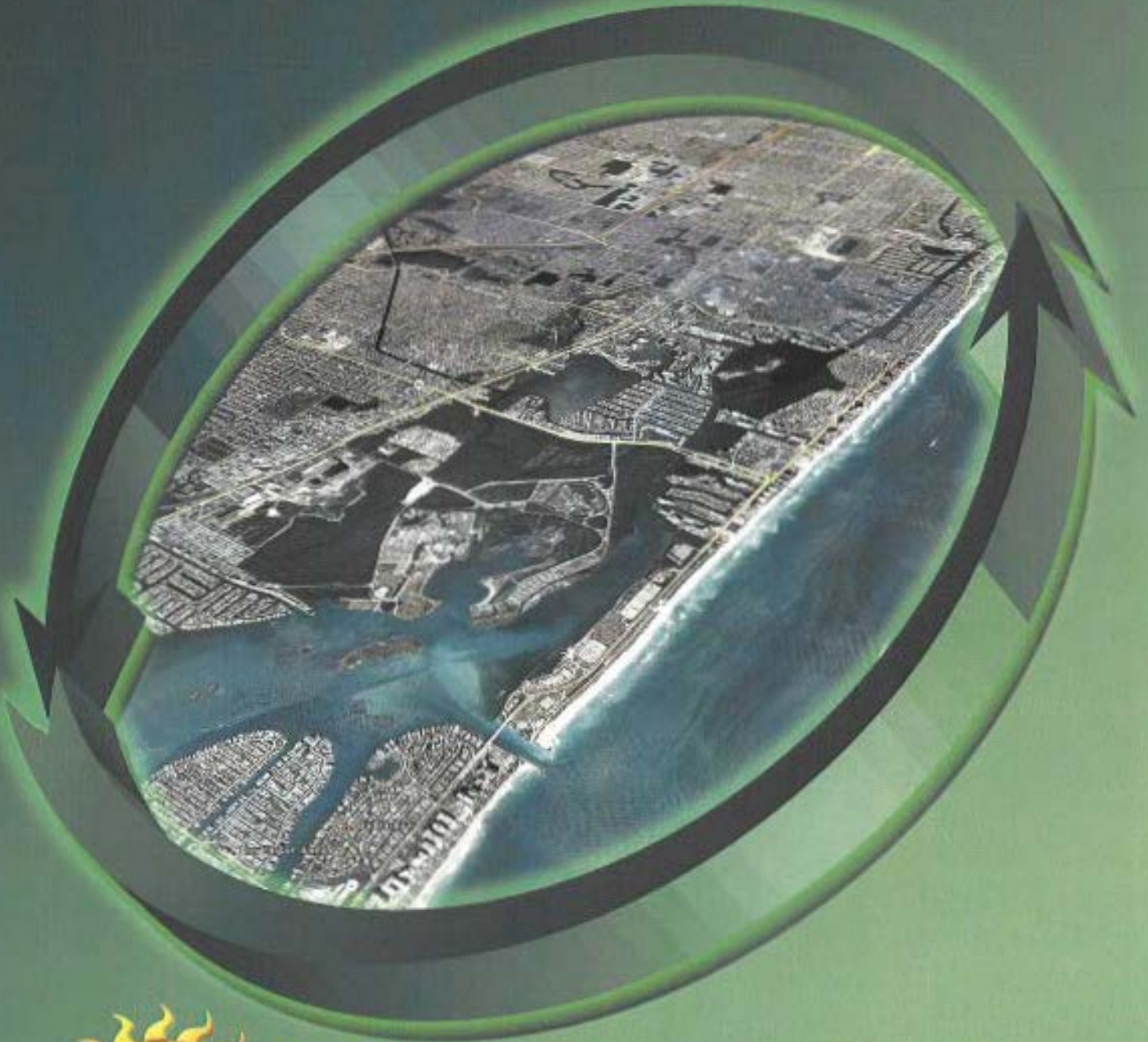


NORTHEAST MIAMI DADE TRAFFIC FLOW STUDY



THE CORRADINO GROUP
2007

UNDERTAKING THE PLAN

Quality transportation planning can be characterized as a combination of art and science. This report attempts to accommodate both. *The art is in deciphering the aspirations of a community through intensive public involvement. The science determines what is required through detailed analysis of data.* The intermingling of these important components results in the list of projects developed to address the most significant and impactful issues and concerns in the study area.



The Northeast area of Miami-Dade County, as a joint effort with its participating communities, has been studied to help reduce the ever growing problem of traffic congestion in the area. These municipalities are interested in the development of a sub-regional plan to identify short and long term multi-modal solutions to transportation issues. By working as a whole, these communities can better resolve traffic issues than if working alone.



This study has been conceptualized as a result of the Northeast Miami-Dade Mayors' Joint Task Force, which was formed as a regional transportation/traffic evaluation committee. The study area consists of the boundaries of Aventura, Bal Harbour, Bay Harbor Islands, Golden Beach, North Miami, North Miami Beach, Sunny Isles Beach and Surfside.

All aspects of the mobility system were examined, including the pedestrian and bicycle network, transit, the physical capacity of the roadway system and policy initiatives.

This effort strives to set an example as a targeted sub-regional attempt at transportation planning which is multi-modal in nature

Several levels of analysis have been undertaken, including a review of roadway links and intersections, as well as transportation corridors.

It is important to understand the physical structure of the transportation system. The study area is made up of a series of east/west and north/south corridors. ***The roadway network is best described as an interrupted grid. Few corridors traverse the entire study area.*** From a north/south perspective, three corridors carry the bulk of the system traffic and traverse the entire area. These include:

- I-95
- Biscayne Boulevard
- Collins Avenue

East / West mobility is characterized by five, corridors which connect I-95 and Biscayne Boulevard:

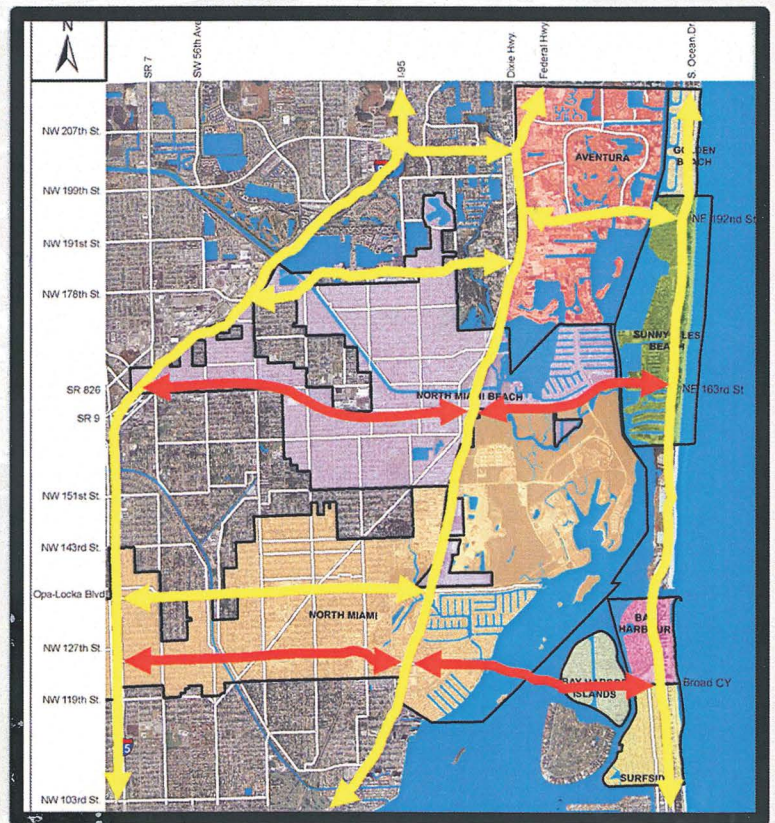
- Ives Dairy Road
- Miami Gardens Drive
- 167/163rd Street
- 135th Street
- 125th Street

The mainland and barrier islands are connected by three causeways:

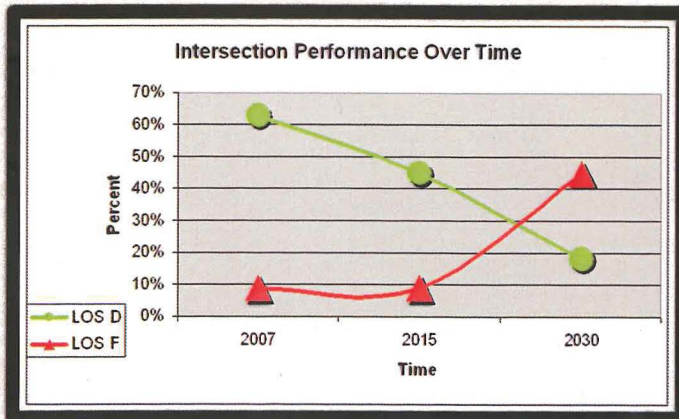
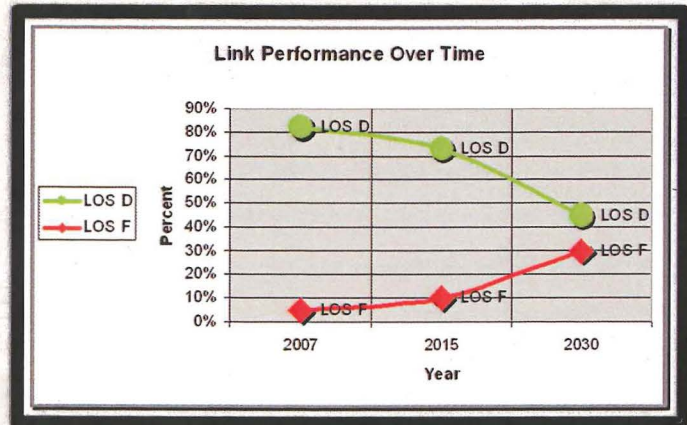
- William Lehman
- Sunny Isles
- Broad

Of these east/west corridors only two connect the barrier islands directly with I-95:

- 167/163rd Sts – Sunny Isles Blvd
- 125th St – Broad Causeway

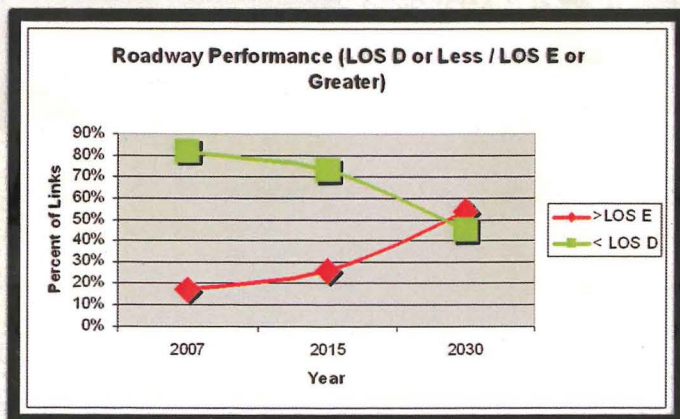


The interrupted grid network functions well now, but will deteriorate significantly through the planning horizon. Roadway segments, intersections and corridors will exhibit heightened congestion as time goes by. The ability to mitigate the situation lies in the development of a diverse array of multimodal projects which address physical capacity, alternative modes and transportation policy. From the perspective of physical capacity the needs to be addressed are focused on individual roadway segments, and intersections as well as the examination of new corridor development by connecting missing links in the system, or by more efficiently using the existing corridors to accommodate flow.



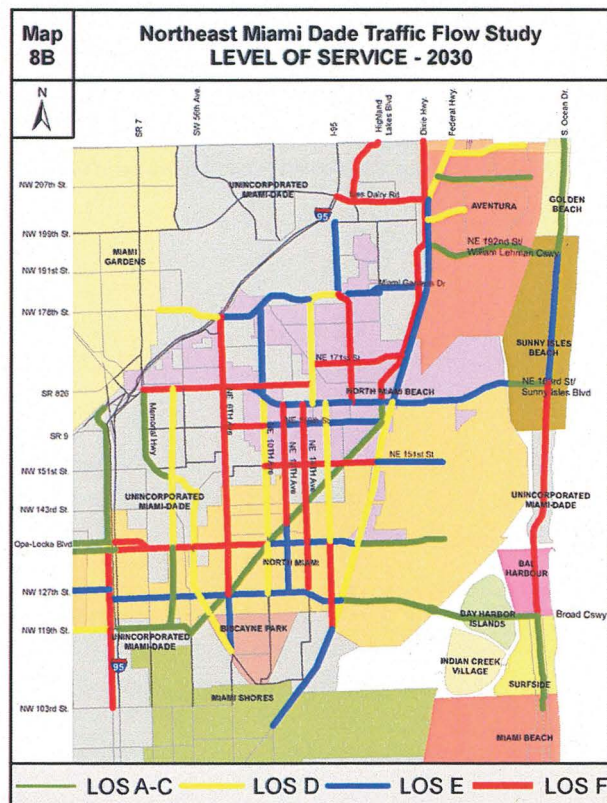
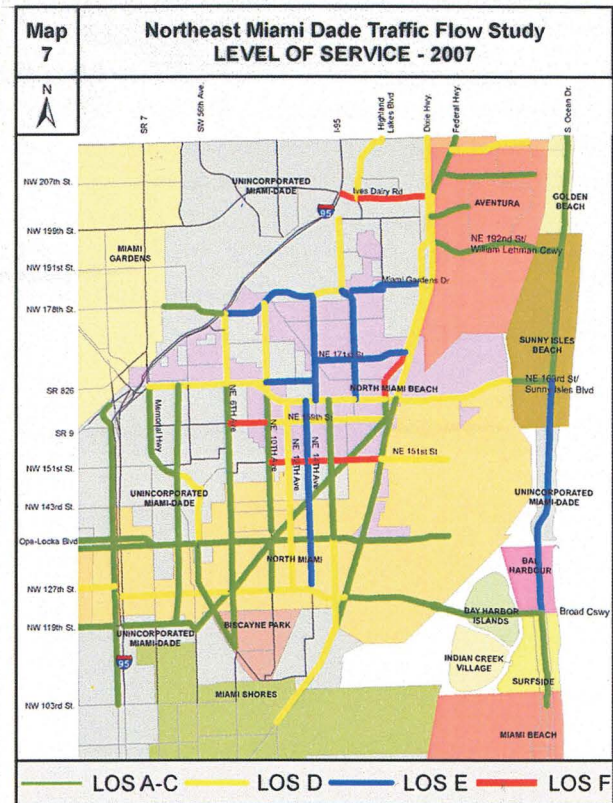
Relative to alternative modes, a higher use of transit and transit incentives needs to be examined, located and provided. Policies that link transportation and land use, as well as attempt to make positive impacts on how and when people travel are going to be needed. As these efforts are developed some will be easier to implement, either by having greater support, requiring less study, requiring less money or being less intrusive.

A phased approach is needed, organizing projects into short and long term implementation categories. The next task: Identification of Multimodal Projects, will address these needs with individual projects stemming from the public involvement and analysis portions of the study.



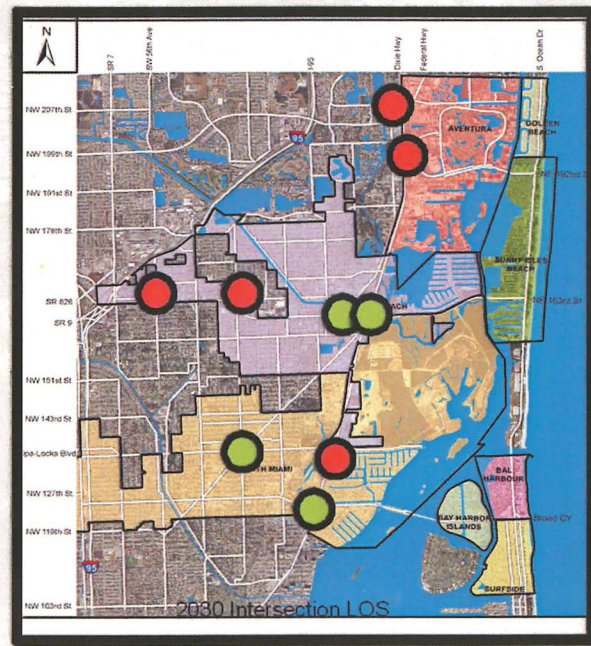
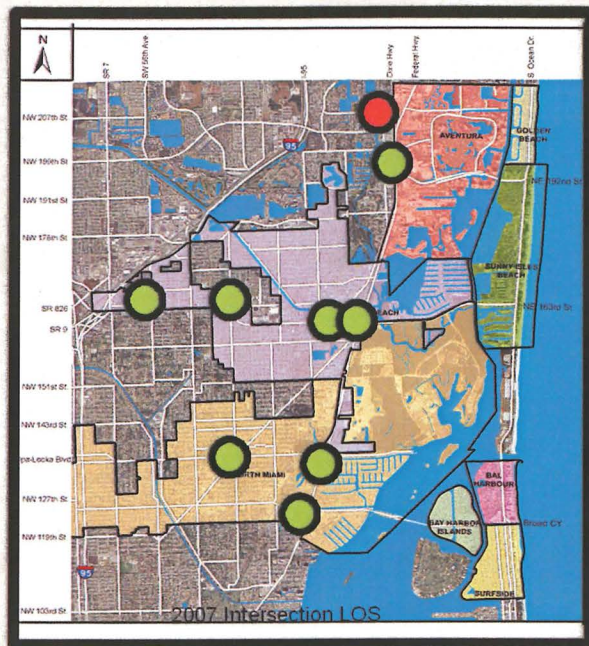
Links

Today the roadway links operate relatively well. Of the 75 roadway links analyzed, 4 links or 5% operate in a failing condition (LOS F). The vast majority of the links, (62 of 75), or 82% operate at an acceptable LOS D or better. This situation will be reversed within the planning horizon. By 2015, the number of failing links will double. The number of acceptable links will shrink to 55 links (73%). By 2030 the number of failing links will increase to 23, going from 6% to 30%. Acceptable links will shrink to 34 or from 82% to 45% of all links.



Intersections

The intersections within the study area are in the same condition. Often it is the intersections which govern the overall feel of constriction in a network because they create the bottlenecks where traffic begins to slow. Eleven intersections were studied as part of this project. The worst conditions were in the PM peak hours. In 2007 all but one intersection (US-1 & Miami Gardens Drive) operated better than LOS F, with 7 of 11 or 63% operating at LOS D or better. By 2015 there is still one LOS F, but 5 of 11 or 45% will operate at LOS D or better. By 2030, the numbers will be reversed with 45% of the intersections operating at LOS F and only 18% (2 of 11) operating at LOS D or better.



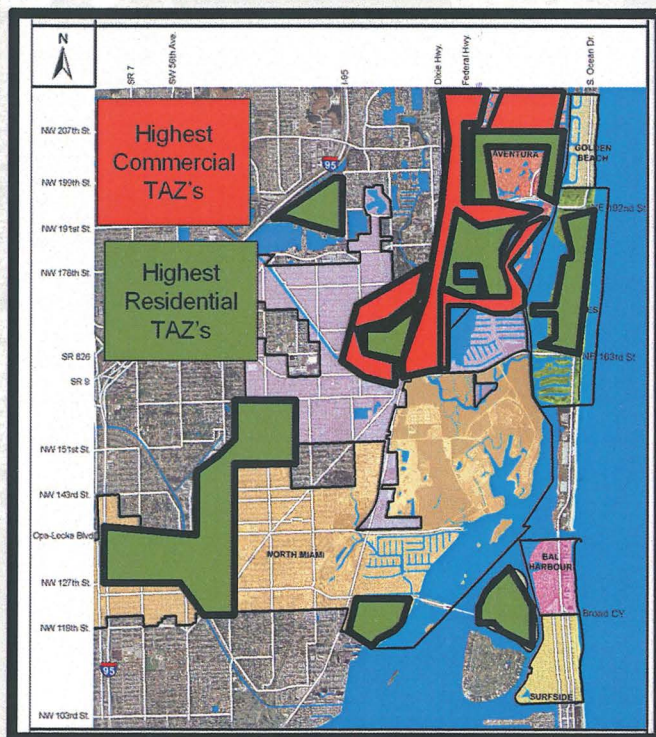
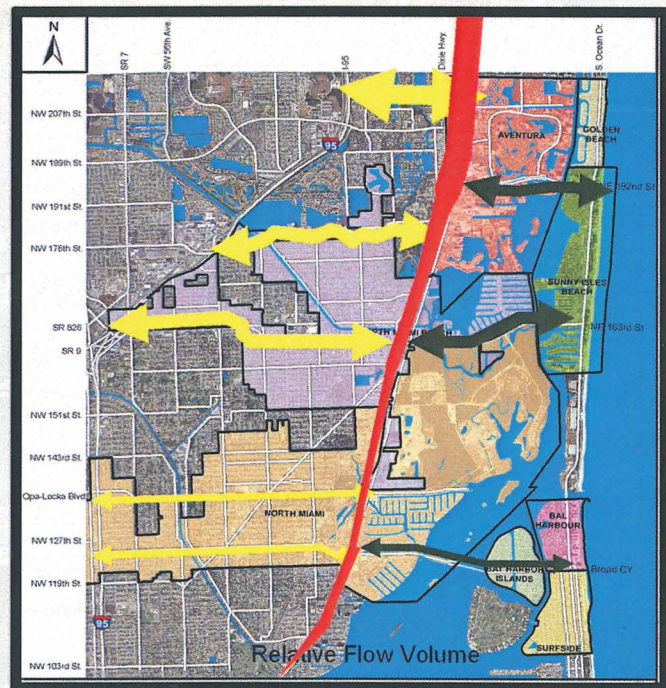
Corridor Flow

Overall the Northern part of the study area is carrying much more volume than the southern part. As an example Ives Dairy Road carries over 4,500 trips in the PM peak hour, while 135th St, the southern most east/west corridor carries less than 1000 trips.

Each corridor connecting I-95 and Biscayne Boulevard has lesser volumes than the corridor to its north. The same is true on Biscayne Boulevard. The volume on Biscayne Boulevard south of Ives Dairy Road is about 6,400 trips. This volume decreased by 65% at 125th Street south of Broad Causeway to 2,300 trips

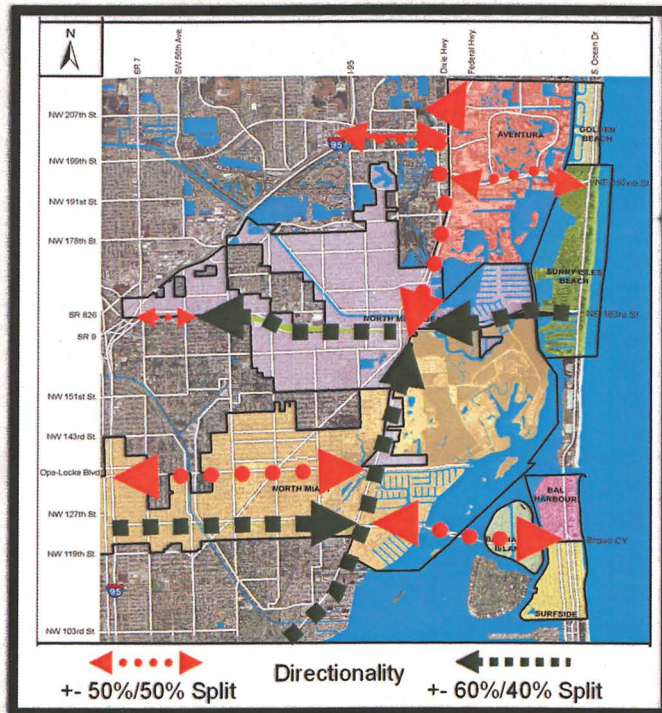
The analysis of the links, intersections and corridors shows several interesting characteristics relative to overall traffic flow. The bulk of the traffic volume is in the northern part of the study area. This can partially be explained by the fact that the northern roads have more lanes, and more capacity, therefore more volume. Further analysis of vehicles per lane as an indicator of congestion shows that the northern roads are also most congested. Ives Road carries nearly 750 vehicles per lane, while the highest total vehicles per lane is on 135th St at 445 vehicles per lane.

The intersection of 163rd Street and Biscayne Boulevard is the epicenter of traffic congestion in the area. All roadway flows seem to maximize in this general area. It provides the most access and most ability to distribute to the regional network very similar to the Julia Tuttle Causeway in Miami Beach.



Directional flow is generally balanced through the study area except in a few key locations. The nexus of transportation and land use dictate why. The area in Aventura and along Biscayne Boulevard has the highest concentrations of both residential and commercial intensity. While there is a mix of uses, there is not a mix of users. There is a home/work imbalance, creating cross flow of traffic each day. Because of this cross flow of drivers, the northern part of the study area exhibits a relatively balanced directional split. Biscayne Boulevard at William Lehman Causeway is balanced 47% north bound / 53% South Bound. The Causeway itself is a 50/50 split.

Corridor Flow (cont.)



Directionality can be seen on a few corridors. For east/west corridors, there is a predominant PM westbound flow on the 167/163rd Street / Sunny Isles Boulevard corridor. This is +/-60% westbound, +/-40% eastbound between AIA and NE 2nd Avenue, where it balances. Conversely, there is a +/- 60% eastbound, +/-40% westbound PM flow on 125th Street. For north/south flow, Biscayne Boulevard is highly directional +/-60% northbound, +/-40% southbound PM flow between the Broad Causeway, and the 151st Street area. Traffic seems to be converging on the center of the area on Biscayne Boulevard. North of 163rd St the predominant flow is south. South of while the flow at that 163rd St, Biscayne Boulevard intersection is basically split evenly north and south, with the largest movement being from the barrier islands to the west. Where this directional flow is

taking place provides the best opportunity to enhance the corridors, without invasive projects which may require infrastructure where none exists. Today 163rd Street, the predominant flow, is north.

Like the results of the coastal communities, it is shown that traffic does not distribute either on AIA or Biscayne Boulevard. It distributes on I-95. Traffic generally enters and exits the Study Area on the I-95 connected corridor closest to their Study Area origin or destination.

The ability to mitigate the situation of deteriorating service lies in the development of a diverse array of multimodal projects in a phased approach which address physical capacity, alternative modes and transportation policy.

PROJECT DEVELOPMENT

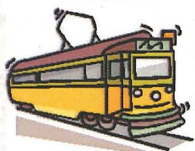
Not enough capacity exists in any one mode of transportation to satisfy the all need alone, yet if a variety of modes were effectively utilized, providing traveler's alternatives, the system would function in an improved manner. ***The ability to implement greater physical capacity is limited.*** There are opportunities to make major impactfull gains in the area of transit.



The development of projects stemmed from the analysis and began by looking at the roadway issues, and attempts to maximize the potential that exists within the existing rights of way. It explored where new linkages could be made and where efficiencies in the existing utilization could be taken advantage of. Bottle-necks in the form of intersections were addressed either by operational or signal improvements.



From a mass transit perspective project development with the existing bus transit system by reevaluating it then restructuring it appropriately, over time it will look and behave like the future system it will eventually become. It is not enough to focus on the future development of rail projects, but to build to that through the incremental reformation of the existing system. Initially, route consolidation being planned by Miami Dade Transit will be important. The route structures need to be simplified, creating linear routes more similar to that of rail transit. This improved operational efficiency is important so that the bus routes function as a reaction to the local needs. As the increase functional efficiency and effectiveness of the route system is enhanced, a major emphasis should be placed on attracting more "choice" riders. In that sense transit amenities need to be put on the buses, stops and stations. Additionally the marketing of the system needs to be enhanced. Over time the system needs to present a more state of the art, polished rail-like look, feel and customer interface. This plan encourages governments to be open to reevaluating and potentially reprioritizing mass transit needs county wide to more accurately service the need, and to manage growth by actively measuring the impact of various types of development and coordinating land use policies with neighboring jurisdictions.



Policy initiatives focused on Transportation Demand Management techniques, such as ride sharing, car sharing, flexible work hours, intelligent transportation systems, and other methods by which to more flexibly use the mobility system and incentive the use of alternative modes should be put in place. It is incumbent on each community to focus on measurable goals, such as modal split. These should be evaluated in their current state, and periodically measured to track performance. The ultimate goal of a more balanced mode split can be achieved by lessening the dependence on the automobile, through the provision of viable alternatives.

The transportation system, left un-treated will create economic consequences, symptoms of which are already being experienced. Transportation is but one aspect, yet cumulatively, the lack of mobility, lack of affordable housing, deteriorating water quality and quantity, as well as skyrocketing property taxes and insurance rates, are fast draining the viability from our communities

Projects Types have been developed in the three categories and are organized into short term or long term efforts in order to address the entire transportation system:

- Physical Capacity
- Alternative Mode
- Policy

Project Lists

Physical Capacity Projects

1. Intersection Level of Service Improvements (Short Term, 1-5yrs if no ROW is needed)
 - 1.1 West Dixie Highway @ Miami Gardens Drive
 - 1.2 Biscayne Boulevard @ William Lehman Causeway
 - 1.3 2nd Avenue @ 167th Street
 - 1.4 163rd Street/Biscayne Boulevard grade separated interchange
2. Traffic Signal Operations (Short Term, 1 – 5 yrs)
 - 2.1 Biscayne Boulevard @ 163rd Street
 - 2.2 West Dixie Hwy @ 163rd Street
 - 2.3 10th Avenue @ 167th Street
 - 2.4 10th Avenue @ 163rd St
 - 2.5 Biscayne Boulevard @ 125th Street
 - 2.6 Biscayne Boulevard @ 135th Street
 - 2.7 West Dixie Hwy @ 135th Street
 - 2.8 Signal Coordination
 - 2.9 Traffic Loop Detector Repair
3. Link Level of Service Improvements (Short Term, 1-5yrs if no ROW is needed) (Long Term 5 – 15 Yrs if ROW is needed)
 - 3.1 10th Avenue between 151st Street and Miami Gardens Drive
 - 3.2 16th Avenue between US-1 and 135th Street
 - 3.3 14th Avenue between 163rd Street and 135th Street
 - 3.4 151st Street between 10th Avenue and US-1
 - 3.5 159th Street between 6th Avenue and West Dixie Highway
 - 3.6 171st Street between 15th Avenue and US-1
 - 3.7 19th Avenue between 103rd Street and Miami Gardens Drive
 - 3.8 Collins Avenue between Harbor Way and Bay View Drive
 - 3.9 West Dixie Hwy between 163rd Street and County Line Road
 - 3.10 Highland Lakes Boulevard between Ives Dairy Road and 125th Street

4. New Corridor Connections (Long Term 5 – 15 yrs)

- 4.1 159th Street
- 4.2 151st Street

5. Reversible Lane Studies (Short Term, 1-5 yrs)

- 5.1 167/163rd Streets
- 5.2 135th Street
- 5.3 Biscayne Boulevard between 125th Street and 151st Street

6. School Board Coordination (Short Term, 1-5 yrs)

- 6.1 Relief of Congestion Related to School Loading on Ives Dairy Road and Miami Gardens Drive
- 6.2 Work with school board to minimize traffic impact to Sunny Isles Beach School on BB-1

7. Direct Connection Between William Lehman Causeway and Aventura Mall (Long Term, 5-15 yrs)

8. Improved Directional Signage Throughout Area (Short Term, 1-5yrs)

9. North Miami Avenue Consistent 4 Lane Section North and South of 105th Street (Long Term, 5-15 yrs)

10. Implement Aventura Biscayne Boulevard Intersection Modifications (Short Term, 1-5 yrs)

Alternative Mode Projects

- 1. Study Biscayne Boulevard Corridor for Higher Level Transit Potential (Short Term, 1-5 yrs)
- 2. Reformation of Transit Routes in the Study Area Based on MDT Comprehensive Bus Operations Analysis and Coastal Communities Transportation Master Plan (Short Term, 1-5 yrs)

2.1 Decrease bus headways

- 3. Support I-95 Bus Rapid Transit (Managed Lanes) (Short Term, 1-5 yrs)
- 4. Link Municipal Shuttles (Immediate)
- 5. Adopt Mode Split Goals in Comprehensive Plans (Short Term, 1-5 yrs)
- 6. BRT on Collins Avenue (Long Term, 5-15 yrs)
- 7. Coordinate Municipal Circulator Transit Routes with MDT (Short Term, 1-5 yrs)
- 8. 163rd Street/Biscayne Boulevard Intermodal Center (Long Term, 5-15 yrs)

9. Ensure Appropriate MDT Bus Operations to Sustain Pedestrian Friendly Environment on West Dixie Highway and 15th Street (Short Term, 1-5 yrs)

10. Attract Choice Transit Riders (Short Term, 1-5 yrs)

10.1 Special use lanes evaluation

10.2. Enhanced transit amenities

10.3. Fuel efficient buses

10.4. Better transit marketing

10.5. Use smaller buses

Policy Projects

1. Shift County Transit Priorities to Biscayne Boulevard Corridor (Short Term, 1-5 yrs)

2. Develop Northeast Miami-Dade Traffic Impact Fee (Short Term, 1-5 yrs)

3. Provide Incentives for Transportation Demand Management Participation (Short Term, 1-5 yrs)

4. Municipal Transportation Coordinator (Immediate)

5. Further Develop Intelligent Transportation Systems (Short Term, 1-5 yrs)

6. Coordinate Municipal Land Use Policies Along West Dixie Highway and Biscayne Boulevard (Short Term, 1-5 yrs)

a. West Dixie Highway Charrette

IMPLEMENTATION

Key factors to the implementation of any plan is the ability to systematically approach the further development of the individual projects. In general, from a technical perspective, transportation efforts have several phases; planning, design and construction. They must seek funding for each phase, whether from the municipal budgeting cycle or at the State or Federal levels. From a practical perspective, each effort also needs an advocate to drive the process forward. Aspects of this vision are relatively simple to implement, in as much as they are purely local issues. Other aspects become increasingly complex, as they require multi-jurisdictional coordination and funding, beyond the scope of any municipality. The implementation process is built from a pragmatic perspective.

The plan seeks to advocate for these projects, and first attempt to implement the ones that present the greatest opportunity to have the most impact at the lowest cost. It progresses through the list to projects of greater complexity, controversy and coordination. Essentially all of the policy initiatives can begin to be implemented in the short term, as can the physical capacity improvements that don't require additional right of way. Similarly, many of the alternative mode projects that require the support of the local community can be done in the short term, as can the initiation of many of the higher intensity transit studies, and route modifications. Long term projects are those that require additional right of way, federal funding matches, or inclusion in the Long Range Transportation Plan or Transportation Improvement Program. The most limiting aspect of this effort is the funding to move the plan forward.

The first step is the creation of a position that can oversee the process, further developing project parameters, seeking funding sources, and moving projects through their respective funding, planning, design and implementation phases with various municipalities and agencies. An immediate step would be to coordinate the municipal shuttles. Working with the CITT, and each of the communities that offer shuttles, an evaluation of opportunities and willingness to contribute can be undertaken. Concurrently conversations with MDT about the route consolidations and realignments can take place as they relate to coordinating with shuttle activity.

Policy initiatives such as the support of the I-95 BRT/Managed Lanes concept is a short term activity. More consistent effort will need to occur in getting local businesses to not only support, but implement transportation demand management techniques. The same goes for advocating a reprioritization of transit policies at the county level. From this consistent communication and advocacy with FDOT and the MPO, the longer term efforts that must go on the LRTP or TIP can begin to be moved forward. While this is on going, the physical capacity projects can be evaluated and moved forward. Those projects not requiring additional right of way can move first depending on municipal funding availability and other coordinative issues. Those projects determined to need additional right of way can be scrutinized from the technical and political perspectives to ascertain the cost/benefit of each. With consistent advocacy in the short term horizon, longer term projects such as the development of the connection from the Lehman Causeway to Aventura Mall and other more intensive projects requiring right of way, can make their way onto requisite plans and begin design and implementation phases by the 5th through 10th years. If individual local funds are available the ability to implement with less coordination is easier.

PROJECT PRIORITIES BY TIME HORIZON				
PROJECT		TIME FRAME		
		IMMEDIATE	SHORT TERM (1-5 YEARS)	LONG TERM (5-15 YEARS)
		2008	2008 - 2013	2014 -2023
Physical Capacity Projects				
#				
1	Intersection Level of Service Improvements (No ROW Needed)			
1a	Intersection Level of Service Improvements (ROW Needed)			
2	Traffic Signal Operations			
3	Link LOS Improvements (No ROW Needed)			
3a	Link LOS Improvements (ROW Needed)			
4	New Corridor Connections			
5	Reversible Lane Studies			
6	School Board Coordination			
7	Direct Connection Between WM Lehman Causeway and Aventura Mall			
8	Improved Directional Signage			
9	North Miami Avenue; Consistent 4 Lane Cross Section			
10	Implement Aventura's Biscayne Boulevard Intersection Modifications			
11	Cross Access Easements On Commercial Property			
Alternative Mode Projects				
	Study Biscayne Boulevard Corridor For Higher Level Transit Potential			
	Reformation of Transit Routes In Study Area			
	Support I-95 Bus Rapid Transit			
	Link Municipal Shuttles			
	Adopt Mode Split Goals			
	BRT on Collins Ave			
	Coordinate Municipal Circulators with MTD Routes			
	163rd Street/Biscayne Boulevard Intermodal Center			
	Ensure Appropriate MDT Bus Operations to Sustain Pedestrian Friendly Environment On West Dixie Hwy			
	Attract Choice Transit Riders			
	Develop Complete Streets Program			
Policy Projects				
	Shift County Transit Priorities to Biscayne Boulevard			
	Develop Northeast Miami- Dade Traffic Impact Fee			
	Provide Incentives for Transportation Demand Management Participation			
	Municipal Transportation Coordinators			
	Further Development of Intelligent Transportation System			
	Coordinate Municipal Land Use Policies			

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