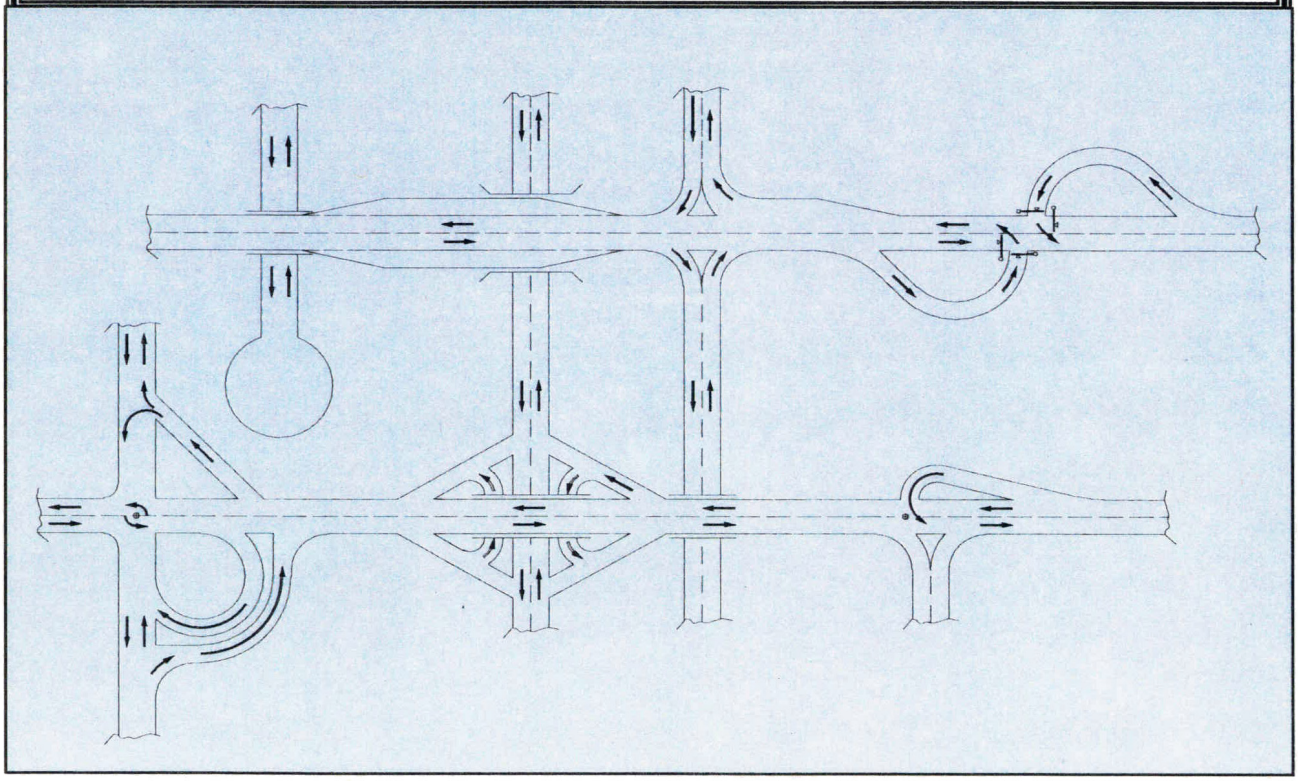
SUPERARTERIAL NETWORK STUDY

PROJECT NO. MPO-96-07

METRO-DADE

DADE COUNTY METROPOLITAN PLANNING ORGANIZATION

Technical Memorandum 8:
Estimation of Test Implementation Requirements



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Superarterial Network Study
Dade County Metropolitan Planning Organization

Project Number: E96-MPO-07

FIRST DRAFT

Technical Memorandum 8: Estimation of Test Implementation Requirements

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1. INTRODUCTION

This document is the 8th report in a series of technical memoranda documenting the progress accomplished to date for development and testing of a Superarterial Network for Dade County. The purpose of this document is to present a plan of action for implementing the Superarterial Network concept to a selected area of Dade County. This plan of action is intended to serve as a model for implementation of the concept to other areas and eventually throughout Dade County. The plan of action also includes a definition of the selected Transportation Area and Superarterials, and a list of improvements proposed for implementation.

Technical Memorandum 8 also includes the evaluation criteria to be adopted for the assessment of mobility improvement strategies and techniques applicable to each of the selected arterials. An implementation schedule is presented, including test time span and monitoring program, as well as potential funding sources of the test project.

This technical memorandum is preceded by Technical Memorandum 7: Preliminary Evaluation and Selection of Test Candidates. In order to test the Superarterial Network Concept, Dade County was divided into a series of Transportation Areas. These areas were selected based on traffic characteristics within Transportation Corridors. In Technical Memorandum 7, arterials within a Transportation Area were identified for preliminary testing of the Superarterial Network concept. A set of mobility-enhancing and congestion-reducing strategies and techniques were used to perform the preliminary testing and the regional model was used to gauge the regional impacts of the concept. Evaluation criteria were developed based on new and/or existing measures and parameters to appraise mobility improvements. These criteria helped estimate and quantify traffic flow improvements resulting from the application of suitable strategies and techniques to the selected major arterials within the study area.

The next step in this study is the generation of a Final Report. Each task previously performed, including literature research; data collection; definition of the Superarterial Network; identification of strategies and techniques; development of evaluation criteria; preliminary testing and testing methodology; implementation requirements; and final recommendations will be included in the final report. The Final Report will also include the Plan of Action developed in this Technical Memorandum, covering physical, operational, institutional, and financial requirements necessary to implement the Superarterial network concept in Dade County.

2. TEST IMPLEMENTATION REQUIREMENTS

Figure 2.1 identifies the different steps needed to successfully test the Superarterial Network concept in Dade County. The process shown in this figure was applied to Transportation Area 4 and is detailed in the following sections from funding source identification to monitoring program. Some of the sections also identify additional data that are needed to refine the results of the preliminary testing, prior to the actual implementation of the proposed improvements for Transportation Area 4.

2.1 Identify and Secure Funding

The Superarterial Network concept was one of the recommended improvements identified in the Dade County Mobility Management Process/Congestion Management System (Dade County MMP/CMS). Some of the potential sources of funding identified in that document are described below:

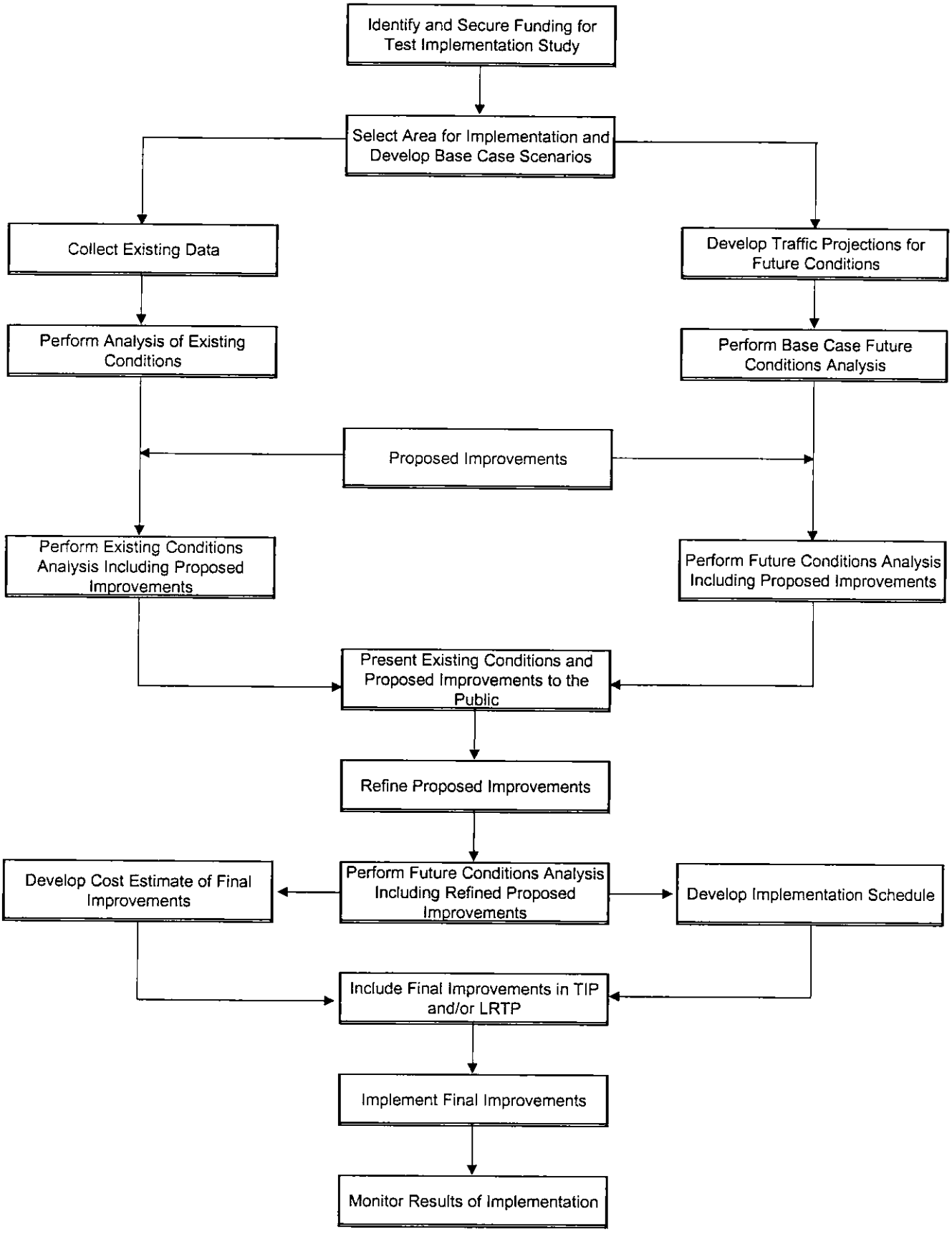
- National Highway System funds are available from Federal Highway Administration (FHWA) for improvements to and maintenance of principal arterials. Up to 80 percent of the program funds can be obtained from the federal government.
- FHWA projects funds can be obtained for demonstration projects including projects that would relieve congestion using advanced technologies and unique financing techniques.
- Congestion Mitigation Air Quality funds are available for highway projects that reduce vehicle emissions and other forms of air pollution to meet targeted air quality standards.
- FIHS Non-Interstate Program funds can be used for improvements on primary intrastate roadways from the state.
- State of Florida Gas Tax funds are available for roadway improvements as well as the Motor Vehicle Fuel Taxes collected by the County.
- Road impact fees are collected from new developments in order to provide new facilities or upgrade existing ones to serve the proposed development.

2.2 Selection of Test Area

Traffic patterns, community boundaries, and location of activity centers among others were used to define the Superarterial Network for Dade County. A three-step process was used, identifying first the major Transportation Corridors, then the Transportation Areas, and finally the arterials forming the Superarterial Network. Detailed information on the development and definition of the Transportation Corridors, Transportation Areas, and Superarterials can be found in Technical Memoranda 4 & 5.

Although the Superarterial Network is intended to span the entire County, testing the impacts of the proposed improvements on the arterials selected for inclusion in the network could not be viably performed for all of the corridors at the same time. Transportation Areas were therefore created as a suitable approach for testing the Superarterial Network concept before it could be implemented in actual practice. Each Transportation Area contained one or more of the arterials selected to be part of the Superarterial Network.

Figure 2.1
Action Plan for Test Implementation



This Technical Memorandum presents an estimation of the required actions needed for implementation of the improvements developed within Transportation Area 4.

The following section gives a brief definition of the Transportation Corridors, Transportation Areas and the Superarterials.

2.2.1 Transportation Corridors

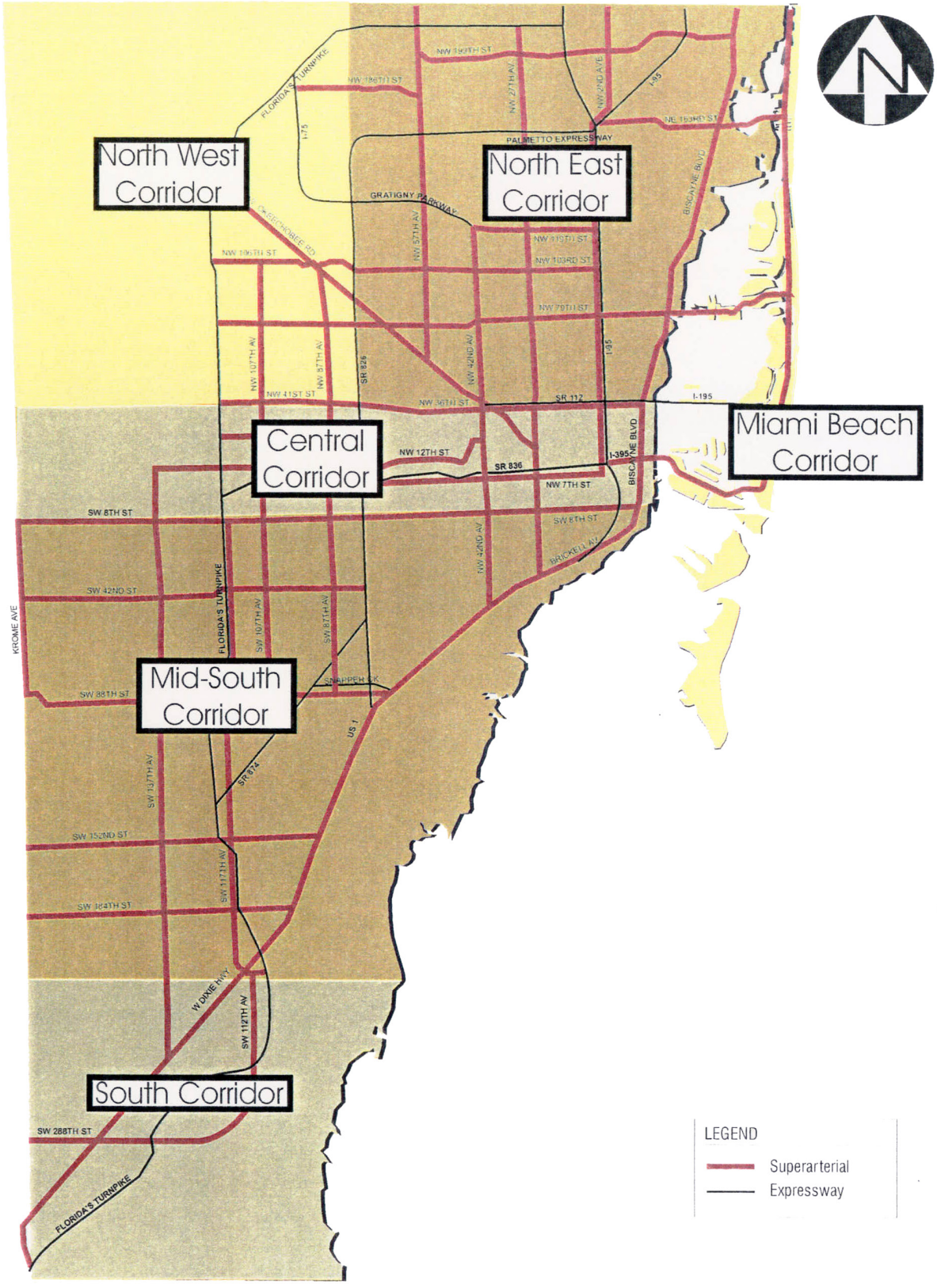
A Transportation Corridor provides temporal and geographical indication of traffic flow, such as peak period time and duration, direction of travel, trip purpose, origin and destination, mode share, and type of vehicle. Transportation Corridors are essential in assisting in the selection of candidate arterials to be included in the Superarterial Network. They provide crucial information on travel patterns to and from major activity centers, level of congestion on arterials within the corridor, alternate routes to expressway facilities, and intensity of transit service. Based on existing data, the following Transportation Corridors were identified: South Corridor, Mid-South Corridor, Central Corridor, Northwest Corridor, Northeast Corridor, and Miami Beach Corridor. Detailed information on the development of Transportation Corridors can be found in Technical Memorandum 7. Figure 2.2 shows the major Transportation Corridors within Dade County.

2.2.2 Transportation Areas

The purpose of the Transportation Area is to develop a manageably sized area intended to test the Superarterial concept. A Transportation Area is a section of Dade County, encompassing several intersecting Superarterials, and defined by existing travel patterns within Transportation Corridors, as well as cohesive and divisive factors. Testing a Transportation Area, as opposed to the entire County, represents a cost-effective alternative that allows to observe the full impact of the proposed improvements on intersecting major arterials. Figure 2.3 shows the limits of the 12 Transportation Areas within Dade County.

Transportation Area 4 was selected as the area to be studied based on land use, level of congestion, and proposed developments. This area is representative of the level of congestion in the remainder of the County allowing to properly estimate the level of improvements necessary. Transportation Area 4 represents and ideal setting for testing the Superarterial Network Concept because it contains both developed mature areas as well as underdeveloped areas.

Figure 2.3 shows the extent and location of Transportation Area 4. This area is located in the central-west section of the county and delimited by SW 88th Street (Kendall Drive) to the south, NW 106th Street to the north, SW 177th Avenue (Krome Avenue) to the west, and SW/NW 107th Avenue to the east. Transportation Area 4 straddles three Transportation Corridors: the Mid-South Corridor, the Central Corridor, and the Northwest Corridor, as it captures both the north-south and east-west traffic patterns. Numerous arterials within Transportation Area 4 are also scheduled for improvements within the next five to fifteen years. This will allow the County to implement the Superarterial features by incorporating them into the proposed improvements.



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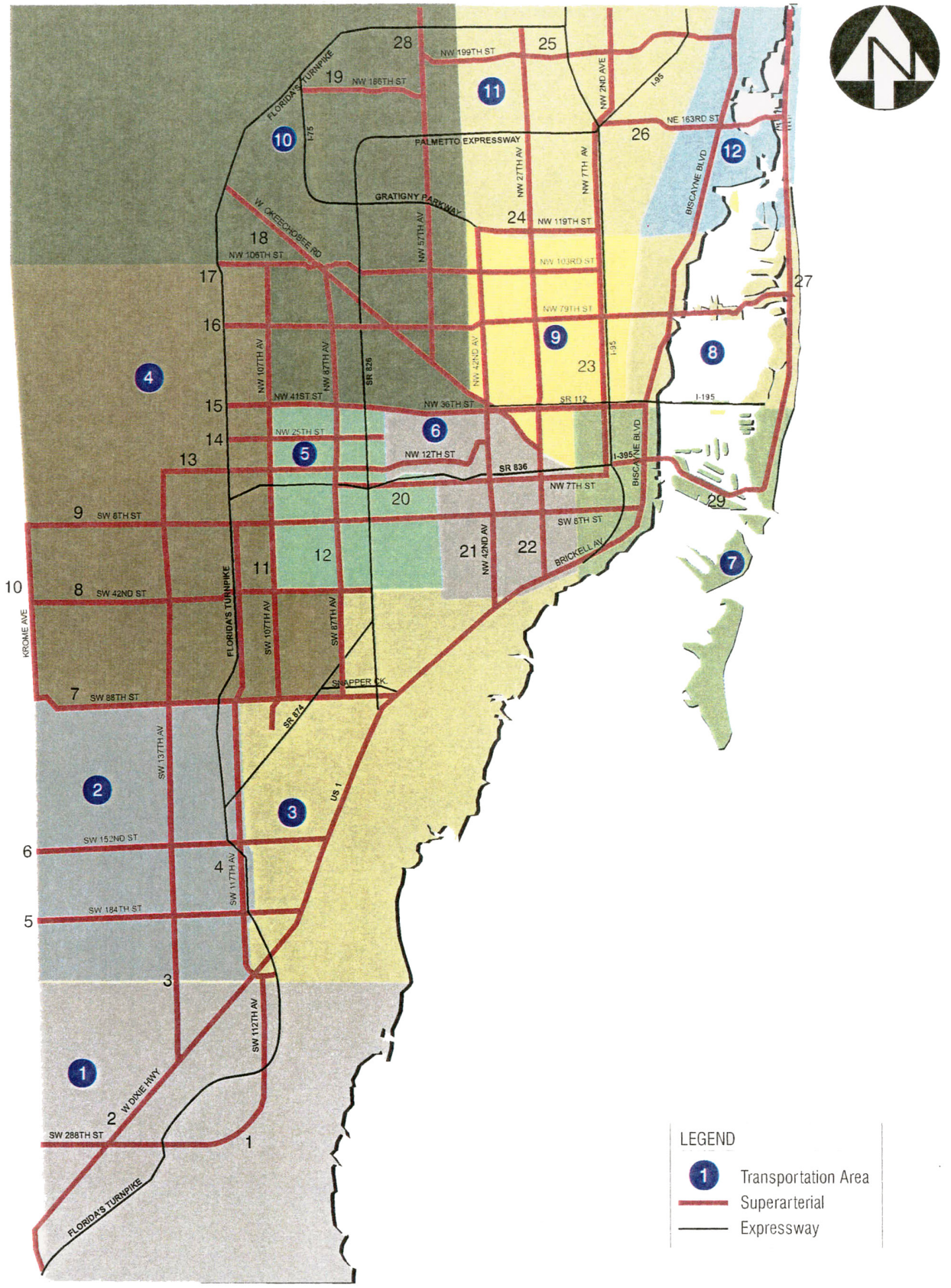
DADE COUNTY

TRANSPORTATION CORRIDORS

Figure 2.2



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SUPERARTERIAL NETWORK STUDY
DADE COUNTY

TRANSPORTATION AREAS AND
SUPERARTERIAL NETWORK

Figure 2.3

2.2.3 Superarterials

The Superarterial Network is intended to consist of selected arterials specifically designed and/or upgraded to increase capacity and alleviate congestion in an urban environment. These arterials would also provide connectivity and accessibility between the regional expressway system and local collector roadways, and offer alternate routes for vehicular travel within Dade County in lieu of the freeway system. The selection of the arterials to be included in the network was based on numerous criteria designed to help gauge the appropriateness and the potential for an arterial to meet the objective of the study. These criteria, further described in Technical Memoranda 4 & 5: Definition of Corridors, Transportation Areas, and the County's Superarterial Network, included levels of congestion, access to major activity centers, and access to freeways among others. Figure 2.3 also shows the proposed Superarterial Network for Dade County

All the Superarterials span the length and width of Transportation Area 4, with the exception of SW 88th Street (Kendall Drive) and Krome Avenue (SW 177th Street). Kendall Drive underwent extensive improvements (widening, improved access to freeways, and signal improvements) in recent past. Despite these improvements, the arterial still experiences tremendous delays due to a combination of factors such as:

- rapid growth in population resulting from increase in the number of housing units,
- numerous major activity centers ranging from regional malls, office complexes, and regional hospital
- access to major north-south arterials and major freeways

The existing right-of-way along Kendall has been used to accommodate roadway widening and intersection improvements. The Florida Department of Transportation (FDOT) is contemplating studying various multimodal approaches through an Arterial Investment Study (AIS). Due to the extensive commercial land use along Kendall Drive, the facility serves not only commuter trips, but is heavily traveled on weekends and during off-peak hours during the week.

Krome Avenue, a two-lane undivided roadway, is located on the edge of the Urban Boundary and is not presently showing congestion problems within Transportation Area 4. Only two major arterials cross Krome Avenue presently, Kendall Drive and SW 8th Street, within the study area. One more crossing is proposed in the future at SW 104th Street (Killian Parkway). As development continues to spread to the west toward Krome Avenue, a pro-active approach should be taken to anticipate and prevent high level of congestion on this facility, to make the necessary provisions for adequate right-of-way acquisitions, and to apply Superarterial design criteria on this facility.

The preliminary testing of the Superarterial Network concept was limited to the following arterials contained in Transportation Area 4. These arterials are also illustrated on Figure 2.3.

- SW 137th Avenue from SW 88th Street (Kendall Drive) to NW 10th Street.
- SW 117th Avenue from SW 88th Street (Kendall Drive) to SW 8th Street (Tamiami Trail).
- SW 107th Avenue from SW 88th Street (Kendall Drive) to NW 41st Street.
- SW 40th Street (Bird Road) from SW 87th Avenue to SW 152nd Avenue.

- SW 8th Street (Tamiami Trail) from SW 107th Avenue to SW 177th Avenue (Krome Avenue).

Technical Memorandum 7: Preliminary Evaluation and Selection of Test Candidates provides detailed information on the preliminary testing of Transportation Area 4. That section of the County was selected as the test implementation area because of the work already performed during the preliminary testing stage of the study. In addition, that area contains both mature and undeveloped areas and experience high levels of congestion that are representative of traffic conditions throughout Dade County.

2.3 Development of Base Case Scenarios

The purpose of this task is to develop scenarios that are be used to identify and measure the impacts of the proposed improvements within Transportation Area 4. Two base case scenarios are proposed to determine the impacts of the proposed improvements: existing and 2010 conditions. Existing base case scenario were developed using actual field data from traffic counts and field surveys. Traffic information for the 2010 base case scenario were obtained from the 2010 Adopted Long Range Plan developed by the Metropolitan Planning Organization. During the actual implementation (future) phase of the concept, this information should be updated if approved changes were made to the 2010 plan at the time of the test implementation study.

2.4 Data Collection

The purpose of the data collection effort is to provide updated information in order to assess base case conditions accurately and provide information on traffic patterns within the study area. That information will be used to develop and evaluate the proposed improvements and also to serve as a base for monitoring the impacts of the improvements once they are implemented in the future. The data collection effort performed as part of this study was limited in nature. Therefore most of the information detailed below are needed to refine the recommended improvements for Transportation Area 4.

2.4.1 24-hour Traffic Counts

The purpose of the 24-hour counts is to provide information on average peak hour conditions and daily traffic flow between intersections along the arterials selected for analysis. A minimum of three-day bi-directional counts is recommended and should be performed on weekdays, from Tuesdays to Thursdays. Figure 2.4 shows the recommended locations for 24-hour counts listed below.

1. SW 137th Avenue south of SW 88th Street (Kendall Drive)
2. SW 88th Street east of SW 137th Avenue
3. SW 137th Avenue south SW 62nd Street
4. SW 56th Street (Miller Drive) west of SW 137th Avenue
5. SW 137th Avenue north of SW 47th Street
6. SW 40th Street (Bird Road) west of SW 137th Avenue
7. SW 137th Avenue north of SW 40th Street
8. SW 24th Street (Coral Way) west of SW 137th Avenue

9. SW 137th Avenue south of SW 8th Street (Tamiami Trail)
10. SW 8th Street west of SW 137th Avenue
11. SW 137th Avenue north of SW 8th Street
12. SW 117th Avenue south of SW 88th Street
13. SW 117th Avenue south of SW 72nd Street (Sunset Drive)
14. SW 117th Avenue north of SW 72nd Street
15. SW 72nd west of SW 117th Avenue
16. SW 56th Street west of SW 117th Avenue
17. SW 117th Avenue south of SW 40th
18. SW 40th Street west of SW 117th Avenue
19. SW 117th Avenue north of SW 24th Street
20. SW 72nd Street west of SW 107th Avenue
21. SW 107th Avenue south of SW 72nd Street
22. SW 56th Street east of SW 107th Avenue
23. SW 107th Avenue south of SW 40th Street
24. SW 40th Street east of SW 107th Avenue
25. NW 107th Avenue south of NW 25th Street
26. NW 107th Avenue north of NW 25th Street
27. NW 25th Street east of NW 107th Avenue
28. SW 8th Street east of SW 107th Avenue
29. SW 8th Street west of SW 117th Avenue

2.4.2 24-hour Vehicle Classification Counts

The purpose of the24-hour vehicle classification counts is to obtain updated information regarding truck traffic on selected arterials within the area. The proposed improvements on these selected arterials focus on means of alleviating congestion by minimizing the impacts of truck traffic. A minimum of three-day bi-directional 24-hour classification counts are recommended at the following locations and should be conducted while the 24-hour counts are being collected:

1. SW 137th Avenue south of SW 8th Street
2. SW 8th Street west of SW 137th Avenue
3. SW 137th Avenue north of SW 8th Street
4. NW 107th Avenue south of NW 25th Street
5. NW 107th Avenue north of NW 25th Street
6. NW 25th Street east of NW 107th Avenue
7. SW 8th Street west of SW 117th Avenue

These locations are also illustrated on Figure 2.4.

2.4.3 Turning Movement Counts

Current turning movement information at intersections is crucial in assessing existing traffic operations and help in developing future traffic projections based on current traffic patterns. These counts should be performed concurrent with the 24-hour counts, from 6:30 AM to 9:00 AM and from 4:30 PM to 6:30 PM at the following locations:

1. SW 137th Avenue and SW 88th Street
2. SW 137th Avenue and SW 56th Street
3. SW 137th Avenue and SW 42nd Street (Bird Road)
4. SW 137th Avenue and SW 24th Street
5. SW 137th Avenue and SW 8th Street
6. SW 142nd Avenue and SW 8th Street
7. SW 117th Avenue and SW 72nd Street
8. SW 117th Avenue and SW 56th Street
9. SW 117th Avenue and SW 40th Street
10. SW 117th Avenue and Turnpike northbound-off ramp
11. SW 117th Avenue and Turnpike northbound-on ramp
12. SW 117th Avenue and SW 24th Street
13. SW 117th Avenue and SW 8th Street
14. SW 107th Avenue and Sunset Drive
15. SW 107th Avenue and Miller Drive
16. SW 107th Avenue and Bird Road
17. NW 107th Avenue and NW 12th Street
18. NW 107th Avenue and NW 25th Street
19. NW 107th Avenue and NW 41st Street

These locations are also shown on Figure 2.4. The turning movement counts should also include any pedestrian activity at the locations being.

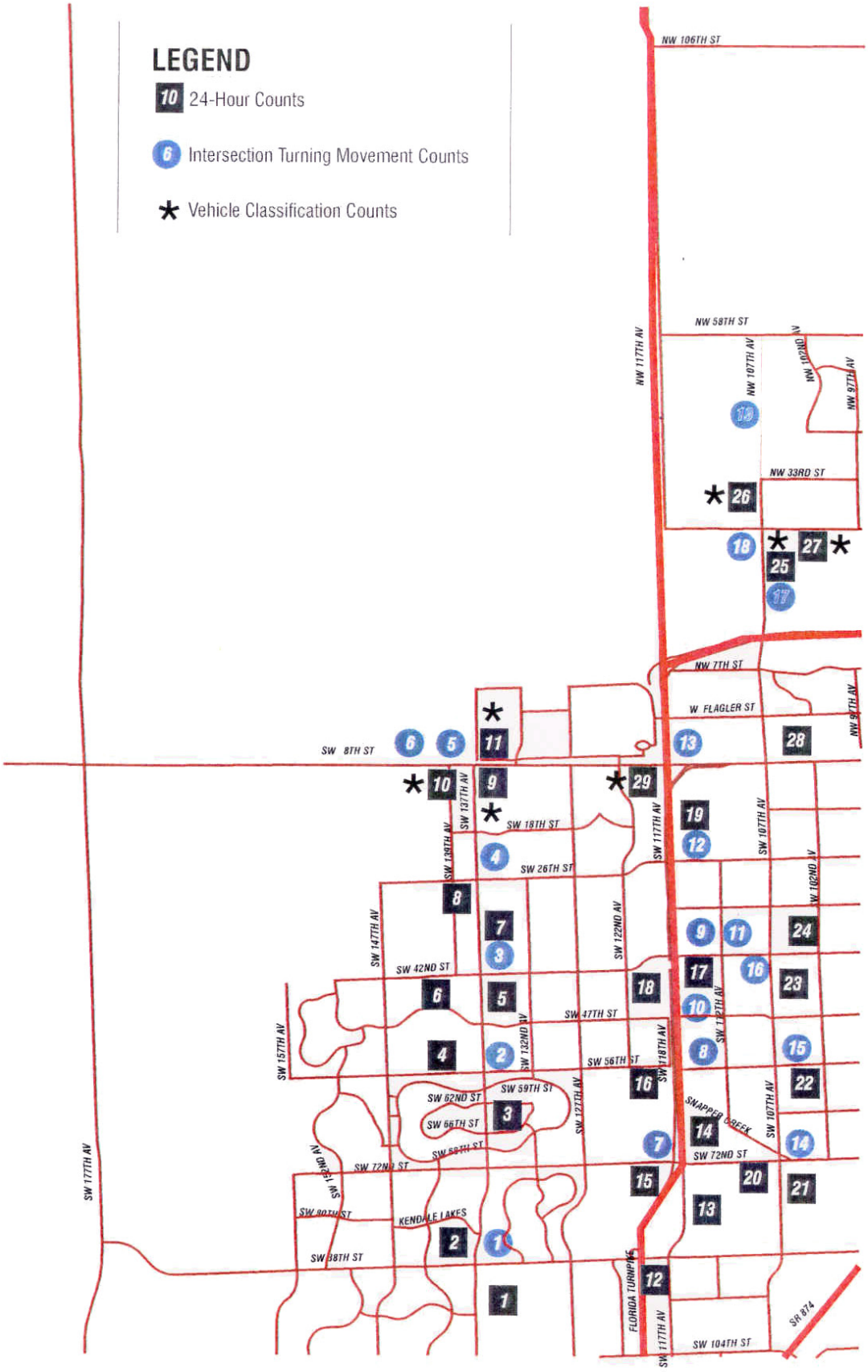
2.4.4 Travel-time and Speed-Delay Studies

Change in travel time and in travel speed is one of the measures of effectiveness recommended for assessing the impacts of the proposed improvements within Transportation Area 4. Changes in travel time can be measured using travel-time and speed-delay studies. These data will also be useful during the monitoring phase of the implementation process. Results of these studies are also crucial in calibrating some of the software to be used for microscopic analysis of traffic operations along arterials taking into account the influence of traffic patterns at both the intersections and mid-block. Travel-time and speed-delay studies are recommended along all the arterials within the study area.

2.4.5 License Plate Survey

One of the proposed improvements is to widen NW 117th Avenue between Bird Road (SW 40th Street) and Tamiami Trail (SW 8th Street). However, this roadway is currently used as an alternate route to bypass the toll plaza on the Florida's Turnpike. A license plate survey would provide information on the extent of the number of drivers bypassing the toll facility and will be useful in determining the impact of the proposed widening on toll plaza revenues. A license plate survey is an alternate mode of obtaining origin-destination information without encumbering drivers with survey cards. License plate surveys are recommended at the following locations, concurrent with the 24-hour and the intersection counts for a three-day period:

1. SW 117th Avenue south of Bird Road (SW 40th Street)
2. Bird Road (SW 40th Street) west of SW 117th Avenue



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TRAFFIC DATA COLLECTION LOCATIONS

Figure 2.4

3. SW 117th Avenue south of Tamiami Trail (SW 8th Street)

Although the location of the new toll plaza will have a significant impact on the amount of diverted trips, the license plate survey will provide enough information for future analysis.

2.4.6 Right-of-Way Studies

Information regarding right-of-way availability along the selected arterials is crucial in determining the magnitude of the costs involved in the implementation of the Superarterial Network concept within Transportation Area 4. Right-of-way information should be collected along all the selected arterials within Transportation Area 4.

2.4.7 Signal Timing and Phasing

Signal timing and phasing information is needed at all signalized intersections within the study area. This information will be used to evaluate the existing level of operation, provide recommendation on fine tuning existing phasing and timing based on actual field data, and also for calibration of the traffic operational simulation models that may be used to perform traffic analysis.

2.4.8 Queue Length Studies

Because of the level of congestion within Transportation Area 4, traffic back-ups are experienced throughout the area, especially at signalized intersections. Queue lengths studies are therefore recommended at all the signalized intersections for which turning movement counts are required. Queue length studies provide information on the "demand" or number of cars that need to be processed and should be performed concurrent with the turning movement counts data collection effort.

2.5 Proposed Improvements

The improvements shown on Tables 2.1 through 2.5 summarize the results of the preliminary testing documented in Technical Memorandum 7: Preliminary Evaluation and Selection of test Candidates. These improvements are based on data collected form different sources and an extensive field observation effort. These improvements are recommended for implementation within Transportation Area 4 after refinement using the data described above

2.6 Public Involvement

The success of the implementation of the Superarterial Network concept is highly dependent on the public's acceptance of the program. It is therefore recommended that education activities be undertaken with various interested and affected groups throughout the study area prior to the implementation phase of the project. Some of the improvements such as changes in signal timing and phasing may not require input from the community while other improvements such as access management will require extensive coordination with the entities that will be affected by such a measure. A public involvement plan is therefore recommended to obtain comments from the public prior to finalization and implementation of the proposed improvements.

Table 2-1
SW 137th Avenue (From SW 88th Street to NW 10th Street)
Recommended Improvements

	Location	Recommended Improvements
1	SW 137th Avenue @ Kendall Drive (SW 88th Street)	• Add new lanes on SW 137th Avenue from Kendall Drive to Bird Road • Provide signs on SW 137th Avenue encouraging the use of SW 84th Street and SW 142nd Avenue as an alternate route, and access to the shopping center through SW 84th Street • Grade separation • Provide adequate drainage on SW 137th Avenue north of Kendall Drive
2	SW 137th Avenue @ Miller Drive (SW 56th Street)	• Provide additional through lanes on Miller Drive • Provide adequate drainage on SW 137th Avenue north of Miller Drive • Increase length of storage bay of southbound to eastbound left turn
3	SW 137th Avenue @ Bird Road (SW 40th Street)	• Increase number of through lanes on Bird Road • Driveway consolidation at shopping centers north of Bird Road (parking lots are already connected)
4	SW 137th Avenue between Coral Way (SW 26th Street) and Tamiami Trail (SW 8th Street)	• Provide adequate drainage on SW 137th Avenue north of Coral Way
5	SW 137th Avenue @ SW 8th Street	• Widen SW 8th Street west of SW 127th Avenue • Increase length of storage bay for westbound to southbound left turn • Connect SW 6th Street to SW 137th Avenue to provide alternate route to SW 8th Street • Grade separation • Widen bridge on SW 137th Avenue north of SW 8th Street • Provide additional lanes on SW 137th Avenue north and south of SW 8th Street • Improve toll collection for the Florida Turnpike ramp through the installation of AVI (Automatic Vehicle Identification)

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations.

Table 2-2
SW 117th Avenue (From SW 88th Street to SW 8th Street)
Recommended Improvements

	Location	Recommended Improvements
1	SW 117th Avenue @ Kendall Drive (SW 88th Street)	• Improvements to Kendall Drive to be coordinated with the proposed Major Improvement Study
2	SW 117th Avenue @ 7700 Block	• Signal timing coordination on 117th from SW 77th Street to Sunset Drive
3	SW 117th Avenue @ Sunset Drive (SW 72nd Street)	• Provide additional through lanes on Sunset Drive
4	SW 117th Avenue @ Miller Drive (SW 56th Street)	• Provide additional lanes on Miller Drive
5	SW 117th Avenue between Turnpike northbound off-ramp and SW 8th Street	• Relocate Turnpike northbound off ramp south of Bird Road toll plaza further south • Improve signage on SW 117th Avenue south of SW Bird Road • Widen Bird Road west of SW 117th Avenue • Incorporate Turnpike improvements • Provide Automatic Vehicle Identification at Toll Plaza on Turnpike • Provide additional lanes on SW 117th Avenue from SW 40th Street to SW 8th Street

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations.

Table 2-3
SW/NW 107th Avenue (From SW 88th Street to NW 103rd Street)
Recommended Improvements

	Location	Recommended Improvements
1.	SW 107th Avenue @ Sunset Drive (SW 72nd Street)	• Provide exclusive right turn lanes eastbound and westbound on Sunset Drive
2.	SW 107th Avenue @ Miller Drive (SW 56th Street)	• Provide exclusive eastbound to southbound and westbound to northbound right turn lanes
3.	SW 107th Avenue @ Bird Road (SW 40th Street)	• Provide grade separation
4.	SW 107th Avenue @ Coral Way (SW 24th Street)	• Additional storage capacity for the eastbound to northbound left turn movement
5.	SW 107th Avenue between SW 8th Street and Flagler Street	• Prohibit left turns except at Flagler Street, 8th Street, and 4th Street during peak hours • Consolidate driveways between shopping centers • Provide access to shopping centers from side streets only • Provide dual left turn at Flagler Street (eastbound to northbound) **or** restripe to allow left turn from inside through lane. • Resurface SW 109th Avenue and encourage 109th Avenue as an alternate route between SW 8th Street and NW 7th Street • Provide shuttle service between FIU campuses • Provide bicycle path • Provide additional access to Sweetwater Elementary from SW 8th Street
6.	NW 107th Avenue between Flagler Street and SR 836	• Add new lanes on NW 107th Avenue • Provide dual lefts from SR 836 eastbound off-ramp to NW 107th Avenue • Improve intersection at NW 7th Street and NW 107th Avenue to accommodate rerouted traffic
7.	NW 107th Avenue between SR 836 and NW 25th Street	• Add new lanes on NW 107th Avenue • Prohibit trucks during peak hours
8.	NW 107th Avenue between NW 25th Street and NW 41st Street	• Increase number of lanes on NW 107th Avenue from NW 25th Street to NW 33rd Street
	NW 107th Avenue @ NW 41st Street	• Provide grade separation
	NW 107th Avenue north of NW 41st Street	• Provide conectivity to NW 103rd Street • Use design criteria for superarterial on new segments from NW 33rd Street to NW 103rd Street (1)

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations.

(1) Criteria are described in Technical Memoranda 4 & 5

Table 2-4
SW 40th Street (Bird Road) (From SW 157th Avenue to SW 87th Avenue)
Recommended Improvements

	Location	Recommended Improvements
	SW 40th Street between SW 87th Avenue and SW 102nd Avenue	• Provide alternate route to SR 826by providing continuity on crossing arterials every 1/2 mile • Provide adequate capacity on crossing arterials to offer alternate routes to SR 826
	SW 40th Street @ SW 107th Avenue	• Provide grade separation
	SW 40th between SW 117th Avenue and SW 147th Avenue	• Widen Bird Road between SW 147th Avenue and SW 117th Avenue

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations.

Table 2-5
SW 8th Street (From SW 107th Avenue to SW 177th Avenue)
Recommended Improvements

	Location	Recommended Improvements
	SW 8th Street @ SW 107th Avenue	Widen SW 107th Avenue north of SW 8th Street (see Table 2.3 item 6)
	SW 8th Street from Turnpike to SW 137th Avenue	Consolidate access to shopping centers along SW 8th Street Reduce queue by increasing number of toll booths and/or provide AVI at toll booths on ramp to Florida Turnpike Increase length of westbound to southbound left turn storage bay at SW 8th Street and SW 122nd Avenue
	SW 8th Street @ SW 127th Avenue	Provide warning sign on SW 8th Street westbound indicating right lane drop at the intersection
	SW 8th Street @ SW 132nd Avenue	Provide enforcement to prevent traffic from blocking intersections along SW 8th Street Widen bridge on SW 132nd Avenue north of SW 8th Street Relocate bus stop northbound from just south of SW 8th Street to mid-block on SW 132nd Avenue Extend east/west left turn bay
	SW 8th Street at SW 137th Avenue	Widen SW 8th Street west of SW 127th Avenue Increase storage of westbound to southbound left turn Grade separation Widen bridge on SW 137th Avenue north of SW 8th Street Connect SW 6th Street to SW 137th Avenue to provide additional access to schools and residences located north of SW 8th Street

Note: These recommendations were based on field observations only. Detailed analyses are required before final recommendations.

2.7 Traffic Analysis

The regional travel demand model was used in the preliminary testing phase of this study. The model was mainly used to measure the regional impacts of the proposed improvements and to obtain traffic projections resulting from the addition of new segments. Because of the macroscopic nature of the regional model, a more microscopic level of analysis is therefore recommended for better quantification of the impacts of the Superarterial Network concept. The analysis tools recommended to assess the impact of the proposed improvements should be able to provide detailed information needed to quantify each of the criteria illustrated on Table 2.6. The tools to be used should address operations at isolated intersections, along individual arterials, and also for a network of arterials.

2.8 Implementation Schedule

The schedule for implementation of the recommended improvements on the selected arterials within any Transportation Area within the County, will be based on the type of improvements and how they fit into the current adopted transportation plans developed by the MPO and FDOT. The proposed improvements can be grouped in three distinct categories:

- Short-term improvements are improvements that are not included in the current transportation plans but can be implemented within the next two to five years. The improvements would include items such as changes in signal timings and phasing, striping, warning devices and minor modifications to streets and intersection geometry. These improvements would most likely considered low to moderate cost improvements.

- Medium-term improvements are improvements that can be coordinated with current projects in the five-year transportation plan. These improvements would usually be included in the moderate to high implementation costs and may require right-of-way acquisition, design changes, and/or coordination with other programs or entities.

- Long-term improvements are improvements that need to be incorporated into the County's or State transportation plans, that would be considered high cost, and that may require right-of-way acquisition, and coordination with other programs or entities. These improvements also include improvements that can be incorporated into already planned improvements in the Cost Feasible Long-Range Transportation Plan.

These definitions were applied to the recommended improvements within Transportation Area 4 and are Table 2.7 shows the proposed schedule for implementation for that area.

Table 2.6
Evaluation Criteria

Strategies and Techniques	Evaluation Criteria																						
	Travel											Costs											
	Time	Costs	Speed	Delay	Traffic Volume	Capacity Increase	Congestion Level	Signal Progression	Auto Occupancy	Safety	Environmental Impacts	Implementation	O&M	Capital	ROW	Construction	Enforcement	Land Use Impacts	Parking Space	Transit Revenue	Ridership
New Lane and/or Street Segment	■				■		■			■			■	■							
Turn Lane Addition and Phasing				■			■			■		■	■								
Street and Intersection Geometry Improvements: Striping, Channelization, and Islands	■									■	■										
Reroute Turning Traffic	■			■			■			■		■			■						
Parallel or By-Pass Segment			■		■		■														
Grade Separation			■	■		■	■	■		■	■							■			
Walkways or Pedestrians/Cyclists Overpasses			■				■	■		■	■										
Exclusive Bicycle Lanes			■				■			■											
Signal Phasing and Timing Changes			■	■			■				■										
New Pedestrian/Cyclists Signal			■							■	■										
Turbo Lanes			■	■		■	■			■											
Access Management/Driveway Consolidation	■		■			■				■								■			
Truck Traffic Restrictions	■		■			■	■				■						■				
Bus Stop Spacing and Design	■		■							■											■
Bus Bays	■		■				■														
Loop Shuttle Buses	■						■					■	■	■						■	
Warning Devices			■	■						■		■	■				■				
Crosswalk, Sidewalk and Bike Path Width			■			■				■											

Note: Land Use Impacts = Commercial Property Value
Number of Patrons

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Table 2.7 Proposed Implementation Schedule

Location	Type of Improvements	TIP Project No (1)	Implementation Time Frame
SW 137th Avenue @ Kendall Drive	• Grade Separation • Add new lanes on SW 137th Avenue from Kendall Drive to Bird Road • Signage • Drainage	671509	Long-term Long term Short-term Medium-term
SW 137th Avenue @ Miller Drive	• Add new lanes on Miller Drive • Drainage • Increase length of storage bay on Miller Drive	671509	Long-term Medium-term Short-term
SW 137th Avenue between Coral Way and Tamiami Trail	• Drainage		Medium-term
Sw 137th Avenue @ SW 8th Street	• Add new lanes on SW 137th Avenue • Add new lanes on SW 8th Street west of SW 127th Avenue • Widen Bridge on SW 137th Avenue • Increase length of Westbound to Southbound left turn storage bay on SW 8th Street • Provide connection between SW 6th Street and SW 137th Avenue • Grade separation • Improve toll collection • Provide SR 836 exit to SW 137th Avenue • Add new lanes on SW 137th Avenue north and south of SW 8th Street	6113881 6151882 6113860	Medium-term Medium-term Long-term (2005-2010) Medium-term (2000-2005) Long-term Short-term Medium-term Long-term *Long-term* (2010-2015)
SW 117th Avenue @ Kendall Drive	• Improvements to Kendall Drive to be coordinated with MIS		Long-term
SW 117th Avenue @ 7700 Block	• Signal Coordination		Short-term
SW 117th Avenue @ Sunset Drive	• Add new lanes on Sunset Drive		Long-term
SW 117th Avenue @ Miller Drive	• Add new lanes on Miller Drive		Long-term

(1) Source: 1998 TIP

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Table 2.7 Proposed Implementation Schedule (Continued)

Location	Type of Improvements	TIP Project No (1)	Implementation Time Frame
SW 117th Avenue from Turnpike northbound off-ramp to SW 8th Street	• Signage • Relocate ramp • Add new lanes on Bird Road • Improve toll collection • Add new lanes on SW 117th Avenue	 1996 TIP (page 129) *	Short-term Long-term Long-term Medium-term Medium-term
SW 107th Avenue @ Sunset Drive	• Add turn lanes on Sunset Drive		Long-term
SW 107th Avenue @ Miller Drive	• Add turn lanes on Miller Drive		Long-term
SW 107th Avenue @ Bird Road	• Grade separation	6113770	long-term
SW 107th Avenue @ Coral Way	• Increase length of storage bay for eastbound to northbound left turn on Coral Way	6113770	Medium-term
SW /NW 107th Avenue between SW 8th Street and Flagler Street	• Access Management • Dual left turn for the eastbound to northbound movement on Flagler Street • Resurface SW 109th Avenue • Shuttle service • Bicycle path • Widen Bridge over Tamiami Canal • Add new lanes on SW 107th Avenue	6113948 671106 (1996 TIP) 671105 (1996 TIP) 6113948	Medium-term Medium-term Medium-term Short-term Long-term Medium-term Medium-term
NW 107th Avenue between Flagler Street and SR 836	• Intersection improvements at NW 7th Street and NW 107th Avenue • Add new lanes on NW 107th Avenue • Dual left turn from freeway eastbound off-ramp	6113948 6113948	Medium-term Medium-term Medium-term
NW 107th Avenue between SR 836 and NW 25th Street	• Add new lanes on NW 107th Avenue • Truck restrictions		Long-term (2010-2015) Short-term
NW 107th Avenue between NW 25th Street and NW 41st Street	• Add new lanes on NW 107th Avenue		Long-term (2010-2015)
NW 107th Avenue @ NW 41st Street	• Grade separation		Long-term

(1) Source: 1998 TIP

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Table 2.7 Proposed Implementation Schedule (Continued)

Location	Type of Improvements	TIP Project No (1)	Implementation Time Frame
NW 107th Avenue north of NW 41st Street	• Add new segment		Long-term (2010-2015)
SW 40th Street @ SW 107th Avenue	• Grade separation		Long-term
SW 40th Street between SW 117th Avenue and SW 147th Avenue	• Add new lanes		Long-term
SW 8th Street between the Florida Turnpike and SW 137th Avenue	• Access management • Improve toll collection • Increase length of storage bay for westbound to southbound left turn on SW 8th Street at SW 122nd Avenue	 6151882 6113881	Long-term Medium-term Medium-term
SW 8th Street @ SW 127th Avenue	• Signage		Short-term
SW 8th Street @ SW 132nd Avenue	• Widen bridge at SW 132nd Avenue • Relocate bus stop • Increase length of storage bay on SW 8th Street	 6113881 (1996 TIP)	Long-term Short-term Medium-term
SW 8th Street @ SW 137th Avenue	• Add new lanes on SW 8th Street • Increase length of storage bay on SW 8th Street • Access management • Grade separation	6113881 (1996 TIP) 6113881 (1996 TIP) 6113881 (1996 TIP)	Medium-term Medium-term Medium-term Short-term

(1) Source: 1998 TIP
671509: 4 to 6 lanes, SW 137th Avenue from SW 88th Street to SW 42nd Street (3 miles)
6151882: Tamiami Toll Plaza replacement (2 miles)
6113860: SR 836 new road construction to SW 137th Avenue
6113770: PD&E/EMO study SW 107th Avenue from from Bird Road to Coral Way
6113948: Transportation Planning NW/SW 107th Avenue from SW 8th Street to SWR 836
671106: Phase 1 New 4 lane bridge and approaches over Tamiami Canal. Phase 2: Widen to 3 lanes from Tamiami Canal to Flagler Street
671105: Widen bridge over Tamiami Canal/Add turn lanes
6113881: PD&E Study SW 8th Street from SW 127th Avenue to SW 152nd Avenue
* : 2 to 4 lanes SW 117th Avenue from Bird Road to SW 8th Street.

2.9 Monitoring System

Dade County is constantly growing at a very fast pace. A monitoring system therefore needs to be designed and followed in order to assess the impacts of the implementation of the Superarterial Network concept. The monitoring system would also allow the County and the state transportation agencies to make appropriate adjustments to the improvements as a result of changes in traffic patterns. The monitoring system would consist of measuring actual field data and comparing them with the measures of effectiveness values obtained before implementation of the concept. Table 2.8 shows the different measures of effectiveness that would be applied on each of the roadways within Transportation Area 4, and the type of data needed to measure the impacts before and after implementation of the recommended improvements. A six to nine month time span is usually recommended prior to monitoring the conditions after implementation.

2.10 Local Agency

Coordination between the County, local municipalities, the public, and FDOT is essential for the success of the implementation of the Superarterial Network concept throughout Dade County. The Metropolitan Planning Organization would be the agency overseeing the preparation of the test implementation study and the implementation of the concept based on the following facts:

- The concept is a measure for managing and alleviating congestion that was recommended under the Dade County Mobility Management Process/Congestion Management System.
- The improvements developed under this concept will need to be coordinated with other programs being developed by the County and the state.
- The recommended improvements will need to be included or coordinated with the TIP and the LRTP and appropriate funding earmarked for implementation of the improvements.

Table 2.8
Monitoring System

Location	Measures of Effectiveness												Data to be Collected						
	Travel												Counts			Studies			
	Time	Costs	Speed	Delay	Traffic Volume	Capacity Increase	Congestion Level	Signal Progression	Safety	Environemtal Impacts	Land Use Impacts	Ridership	Turning Movement	24-Hour	Vehicle Classification	Travel time and Speed Delay	Right-of-Way	Signal Phasing and Timing	Queue Length
SW 137th Avenue @ Kendall Drive			■	■		■	■	■		■	■		■	■		■	■	■	■
SW 137th Avenue @ Miller Drive	■			■	■		■		■				■	■		■	■	■	■
SW 137th Avenue @ Bird Road	■			■	■	■	■		■		■		■	■		■	■	■	■
SW 137th Avenue between Coral Way and SW 8th Street	■		■	■			■						■	■	■	■	■	■	■
SW 137th Avenue @ SW 8th Street	■		■	■	■	■	■		■	■			■	■	■	■	■	■	■
SW 117th Avenue @ 7700 Block			■	■			■			■				■		■		■	■
SW 117th Avenue @ Sunset Drive	■				■		■		■				■	■		■	■	■	■
SW 117th Avenue @ Miller Drive	■				■		■		■				■	■		■	■	■	■
SW 117th Avenue between Turnpike northbound off-ramp and SW 8th Street	■			■	■	■	■		■				■	■	■	■	■	■	■
SW 107th Avenue @ Sunset Drive				■			■		■				■	■		■	■	■	■
SW 107th Avenue @ Miller Drive				■			■		■				■	■		■	■	■	■
SW 107th Avenue @ Bird Road)			■	■		■	■	■	■	■	■		■	■		■	■	■	
SW 107th Avenue @ Coral Way				■			■		■							■	■	■	■
SW 107th Avenue between SW 8th Street and Flagler Street	■		■	■		■	■		■		■	■				■	■	■	■

Note: Land Use Impacts = Commercial Property Value
Number of Patrons

Table 2.8 (Continued)
Monitoring System

Location	Measures of Effectiveness												Data to be Collected						
	Travel												Counts			Studies			
	Time	Costs	Speed	Delay	Traffic Volume	Capacity Increase	Congestion Level	Signal Progression	Safety	Environemtal Impacts	Land Use Impacts	Ridership	Turning Movement	24-Hour	Vehicle Classification	Travel time and Speed Delay	Right-of-Way	Signal Phasing and Timing	Queue Length
NW 107th Avenue between Flagler Street and SR 836	■			■	■		■		■	■						■	■	■	■
NW 107th Avenue between SR 836 and NW 25th Street	■		■		■	■	■		■				■	■	■	■	■	■	■
NW 107th Avenue between NW 25th Street and NW 41st Street	■				■		■		■				■	■	■	■	■	■	■
NW 107th Avenue @ NW 41st Street			■	■		■	■	■	■	■	■		■	■		■	■	■	
NW 107th Avenue north of NW 41st Street	■	■	■	■	■	■	■			■	■								
SW 40th Street between SW 147th Avenue and SW 117th Avenue	■				■		■		■				■	■		■	■	■	■
SW 40th Street between SW 102nd Avenue and SW 87th Avenue	■		■	■	■		■		■					■		■	■	■	■
SW 8th Street @ SW 107th Avenue	■				■	■			■					■		■	■	■	■
SW 8th Street from Turnpike to SW 137th Avenue	■		■	■		■	■		■	■	■		■	■	■	■	■	■	■
SW 8th Street @ SW 127th Avenue			■	■					■										
SW 8th Street @ SW 132nd Avenue	■		■	■	■	■	■		■	■									
SW 8th Street at SW 137th Avenue	■		■	■	■	■	■		■		■		■	■		■	■	■	■

Note: Land Use Impacts = Commercial Property Value
Number of Patrons