1,414	1,544	1,393	12,216	1%
Hollywood	4,241	3,888	3,759	3,758	3,603	3,894	4,337	3,382	5,361	7,153	6,708	6,443	56,527	5%
Ft Laud Airport	2,729	2,498	2,616	2,649	2,415	2,596	2,831	2,014	3,120	4,285	4,082	3,934	35,769	3%
Ft Lauderdale	7,568	7,241	7,634	7,356	6,367	7,202	8,252	6,602	8,037	10,407	9,904	10,838	97,408	9%
Cypress Creek	6,255	6,157	6,321	6,284	5,818	6,090	6,954	5,240	6,798	8,229	7,590	8,055	79,791	7%
Pompano Beach	5,300	5,499	5,284	4,979	4,430	5,162	5,457	4,143	5,528	6,917	6,337	6,634	65,670	6%
Deerfield Beach	5,605	5,719	5,826	5,518	4,983	5,349	6,159	4,645	5,975	7,387	6,959	7,453	71,578	6%
Boca Raton	8,142	8,701	9,134	8,613	7,164	8,233	8,510	6,906	8,820	10,024	9,565	10,065	103,877	9%
Delray Beach	4,182	4,749	4,972	4,640	3,917	4,320	4,590	3,887	4,250	5,379	5,203	6,051	56,140	5%
Boynton Beach	5,527	6,477	6,285	5,372	4,643	5,213	5,968	5,310	5,101	5,946	5,885	6,120	67,847	6%
Lake Worth	9,167	10,743	10,018	8,375	6,948	7,355	8,395	6,988	8,567	9,984	9,380	11,058	106,978	9%
Palm Beach Airport	6,289	6,083	5,999	5,846	5,346	6,412	7,584	5,487	6,213	7,575	7,799	8,108	78,741	7%
West Palm Beach	24,536	24,636	27,047	25,492	22,684	23,242	25,044	20,782	26,422	33,340	29,028	28,896	311,149	27%
Totals	90,957	93,283	95,742	89,765	79,119	86,057	94,801	76,057	95,307	118,248	110,048	115,055	1,144,439	100%

SOUTHBOUND

STATIONS	01/92	02/92	03/92	04/92	05/92	06/92	07/92	08/92	09/92	10/92	11/92	12/92	TOTAL	% of Total
West Palm Beach	0	0	0	5	0	0	0	0	0	74	0	0	79	0%
Palm Beach Airport	110	61	51	73	58	66	33	67	110	112	115	120	976	0%
Lake Worth	1,516	1,388	1,558	1,212	1,270	952	575	568	1,487	1,671	1,447	1,246	14,890	1%
Boynton Beach	1,957	1,865	2,048	1,829	2,020	1,525	1,117	1,050	2,049	2,210	2,071	1,838	21,579	2%
Delray Beach	1,478	1,549	1,757	1,526	1,674	1,624	1,511	1,269	1,724	2,059	1,875	1,928	19,974	2%
Boca Raton	4,483	4,155	4,433	4,063	3,927	3,608	3,922	2,769	5,026	5,737	5,049	4,572	51,744	5%
Deerfield Beach	2,555	2,459	2,670	2,634	2,543	2,331	2,389	2,125	2,752	2,851	3,033	2,825	31,167	3%
Pompano Beach	2,472	2,388	2,564	2,383	2,590	2,405	2,776	2,083	2,540	3,011	2,877	3,659	31,748	3%
Cypress Creek	4,517	4,255	4,559	4,749	4,440	4,498	4,808	3,935	4,759	5,110	4,974	4,805	55,409	5%
Ft Lauderdale	7,730	7,602	8,658	8,378	7,196	7,406	8,317	7,412	7,528	9,158	8,728	9,477	97,590	9%
Ft Laud Airport	3,407	3,151	3,540	3,514	3,434	3,386	3,731	2,705	3,158	3,837	3,674	4,192	41,729	4%
Hollywood	6,406	5,720	6,167	6,445	5,187	6,053	6,669	5,069	6,069	7,209	7,051	7,811	75,856	7%
Golden Glades	7,354	6,594	7,201	6,788	6,181	7,331	7,968	6,752	7,778	10,270	9,270	9,718	93,205	8%
Metrorail	38,492	42,758	40,230	37,747	32,194	35,219	40,035	31,283	38,998	47,408	44,040	53,048	481,452	42%
Miami Airport	9,302	8,690	9,219	9,422	8,067	8,930	10,859	8,661	10,607	13,032	12,403	13,699	122,891	11%
Totals	91,779	92,635	94,655	90,768	80,781	85,334	94,710	75,748	94,585	113,749	106,607	118,938	1,140,289	100%
GRAND TOTAL	182,736	185,918	190,397	180,533	159,900	171,391	189,511	151,805	189,892	231,997	216,655	233,993	2,284,728	

TRI-RAIL PASSENGER AUDIT REPORT
On Counts for CY 1992

NORTHBOUND

STATIONS	01/92	02/92	03/92	04/92	05/92	06/92	07/92	08/92	09/92	10/92	11/92	12/92	1992 TOTAL	% of Total
Miami Airport	10,435	9,107	9,292	9,804	8,657	9,773	11,298	8,807	11,531	14,695	14,096	15,604	133,099	12%
Metrorail	34,707	42,596	41,880	35,825	28,852	34,831	40,608	31,836	38,236	48,026	44,925	48,504	470,826	41%
Golden Glades	7,009	6,335	6,736	7,151	6,176	7,501	8,149	6,782	8,085	11,009	10,208	9,633	94,774	8%
Hollywood	6,844	6,208	6,814	7,019	5,900	6,792	6,870	5,492	6,840	8,154	7,778	8,120	82,831	7%
Ft Laud Airport	3,337	2,900	3,100	3,372	3,056	3,184	3,341	2,438	2,894	3,697	3,490	3,659	38,468	3%
Ft Lauderdale	8,299	8,277	9,033	8,280	7,591	7,403	8,013	7,338	7,663	9,069	8,456	8,859	98,281	9%
Cypress Creek	4,566	4,006	4,135	4,393	4,131	4,238	4,639	3,681	4,867	5,435	4,822	5,098	54,011	5%
Pompano Beach	2,830	2,402	2,529	2,566	2,791	2,637	2,792	2,173	2,701	3,234	3,201	3,607	33,463	3%
Deerfield Beach	2,671	2,329	2,445	2,363	2,230	2,026	2,102	1,816	2,549	2,972	2,896	2,897	29,296	3%
Boca Raton	4,638	3,961	4,041	3,938	4,060	3,066	3,323	2,473	5,052	5,555	4,638	3,924	48,669	4%
Delray Beach	1,630	1,538	1,636	1,581	1,710	1,619	1,619	1,331	1,816	2,331	2,026	1,943	20,780	2%
Boynton Beach	2,176	2,033	2,194	1,941	2,053	1,620	1,229	1,148	1,879	2,013	1,737	1,664	21,687	2%
Lake Worth	1,668	1,517	1,726	1,409	1,642	1,148	645	599	1,503	1,796	1,655	1,447	16,755	1%
Palm Beach Airport	139	74	125	123	205	219	173	143	304	186	144	92	1,927	0%
West Palm Beach	8	0	0	0	65		0	0	15	50	0	0	138	0%
Totals	90,957	93,283	95,686	89,765	79,119	86,057	94,801	76,057	95,935	118,222	110,072	115,051	1,145,005	100%

SOUTHBOUND

STATIONS	01/92	02/92	03/92	04/92	05/92	06/92	07/92	08/92	09/92	10/92	11/92	12/92	TOTAL	% of Total
West Palm Beach	17,919	18,360	19,206	18,747	17,007	17,557	19,343	15,971	19,349	23,360	20,462	21,624	228,905	20%
Palm Beach Airport	5,754	5,425	5,657	5,786	5,225	5,803	7,062	5,261	6,638	7,570	7,328	8,598	76,107	7%
Lake Worth	9,514	11,285	11,010	9,426	8,467	8,556	9,354	7,787	9,472	11,442	10,856	12,263	119,432	10%
Boynton Beach	6,151	6,922	6,450	6,168	5,426	5,606	6,556	5,490	6,053	6,519	6,208	7,065	74,614	7%
Delray Beach	4,147	4,660	4,658	4,490	3,888	4,109	4,500	3,690	4,344	4,883	4,957	5,923	54,249	5%
Boca Raton	9,748	8,913	9,327	8,617	8,026	8,096	8,338	6,821	8,713	9,879	9,271	10,314	106,063	9%
Deerfield Beach	6,806	6,895	6,766	6,640	5,827	6,283	7,531	5,475	7,067	8,283	7,970	9,192	84,735	7%
Pompano Beach	5,827	5,988	6,083	5,714	4,900	5,702	5,935	4,885	6,336	7,242	6,804	7,673	73,089	6%
Cypress Creek	7,603	7,171	7,083	7,196	6,328	6,498	7,537	6,038	7,710	9,011	8,377	9,250	89,802	8%
Ft Lauderdale	8,098	7,662	8,109	8,080	7,098	8,019	8,775	6,805	8,809	10,902	10,426	12,076	104,859	9%
Ft Laud Airport	2,978	2,778	3,247	2,915	2,579	2,698	2,862	2,314	3,293	4,286	4,277	4,707	38,934	3%
Hollywood	6,212	5,576	5,908	5,896	5,238	5,354	6,003	4,424	6,889	8,688	8,092	8,972	77,252	7%
Golden Glades	948	996	1,053	985	705	913	845	718	1,024	1,445	1,574	1,279	12,485	1%
Metrorail	74	4	23	108	67	140	69	69	93	157	5	2	811	0%
Miami Airport	0	0	0	0	0	0	0	0	0	47	0	0	47	0%
Totals	91,779	92,635	94,580	90,768	80,781	85,334	94,710	75,748	95,790	113,714	106,607	118,938	1,141,384	100%
GRAND TOTAL	182,736	185,918	190,266	180,533	159,900	171,391	189,511	151,805	191,725	231,936	216,679	233,989	2,286,389	

TRI-RAIL PASSENGER AUDIT REPORT
Off Counts for CY 1993

NORTHBOUND

STATIONS	01/93	02/93	03/93	04/93	05/93	06/93	07/93	08/93	09/93	10/93	11/93	12/93	1993 TOTAL	% of Total
Miami Airport	0	0	0	0	0	0	0	0	0	0			0	0%
Metrorail	40	139	5	1	113	5	40	20	0	15			378	0%
Golden Glades	1,328	1,711	1,616	1,808	1,561	1,763	1,752	1,583	1,419	1,369			15,910	1%
Hollywood	7,029	7,154	7,620	7,390	6,644	6,811	6,666	6,477	6,368	6,748			68,907	6%
Ft Laud Airport	4,279	4,414	4,515	4,337	3,928	3,935	3,622	3,925	3,607	3,869			40,431	3%
Ft Lauderdale	11,004	11,578	12,646	11,447	10,512	10,965	11,100	11,304	10,066	10,759			111,381	9%
Cypress Creek	8,152	8,537	8,066	8,469	8,409	8,168	8,238	8,021	7,619	8,062			81,741	7%
Pompano Beach	6,950	7,062	7,068	7,038	6,352	6,637	5,889	6,785	6,358	6,380			66,519	5%
Deerfield Beach	7,149	7,809	7,376	6,844	6,639	6,947	6,805	6,640	6,183	6,553			68,945	6%
Boca Raton	10,812	11,314	11,223	11,231	10,224	10,057	10,344	9,931	9,699	11,145			105,980	9%
Delray Beach	6,058	6,826	6,172	6,295	6,064	6,038	5,531	6,080	5,600	5,823			60,487	5%
Boynton Beach	6,720	7,471	7,020	6,783	6,253	6,372	6,396	6,906	6,044	6,777			66,742	5%
Lake Worth	11,562	12,893	11,921	11,661	11,434	10,778	9,769	10,871	11,221	10,792			112,902	9%
Palm Beach Airport	8,653	8,887	9,281	9,085	8,482	8,430	9,283	8,880	9,464	8,221			88,666	7%
West Palm Beach	31,536	34,036	35,261	37,804	35,548	31,962	29,822	33,591	37,481	34,163			341,204	28%
Totals	121,272	129,831	129,790	130,193	122,163	118,868	115,257	121,014	121,129	120,676	0	0	1,230,193	100%

SOUTHBOUND

STATIONS	01/93	02/93	03/93	04/93	05/93	06/93	07/93	08/93	09/93	10/93	11/93	12/93	TOTAL	% of Total
West Palm Beach	0	0	0	0	0	0	0	0	0	0			0	0%
Palm Beach Airport	63	68	126	93	104	102	36	199	402	69			1,262	0%
Lake Worth	1,361	1,562	1,816	1,329	1,557	1,056	601	1,078	1,627	1,759			13,746	1%
Boynton Beach	2,131	2,162	2,472	2,150	2,162	1,776	1,338	1,877	2,592	2,657			21,317	2%
Delray Beach	2,289	2,256	2,552	2,392	2,336	2,224	1,876	2,658	2,434	2,641			23,658	2%
Boca Raton	5,598	6,222	5,970	5,561	5,233	4,279	3,430	4,408	5,708	6,027			52,436	4%
Deerfield Beach	3,109	3,273	3,277	3,194	2,925	2,827	2,681	2,899	3,034	3,383			30,602	3%
Pompano Beach	3,310	3,382	4,106	3,940	3,388	3,272	3,089	3,366	3,439	3,445			34,737	3%
Cypress Creek	5,384	5,218	5,434	5,536	5,519	5,573	4,795	5,597	5,475	5,222			53,753	4%
Ft Lauderdale	9,032	10,139	10,399	10,414	9,457	10,098	10,461	10,912	9,153	9,377			99,442	8%
Ft Laud Airport	4,040	4,446	4,632	4,373	4,192	4,679	4,131	4,235	3,948	4,243			42,919	4%
Hollywood	7,767	8,136	8,446	7,812	7,576	7,938	7,795	7,916	7,550	7,896			78,832	7%
Golden Glades	10,913	8,579	8,809	9,254	10,396	9,465	9,342	9,838	9,147	10,319			96,062	8%
Metrorail	51,328	58,075	57,654	57,162	53,158	48,254	47,603	50,686	45,795	47,436			517,151	43%
Miami Airport	13,820	14,155	14,464	14,177	13,118	14,123	14,124	14,076	14,231	13,016			139,304	12%
Totals	120,145	127,673	130,157	127,387	121,121	115,666	111,302	119,745	114,535	117,490	0	0	1,205,221	100%
GRAND TOTAL	241,417	257,504	259,947	257,580	243,284	234,534	226,559	240,759	235,664	238,166	0	0	2,435,414	

TRI-RAIL PASSENGER AUDIT REPORT
On Counts for CY 1993

NORTHBOUND

STATIONS	01/93	02/93	03/93	04/93	05/93	06/93	07/93	08/93	09/93	10/93	11/93	12/93	1993 TOTAL	% of Total
Miami Airport	16,962	16,064	15,885	16,487	15,035	15,942	16,727	17,881	15,504	14,983			161,470	13%
Metrorail	49,878	57,639	54,794	55,365	51,641	50,456	50,150	49,959	50,342	48,814			519,038	42%
Golden Glades	11,096	8,735	9,267	10,239	10,772	9,754	9,828	9,906	9,626	11,158			100,381	8%
Hollywood	8,410	8,929	9,040	8,747	8,126	8,540	7,696	8,358	7,694	8,206			83,746	7%
Ft Laud Airport	3,712	4,027	4,322	4,291	3,925	4,229	3,871	4,072	3,845	4,069			40,363	3%
Ft Lauderdale	8,434	10,223	9,792	9,956	9,020	8,432	8,756	9,231	8,791	8,632			91,267	7%
Cypress Creek	5,017	5,154	5,300	5,626	5,217	5,488	4,895	5,143	5,371	4,868			52,079	4%
Pompano Beach	3,199	3,515	4,573	3,909	3,412	3,507	3,154	3,476	3,583	3,597			35,925	3%
Deerfield Beach	3,297	3,307	3,410	3,257	2,839	3,032	2,983	3,158	3,225	3,275			31,783	3%
Boca Raton	4,819	5,238	5,267	4,947	4,608	3,732	3,120	3,999	5,384	5,259			46,373	4%
Delray Beach	2,380	2,462	2,793	2,618	2,813	2,405	1,820	2,227	2,729	2,720			24,967	2%
Boynton Beach	2,059	2,390	2,832	2,449	2,458	1,884	1,357	2,044	2,894	2,725			23,092	2%
Lake Worth	1,839	2,025	2,320	2,115	2,120	1,330	765	1,387	1,984	2,208			18,093	1%
Palm Beach Airport	170	123	195	187	177	137	125	173	157	162			1,606	0%
West Palm Beach	0	0	0	0	0	0	0	0	0	0			0	0%
Totals	121,272	129,831	129,790	130,193	122,163	118,868	115,247	121,014	121,129	120,676	0	0	1,230,183	100%

SOUTHBOUND

STATIONS	01/93	02/93	03/93	04/93	05/93	06/93	07/93	08/93	09/93	10/93	11/93	12/93 0	TOTAL	% of Total
West Palm Beach	23,413	24,347	24,894	24,482	24,385	22,420	22,303	22,786	23,787	23,239			236,056	20%
Palm Beach Airport	8,448	8,863	8,597	8,953	8,611	8,227	8,384	8,615	7,629	7,854			84,181	7%
Lake Worth	12,328	13,735	13,829	12,937	12,699	12,170	11,598	12,642	11,928	13,241			127,107	11%
Boynton Beach	7,629	8,231	7,969	7,558	7,342	7,207	7,281	8,600	7,086	7,586			76,489	6%
Delray Beach	5,932	6,590	6,488	6,262	6,115	5,878	5,468	6,071	5,623	5,833			60,260	5%
Boca Raton	10,485	10,910	11,105	10,930	9,524	9,280	8,646	9,121	9,744	10,364			100,109	8%
Deerfield Beach	8,888	9,238	8,653	8,618	7,807	7,721	7,563	7,803	7,371	8,227			81,889	7%
Pompano Beach	7,652	8,003	8,083	8,166	7,606	7,311	6,799	7,940	7,143	7,188			75,891	6%
Cypress Creek	8,981	9,446	9,071	9,711	9,204	9,079	8,303	9,022	8,672	8,963			90,452	8%
Ft Lauderdale	11,644	12,167	14,451	13,063	12,062	12,002	11,532	12,343	11,336	11,625			122,225	10%
Ft Laud Airport	4,585	4,934	5,276	4,722	4,663	4,496	4,047	4,823	4,229	4,090			45,865	4%
Hollywood	8,891	9,705	10,201	10,659	9,751	8,478	8,046	8,614	8,706	7,987			91,038	8%
Golden Glades	1,246	1,504	1,526	1,318	1,338	1,392	1,301	1,331	1,270	1,235			13,461	1%
Metrorail	23	0	14	8	14	5	31	34	11	58			198	0%
Miami Airport	0	0	0	0	0	0	0	0	0	0			0	0%
Totals	120,145	127,673	130,157	127,387	121,121	115,666	111,302	119,745	114,535	117,490	0	0	1,205,221	100%
GRAND TOTAL	241,417	257,504	259,947	257,580	243,284	234,534	226,549	240,759	235,664	238,166	0	0	2,435,404	

3. **Cost and Ridership Demand Estimates for Proposed Extension of Tri-Rail Service to South Dade County**

Cost and Ridership Demand Estimates for the Proposed Extension of Tri-Rail Service to South Dade County

Prepared for:
TRI-COUNTY COMMUTER RAIL AUTHORITY

By:
BARTON-ASCHMAN ASSOCIATES, INC.
PARSONS DE LEUW, INC.
THE GOTHARD GROUP

May 1993

Contents

Chapters

Executive Summary

The Tri-County Commuter Rail Authority has undertaken a study of the feasibility of extending Tri-Rail service from its current southern terminus into southern Dade County. Two alignments and three service delivery options for providing Tri-Rail service were studied. Both alignments began at the Miami International Airport Station of the existing system. The first two alignment options follow the existing CSX right-of-way, and the third follows the FEC alignment. Specifically, the three alignments were:

- the existing CSX railroad tracks to Homestead/Florida City;
- the CSX tracks to the Countrywalk/Metrozoo area only; and
- the exiting FEC tracks to the Dadeland North station of Metrorail in the Kendall area of Dade County.

The purpose of the study was to estimate the costs of upgrading the existing rail facilities, construct new stations, and project ridership demand of the proposed extensions given both the present conditions and the potential rebuilt conditions of the area. A summary of the study findings is presented here and illustrated in the table on the following page.

Results of Analysis

The results of the analysis shows that the extension to Dadeland North using the FEC alignment results in the most cost-effective option, with cost-effectiveness being defined as cost per rider. The CSX option to Countrywalk/Metrozoo ranks second with the extension all the way to Homestead/Florida City using the CSX alignment ranking third. The additional 12.5 miles of service only produce an additional 430 riders on an average weekday.

TRI-RAIL EXTENSION INTO SOUTH DADE COUNTY
SUMMARY OF OPTIONS

	FEC to Dadeland	CSX to Country Walk	CSX to Homestead/ Florida City
Miles	10.4	17.7	30.2
Stations	2	4	5
Ridership (Average Weekday)			
Dade	1,000	1,750	1,980
InterCounty	1,100	1,300	1,500
Total	2,100	3,050	3,480
Costs (millions)			
Construction	$21.5	$35.9	$57.7
Annual Operating Costs			
Hourly Service	$1.7	$3.1	$4.9
1/2 hour Service	$2.0	$3.5	$5.5
Additional Train Sets Required	2/4*	2/4	2/4

*Hourly/1/2 hour service

All three of the options require the addition of two train sets for the hourly service and four for the half-hour service. The purchase price for each train set (one locomotive, three trailer cars, and one cab car) is estimated to be $6.9 million. This results in total equipment costs of $13.8 million for the hourly service and $27.6 million for the half-hour service. Leasing the equipment rather than purchasing will result in an annual lease costs of $1.2 million and $2.4 million for hourly and half-hourly service, respectively.

Engineering Analysis

Both the CSX and FEC tracks were field inspected as a part of this study. The analysis resulted in a series of improvement recommendations for each. The overall track improvement recommendations included the following.

- Removal of the entire mainline and replace it with new track, including turnouts, to make it suitable for FRA Class 4 (80 mph for passenger, 60 mph for freight) operation.
- Replacement of certain existing turnouts serving industries with new, same size turnouts.
- Construction of enough passing sidings to support the half-hourly headway operating scenario.
- Regrade and roll trackbed after removal of the existing track, and place new track on a bed of clean ballast eight inches deep.
- Replacement of all grade crossing with full depth rubber panels.

Station Locations

A total of five new stations were proposed for the CSX option, and three for the FEC. The station locations proposed for CSX are summarized below.

- Bird Road. In the vicinity of the crossing of Bird Road and the existing CSX tracks.

- North Kendall Drive/ Don Shula Expressway. In the general vicinity of the crossing of North Kendall Drive and the existing CSX tracks.

- Killian Parkway/ Don Shula Expressway. In the vicinity of the crossing of Killian Parkway and the existing CSX tracks.

- Country Walk/Metrozoo. In the vicinity of the crossing of Coral Reef Drive and the existing CSX tracks.

- Homestead/Florida City. At the abandoned railroad passenger station in the center of Homestead.

The shorter option for the CSX corridor would terminate at the Countrywalk/Metrozoo station.

The three station locations proposed for the FEC option were as follows.

- Merchandise Mart. North of the Oleander Junction, so that if in the future both the FEC and CSX are used for Commuter service, the station would serve both line and provide a cross platform transfer between the two lines.

- Bird Road. In the vicinity of Bird Road and the existing FEC tracks.

- Dadeland North. Two options are shown on the plan. The base case, with the platform under the Snapper Creek Expressway, is less expensive since it does not include extending the track southward across Snapper Creek and S.W. 85th Street. Another option would locate the station about 1,000 to 1,500 feet further south, on the south side of Snapper Creek and closer to the Metrorail parking garage.

For each of the proposed stations, a simple low level, single platform configuration much the same as the existing TCRA stations was assumed.

Run Times

Run times were calculated based on the maximum authorized speed of 79 mph. The estimated run time included a one minute dwell at intermediate stations. Computed run times between stations on the CSX option were estimated to be as follows:

Miami International Airport Station		
		13'00" minutes
Bird Road Station	Dwell	1'00"
		4'00"
N. Kendall Drive Station	Dwell	1'00"
		3'00"
Killian Parkway Station	Dwell	1'00"
		4'00"
Countrywalk/Metrozoo Station	Dwell	1'00"
		12'00"
Homestead Station		---
TOTAL		40'00"

The estimated run times for the FEC options were estimated to be as follows:

Miami International Airport Station		
		9'00" minutes
Merchandise Mart Station	Dwell	1'00"
		3'30"
Bird Road Station	Dwell	1'00"
		3'30"
Dadeland North Station		---
TOTAL		18'00"

Layover times, based on a one hour cycle, were estimated to be between 10 and 12 minutes at each of the line's termini.

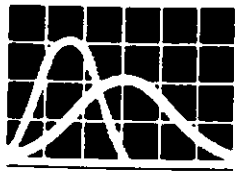
Ridership Estimation

The extension of the Tri-Rail system into south Dade County would generate the following average weekday trips:

- CSX alignment to Homestead/Florida City: 3,480
- FEC alignment to Dadeland North: 2,100

These trip totals include trips made within Dade County and those between Dade County and Broward or Palm Beach Counties. This would be for a mature system, after the first year of operation. The alignments serve the fastest growing areas of Dade County and would not preclude any of the proposed extensions of the Metrorail system. Measures to increase potential ridership include the development of feeder bus service and the redevelopment of the area displaced by Hurricane Andrew into denser, transit accessible communities.

4. **An Evaluation of Service Utilization and Satisfaction with FEMA Vans provided through MDTA - Executive Summary. By: Behavioral Science Research.**



BEHAVIORAL ■ SCIENCE ■ RESEARCH

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AN EVALUATION OF SERVICE UTILIZATION AND SATISFACTION WITH FEMA VANS PROVIDED THROUGH MDTA

Provided to:
Metro Dade Transit Agency

July 22, 1993

Project Manager:
Vivian E. Raab

(305) 443-2000 ■ (800) 282-2771
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1. EXECUTIVE SUMMARY

Awareness for the South Dade van service is very high; 90% of all survey respondents knew about the service. Survey respondents, both those who have used the vans and those who have not, feel strongly that the van service is important -- 73% of all respondents claim the service is 'somewhat' or 'very' important.

Survey findings indicate that the South Dade van service is, or has been, used by 15% of area households. Users tend to be younger and less affluent than the general population of the area, and come from larger families. They are more heavily weighted toward Blacks and Hispanics, and tend to be less fully employed than the general population.

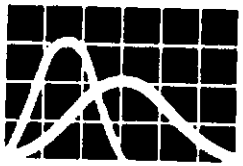
Vans tend to be used several times per week by resident riders; over 50% of the riders use the vans at least three times per week. The primary destinations are reported to be shopping, work and doctor visits.

While 90% of current users feel the van service is 'somewhat' or 'very' important, 60% say that it would be little or no problem if the vans were not available. Only 12% say they couldn't go where they need to go without the van service.

As the potential absence of the South Dade van service seems to be a significant problem *only for a small percentage* of current van users, it seems appropriate for MDTA to consider limiting the number of van routes offered to only those routes with the highest ridership levels.

Additionally, MDTA might consider a charge of 25 or 50 cents per trip, to help offset the cost of operating the remaining routes. At these price points, nearly all users would continue to use the van service at their current levels.

5. **On-Board Ridership Profile and Opinion Survey of Emergency Fixed Route Van Service - Executive Summary By: Behavioral Science Research.**



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ON-BOARD RIDERSHIP PROFILE AND OPINION SURVEY OF EMERGENCY FIXED ROUTE VAN SERVICE SOUTH DADE COUNTY, FLORIDA

Provided to:

METRO DADE TRANSIT AGENCY

July 23, 1993

Project Manager:
Richard D. Roth

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1. EXECUTIVE SUMMARY

The data described in this report are drawn from on-board surveys conducted from among 285 South Dade van riders, on a minimum of two morning routes and two afternoon routes per van. The surveys were conducted on weekdays in a two-week period during May and June, 1993, nine months after the hurricane.

- THE VANS SERVE AN ONGOING TRANSPORTATION SUPPORT FUNCTION. Nearly two-thirds of all South Dade van riders began using the service within its first four months of operation, and people are continuing to use the service.

- THE SOUTH DADE VANS SUPPORT WORKERS. Nearly one-half of all on-board survey respondents' trips were reported as work-related. That is, they were either on their way to work or returning from work.

- RIDERS REPORT HIGH LEVELS OF SATISFACTION. Customer satisfaction among riders of the South Dade van service is very high, indeed unusually high for a public transportation service.

  + The vast majority (93%) of user respondents reported their experience with the South Dade vans to be completely or somewhat satisfactory.

  + Nearly two-thirds of all respondents reported their experience with the vans to be "completely satisfactory," and close to one-third reported their experience to be "somewhat satisfactory."

+ There were no major differences in these distributions among riders of the South Dixie route nor among any of the twelve other routes.

+ The majority (between 57% and 66%) of respondents provided favorable evaluations of the issues concerning safety, cleanliness, timeliness and dependability.

- ELIMINATING THE VANS WOULD CAUSE AN INCONVENIENCE. Virtually all -- 96% -- of the on-board respondents surveyed reported that not having the South Dade (FEMA) vans available would represent at least some problem for them.

  + Nearly one-half of all respondents reported that discontinuing the van system would cause them a "***great problem***," while another 36% termed the possible absence of the vans as representing ***"some problem"*** for them.

  + Only 13% of the respondents said it would be a "***minor problem.***"

  + 28% of the respondents stated that they could not make the trip they were taking on the vans by any other means if the vans were discontinued.

  + Public transportation dependence of the van rider population is high: *fully 32% of the van riders have no private transportation*, over 50% higher than pre-hurricane levels.

- THERE IS A HIGH LEVEL OF REPEATED USE. The majority of respondents (at least 80%) reported using the South Dade van service a minimum of three to four days a week.

+ Two-thirds of all on-board respondents reported using the service five or more days per week.

+ Close to three-fourths of all respondents surveyed on the South Dixie Shuttle indicated they used the shuttle at least five days a week.

- THE SOUTH DADE SERVICE SERVES A LOW-INCOME POPULATION.

+ Approximately two-thirds of all on-board respondents were persons in the lower income brackets, earning $15,000 or less. Less than one-fifth were persons whose total 1992 household income was greater than $20,000.

+ The vast majority of on-board respondents could not use the service regularly if there were a charge of more than $ .50 per trip. 90% of all respondents reported they would reduce or discontinue their use of the service if the fare was $1.50 per trip; 80% would reduce their usage or discontinue at $1.00 per trip; 70% were similarly inclined at $ .75 per trip. Even at $ .50 per trip, better than 50% would not use the service or would reduce their usage.

- THE MAJORITY OF RIDERS ARE INTER-REGIONAL TRAVELERS.

+ Approximately two-thirds of all respondents used the South Dade van service for an inter-regional trip. That is, the trip originated in one South Dade Region and ended in another.

+ It is also important to note that just over 40% or two out of every five passengers whose trip originated in one of the three sub-regions of South Dade used the service for an intra-regional trip. The incidence of such relatively short rides was highest among Mid-South Dade riders (47%) and Upper South Dade passengers (43%).

- THE MAJORITY OF RIDERS WALK TO AND FROM THE VAN SERVICE.

  + The majority of all respondents (64%) reported they had walked to reach the van route pick up location. Of those who walked. 86% walked three blocks or less, and the remaining 14% walked more than three blocks.

  + The majority of respondents reported they walk to their destination upon disembarking the van service. 86% of these respondents walked three blocks or less. Transferring to another van was the next most frequently noted method used to reach their final destination by respondents.

- DEMOGRAPHIC CHARACTERISTICS

  + Just under one-half of all on-board respondents were aged between 20 and 39 years old. The second highest incidence was among the 19 and Under group, at 39%. The median age of all on-board respondents was approximately 27 years.

  + Better than two-thirds of all on-board respondents reported their household consisted of four or more persons; nearly one-half had households consisting of five or more persons.

  + Just over one-half of all on-board respondents were working either full or part time. Approximately one-third were students and 10% were unemployed.

  + African-Americans accounted for just over one-half of all on-board respondents. Approximately one-fourth of those completing the survey were Hispanic and 17% were Anglos.

6. Transit Corridor Transitional Study Summary

6. Transit Corridor Transitional Study Summary

TABLE 1

POTENTIAL APPLICATION OF MODE TECHNOLOGIES

	Priority Bus Lanes	Express Busway	"Hybrid" Light Rail Transit*	Metrorail	Local Bus/ Jitney**	Notes
SOUTH		•	•	•	O	
KENDALL	•	•	•	•	O	Busway and bus lanes combined in one alternative
NORTH	•			•	O	
NORTHEAST		•	•	•	O	
BEACH			•		O	
WEST			•	•	O	Various alignments
WEST-BEACH			•	•	O	Dedicated bus/van service

• Line-Haul Service Mode Alternative
O Background Service Mode
O Special Service

* "Hybrid" light rail transit vehicles can operate both on Metrorail lines and in mixed traffic or with crossings. In the Northeast, West and Beach corridors, regular light rail transit is an alternative.

** Local bus service may include regular buses, minibuses, and/or jitneys.
Special airport-seaport bus service represents existing cruise company bus services.

Local On-Street Minibus/Jitney

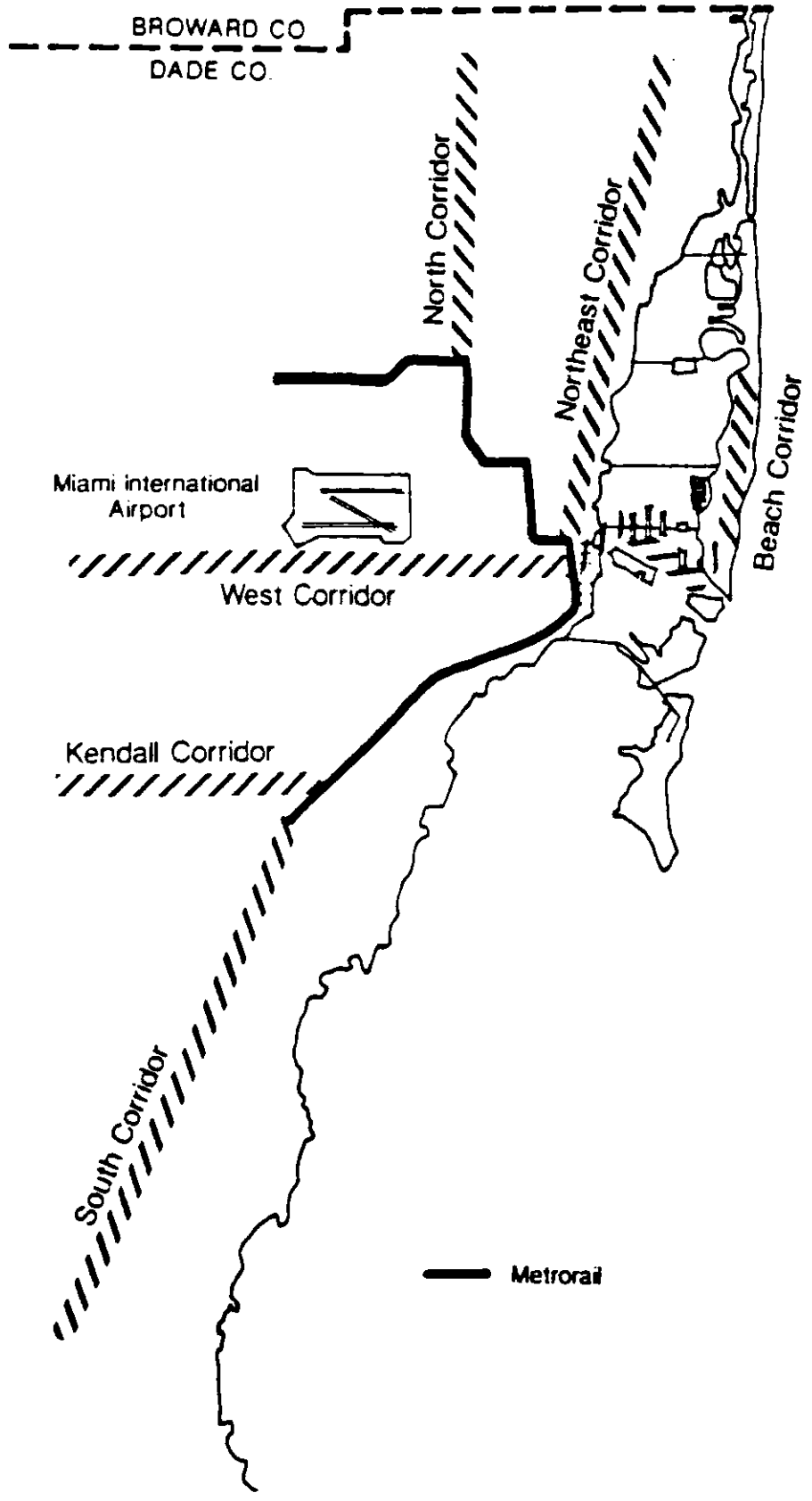
This mode represents minibus and jitney services presently operating in Dade County. Minibus service operates in mixed traffic making frequent stops and may provide feeder service to another mode such as Metrorail. Significant features include:

- Serves light passenger volumes
- Slow speed
- Dense localized network useful for short trips
- Extremely flexible routing and scheduling

Local On-Street Bus

This mode represents the majority of Metrobus routes operating in Dade County. Local bus service operates in mixed traffic making frequent stops and may provide feeder service to another mode such as heavy rail. Significant features include:

- Serves light to heavy passenger volumes
- Slow speed



METRO-DADE

Dade County
Metropolitan Planning
Organization

Dade County
Transit Corridors
Transitional Analysis

Candidate
Corridors
Studied

NOT TO SCALE

Figure 1

- Dense areawide network useful for short to medium length trips
- Flexible routing and scheduling

Priority Bus Lanes

Priority bus lanes or transitways are characterized by buses operating on exclusive bus lanes along a street and making periodic stops. A busway may be located in the median of a roadway or may consist of restricted lanes available full time or only during peak flow periods along the sides of the roadway. The speed of service depends on the spacing of stops and degree of separation from other traffic. Significant features include:

- Serves medium to high passenger volumes
- Slow to medium speed
- May serve short to long trips (depending on operating speed and bus stop spacing)
- May be intermixed with on-street bus operation

Express Busway

This mode is represented by express buses operating on a busway or separate bus lane along a roadway or segregated right-of-way. In such service, buses normally collect passengers on local streets or at park-and-ride facilities at one end of the busway, then operate with few or no stops until reaching the other end of the busway. Express buses may serve the CBD directly or they may feed a rail transit station. Significant features include:

- Serves medium to high passenger volumes
- Primarily serves long distance commuter trips
- Buses may continue on a local collector route to provide a one-seat ride without transfers
- May operate in HOV lanes with other traffic or on exclusive lanes
- High speed – buses avoid roadway congestion by use of exclusive lanes

Automated Guideway Transit (AGT)

This mode is represented in Dade County by Metromover. AGT usually operates as a local distribution system. Because it is automated (driverless), AGT systems operate on an exclusive right-of-way. Significant features include:

- Serves low to medium passenger volume
- Medium speed
- Serves short to medium length trips
- Automated, control by computer with supervision from central control center
- Must be grade separated throughout
- Stations spaced 1/4 to 1/2 mile apart
- Cars may operate alone or in pairs

Light Rail Transit (LRT)

Light rail transit is a flexible mode which can operate in a variety of settings. Key distinctions between light and heavy rail are light rail's use of overhead power collection as opposed to the track-level third rail used by heavy rail and light rail's shorter trains of articulated vehicles. With overhead power collection, light rail trains can operate in mixed traffic like streetcars, on an at-grade right-of-way with street and

pedestrian crossings, or on a fully segregated right-of-way. Since passengers can walk across tracks, stations can be simple with low platforms or use high platforms for faster loading and unloading.

An LRT option which may be of particular interest in Dade County is a "hybrid" vehicle which can operate both on Metrorail tracks and on tracks with street crossings or in mixed traffic. Such a vehicle would be equipped to collect power both from a third rail (for operation along existing Metrorail lines) and from overhead catenary wires (where street crossings or mixed traffic is present), would have both high and low platform access, and would be compatible with both automatic operation on Metrorail and manual operation where grade crossings are present.

Significant LRT features include:

- Serves medium to high passenger volume
- Low to high speed (depending on degree of separation of right-of-way and distance between stops)
- May serve short to long distance trips
- Normally uses overhead power collection, but may also use third rail
- May operate in mixed traffic, with cross-traffic, or on exclusive right-of-way
- Stations may be elaborate or simple. May use low platforms, high platforms, or both
- Stations spaced 1/2 to 1 mile apart
- Vehicles may operate along or in trains of up to four vehicles
- Lower capital cost than heavy rail
- Lower environmental and neighborhood impacts than heavy rail
- May be automated where exclusive right-of-way is used
- Fare collection may be performed in stations, on board vehicles, or both

Heavy Rail

This mode is represented in Dade County by Metrorail. Heavy rail, which collects power from a "third rail", must be on an exclusive guideway throughout – vehicle or pedestrian crossing of tracks is not possible. Heavy rail provides the highest passenger capacity and fastest service possible but at the highest capital cost. Significant features include:

- Serves high passenger volume
- Medium to high speed
- Serves medium to long trips
- Must be an exclusive right-of-way throughout (no crossings)
- Highest per-unit capital cost
- Must use high platforms
- Power collection from "third rail"
- Medium to long trains (usually 4 to 10 cars)
- Stations spaced 3/4 to 1-1/2 miles apart

In several of alternatives, Metrorail vehicles, which pick up their propulsion power by means of a third rail, would be equipped with a roof-top pantograph to pick up power from an overhead wire, and be able to operate like a light rail transit line .

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
NEW DAILY METRODADE TRANSIT TRIPS (LINKED)

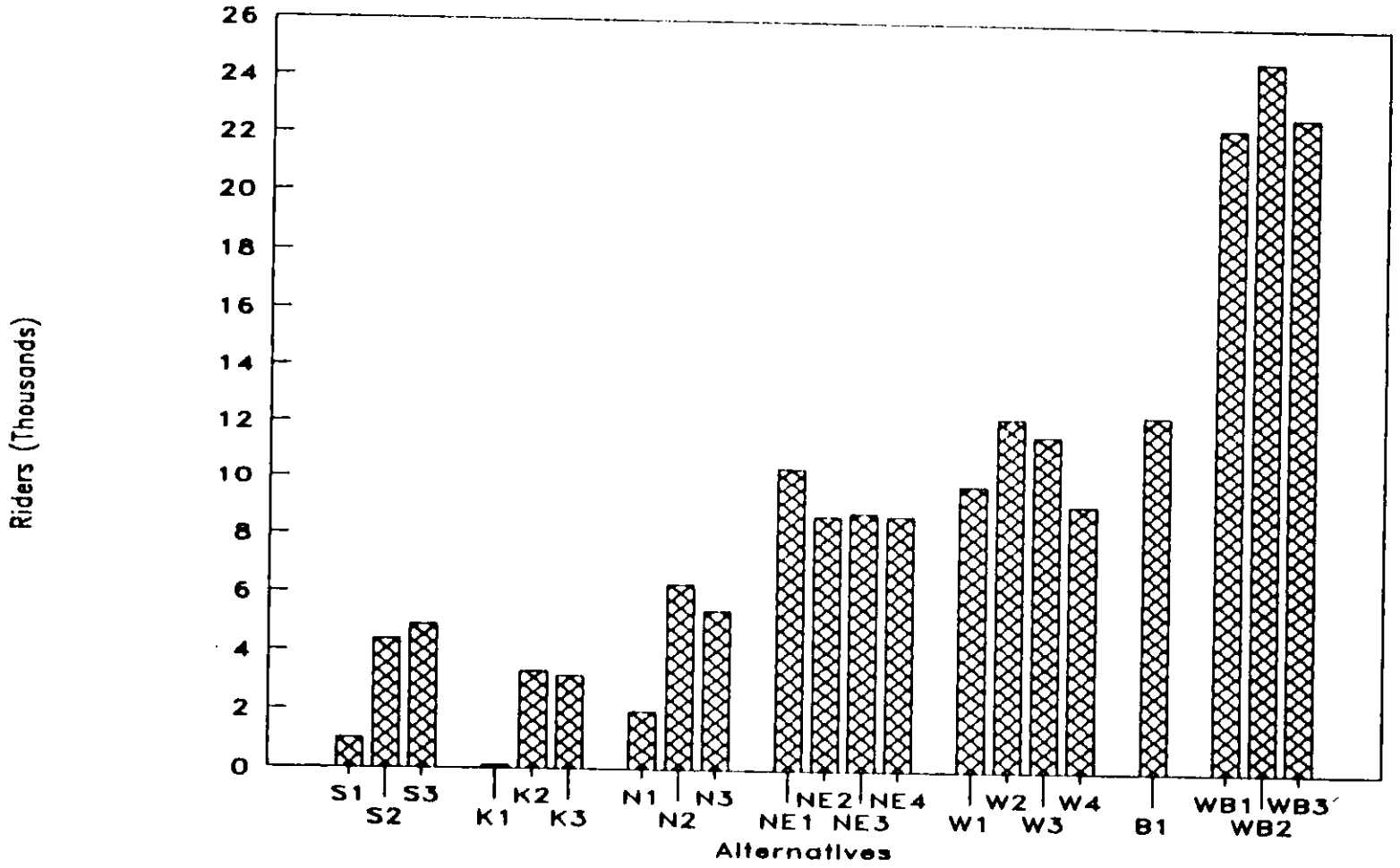


Figure SUM.1

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
DAILY BOARDING ON NEW ALIGNMENTS

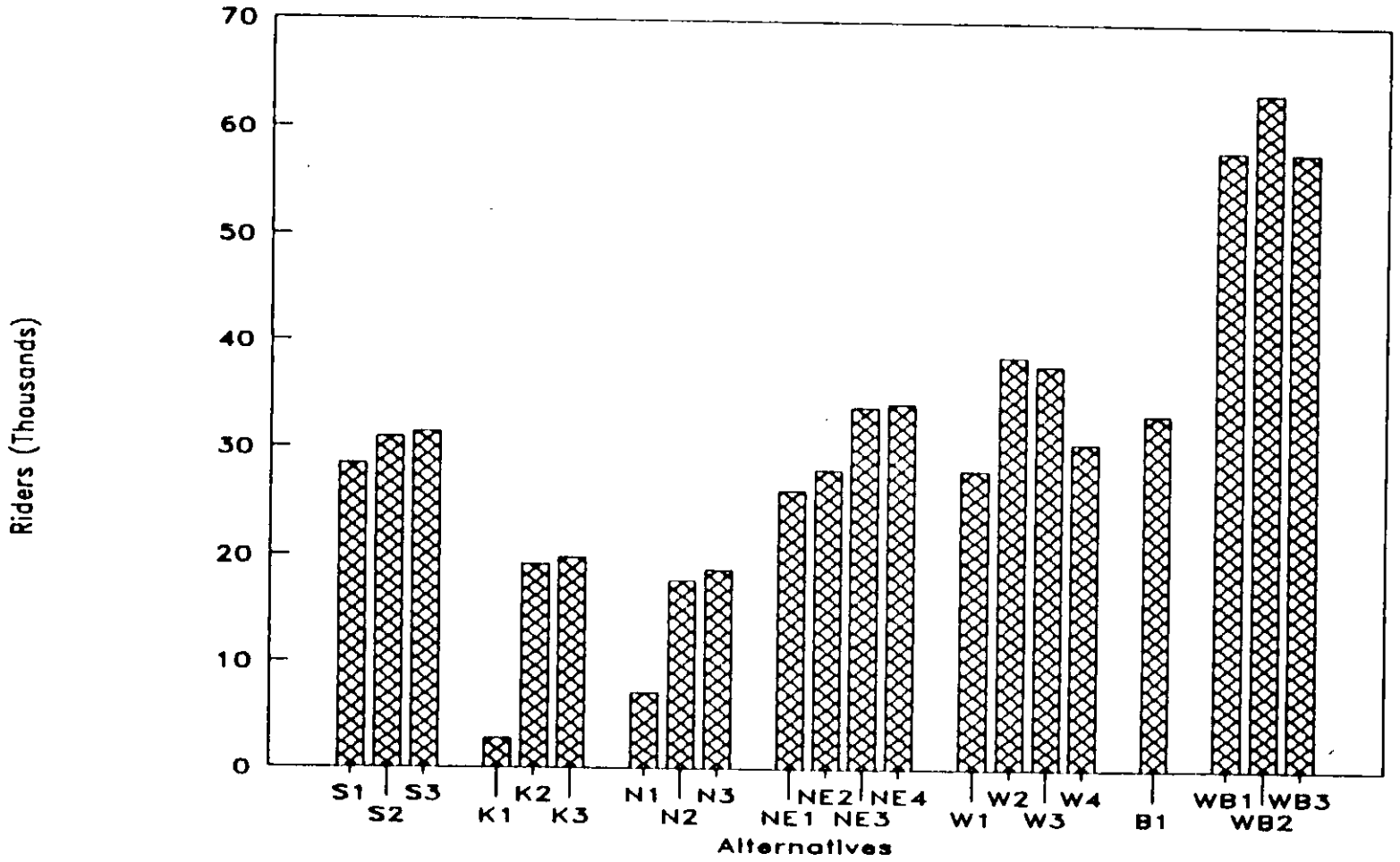


Figure SUM.2

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
INCREMENTAL CAPITAL COST ESTIMATE

Alternative	Total Capital Cost	Cost/Mile
TSM/Base	N/A	N/A
S1 Busway	$88,734,000	$5,241,000
S2 "Hybrid" LRT	$541,763,000	$27,611,000
S3 Metrorail	$868,456,000	$44,261,000
K1 Busway	$22,003,000	$2,993,000
K2 "Hybrid" LRT	$348,373,000	$48,791,000
K3 Metrorail	$474,586,000	$60,732,000
N1 Busway	$26,971,000	$3,467,000
N2 Metrorail	$495,478,000	$52,349,000
N3 Metrorail	$529,974,000	$45,836,000
NE1 Busway	$87,379,000	$6,807,000
NE2 "Regular" LRT	$395,716,000	$31,220,000
NE3 "Hybrid" LRT	$439,409,000	$33,382,000
NE4 Metrorail	$653,053,000	$51,216,000
W1 Metrorail	$604,309,000	$48,938,000
W2 "Hybrid" LRT	$760,753,000	$54,134,000
W3 "Hybrid" LRT	$712,982,000	$48,450,000
W4 Flagler LRT	$513,614,000	$37,302,000
B1 "Regular" LRT	$288,883,000	$31,063,000
WB1 Metrorail	$979,013,000	$48,997,000
WB2 "Hybrid" LRT	$1,119,052,000	$51,469,000
WB3 "Hybrid" LRT	$1,208,179,000	$58,417,000
WB1* Metrorail	$1,007,013,000	$50,398,000
WB2* "Hybrid" LRT	$1,139,052,000	$52,389,000
WB3* "Hybrid" LRT	$1,228,179,000	$59,384,000

* Includes Airport and Seaport service.

Table SUM.2

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
INCREMENTAL ANNUAL CAPITAL COST

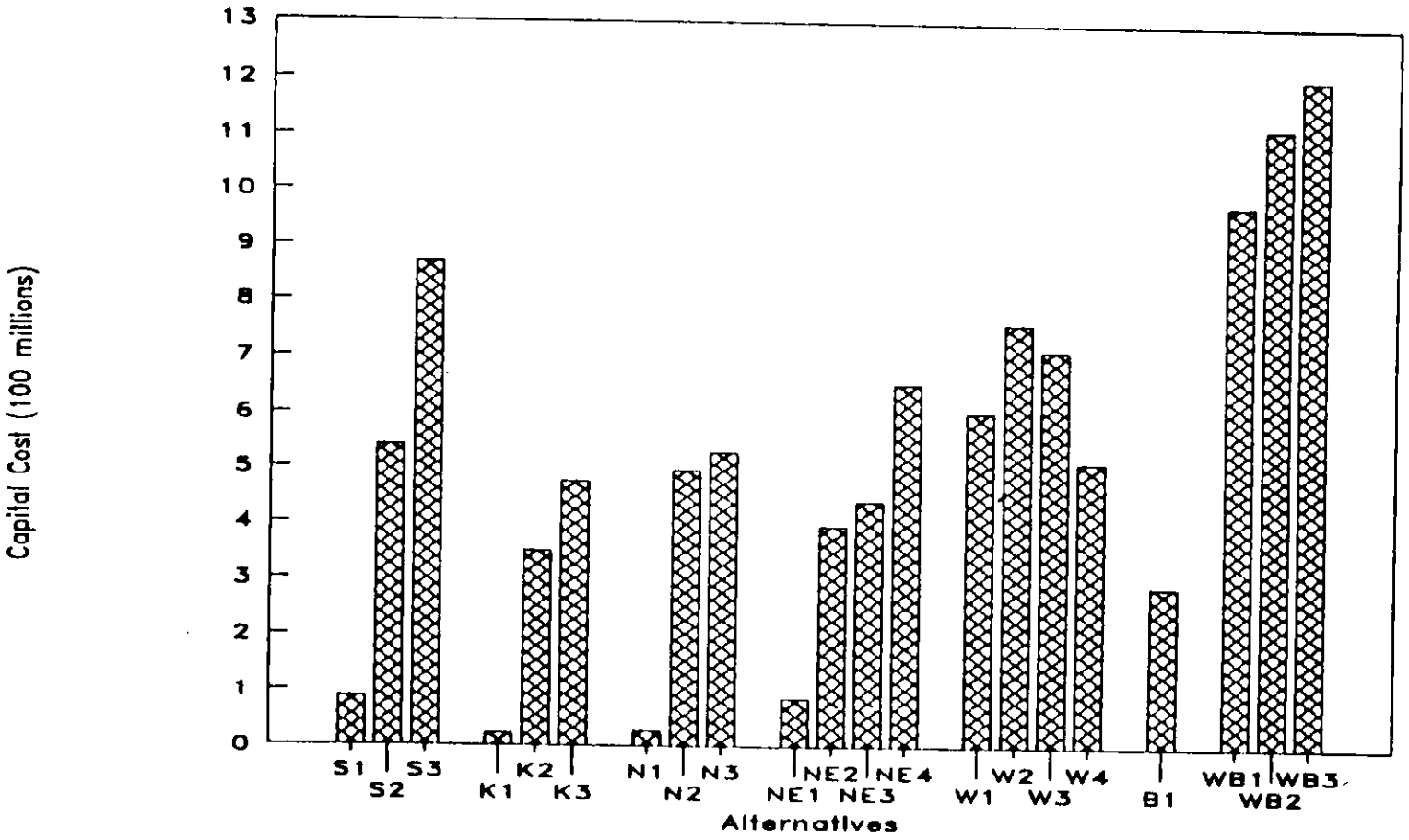


Figure SUM.3

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
INCREMENTAL ANNUAL O&M COST

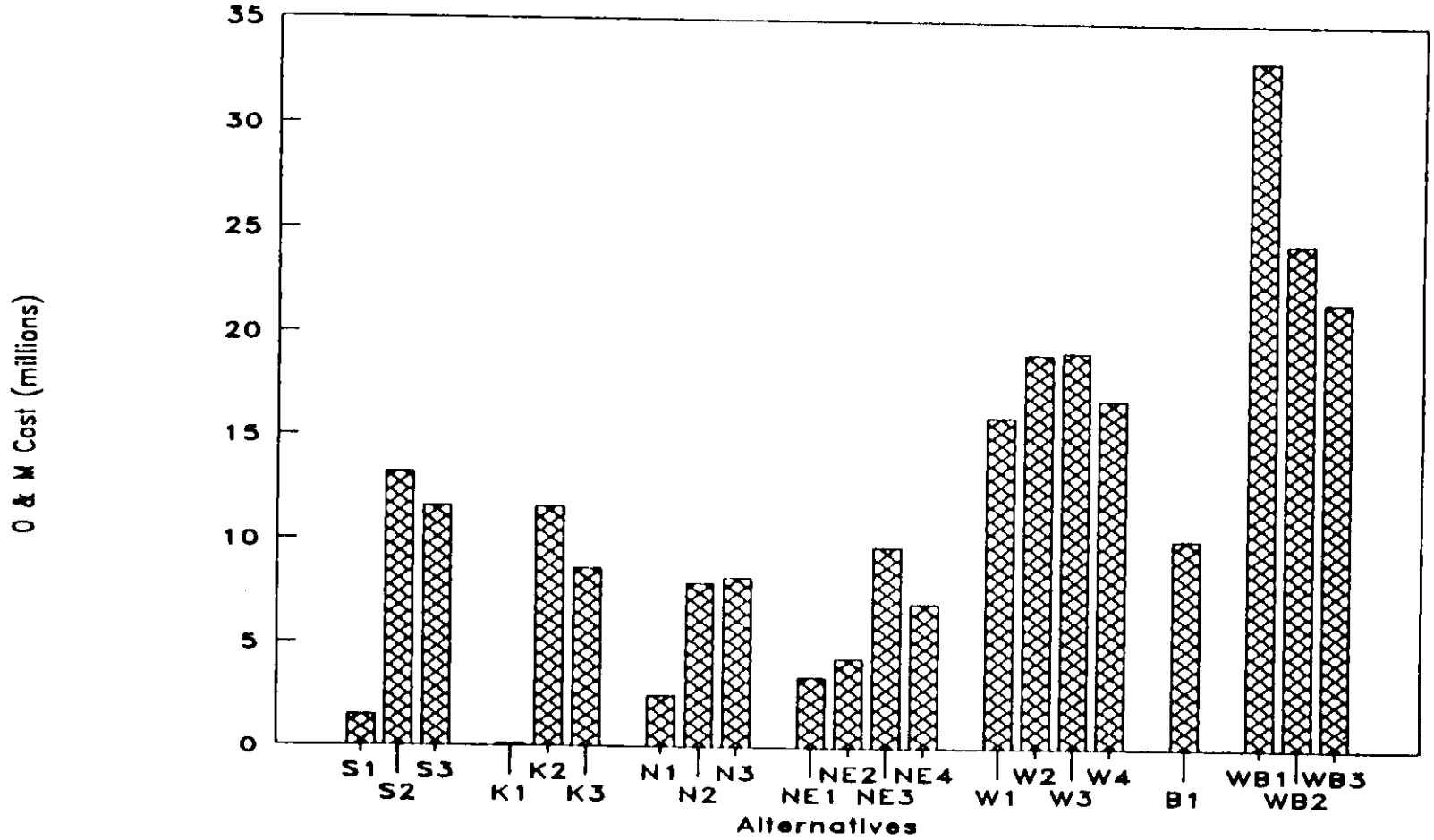


Figure SUM.4

Environmental Assessment

The alternatives considered in this study were developed to avoid or minimize impacts to existing communities and the man-made and natural environments. Alignments or transit modes that would have major community/environmental impacts were screened out from consideration early in the study process. The alternatives that considered in this study do have some impacts, however, most of which can be mitigated. Nevertheless, there are some impacts associated with the construction and/or the operation of an alternative which vary among the different alternatives and particularly among the different corridors.

Community disruption, property takings and related land use impacts are the major affects of many of the alternatives. This is particularly the case for the Kendall Corridor and along the Flagler Street under Alternative W4, LRT. These issues are probably the most serious environmental/community impacts associated with any of the alternatives or corridors and may well affect the viability or desirability of these possible improvements. Even those corridors and alternatives that use existing transportation alignments, such as the FEC right of way under the South Corridor and Northeast Corridor, and SR 836 under the West Corridor, additional require additional land for parking and access facilities at the stations. Land development issues are also a concern along the North Corridor, especially around the northern segment near Joe Robbie Stadium.

Traffic concerns can readily be addressed around most station areas. The street grade crossings close to US 1 of the busway and at-grade rail options under the Northeast and South corridors, will require special design and coordination attention.

The two most critical natural environmental issues affecting the corridors are the presence of an endangered species, Deltoid Spurge (a plant,) along the South Corridor's FEC right of way, and water ecology issues associated with the construction of the tunnel under Government Cut in Alternative WB3.

Many issues such as noise and vibration are generally mitigatible and the cost estimates include allowances for these types of mitigation measures. A formal environmental impact statement (EIS) would be prepared on any project selected for implementation.

Air quality is an important environmental concern, particularly given the requirements of the federal Clear Air Act of 1990. Transit improvements are generally regarded as having a beneficial effect on air quality and part of an overall regional air quality improvement program. Key indicators of the degree to which the various alternatives improve air quality are the number of auto trips diverted to transit and the diverted number of auto vehicle miles travelled (VMT), as these are measures of the reduction in auto emissions. Diverted auto trips and VMT are presented in the evaluation matrix for each corridor. Generally those alternatives that attract the most new riders, such as the West Beach options, have the greatest reductions in auto trips and VMT, and therefore auto emissions. While the amount of reductions in any one corridor may not be large on a regional basis, they nevertheless contribute to an overall program to improve air quality.

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
ANNUAL OPERATING AND MAINTENANCE COSTS
NET CHANGE RELATIVE TO TSM*

Alternative	Bus Component	LRT Component	HRT/ "Hybrid" LRT Component	Costs Associated with Passenger Activities	Total
TSM/Base	N/A		N/A	N/A	N/A
S1	1,465,000		0	28,000	1,493,000
S2	-3,777,000		16,890,000	129,000	13,242,000
S3	-3,777,000		15,226,000	143,000	11,592,000
K1	83,000		0	2,000	85,000
K2	-463,000		11,986,000	107,000	11,630,000
K3	-445,000		8,986,000	97,000	8,638,000
N1	2,361,000		0	94,000	2,455,000
N2	-597,000		8,289,000	256,000	7,948,000
N3	-1,562,000		9,486,000	230,000	8,154,000
NE1	3,088,000		0	320,000	3,408,000
NE2	-4,701,000	8,800,000	0	246,000	4,345,000
NE3	-4,701,000		14,177,000	242,000	9,718,000
NE4	-6,204,000		12,992,000	237,000	7,025,000
W1	-2,284,000		17,986,000	299,000	16,001,000
W2	-2,218,000		20,971,000	372,000	19,125,000
W3	-3,553,000		22,394,000	353,000	19,194,000
W4	-4,434,000	21,046,000	0	279,000	16,891,000
B1	-8,316,000	18,011,000	0	390,000	10,085,000
WB1	-10,038,000		42,629,000	696,000	33,287,000
WB2	-9,972,000		33,753,000	764,000	24,545,000
WB3	-9,940,000		30,900,000	704,000	21,664,000
WB1**	-10,038,000		49,012,000	975,000	39,949,000
WB2**	-10,000,000		38,551,000	1,043,000	29,594,000
WB3**	-9,900,000		35,647,000	984,000	26,731,000

*In 1992 $

**Includes Airport and Seaport service

Table SUM.3

FTA Cost Effectiveness Index

The FTA cost effectiveness index, described in detail at the beginning of the report, provides one means of combining the mobility benefits and costs into one measure. This measure is an annualized increment cost per new transit rider. The lower the cost per new rider, the more "cost effective" the alternative. While the FTA cost effectiveness index does not include every impact and benefit (environmental or community impacts, for instance), it does provide a means to compare alternatives with varying costs and levels of mobility benefits. Also as discusses in the Overview section a the beginning of the report, the cost component of the index can be graphically plotted against the ridership component to see the degree to which increased levels of investment in terms of capital and O&M costs generate ridership benefits. Those alternatives that lie highest and furthest to the left on the graph are connected. The resulting boundary, or "frontier," indicates the best that can be done with increasing levels of investment; those alternatives that are lower and to the right on the graph indicate less cost-effective investment opportunities.

Table SUM.4 shows the input values and cost-effectiveness indices for the alternatives in all the corridors. Figure SUM.5 plots the measure as discussed above for those alternatives in each corridor that are on its "frontier." Thus, the figure show how the most cost-effective alternatives in each corridor stack up against on another. Based on this measure, the Northeast Corridor busway, NE1, and the West-Beach Corridor options (all three has similar C/E indices,) are the most cost-effective alternatives and corridor considered. Other alternatives that are in close proximity to the "frontier" are the North Corridor busway and the Beach LRT, although this latter option is part of the West-Beach combination. The South Corridor and Kendall Corridor are the least attractive investment opportunities, based solely on the FTA C/E measure.

Summary Evaluation

This study examined and evaluated sets of transportation improvement alternatives for seven corridors in Dade County. The results of the technical analyses are presented and various indicators of performance, benefits, costs and impacts are listed and used to identify those alternatives and corridors, of those considered, that represent the best opportunities for transportation investment. To the extent possible within the scope of this systems level of technical analysis, consideration of community and environmental impacts and sensitivities have been incorporated into the development and evaluation of the alternatives. An ongoing financial analysis is examining the resources and opportunities to fund the construction and operations of potential improvements.

The following findings can be drawn from the results of the technical analysis presented above:

- The Northeast Corridor busway is a very cost effective and relatively low cost option.
- The West-Beach Corridor represents an opportunity to provide a major transportation improvement to better serve existing riders, attract a large number of new riders to transit, and provide a economically-valuable direct connection between the Miami International Airport and the Seaport. While the benefits are great, so is the investment. The two component that comprise this corridor – West Corridor and Beach Corridor – each are viable, beneficial, and reasonably cost-effective investments by themselves, especially the Beach LRT. This opens

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
COST EFFECTIVENESS FRONTIER

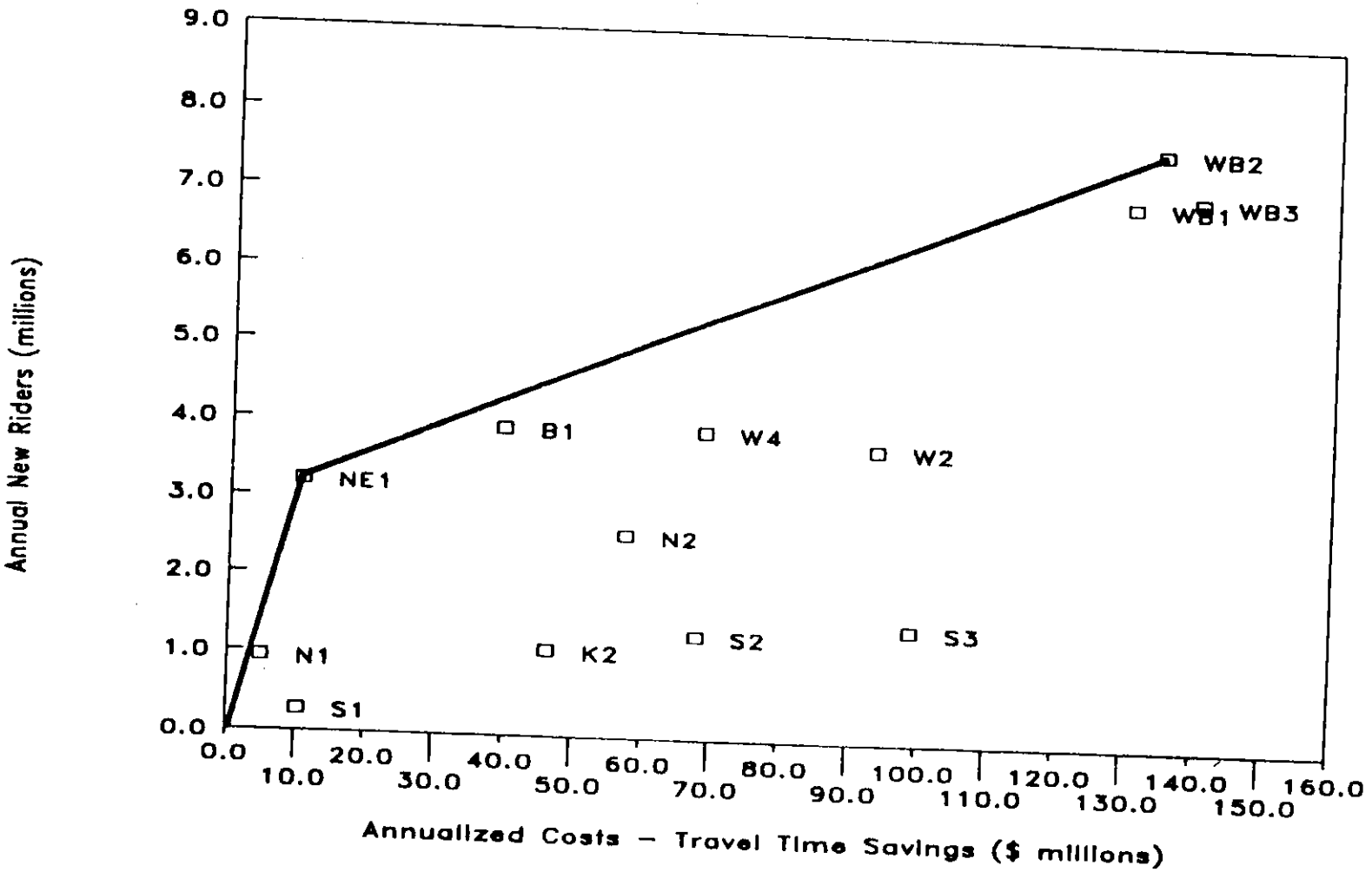


Figure SUM.5

DADE COUNTY TRANSIT CORRIDORS TRANSITIONAL ANALYSIS
COST EFFECTIVENESS INDEX

ALTERNATIVES		Change in Travel Time Savings (TT)	Change in O&M Costs (OM)	Change in Equivalent Annualized Capital Cost (EAC)	Change in Riders (R)		FTA Cost Effectiveness Index (C/E)*	
					MetroDade+ Jitney	MetroDade Only	MetroDade+ Jitney	MetroDade Only
S1	Busway	$758,000	$1,493,000	$9,636,512	285,194	284,889	36.37	36.41
S2	"Hybrid" LRT	$835,000	$13,242,000	$55,530,708	1,295,194	1,294,889	52.45	52.47
S3	Metrorail	$1,680,000	$11,592,000	$89,016,740	1,428,194	1,428,889	69.27	69.23
K1	Busway	$70,000	$85,000	$2,389,526	23,551	23,551	102.10	102.10
K2	"Hybrid LRT"	$991,000	$11,630,000	$35,708,233	1,074,284	1,074,284	43.14	43.14
K3	Metrorail	$1,313,000	$8,638,000	$48,645,065	975,720	975,466	57.36	57.38
N1	Busway	$509,000	$2,455,000	$2,929,051	924,971	942,307	5.27	5.17
N2	Metrorail	$1,429,000	$7,948,000	$50,786,495	2,440,119	2,564,948	23.48	22.34
N3	Metrorail	$1,133,000	$8,154,000	$54,322,335	2,187,685	2,303,030	28.04	26.64
NE1	Busway	$2,504,000	$3,408,000	$9,489,359	2,221,697	3,210,077	4.68	3.24
NE2	"Regular" LRT	$2,718,000	$4,345,000	$40,560,890	1,849,331	2,468,122	22.81	17.09
NE3	"Hybrid" LRT	$2,798,000	$9,718,000	$45,039,423	1,685,893	2,423,547	30.82	21.44
NE4	Metrorail	$3,245,000	$7,025,000	$66,937,932	1,718,610	2,376,353	41.15	29.76
W1	Metrorail	$2,260,000	$16,001,000	$61,941,673	2,859,066	2,991,597	26.47	25.30
W2	"Hybrid" LRT	$3,435,000	$19,125,000	$77,977,183	3,419,586	3,732,062	27.39	25.10
W3	"Hybrid" LRT	$3,199,000	$19,194,000	$73,080,655	3,156,585	3,534,009	28.22	25.21
W4	"Regular" LRT	$945,000	$16,891,000	$52,645,435	2,153,464	2,797,341	31.85	24.52
B1	"Regular" LRT	$153,000	$10,085,000	$29,610,508	1,919,209	3,911,038	20.60	10.11
WB1	Metrorail	$3,346,000	$33,287,000	$100,348,833	5,194,640	6,972,129	25.08	18.69
WB2	"Hybrid" LRT	$4,655,000	$24,545,000	$114,702,830	5,580,368	7,655,409	24.12	17.58
WB3	"Hybrid" LRT	$5,499,000	$21,664,000	$123,838,348	5,146,923	7,057,337	27.20	19.84
WB1	Metrorail**	$3,346,000	$39,949,000	$103,218,833	7,994,640	9,772,129	17.49	14.31
WB2	"Hybrid" LRT**	$4,655,000	$29,594,000	$116,752,830	8,380,368	10,455,409	16.91	13.55
WB3	"Hybrid" LRT**	$5,499,000	$26,731,000	$125,888,347	7,946,923	9,857,337	18.51	14.92

* C/E = ($OM + $EAC - $TT) / R
= Annualized Cost per New Rider

** Includes Airport and Seaport service

Table SUM.4

up the opportunity for staged implementation of an overall program for the corridors based on availability of funding.

- Improvements in the North Corridor attract many new riders as well as serve existing users. The busway is a very cost effective, low cost investment, while the rail extension straight up NW 27th Avenue represents a higher cost option.

- The alternatives in both the South Corridor and Kendall Corridor improve access and travel times for existing riders but only attract relatively modest new ridership compared to the investment required. The investment for the South Corridor busway is modest and provides an opportunity to establish a transit facility in this corridor as it recover from the Hurricane d]fjkasd

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