



# CITY OF MIAMI BEACH

## MUNICIPAL MOBILITY PLAN

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### IMPLEMENTATION STUDY

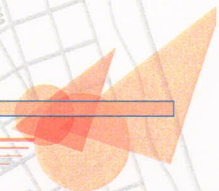
#### EXECUTIVE SUMMARY

Submitted to

CITY OF MIAMI BEACH

Prepared By

CORRADINO

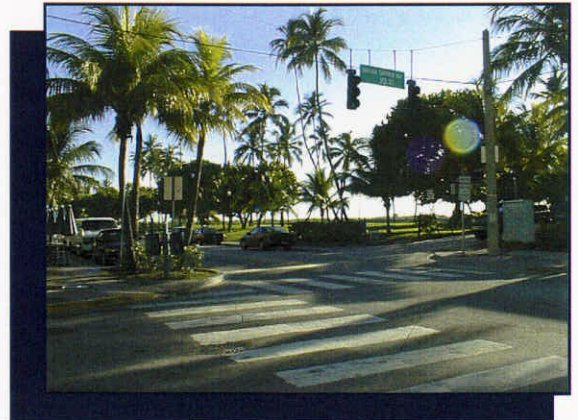


# PROJECT OVERVIEW

## INTRODUCTION

**T**he Miami Beach Municipal Mobility Plan (MMP) is the City's first "grassroots" effort to master plan for the community's transportation needs. It provides a snapshot of future transportation issues and trends which will impact Miami Beach. The MMP establishes the City's vision for transportation, makes recommendations for meeting the identified needs (the Ten-Year Plan), provides a "Project Bank" of strategies for addressing the issues, and establishes the planning tools for guiding on-going decisions related to mobility. It also reflects a comprehensive approach towards the issue of transportation by addressing the needs for all types of mobility including automobiles, transit, pedestrians, bicycles and other non-motorized vehicles.

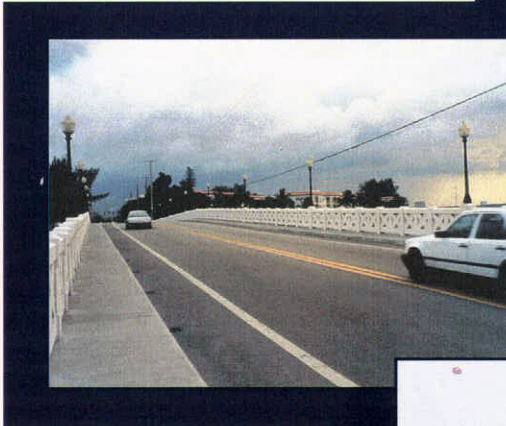
The first step towards implementing the MMP is developing the MMP Implementation Plan. The core of the Implementation Plan is the Project Bank, initially developed in the MMP illustrated in figure 1. This bank identifies specific projects or strategies, to improve mobility and enhance the quality of life on Miami Beach. The remainder of the Implementation Plan refines the Project Bank by prioritizing individual projects, identifying funding sources and strategies, recommending legislative initiatives for strengthening the transportation opportunities work plan, and examining case studies of traffic calming devices as part of the Project Bank.



*Ocean Drive Operational Improvements*



*South Beach East/West One-Way Pairs*



*Venetian Causeway Improvements and Enhancements*



*Alton Road Enhancements*



*South Beach Walk*



# PROJECT BANK

## COST ESTIMATES

The MMP identified transportation and mobility issues through a series of extensive public meetings. Among the most important transportation issues City-wide were:

- Roadway System Needs
- Neighborhood Impacts
- Sense of Place
- Safety
- Hurricane Evacuation

Subsequently, 44 projects were developed in response to these issues to comprise the Project Bank. Projects are categorized as:

- Capacity Improvement Projects
- Corridor Enhancement Projects
- Community Sustainability Projects
- Alternative Mode Projects

and include preliminary cost estimates developed to provide an order-of-magnitude cost (based on comparisons with similar projects in the Miami-Dade County Fiscal Years 1999-2003 Transportation Improvement Program). These estimates are general approximations to be utilized for planning purposes and are shown in table 1.

The planning component of the project cost primarily consists of feasibility studies, environmental studies, operational studies and public involvement. The design component of the project cost includes preparing design, plans, specifications, details, construction contract documents, and permitting. The construction component estimates the costs to build the project including the acquisition of right-of-way, utility relocation, and construction engineering and inspection.

After the planning component determines more precisely what actually needs to be constructed, a more detailed engineering cost estimate should be prepared. This detailed cost estimate will identify the required funds that should be programmed for the project. Additionally, the costs reflect current values and should be adjusted in the future to reflect current economic conditions.



Collins Avenue- Grand Boulevard



Community Shuttle Expansion

Table 1 Project Costs

Project	Planning Costs	Design Costs	Construction Costs
1. North Beach Community Shuttle	\$50,000	\$1,600,000*	\$1.2 M**
2. North Beach Neighborhood	\$25,000	\$30,000	\$2 M
3. Harding/Collins Avenue Enhancements	\$15,000	\$50,000	\$35 M
4. Biscayne Elementary School	\$7,500	\$15,000	\$50,000
5. Indian Creek Drive/71 <sup>st</sup> Street/Dickens	No Matching Funds Required		
6. Normandy Drive/71 <sup>st</sup> Street Corridor	\$15,000	\$200,000	\$1.25 M
7. Indian Creek Drive Capacity	\$50,000	\$75,000	\$7.5 M
8. North Beach Waterfront Access	N/A	\$20,000	\$1.5 M
9. Collins Avenue	\$25,000	\$200,000	\$1.5 M
10. North Beach Walk/Atlantic Trail	\$10,000	\$200,000	\$2 M
11. 63 <sup>rd</sup> Street/Indian Creek Drive	No Matching Funds Required		
12. Collins Avenue Realignment	\$100,000	\$100,000	\$5 M
13. La Gorce/Pine Tree Traffic Calming	No Matching Funds Required		
14. Alton Road Enhancements	\$25,000	\$400,000	\$2.5 M
15. Middle Beach Walk/Atlantic Trail	\$10,000	\$300,000	\$3 M
16. 47 <sup>th</sup> Street Traffic Calming/Safety	\$10,000	\$15,000	\$50,000
17. Nautilus Neighborhood Calming	\$40,000	\$70,000	\$7 M
18. Middle Beach Community Shuttle	\$50,000	\$2,400,000*	\$1.6 M**
19. 43 <sup>rd</sup> Street/Alton Road Intersection	\$20,000	\$100,000	\$5 M
20. Middle Beach Intermodal Facility	N/A	N/A	N/A
21. Indian Creek Drive/41 <sup>st</sup> Street	\$30,000	\$300,000	\$6 M
22. Alton Road/41 <sup>st</sup> Street Intersection	\$15,000	\$50,000	\$25 M
23. 41 <sup>st</sup> Street Streetscape	No Matching Funds Required		
24. Alton Road Enhancements	\$20,000	\$150,000	\$1 M
25. Indian Creek Multi-Purpose Trail	\$10,000	\$30,000	\$3 M
26. Dade Boulevard/23 <sup>rd</sup> Street	\$15,000	\$150,000	\$75 M
27. Dade Boulevard Intersection	\$30,000	\$50,000	\$2.5 M
28. Alton Road at 20 <sup>th</sup> Street and Sunset	\$25,000	\$50,000	\$3 M
29. Alton Road/Dade Boulevard	No Matching Funds Required		
30. Dade Blvd/17 <sup>th</sup> Street/West Avenue	\$50,000	\$150,000	\$6 M
31. 17 <sup>th</sup> Street/Alton Road Intersection	No Matching Funds Required		
32. Venetian Causeway Venetian Trail	N/A	\$350,000	\$2.28 M
33. 16 <sup>th</sup> Street Enhancements/Operations	\$25,000	\$50,000	\$25 M
34. Alton Road Capacity Improvements	\$50,000	\$150,000	\$1 M
35. Flamingo Park Neighborhood	\$40,000	\$75,000	\$5 M
36. So Beach East/West One-Way Pairs	No Matching Funds Required		
37. Washington Avenue Enhancements	N/A	\$300,000	\$3 M
38. 5 <sup>th</sup> Street/Alton Road Intersection	\$100,000	\$500,000	\$3 M
39. East-West Transit Corridor	N/A	N/A	N/A
40. South Beach Intermodal Facility	\$25,000	\$750,000	\$7.5 M
41. South Beach Walk/Atlantic Trail	\$10,000	\$200,000	\$2 M
42. South Point Streetscape/Ped. Access	\$25,000	\$40,000	\$3 M
43. Ocean Drive Operational	No Matching Funds Required		
44. Collins Avenue-Grand Boulevard	\$25,000	\$100,000	\$5 M

\* = Capital Costs

\*\* = Total Operating Costs

## PROJECT BANK PRIORITIZATION

Projects in the Project Bank are prioritized into two sets of prioritization tables to develop a realistic timeline for implementation. The first set, called project horizons, arranges the projects according to their expected date of completion. This includes long, short and mid-terms periods of time. The second set, shown below in tables 2 and 3, called project prioritization, arranges projects by order of importance. This order is measured by each project's ability to enhance mobility, while improving neighborhood sustainability.

The total score is composed of a subset of criteria given a 0, 1, or 2. These ratings are explained a

0, Project Does Not Meet/Has Unfavorable Relationship to criterion

1, Project Partially meets / Has Moderately favorable relationship to Criterion

2, Project Meets / Has Moderately Favorable Relationship to criterion

### Project Prioritization

#### Capacity Improvement Projects

Project Criteria	7. Indian Creek Dr Capacity	19. 43rd St/Alton Rd	34. Alton Rd Capacity	38. 5th St/Alton Rd
<b>CAPACITY IMPROVEMENT CRITERIA</b>				
Satisfies LOS Standard	2	2	2	2
Improves Safety	2	2	2	2
Facilitates Hurricane Evacuation	2	1	2	1
Improves Quality of Driver Experience	2	2	2	2
<b>CORRIDOR ENHANCEMENT CRITERIA</b>				
Promotes a More Casual Flow of Traffic	1	1	1	1
Improves Facility Function/Operations	2	2	2	2
Promotes Unique Character, Sense of Place	0	0	0	0
Mitigates Roadway Impacts	0	0	0	0
<b>COMMUNITY SUSTAINABILITY CRITERIA</b>				
Discourages Neighborhood Traffic Intrusion	1	1	1	1
Promotes Positive Economic Development	1	1	1	1
Promotes Favorable Development Pattern	0	0	0	0
Supports Neighborhood Identity	0	0	0	0
<b>ALTERNATIVE MODE PROJECTS</b>				
Promotes Use of Alternative Modes	0	0	0	0
Improves ADA Mobility	0	0	0	0
Improves Transit-Dependent Mobility	0	0	0	0
Promotes Transit-Related Development	0	0	0	0
<b>TOTAL SCORE</b>	<b>13</b>	<b>12</b>	<b>13</b>	<b>12</b>

Table 2

### Project Prioritization

#### Community Sustainability Projects

Table 3

Project Criteria	2. North Beach Neighborhood Calming	4. Biscayne Elementary School Circulation	16. 47th St Traffic Calming-Safety	17. Nautilus Neighborhood Calming	33. 16th St Enhancements	35. Flamingo Park Neighborhood Calming	37. Washington Ave Enhancements	42. South Pointe Streetscape-Pedestrian Access Program	44. Collins Ave Grand Boulevard
<b>CAPACITY IMPROVEMENT CRITERIA</b>									
Satisfies LOS Standard	0	0	0	0	1	0	1	0	0
Improves Safety	1	2	2	2	2	2	2	2	2
Facilitates Hurricane Evacuation	0	0	0	0	1	0	1	0	0
Improves Quality of Driver Experience	2	0	2	2	2	2	2	2	2
<b>CORRIDOR ENHANCEMENT CRITERIA</b>									
Promotes a More Casual Flow of Traffic	2	2	2	2	2	2	2	1	1
Improves Facility Function/Operations	1	2	1	1	2	2	2	0	0
Promotes Unique Character, Sense of Place	2	0	2	2	1	1	2	2	2
Mitigates Roadway Impacts	2	0	2	2	1	1	2	2	2
<b>COMMUNITY SUSTAINABILITY CRITERIA</b>									
Discourages Neighborhood Traffic Intrusion	2	0	2	2	1	1	2	0	0
Promotes Positive Economic Development	1	0	1	1	0	0	1	1	2
Promotes Favorable Development Pattern	1	0	1	1	0	0	1	1	2
Supports Neighborhood Identity	2	0	2	2	0	0	2	2	2
<b>ALTERNATIVE MODE PROJECTS</b>									
Promotes Use of Alternative Modes	1	1	1	1	1	1	1	1	1
Improves ADA Mobility	1	1	1	1	1	1	1	1	1
Improves Transit-Dependent Mobility	0	0	0	0	0	0	0	0	0
Promotes Transit-Related Development	0	0	0	0	0	0	0	0	0
<b>TOTAL SCORE</b>	<b>18</b>	<b>8</b>	<b>19</b>	<b>19</b>	<b>15</b>	<b>13</b>	<b>22</b>	<b>15</b>	<b>17</b>



# FUNDING AND CAPITAL IMPROVEMENTS

## Funding Packages Figure 2

The Miami Beach Municipal Mobility Plan (MMP) listed a set of potential funding sources for the Project Bank improvements. This list was intended to provide a full range of *potential* sources of funding for further development at a later time. The Implementation Plan presents a refined list of funding sources which may be made directly available to the City or indirectly through State Government, such as FDOT. The funding sources reflect the full scope of the Project Bank, and relate to the ways in which similar projects have been paid for in the past.

### POTENTIAL FUNDING SOURCES

- State Intermodal Development Fund
- 100 Percent State Funds
- State Transportation Disadvantaged Funds
- Federal Transit Administration (FTA) Funds
- Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21)
- Clean Cities Program
- Miami-Dade Neighborhood Traffic Management, Public Works Department
- Mitigation Plans for Development Approval
- The Florida Pedestrian and Bicycle Safety Program
- Florida Greenways and Trails Program
- Florida Recreation Development Assistance Program
- National Recreational Trails Funding Program
- Special Waterway Projects Program
- Florida Inland Navigational District (FIND)
- Special Benefit Districts
- Sustainable Development Challenge Grant Program



Ocean Drive

### PROJECT FUNDING PACKAGES

One strategy for making projects more attractive for potential funding is grouping similar projects. The City of West Palm Beach was granted \$11.25 million in TEA-21 funding for a reconstruction effort made up of many smaller projects, including side street traffic calming, landscaping, and utilities replacement. The City was able to successfully “package” these projects to obtain significant funding. This funding would probably not have been achieved if the individual projects had been pursued separately. West Palm Beach’s experience points out the importance of creatively packaging transportation projects in order to attract the attention of funding entities.

In Miami Beach, projects could be grouped according to more general improvement categories. This includes projects which are linked geographically, physically and functionally. Four packages could be developed to include a majority of the projects in the Project Bank.

Figures 2 and 3 group projects according to these four funding packages.

#### Project Funding Package #1: “Spine” Preservation & Enhancement

The Collins Avenue and Alton Road corridors provide the vital functions of connecting Miami Beach to the rest of the metropolitan area, while also providing hurricane evacuation routes and major circulation routes within the City. This project funding package includes:

3. Harding Avenue Enhancements
9. Collins Ave. Improvements/Regulation Program
12. Collins Avenue Realignment
14. Alton Road Enhancements
19. 43<sup>rd</sup> Street/Alton Road Intersection Capacity Improvements
22. Alton Road/41<sup>st</sup> Street Intersection Calming
24. Alton Road Enhancements
28. Alton Road at 20<sup>th</sup> Street and Sunset Drive at 20<sup>th</sup> Street Intersection Reconfiguration/Improvements
30. Dade Blvd./17<sup>th</sup> St./West Ave. Intersection Reconfiguration and Connection
34. Alton Road Capacity Improvements
38. 5<sup>th</sup> St./Alton Rd. Intersection Improvements
44. Collins Avenue Grand Boulevard





Funding sources include State 100 Percent Funds through FDOT, Mitigation Plans for Development Approval, and TEA-21 funds.

**Project Funding Package #2: Community Shuttle Expansion**

This funding package addresses the mid to long-term need to expand the existing community shuttle system which consists entirely of the Electrowave. This project funding package includes:

1. North Beach Community Shuttle Expansion
18. Middle Beach Community Shuttle Expansion

Potential funding sources include the State Intermodal Development Fund, TEA-21, FTA funds, Clean Cities, Sustainable Development Challenge Grant, Mitigation Plans for Development Approval, and participation in the projects from Miami-Dade Transit Agency.

**Project Funding Package #3: Major Pedestrianways, Beachwalks and Greenways**

The MMP envisions a network of pedestrianways, beachwalks, and greenways which will provide an integrated system for non-motorized travel. This network is shown in Figure 3. This project funding package includes:

10. North Beach Walk
15. Middle Beach Walk
25. Indian Creek Multi-Purpose Trail
32. Venetian Causeway Improvements (Venetian Trail)
41. South Beach Walk

Potential funding sources include the State Intermodal Development Fund, TEA-21, Clean Cities, Sustainable Development Challenge Grant, the Florida Pedestrian and Bicycle Safety Program, Florida Recreation Development Assistance Program, National Recreational Trails Funding Program, Florida Greenways and Trails Acquisition Program, and Mitigation Plans for Development Approval.

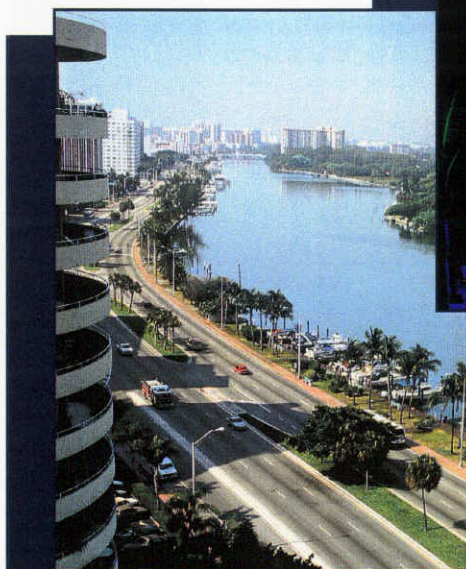
**Project Funding Package #4: Neighborhood Traffic Calming**

Traffic calming projects can appropriately be packaged together as a wide-ranging response to the impacts of traffic on neighborhoods. While other projects than those listed below include traffic calming elements, these projects do not overlap with others that make up the other project funding packages. This project funding package includes:

2. North Beach Neighborhood Calming/Streetscape Improvements
16. 47<sup>th</sup> Street Traffic Calming/Safety Improvements
17. Nautilus Neighborhood Calming Project
35. Flamingo Park Neighborhood Calming Project
42. South Pointe/Streetscape/Pedestrian Access Program

Funding sources include Mitigation Plans for Development Approval, TEA-21, Special Benefit Districts, City of Miami Beach General Fund, and technical assistance from Miami-Dade Neighborhood Traffic Management.

Ocean Drive



Indian Creek



# CONCURRENCY AND PROJECT IMPLEMENTATION

Rule 9J-5, Florida Administrative Code, which provides the minimum criteria for review of local government comprehensive plans, addresses requirements related to local government concurrency management systems. "Concurrency" means that the required public facilities and services necessary to maintain the adopted level of service standards are available when the impacts of development occur. A concurrency management system is required of all local governments in order to establish an on-going mechanism to ensure that the public facilities and services needed to support development are available when the impacts of development occur. The concurrency management system must be supported by a schedule of capital improvements demonstrating that the adopted level of service standards will be achieved and maintained.

Although concurrency seeks to ensure that adequate public facilities are provided as new development occurs, it can direct development away from dense cities such as Miami Beach which typically have difficulties maintaining the adopted level of service standards for transportation facilities.

The following is an explanation of concurrency management options as they apply to Miami Beach.

## TRANSPORTATION CONCURRENCY MANAGEMENT AREAS (TCMAS)

These specially designated areas are designed to promote infill development or redevelopment with more efficient mobility alternatives such as public transit. By establishing an areawide level of service (LOS) standard within a compact area, a TCMA can develop multiple, alternative routes and modes of transportation for frequent and typical trips. To qualify as a TCMA and create area-wide level of service standards, the area:

1. Must be compatible with the local comprehensive plan
2. Should have a viable street network with justifiable boundaries
3. Should have sufficient transportation alternatives to achieve required mobility
4. Should be coordinated with the DOT and MPO

Currently, Miami Beach is considering designating three TCMA in South, Middle and North Beaches, based on the existing neighborhood boundaries and the Transportation Analysis Zones (TAZs). Figure illustrates the TCMA. The TCMA boundaries reflect the TCMA legislation requirements and the goals and objectives of residents as described in the Miami Beach Municipal Mobility Plan.

Potential Transit Villages  
Figure 4



Community Shuttle Expansion



# TRANSPORTATION CONCURRENCY EXCEPTION AREAS (TCEAs)

Exceptions are granted to reduce the adverse impact transportation concurrency may have on urban infill development and redevelopment as well as promoting public transportation. Although TCEAs are an option available to local governments under Rule 9J-5, it is not applicable nor advisable for Miami Beach. The City is located in a high hazard coastal area and meeting hurricane evacuation timeframes are of critical concerns, particularly if roadway level-of-service (LOS) standards are not regulated or enforced.

# LONG-TERM TRANSPORTATION CONCURRENCY MANAGEMENT SYSTEMS

The State has developed a "long term transportation concurrency management system" which allows an expansion of the three year time frame to ten years when there is a backlog on transportation facilities. To qualify, a project must be financially feasible and must be able to meet the required level of service standard at the end of the ten year period. Additionally, interim level of service standards are required to incrementally reach the required level of service goal. The long term transportation concurrency management system yields a higher and, perhaps, a more unrealistic level of service standard than the short term system which requires maintaining a particular level of service. Achieving the long term system level of service standard in Miami Beach would require additional reconstruction to increase road capacity where there are existing deficiencies. Therefore, it may not be advantageous for the City of Miami Beach to implement a long term concurrency management system.

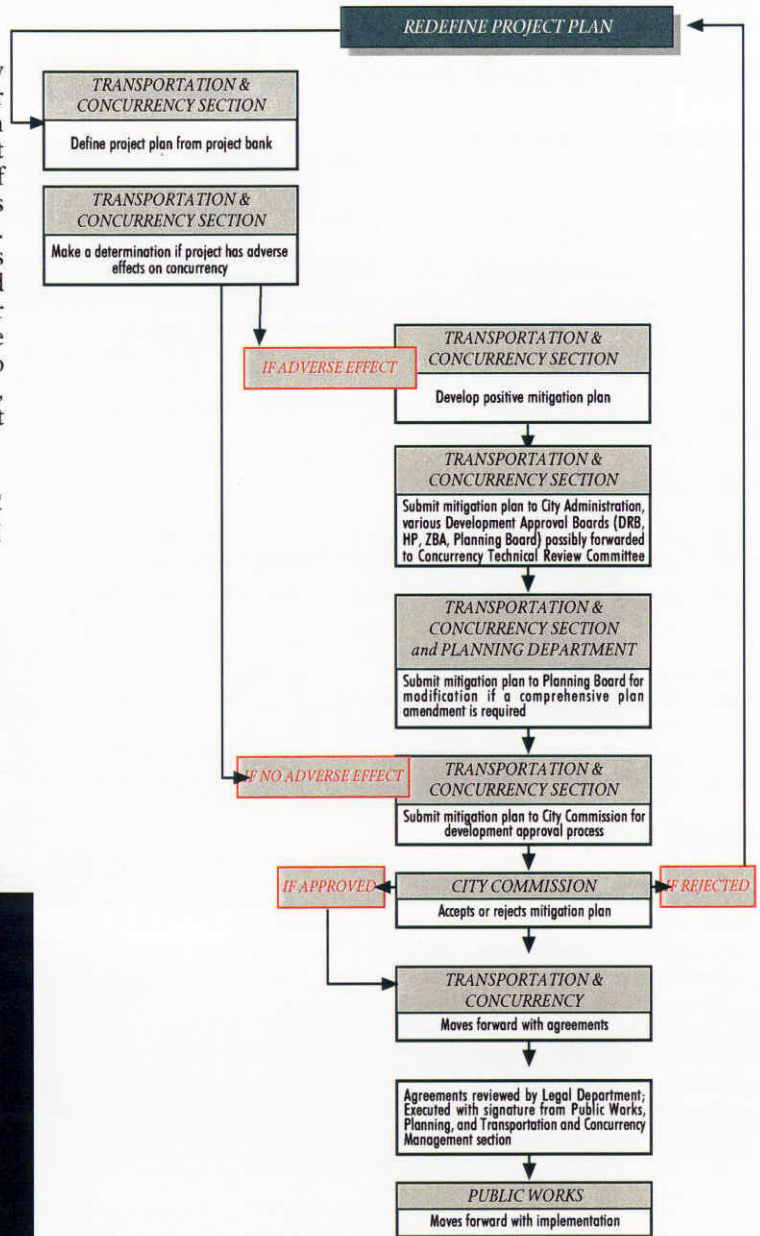
# ORGANIZATIONAL STRUCTURE FOR PROJECT BANK IMPLEMENTATION

In order to initiate the concurrency management system, the City will establish a Transportation and Concurrency Management Section, established to coordinate and implement the Transportation Concurrency. The section will administer the TCMA and the Project Bank improvements. The process for transportation concurrency administration is illustrated in figures.



Indian Creek

Structure for Implementation  
Figure 5



# TRAFFIC CALMING

Traffic calming is a method of slowing automobile traffic on residential and local streets with road obstructions which impede speed. A successful traffic calming program will redirect non-local traffic onto main arterials and circulator roads and reserve local streets for local traffic. Figure 6 indicates the neighborhoods in Miami Beach. There is need for traffic calming in various portions of all neighborhoods.

There are myriad traffic calming techniques employed throughout the country and the world. Some of the best examples can be found in the West Coast region where a strong commitment to good urban growth has been made. Miami-Dade County recognized the need for such a commitment when they developed the Miami-Dade County Street Closure/Traffic Flow Modification Manual.

## TRAFFIC CALMING PROCESS

The Miami-Dade County Street Closure/Traffic Flow Modification Study provides guidelines for implementing traffic calming projects within Miami-Dade County. The process outlined suggests studying traffic conditions before calming measures are implemented to determine if traffic calming measures are needed and what measures may be appropriate on a temporary basis. Once traffic calming measures are installed on an experimental basis, the Metro-Dade Street Closure/Traffic Flow Modification Study recommends that a traffic study be conducted to determine the impact and effectiveness of the measures. If proven effective, the traffic calming measures may be implemented on a permanent basis. However, if the measures are proven ineffective, other measures may be implemented until better devices are identified for permanent application.

### Comments from MDCPWD

The Miami Dade County Public Works Department (MDCPWD) was receptive to the idea of the City conducting the 'preliminary study' to determine if traffic flow modification is warranted. This would allow the City to reduce unjustified traffic flow modification requests. Therefore, the City would only approach the MDCPWD with requests substantiated with traffic data.

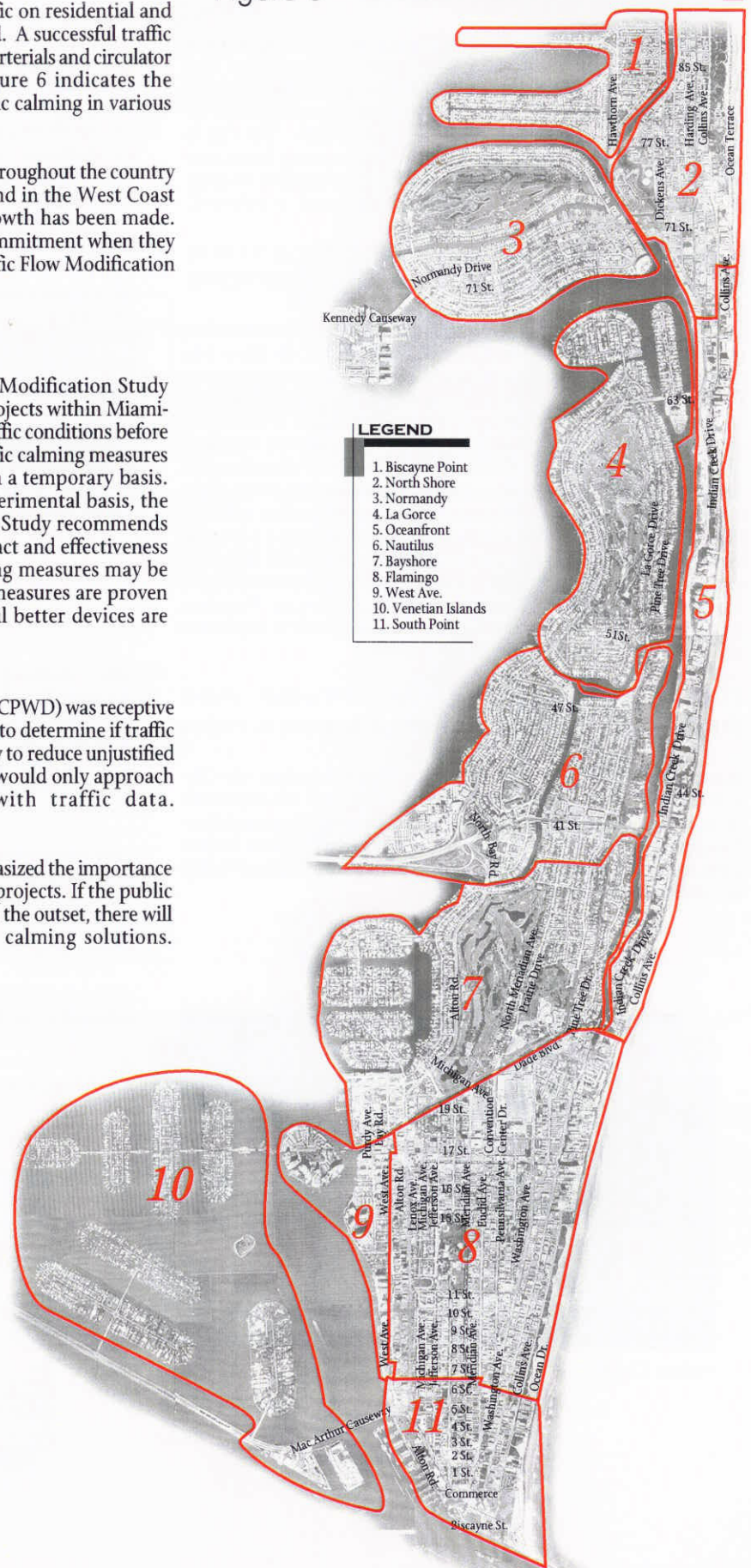
### Comments from FDOT

The Florida Department of Transportation (FDOT) emphasized the importance of public involvement in Miami Beach's traffic calming projects. If the public is informed and involved in traffic calming projects from the outset, there will be less neighborhood opposition and better traffic calming solutions.

## CASE STUDIES

Several cities in the United States have successfully used traffic calming devices to decrease speeding and traffic volumes in residential areas, while creating a safer pedestrian environment. Seattle, Portland, West Palm Beach, and Berkeley are all tourist destinations, like Miami Beach. They are located on the water and have been built on a grid. The following page gives examples of those cities' traffic calming devices and how they apply to Miami Beach.

Miami Beach Neighborhood Divisions  
Figure 6



SEATTLE, WA



*Traffic Circles*

- reduce speed
- Beautify
- 94% reduction in collisions over past three years



*Chicanes*

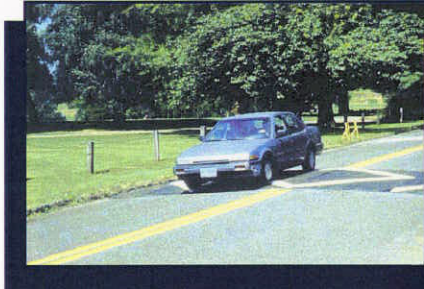
- Curb bulbs on alternating sides of the street
- Beautify when placed mid-block
- Changes the driver's perception of the street
- Decreases vehicle speed by 5-13 m.p.h.



*Raised Crosswalks*

- Reduces speeds at pedestrian crossings
- Interferes with emergency vehicles
- Can increase noise
- Neither device is used on a primary emergency response route

PORTLAND, OR



*Speed Humps*

- -14 ft. hump achieves 25 m.p.h.
- -22 ft. hump achieves 33 m.p.h.
- Can increase noise
- Interfere, with emergency vehicles



BERKELEY, CA



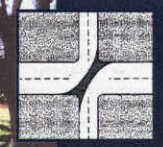
*Speed Humps*

- Most common in Berkeley
- Can divert non-local traffic to other residential neighborhoods



*Diverter*

- Full diverters create Cul-de-Sacs
- Diagonal Diverters force vehicles to turn
- Semi-diverters close half the street



WEST PALM BEACH, FLA



- Similar layout to Miami Beach
- Local Example
- Received \$11.25 Million from TEA-21
- Funding has been used to supplement FDOT's construction budget
- One of the first cities to apply for TEA-21 funding making it easier to lobby support
- Use traffic circles, raised medians, traffic humps, landscape medians, street closures

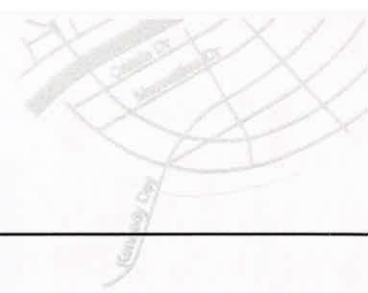
MIAMI BEACH, FLA



*Meeting with MDCPWD + FDOT*

- Preliminary traffic calming studies to be done by the city, per request
- Use Devices on an experimental basis
- Prefer Mid Block Speed humps to rumble strips and raised intersections
- Chicanes may not be appropriate as drivers are too aggressive
- Lane narrowing should be considered
- Include the public





C O R R A D I N O 1 9 9 9



W W W . C O R R A D I N O . C O M