

# Miami River Greenway Action Plan

Miami, Florida

April 2001

Prepared for  
The Miami River Commission

Prepared by

**GREENWAYS**  
INCORPORATED

Environmental Design  
Landscape Architecture  
Bicycle & Pedestrian Planning



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Greenways Incorporated**

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# Acknowledgments

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This report was prepared for the Miami River Commission and its Greenway Subcommittee by the Trust for Public Land Miami Field Office in partnership with Greenways Incorporated, Durham, North Carolina.

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The Miami River Commission Greenway Subcommittee is comprised of a distinguished group of citizens that have dedicated a significant amount of time and effort, as volunteers, toward the preparation of this Action Plan.

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## About the Miami River Commission

The Miami River Commission (originally the Miami River Study Commission) was created by the State Legislature to "conduct a comprehensive study and review of restoration and enhancement of the Miami River and Biscayne Bay." The 18-member commission was originally appointed in 1997 to represent the public and private sectors. This Greenway Action Plan is one element of several reports and projects that have been completed by the Commission in fulfillment of its original purpose and mission.

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The Trust for Public Land (TPL) is the only national conservation organization specifically established to conserve land for people. From vast wilderness lands to crowded cities, TPL helps connect America's people to America's special places. A private non-profit organization founded in 1972, TPL specializes in conservation real estate, applying its expertise in negotiation, public finance, and law to protect land for public use. TPL has protected more than 960,000 acres of land valued at more than \$1.3 billion in 44 states, Canada and the US Virgin Islands. For more information about the Trust for Public Land, please visit our website at [www.tpl.org](http://www.tpl.org).

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## About Greenways Incorporated

Greenways Incorporated (GWI) is a multi-disciplinary environmental planning and design firm that specializes in providing consulting services to government agencies, for-profit businesses and non-profit organizations. Their chosen professional focus is in riverfront greenway, open space, trail and alternative transportation planning, design, development and management. GWI has completed successful projects in more than 100 communities and 27 states, and has provided consulting services in Canada and Japan. For more information about Greenways Incorporated, please visit our website at [www.greenways.com](http://www.greenways.com).

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# Miami River Greenway Action Plan

## Executive Summary

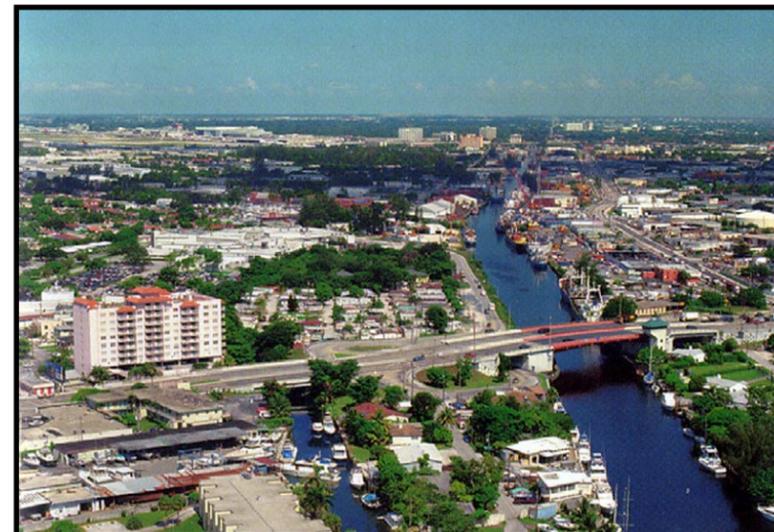
### Introduction/Overview

The Miami River is a valuable natural resource situated in heart of Miami, Florida. For the past two decades, numerous plans have been produced to determine optimal uses for the river corridor. This Action Plan report provides specific recommendations and implementation strategies that will hasten physical improvements throughout the river corridor. As a result of these actions, the river corridor will become more accessible to residents and visitors, marine industrial shipping activity will continue to thrive and prosper, land values will steadily improve, new recreational amenities will make the river a destination landscape, and an important element of Miami's natural and cultural heritage will be protected and enhanced for future generations to enjoy.

The Miami River Greenway project study area consists of the easternmost 5.5 miles of the Miami River, from the Salinity Dam located at approximately NW 36 Street and NW 40 Avenue, to the mouth of the River at Biscayne Bay. The Study Area consists of those lands on both sides of the River, extending out approximately 2,500 feet from the river at the longest point on either side. The land on both sides of the Comfort Canal (also known as South Fork), Wagner Creek and the Tamiami Canal extends out approximately 500 feet at the longest point on either side.

Although the Miami River is a short river, its history is long. The Miami River evolved over thousands of years from a tidal channel into a freshwater stream that carried water from the Everglades to Biscayne Bay. The river is the oldest natural landmark in southeast Florida. From 1909 to 1933 the river was lengthened and widened. The famous Miami rapids ceased in 1909 when the Miami Canal was built as part of the Everglades drainage project. Remnants of the rapids can be seen at the City of Miami's Paradise Point Park at NW South River Drive. When digging for the Miami Canal began, the water table dropped dramatically and Everglades muck slid into the once clear waters of the river. Concern over environmental degradation, water pollution, bridge openings and the generally unkept appearance of the Miami River has been voiced since the 1940s. In the early 1970s studies were undertaken by the Chamber of Commerce, the City of Miami, the Dade County Pollution Control Department, the US Geological Survey, the Central and Southern Flood Control District, the US Army Corps of Engineers, Secretary of State Richard Stone's Office and the Dade

County Planning Advisory Board on the deplorable conditions along and within the River. As a result there were code enforcement sweeps to clean up the river. The 1976-86 Miami Comprehensive Neighborhood Plan recognized the River as a special district and stated that "the Miami River is a working river and a major resource. It is presently underutilized and offers many redevelopment opportunities". As we enter the 21st Century, the Miami River is beginning to realize its potential as a major community resource through this Greenway Plan.



### How this Plan was Prepared

This Action Plan has been prepared by Greenways Incorporated in partnership with the Trust for Public Land and the Miami River Commission. Meaningful public involvement has been critically important in the preparation of the Action Plan. Several methods have been used to solicit input from Miami-Dade residents. First, more than 50 stakeholder meetings have occurred during a 16-month period; second, 5 public worksessions have been held at various locations throughout the study area to provide residents with an opportunity to view and comment on draft recommendations; third, three Greenway newsletters have been published during the 16-month period providing an update of the planning process and draft recommendations; fourth, a public opinion survey was distributed, collected and compiled to solicit specific information from the public; and fifth, more than 75 copies of the full-length draft plan were distributed throughout the community in order to solicit specific input on the recommendations featured in this plan.

Many prior and current planning efforts have been summarized and incorporated into the development of this Action Plan. These include previous master plans for the Miami River corridor, as well as specific site development plans for public and private properties that border the river channel.

This Plan has been reviewed and received the endorsement of several community advisory groups in the Miami-Dade area, including the Miami Urban Design Review Board, Miami Parks Advisory Board, Miami Planning Advisory Board, Miami-Dade MPO Bicycle Advisory Committee, Waterfront Advisory Board and the Miami Historic and Environmental Preservation Board.



## Characterization of the River

From stakeholder meetings and an inventory of existing conditions, it is apparent that a number of different themes exist within the Miami River Greenway corridor. These river themes help to define the unique features, cultural influences and physical conditions of the river. For other significant river projects around the nation, river themes have helped to achieve a better understanding and long-term support for project initiatives. The following represent the principal river greenway themes identified for the Miami River.

### “The Miami River is Our Home”

The Miami River is home to a multi-cultural population. Currently, few public gateways exist to encourage either visual or physical interaction with the river. In fact local residents have become increasingly isolated from this valuable natural resource. A river greenway system would serve to reconnect the diverse cultural and ethnic neighborhoods adjacent to the river to this important community asset.

### “The Miami River is a Working River”

The Miami River is an international transfer point of cargo for a large collection of shippers. The river’s navigation and commercial shipping directly generate 2 million tons of cargo each year with an estimated value of more than \$5 billion annually. The river constitutes one of the largest employers in downtown Miami, and most importantly offers a range of jobs hard to find in other employment sectors of the downtown area. The industrial complex along the river has grown steadily during the past fifty years.

### “The Miami River is a Destination Landscape”

A destination landscape is one that serves as an attraction for people and activity (i.e., South Beach). Destination landscapes generate a critical mass of people, they are generally attractive landscapes and they usually result in economic activity. The proposed Miami River Greenway and the long standing Miami Riverwalk are the key elements to creating a successful destination landscape along the river. As with other successful river landscapes throughout the nation, Miami must understand that a destination landscape is a blend of scenic attraction and robust commerce.

### “The Miami River is an Important Environmental Resource At Risk”

The word “Miami” means sweet water, and for as long as humans have occupied the landscape, the Miami River has been an important source of water, animal life and plant life. Even though it is polluted today and supports a large industrial marine use, the river ecosystem remains an important functional element of the riverine landscape. The greenway can instill a new stewardship ethic for this critically important resource. This can be realized through a comprehensive river dredging and shoreline stabilization program that would serve to remove contaminated sediments from the river and reduce pollution loads in the tributaries and main channel. With mutual support for both industrial and recreational uses, and a renewed interest in stewardship and conservation, the Miami River can continue to be a valuable natural resource for Miami and South Florida well into the 21st Century.

### “The Miami River is an Economic Resource”

After international trade, travel and tourism is the most important industry to the Greater Miami economy. The Miami River landscape has not realized the full benefits of the tourism industry. The River is quickly becoming a sought after address for residential, commercial and retail development. While the “working river” continues to be the most significant economic element of the river landscape, tourism and higher property values will enrich this economic base to make the river a major economic force in the local economy. The river greenway system will further enhance this expansion of economic activity. The greenway will make the river landscape accessible, attractive, and connected, which in turn will continue to increase the value of property adjacent to the riverbanks.

### “The Miami River is Part of Our Heritage”

The mouth of the Miami River has been a focal point for human settlement and activity for more than 2000 years. There are many important sites and feature landscapes along the river that should be identified and interpreted. Local residents and visitors would gain a greater appreciation for the significance of the river landscape through these endeavors. The Greenway can become a land use that supports the interpretation of this heritage, providing pedestrian and water-based access to sites along the river corridor.



## Summary of Key Recommendations

The Miami River Greenway development program consists of five key elements: 1) points of public entry to the river; 2) a primary system of public trails and walkways; 3) improvements and enhancements to existing parks; 4) improvements and enhancements to existing bridges and roadways; and 5) improvements and enhancements to river channel banks.

### Improvements to the River Channel

First and foremost, the Miami River is scheduled to be dredged of excess sediment. This project will be completed through a unique partnership between the city of Miami, Miami-Dade County and the US Army Corps of Engineers. Dredging will improve navigation and help to clean the river of debris. Additionally, it is recommended that river bank stabilization take place after river dredging is complete. This will restore native trees and vegetation to portions of the river shoreline, and create habitat for wildlife.

### Points of Public Entry

Access to the Miami River will be improved in several ways. First, public parks along the river will be cleaned up and new facilities will be added so that residents and visitors will have access to a linked system of trails and recreation facilities. Additionally, neighborhood gateways will be added at key locations along the 5.5-mile river corridor. Also, bridge improvements are scheduled to take place in the near future, improving pedestrian and bicycle access to the river corridor. It is also likely that some private lands will be redeveloped and opened for limited public access and use.

### System of Trails, Bikeways and Walkways

Perhaps the most significant recommendation within this plan is for the completion of a comprehensive network of trails, bikeways and walkways adjacent to the river corridor. The Miami Riverwalk will be extended and completed within the lower section of the river corridor, on both sides of the river from Biscayne Bay to the NW 5th Street bridge. This will offer residents and visitors an extensive promenade along the river's edge. West of NW 7th Avenue, and throughout the rest of the river corridor, a system of on-road bicycle facilities, sidewalk improvements and off-road trails will weave through the existing urban fabric adjacent to the river. Among the improvements will include the Overtown Greenway, an urban streetscape corridor from the Winn Dixie Supermarket at NW 12th Avenue and NW 11th Street to Biscayne Bay at Bicentennial Park. The trail system will serve to connect people to the river and its amenities, neighborhoods and parks adjacent to the river. Additionally, a system of trails along Biscayne Bay is also proposed by this Action Plan. These trails will link Brickell Key to Paces Park.



## Cost of Facility Development

The improvements to the river corridor that are recommended in this Action Plan will be accomplished over the course of many years. It is estimated that the total cost of these improvements will exceed \$23 million. This includes all physical improvements proposed within this plan, as well as fees for surveying, design and engineering work, environmental permitting, landscaping and property acquisition (if necessary and only from willing sellers).

## Sources of Funding

Several sources of funding have been identified within the Action Plan. This includes funding from both public and private sector sources. Also under consideration is the possible implementation of a special Tax Increment Financing District for the river corridor. Under this TIF program, tax revenue collected within the river corridor would be earmarked and used to fund the improvements to the river. As economic values increase on the property adjacent to the river, so will the amount within the TIF fund. This will allow more improvements to be made over time.

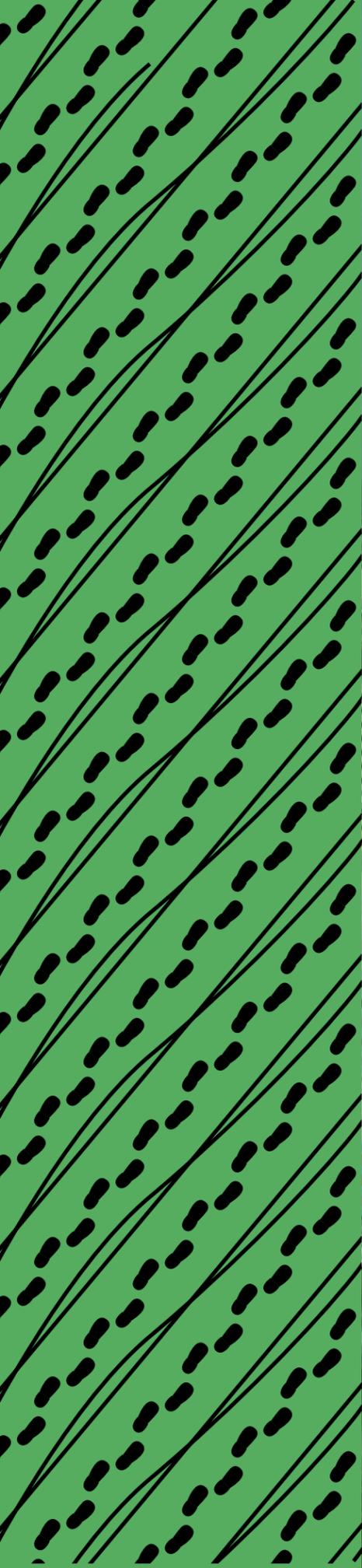
## Operation and Management Strategies

A key element in the future success of the Miami River Greenway project will be the management and operation of the facilities along the 5.5-mile riverfront project. A public opinion survey revealed the preference of local residents to have a public-private organization serve as principal facilitator and coordinator of the Greenway. The Miami River Commission is an existing organization that might be capable of fulfilling the responsibilities of coordinating the future development of the Greenway. This Plan also recommends consideration be given to establishing a Riverfront Corporation, that could also serve a champion for these recommendations. Additionally, the City of Miami, Miami-Dade County and the State of Florida will play important roles in advancing the development and management of facilities along the Miami River. Finally, private property owners on the river will play an important role in the successful management of Greenway facilities by agreeing to voluntarily participate in river improvement activities.

## How to Get Involved in the Greenway Project

If you are interested in learning more about the Greenway project there are several things you can do. First, obtain a copy of the full-length Action Plan and support the recommendations that are defined within the report. Second, voice your support for the recommendations in the Plan by contacting elected officials in the City, County and State. Third, you can contribute financially to the project by contacting the Miami River Commission or the Trust for Public Land. Fourth, if you a property owner along the river, you can support the plan by making necessary improvements to your riverfront property that are in keeping with the recommendations of the Plan. If you would like additional information, please contact Lavinia Freeman, Program Manager at the Trust for Public Land (305) 667-0409, or David Miller, Managing Director or Brett Bibeau, Assistant Director of the Miami River Commission at (305) 361-4850.





# **Miami River Greenway Action Plan**

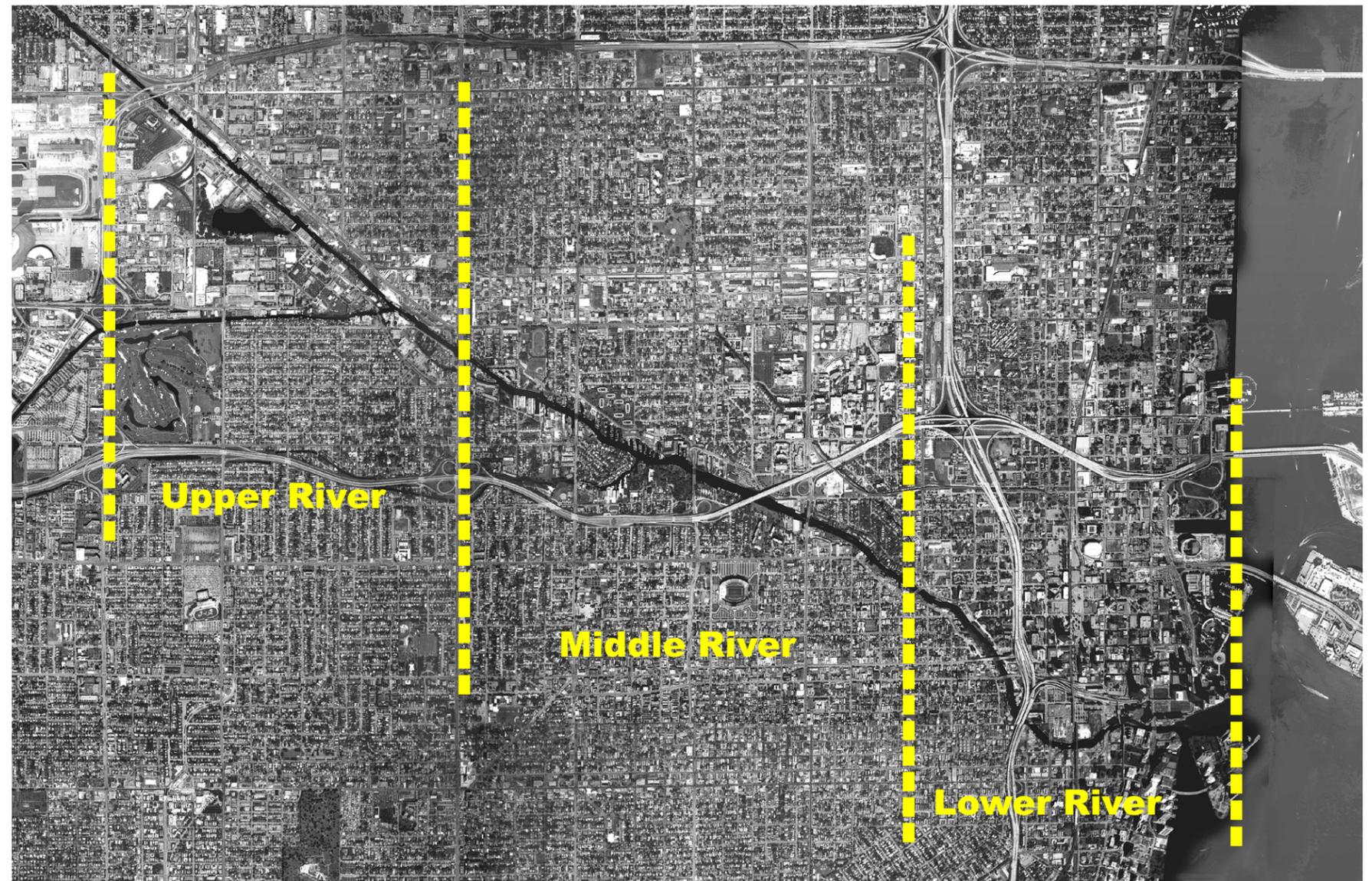
## **Framework for Action**

# Framework for Action

For more than two decades many have studied and planned for the transformation of the Miami River from an unfulfilled opportunity to a vibrant community asset. Several master plans have been developed that have called for improved access to the river, revitalization of neighborhoods, better water quality and sustained river shipping. The purpose of this action plan is to establish a unified vision for the Miami River that supports many of the ideas and goals that have been presented in previous plans, and most importantly establish a framework of action for the future development of a river greenway system. The Miami River Greenway project study area is defined as 5.5 miles of the Miami River from the Salinity Dam located at NW. 36<sup>th</sup> Street and NW. 40<sup>th</sup> Avenue, to the mouth of the River at Biscayne Bay, including those lands on both sides of the River, extending out approximately 2,500 feet at the farthest point on either side and 500 feet along both sides of the Comfort Canal or South Fork, Wagner Creek and Tamiami Canal (see aerial photo).

This section defines three overarching concepts that make it easier to understand the intent and purpose of the Miami River Greenway Action Plan project. The first concept provides for the description of **three distinctive characters** found along the river. The second concept is the definition of **river greenway themes** that serve as a catalyst for action and implementation. The third is definition of the **vision and goals and objectives** for a river greenway system. These three concepts form the basis of the greenway project and will serve to direct the future implementation strategies for the Miami River Greenway. The river greenway themes articulate both a marketing philosophy as well as individual development strategies for the greenway. The vision, goals and objectives are derived in part from the themes and from meetings with local stakeholders, and establish specific recommendations that should be implemented through the action plan. The characterization should help to distinguish that the river landscape is different along the 5.5 mile stretch.

Figure 4: Aerial photo illustrating the extent of the Miami River corridor, from the International Airport to Biscayne Bay, by Aerials Inc., Miami, FL.



# Characterization of the River

The Miami River is not a homogeneous landscape. In reality, the river is a series of different landscapes that are linked by its functional and aesthetic qualities. For the purposes of this Greenway Action Plan, the Miami River has been divided into three distinctive sections that reflect the different land uses, characteristics and functions found along the river. This characterization is significant because it defines a major element for a framework of action. It also provides the foundation for promoting greenway strategies that are unique to each of the three river sections.

## “Lower River” – Biscayne Bay to the 5th Street Bridge

The “Lower River” section of the Miami River extends from the mouth of the river at Biscayne Bay to 7<sup>th</sup> Avenue. This section includes Brickell Key, as well as the Central Business District, Brickell, Overtown and East Little Havana neighborhoods. Key land uses in this section include the Miami Circle historic site, Bayfront Park, Brickell Area River, Fort Dallas Park, Jose Marti Park, Lummus Park, Convention Center, Central Business District, Miami Government Center, Miami Riverside Administration Center and portions of the existing Riverwalk. This section of the river is best characterized by dense urban development comprised of high-rise residential and commercial, single family and multi-family housing, retail, hotel, office, waterfront restaurants, and institutional land uses.

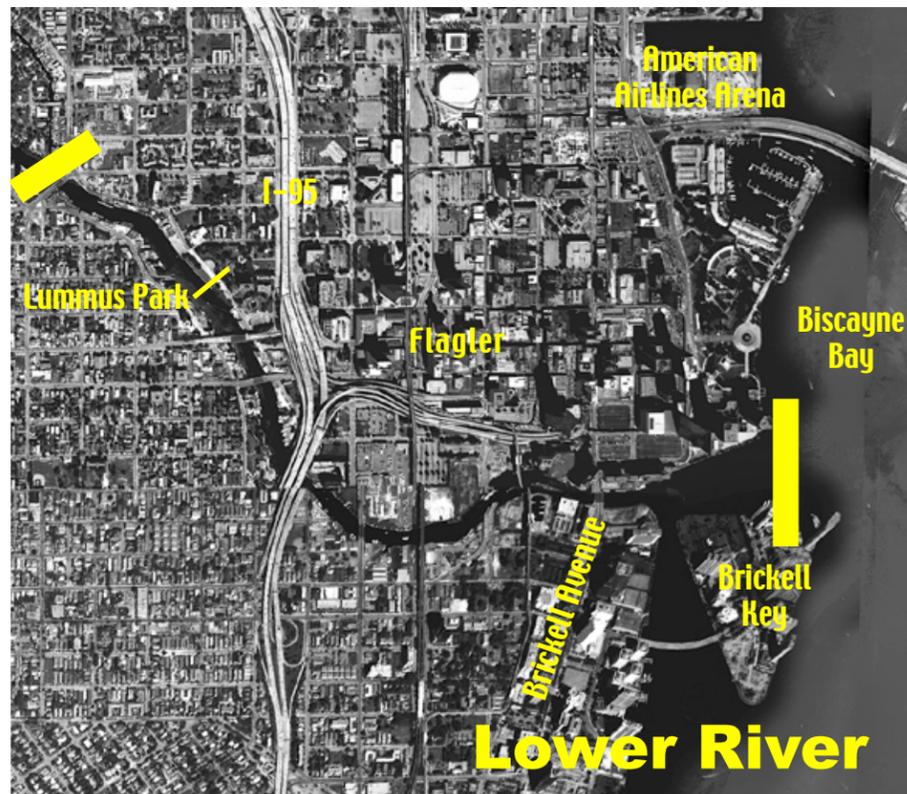


Figure 1: Aerial of Lower Miami River by Aerials, Inc., Miami, FL

## “Middle River” – 5th Street Bridge to the NW 22<sup>nd</sup> Avenue Bridge

The “Middle River” section of the Miami River extends from NW 7<sup>th</sup> Avenue to NW 22<sup>nd</sup> Avenue. This section includes the Civic Center, as well as the Spring Garden and Grove Park neighborhoods. Key land uses include Sewell Park, Civic Center and the Medical Complex. Land use is primarily characterized by single family and multi-family housing that abuts the river and extends throughout adjacent neighborhoods.

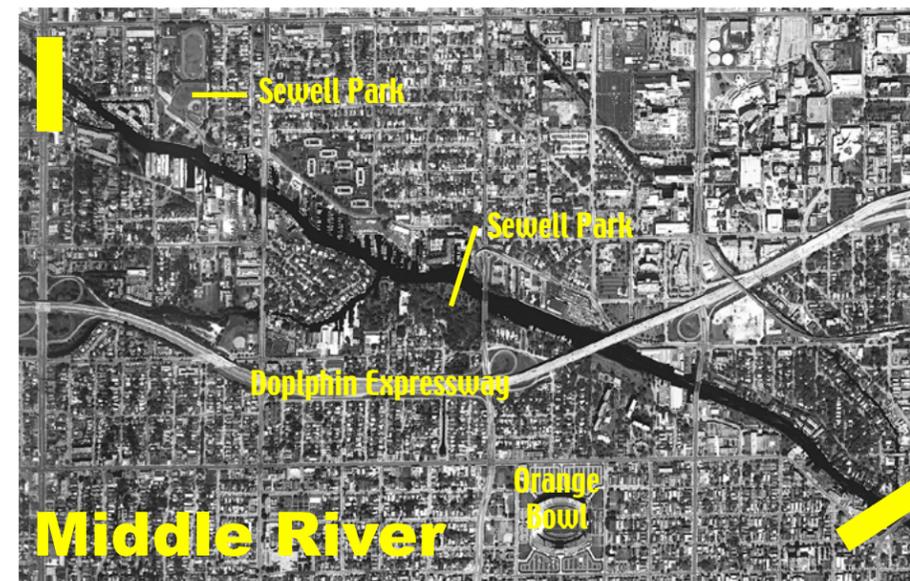


Figure 2: Aerial photo of Middle Miami River by Aerials Inc., Miami, FL.

## “Upper River” – 22<sup>nd</sup> Avenue Bridge to Palmer Lake

The “Upper River” section of the Miami River extends from 22<sup>nd</sup> Avenue to Palmer Lake. This section includes the Miami Industrial, Grapeland Heights and Melrose neighborhoods. Key land uses include the Miami International Airport, Miami River Rapids Mini Park, Curtis Park and the river industrial complex and the planned Miami Intermodal Center. Land use is primarily characterized by the industrial complex that serves as the transfer point for cargo and for the construction, service and repair of freight and recreational watercraft.

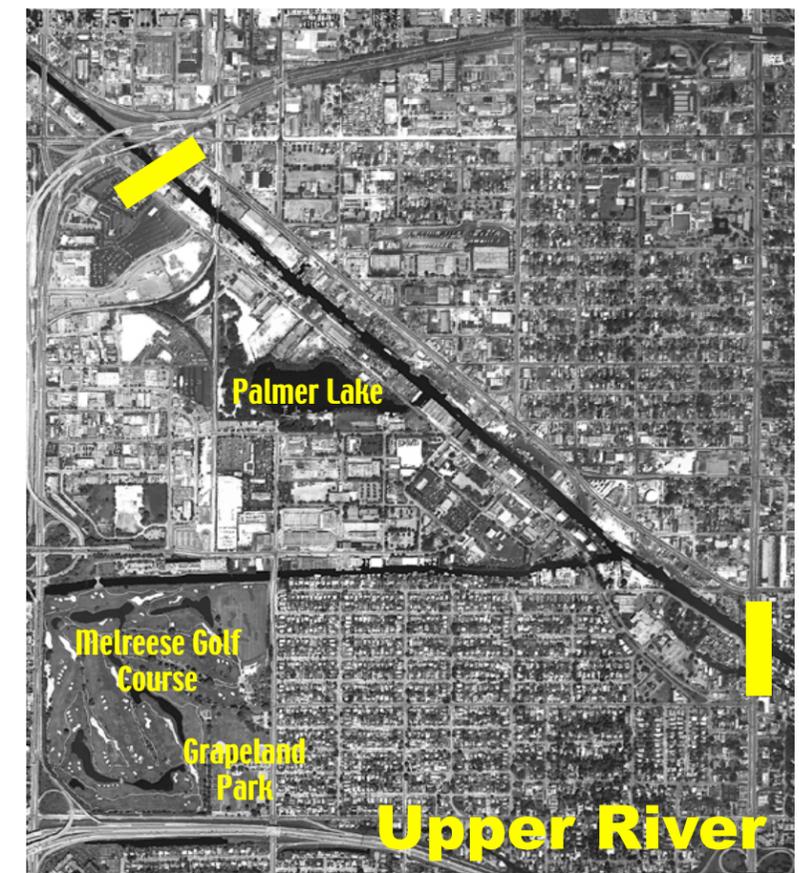


Figure 3: Aerial photo of Upper Miami River by Aerials Inc., Miami, FL.

## River Greenway Themes

From the stakeholder meetings and inventory of existing conditions, it is apparent that a number of different themes exist within the Miami River corridor. These river themes help to define the unique features, cultural influences and physical conditions of the river. For other significant river projects around the nation, river themes have helped to achieve a better understanding and long-term support for project initiatives.

### “The Miami River is Our Home”

The Miami River is home to tens-of-thousands of people from throughout the world. This multi-cultural population interacts with the river landscape daily, and yet access to the beneficial landscapes has been systematically limited over time by a community-wide policy of fencing and under-programming of key public landscapes. The network of roads, bridges, highways and public transportation systems has also served to limit direct interaction with the river. Currently, few public gateways exist to encourage either visual or physical interaction with the river. In fact local residents have become increasingly isolated from this valuable natural resource. A river greenway system would serve to reconnect to the river the diverse ethnic neighborhoods adjacent to this important community asset. The river is after all a landscape that can serve the recreation, health and fitness, transportation, education, social and employment needs of the adjacent residential neighborhoods. Key landscapes must be better designed, developed and programmed to make the river landscape more of an asset to the adjacent residents. This is happening by involving the

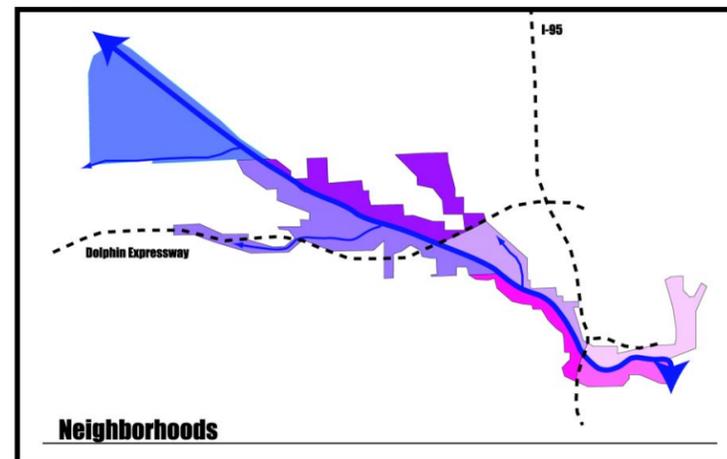


Figure 5: Conceptual diagram depicting neighborhoods along the Miami River.

residents in a planning and design process that would result in successful development of a safe and accessible river greenway system. The greenway would link together neighborhoods with the significant parks, public open spaces, historic sites and other destinations found along the river. The greenway will also make possible a more comprehensive system of access to the river from adjoining population centers. This will enable people to transport themselves, by walking and cycling, to a multitude of key destinations along the 5.5-mile river.

### “The Miami River is a Working River”

The Miami River is the “5<sup>th</sup> largest port” in the State of Florida. While not formally recognized as a “port”, the river is an international transfer point of cargo for a large collection of shippers. The river’s navigation and commercial shipping directly generate more than 4 million tons of cargo each year with an estimated value of more than \$6 billion annually. The river constitutes one of the largest employers in downtown Miami, and most importantly offers a range of jobs hard to find in other employment sectors of the downtown area. Scheduled to begin in the year 2001, will remove contaminated sediment from the river bottom and result in

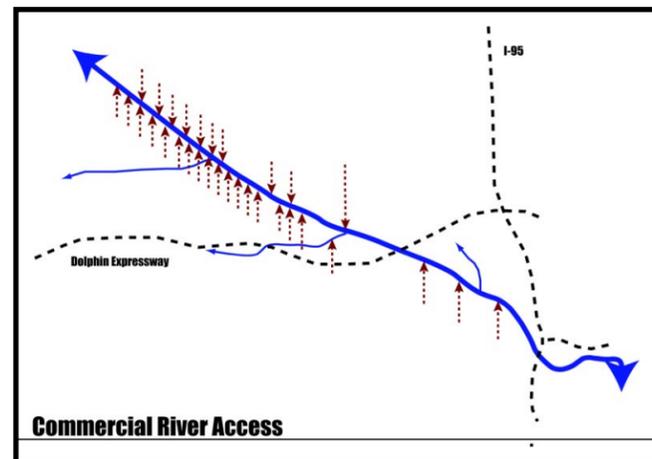


Figure 6: Conceptual diagram depicting frequency of commercial marine use along the River.

more cargo volume and more jobs in the industry. The river greenway system will serve to sustain maritime shipping and recreational boating activities along the Miami River. The greenway will provide improved access to the river to view the shipping industry at work and help to raise awareness of the importance of the river as a working river landscape.

### “The Miami River is a Destination Landscape”

A destination landscape is one that serves as an attraction for people and activity (i.e. South Beach). Destination landscapes generate a critical mass of people, they are generally attractive landscapes and they usually result in economic activity. The Miami River already has a number of high quality attractions that make it a destination landscape. However, these are not currently linked together in a way that can serve to generate a critical mass of use. This can change through the development of a river-oriented greenway system. The proposed Miami River Greenway and the long standing Miami Riverwalk are the key elements to creating a successful destination landscape along the river. Additionally, connections to the river are critical as well, such as the proposed Overtown Greenway, the Flagler Streetscape improvements, and linkages to East Little Havana and the Brickell Corridor. New investment in public and private spaces is needed to create a more friendly and conducive atmosphere for tourism and daily activity. This can begin to happen as the community

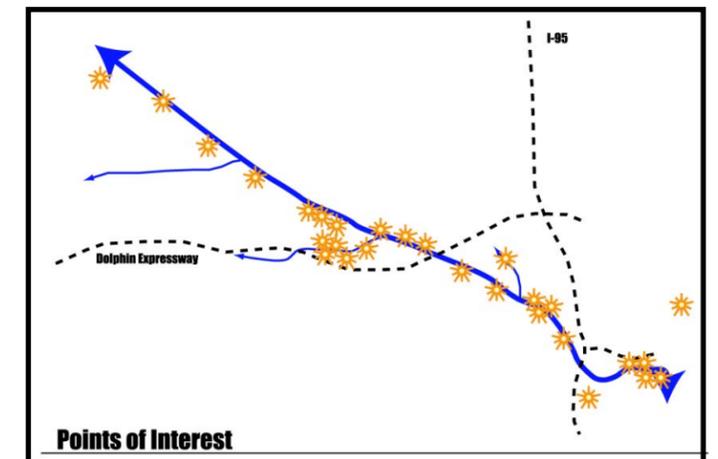
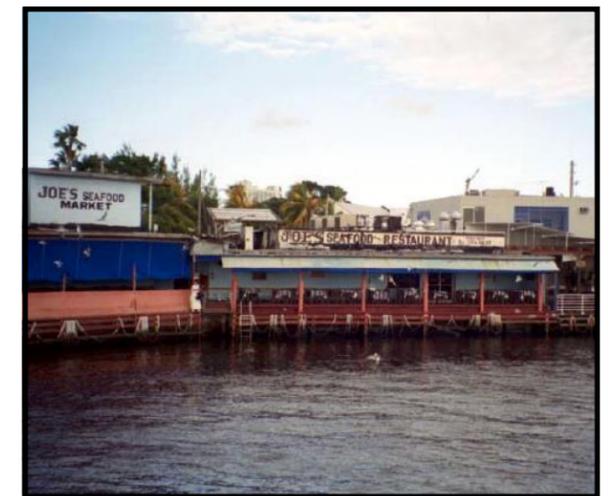


Figure 7: Conceptual diagram depicting points of interest found along the River.



recognizes the value of making investment in the “green infrastructure” of the river. Finally, access to the river needs to be improved with gateways, bicycle and pedestrian paths that flow from the downtown and adjacent residential neighborhoods to the river. As with other successful river landscapes throughout the nation, Miami must understand that a destination landscape is a blend of scenic attraction and robust commerce.

**“The Miami River is an Important Environmental Resource at Risk”**

The word “Miami” means sweet water, and for as long as humans have occupied the landscape, the Miami River has been an important source of water, animal life and plant life. Even though it is polluted today and supports a large industrial marine complex, the river ecosystem remains an important functional element of the riverine landscape. Important species of plants and animals still inhabit the river, with the manatee being a symbol of an ecosystem at risk. The Biscayne Bay is a direct recipient of the fresh water flowing from the Miami River. The Bay is a valuable resource for residents of South Florida, supplying recreation, tourism and economic opportunities. Less than 15% of South Florida’s rainwater reaches the Biscayne Aquifer, the primary drinking water supply for the metro region. The remainder is evaporated by the sun or drained by canals to the sea. Between 1990 and 2010, the demand for public water supply in South Florida is expected to increase by 69%. Now is the time to take stock of important water resources like the Miami River and implement programs of action to further protect and restore these resources. The greenway can instill



a new stewardship ethic for this critically important resource. This can be realized through a comprehensive river dredging and shoreline stabilization program that would serve to remove contaminated sediments from the river and reduce pollution loads in the tributaries and river channel. With mutual support for both industrial and recreational uses, and a renewed interest in stewardship and conservation, the Miami River can continue to be a valuable natural resource for Miami and South Florida well into the 21<sup>st</sup> Century.

**“The Miami River is an Economic Resource”**

After international trade, travel and tourism is the most important industry to the Greater Miami economy. Miami is recognized around the world as a leading tourist destination, employing over 250,000 residents and generating \$10.9 billion in overnight visitor expenditures. The Miami River landscape has not realized the full benefits of the tourism industry. While Miami is the second greatest international financial center in the United States, it is also the 4<sup>th</sup> poorest city in the nation. Historically, property values adjacent to the Miami River have not kept pace with waterfront property values at oceanfront and bayfront locations around Miami-Dade County. This is clearly reflected in the economic values currently found in adjacent residential neighborhoods. However, the Miami River is quickly becoming a sought after address for residential, commercial and retail development. Property values in the downtown section of the river are already beginning to increase dramatically. In fact, the future Florida Marlins baseball stadium on the will spur economic revitalization to the lower section of the river, and will in turn begin to transform the river into a destination landscape. While the “working river” continues to be the most significant economic element of the river landscape, tourism and higher property values will



enrich this economic base to make the river a major economic force in the local economy. This can occur in a way that does not replace or threaten the livelihood of the marine industry. The river greenway system will further enhance this expansion of economic activity. The greenway will make the river landscape accessible, attractive, and connected, which in turn will continue to increase the value of property adjacent to the riverbanks.

**“The Miami River is Part of Our Heritage”**

The mouth of the Miami River has been a focal point for human settlement and activity for more than 2000 years. Currently, the 2.2 acre site at the mouth of the river, known as the “Miami Circle,” is all that remains of a native American civilization archaeological record. Efforts are currently underway to properly interpret this unique landscape and the artifacts that have been found on the site. This is but one of many interesting historical sites along the river. There are many important sites and feature landscapes along the river that should be identified and interpreted. Local residents and visitors would gain a greater appreciation for the significance of the river landscape through these endeavors. The Greenway can become a land use that supports the interpretation of this heritage, providing pedestrian and water-based access to sites along the river corridor.

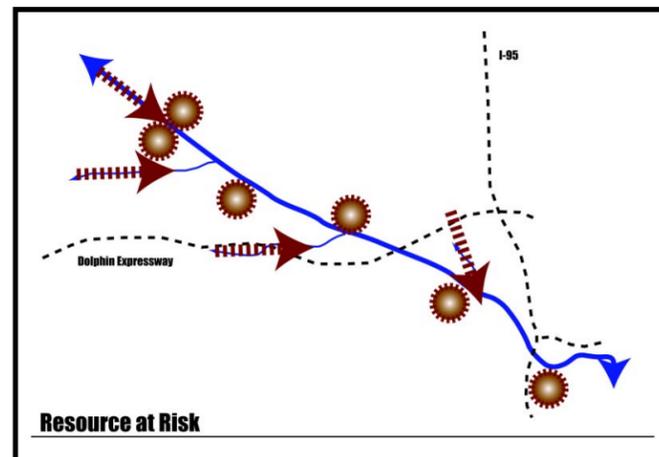


Figure 8: Conceptual diagram depicting locations of environmental resources along the River.

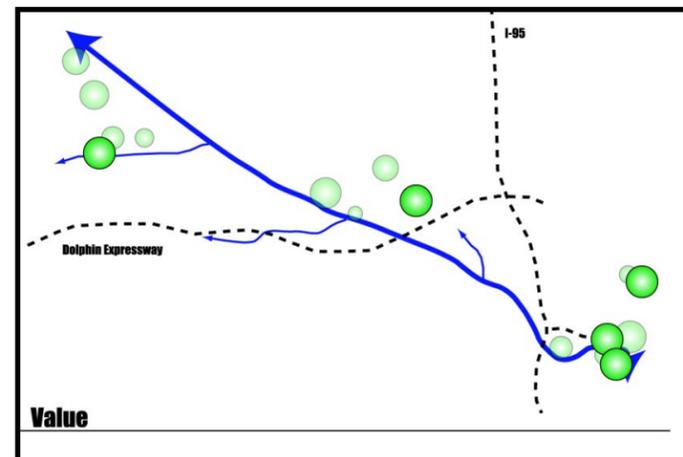


Figure 9: Conceptual diagram depicting the distribution of economic value along the River.

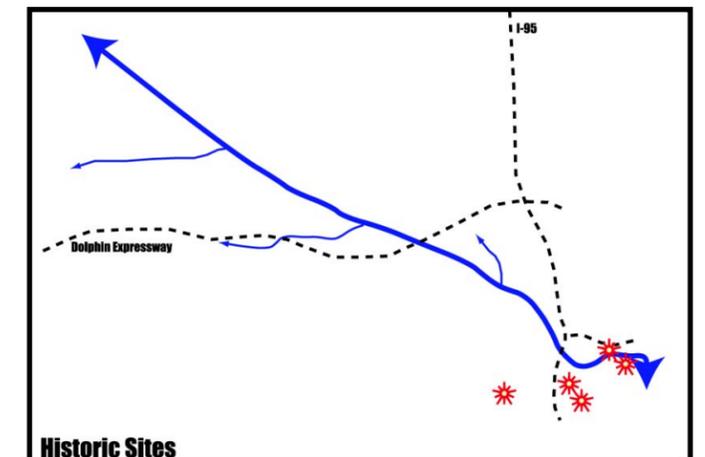


Figure 10: Conceptual diagram depicting the distribution of historic sites along the River.

# River Greenway Vision & Goals

From the themes defined herein, a review of prior planning efforts, a dozen focus groups meetings, and one-on-one meetings with more than two dozen business, civic and government leaders, a vision emerges for the Miami River Greenway.

*The Miami River is a valuable natural, historic and cultural resource and the namesake of our community. We envision the Miami River as an ecological system that serves to enrich the lives of residents throughout the Miami metropolitan area. The Miami River Greenway will help to improve the future economic well-being of our community by increasing public access to the waterway, sustaining the “working river” maritime shipping industry, restoring water quality in the river channel, serving as an attractive destination for local residents and visitors, encouraging appropriate adjacent land use, fostering an ethic of stewardship for plants and animals native to the river landscape, and celebrating the multi-cultural ethnicity of our community.*

Figure 11: Aerial view of river looking west.



## Miami River Greenway Goals & Objectives

The vision for the River Greenway will be realized in part through the adoption and implementation of the following greenway goals and objectives. (Please note: some objectives are found under more than one goal) The goals and objectives are not in order of importance nor significance.

### Goal 1: Improve Access to the River Objectives

- Remove the system of fences that has served to restrict access to and along the river landscape.
- Improve the visual identity and public awareness of the river.
- Provide for improved access to marinas.
- Construct a comprehensive system of greenway trails on publicly owned properties.
- Promote safety and security throughout the river greenway system through the adoption of CPTED principles (Crime Prevention Through Environmental Design).
- Link existing parks, historic and significant natural sites throughout the river landscape.
- Encourage landowners and land developers to link private facility development to the greenway.
- Develop an efficient alternative transportation system of bicycle and pedestrian facilities within and adjacent to the greenway that will enable people to connect to destinations on both sides of the river.
- Implement the Miami River Trail element of the North Dade Greenways Master Plan.
- Work with private landowners to voluntarily acquire parcels of land that will provide for improved public access to the river.

### Goal 2: Sustain the “Working River” Industries of the Miami River Objectives

- Support the growth of the shipping and marine industries.
- Work with local, state and Federal officials to complete a comprehensive dredging program for the Miami River.
- Coordinate greenway development with future expansion of the shipping and marine industry.
- Continue the removal of abandoned and derelict vessels from the river.
- Improve navigational and safety code enforcement on the river.
- Improve roads and bridges in the vicinity of the river to encourage sustainable and compatible development and minimize conflict between vehicular and shipping traffic.
- Increase adjacent residential, commercial and industrial property values and increase the tax base through the development of the greenway system.
- Contribute to the economic well-being of the community by providing employment opportunities resulting from development of the greenway.
- Define, quantify and tout the economic benefits of the Miami River Greenway.
- Clean up toxic areas and hazardous waste found within the river corridor.
- Improve law enforcement activities throughout the Miami River corridor.

### Goal 3: Restore Water Quality throughout the River Ecosystem. Objectives

- Work with Federal, State and Local governments and area businesses to improve water quality through a comprehensive program aimed at reducing point source and non-point source pollution.
- Target identified polluted sites for clean up in accordance with Federal and State laws, regulations and programs.
- Where possible provide riverbank vegetative buffers, an element of cleaning up overland stormwater runoff and pollution.
- Where possible stabilize the banks of the river through the use of plants, native limestone rock and other proven water engineering techniques (i.e. soil bioengineering)
- Utilize best management practices to slow runoff and pollutant loading on tributary streams that feed the main river stem.
- Develop local upstream water quality programs for the feeder streams of the river.
- Educate local residents as to the importance of best management practices to improve water quality.

### Goal 4: Serve as a Destination Landscape for Metro Miami Objectives

- Make the river an attractive destination for local residents and tourists.
- Complete the existing Riverwalk program in applicable sections of the river greenway.
- Diversify the land use and destinations found along the river to include more restaurants, retail shops and other river related business uses.
- Implement a blueway (i.e. water transportation program) for the Miami River that would foster water-based linkages to key destinations.
- Remove fences that currently serve as a barrier to river access and program these landscapes for resident and tourist uses.
- Program river greenway events for each month of the year.
- Implement a comprehensive signage program for the river greenway system.
- Incorporate art into the river greenway landscape.

### Goal 5: Encourage a Compatible Land Use Vision for the River Objectives

- Promote a diversity of land uses and destination landscapes that support increased activity along the river.
- Revitalize key destination landscapes such as neighborhood parks to encourage more use.
- Consider the use of an overlay planning district for the river, jointly prepared by the Miami River Commission, the City of Miami and Miami-Dade County.
- Develop neighborhood scale retail, commercial and tourist destinations.
- Implement the Downtown Miami Design Guidelines as developed by the Urban Design Committee.
- Develop strong bicycle and pedestrian connections to Downtown Miami, the Brickell Avenue corridor and adjacent residential neighborhoods.



- Work with financial community of Miami to establish financial incentives for the Miami River Greenway that will ensure the orderly and compatible redevelopment of vacant or underutilized properties along the river.
- Encourage land use and zoning regulations that protect natural resources and promote the development of the greenway system.

## **Goal 6: Foster an Ethic of Stewardship for the Miami River**

### **Objectives**

- Promote the long-term involvement of local residents in the implementation of the Miami River Greenway system.
- Promote the continued protection of the endangered manatee and other endangered species of animals and plants found within the river corridor.
- Restore and enhance the riparian environment along the riverbanks to support plant and animal habitat where appropriate.
- Encourage biodiversity through revegetation of riparian zones and reintroduction of native plant species where appropriate.
- Encourage public/private partnerships for stewardship of river resources.
- Encourage education based projects, experiments, monitoring programs and other activities.
- Work with local school system to provide outdoor classroom settings for biology, zoology and geology classes.

## **Goal 7: Celebrate the Multi-Cultural Diversity of Adjacent Neighborhoods**

### **Objectives**

- Create public spaces that will support cultural celebration and invite local groups to help program the space for such celebrations and festivals.
- Link together the resources of the river landscape, including parks, open spaces and historic sites.
- Create gateways between local neighborhoods and the greenway that recognize cultural make-up and influences of that neighborhood.
- Involve local residents, community groups, businesses, civic organizations and public agencies in a program of coordinated maintenance of the greenway system. This would involve establishing an Adopt-a-Greenway program to tap volunteer resources for the greenway.
- Protect the public health, welfare and safety of greenway users through a community policing program and through the implementation of CPTED (Crime Prevention Through Environment Design).
- Respect the privacy of adjacent landowners.
- Develop additional recreation facilities along greenway lands close to where residents live and work.



# Miami River Greenway Concept Plan

## Hubs and Spokes

From the framework, river themes, vision, goals and objectives emerges a concept for future river greenway development. The concept is also based in part on the State of Florida Greenway concept of “hubs and spokes.” Under Florida’s statewide greenway system, hubs can be comprised of ecologically significant lands, public parks and destination landscapes. Spokes are comprised of linear landscapes such as streams and rivers, utility corridors and transportation corridors. For the Miami River Greenway, the hubs are represented by existing and proposed public regional and neighborhood parks, the spokes would be the Riverwalk, riverside trails, on-road bicycle and pedestrian facilities and the blueway elements of the river. This is graphically depicted below in figure 12.

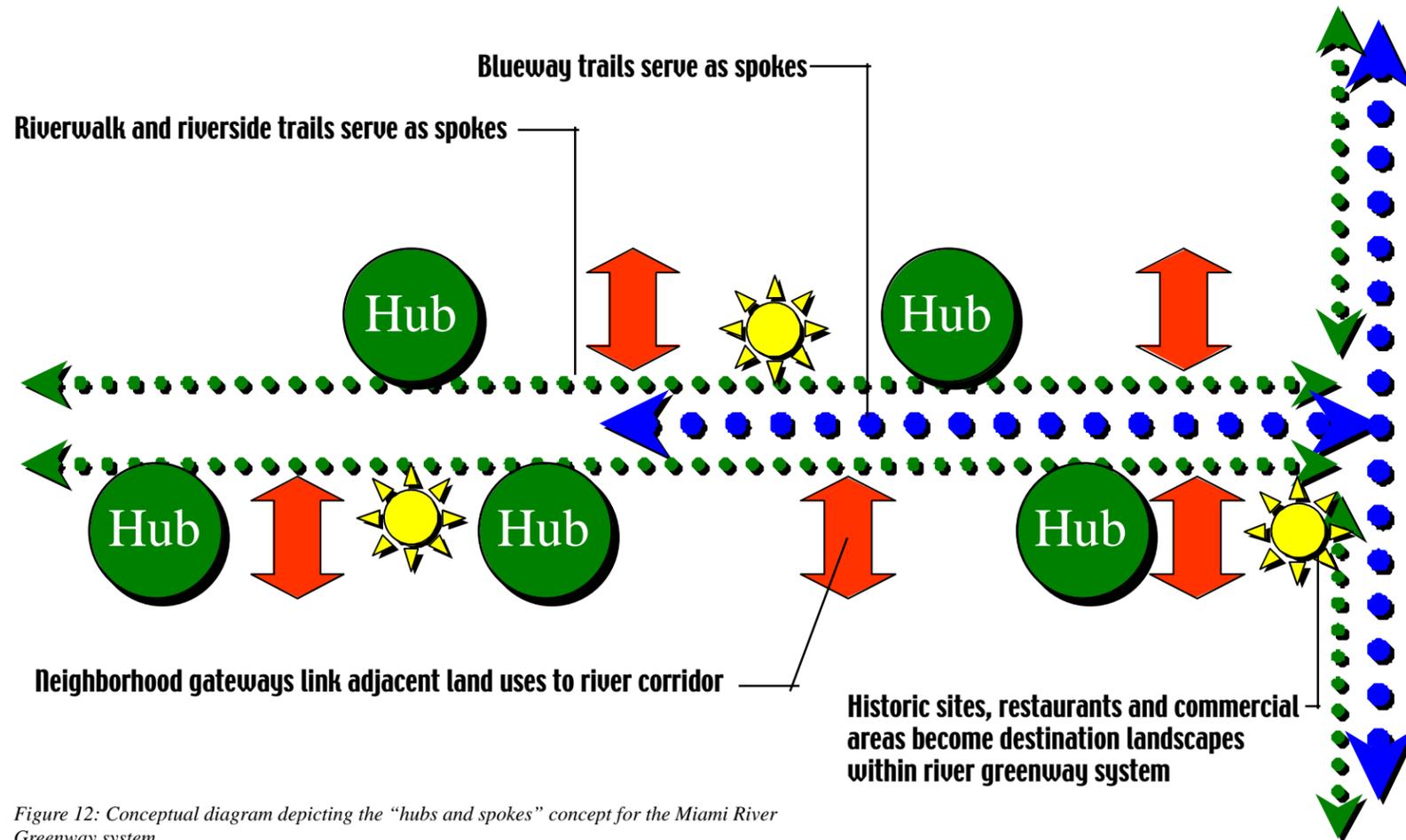


Figure 12: Conceptual diagram depicting the “hubs and spokes” concept for the Miami River Greenway system.

## Integration of New Urbanism

Further, based on stakeholder meetings and public input, it is the desire of the community that concepts of new urbanism be represented in this Greenway Action Plan. Specifically, as the river corridor landscape continues to evolve and land use changes occur, it is assumed that the parks would also serve as nodes from which future development would emanate. Under the concept of new urbanism future development would be safe enough to support children walking from their front door to local destinations throughout the community. Future land use development would support integrated mixture of uses including public places, shops, offices, and places to live. These uses would be linked together by a network of walkable streets and the riverwalk greenway system. Additionally, streets would serve to diffuse traffic patterns. Buildings would front along streets lined with sidewalks and trees. Buildings would help to create the effect of outdoor rooms and would be arranged as part of an overall pattern of streets and blocks. On-site parking would be discretely hidden from view behind buildings. Buildings in the neighborhoods would be constructed for different uses, scale, and architectural expressions. Architectural expression of the buildings would reflect the climate and traditions of central Miami. The parks would serve as the principal public outdoor space, and be large enough to accommodate concerts, open air markets and river festivals. The concept of new urbanism is graphically depicted in figure 13.

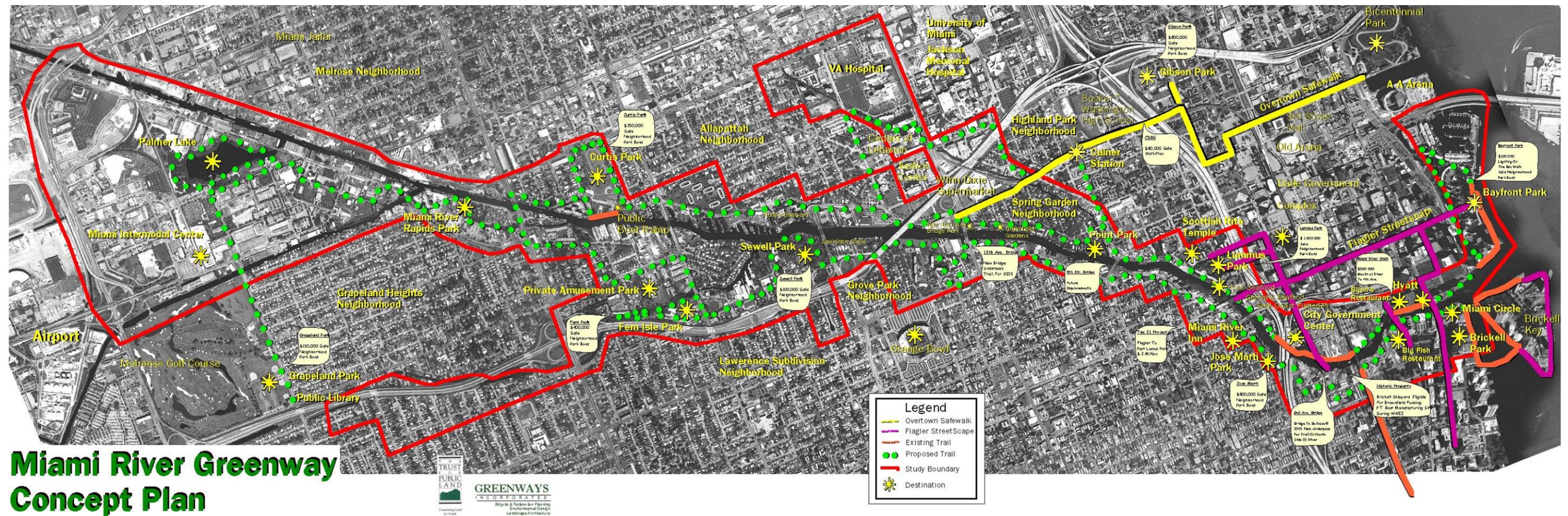


Figure 13: Graphic illustration is of Cedar Park Town Center designed by Land Design Studio

## Illustrative Concept Plan

Using the previous graphic concepts and conclusions derived from the framework for action, the consultant team developed the following Conceptual Master Plan map for the Miami River Greenway. Principally, this concept plan illustrates future routes for river greenway trail development using information obtained from community worksessions, stakeholder meetings and input from local government agency staff. This concept plan defines a beginning point for overall greenway facility development that is more thoroughly depicted and described in the next few chapters of this Action Plan report.

Figure14: Illustrative concept plan for Miami River Greenway





# Miami River Greenway Action Plan

## Design Development Recommendations

# Design Development Recommendations

The primary objective of the design development recommendations provided in this section of the Action Plan report is to translate the framework for action into successful implementable strategies throughout the project study area. To accomplish this a design development program has been developed and is comprised of specific recommendations for the three reaches of the river Greenway project. The principal foundation of these recommendations is that Greenway facility development will occur on public property and will not involve the condemnation of private property for Greenway purposes. Where the Greenway development recommendations are provided on private property, it is anticipated that these will be implemented through the voluntary participation of private landowners and businesses located in the project study area.

## Key Recommendations

The Miami River Greenway development program consists of five key elements:

- 1) points of public entry or “gateways” to the river corridor;
- 2) a primary system of public land and water-based trails;
- 3) improvements and enhancements to existing parks;
- 4) improvements and enhancements to existing bridges and roadways; and
- 5) improvements and enhancements to river channel banks.

These design development recommendations are complimented with a full range of greenway policy recommendations described in later sections of this Action Plan report.

The Miami River Greenway map on the following page (see Map 1) illustrates an overall strategy for the routing of trails and walkways along the Miami River as well as the development of other improvements along the river. The following pages define the detailed recommendations for each section of the river.

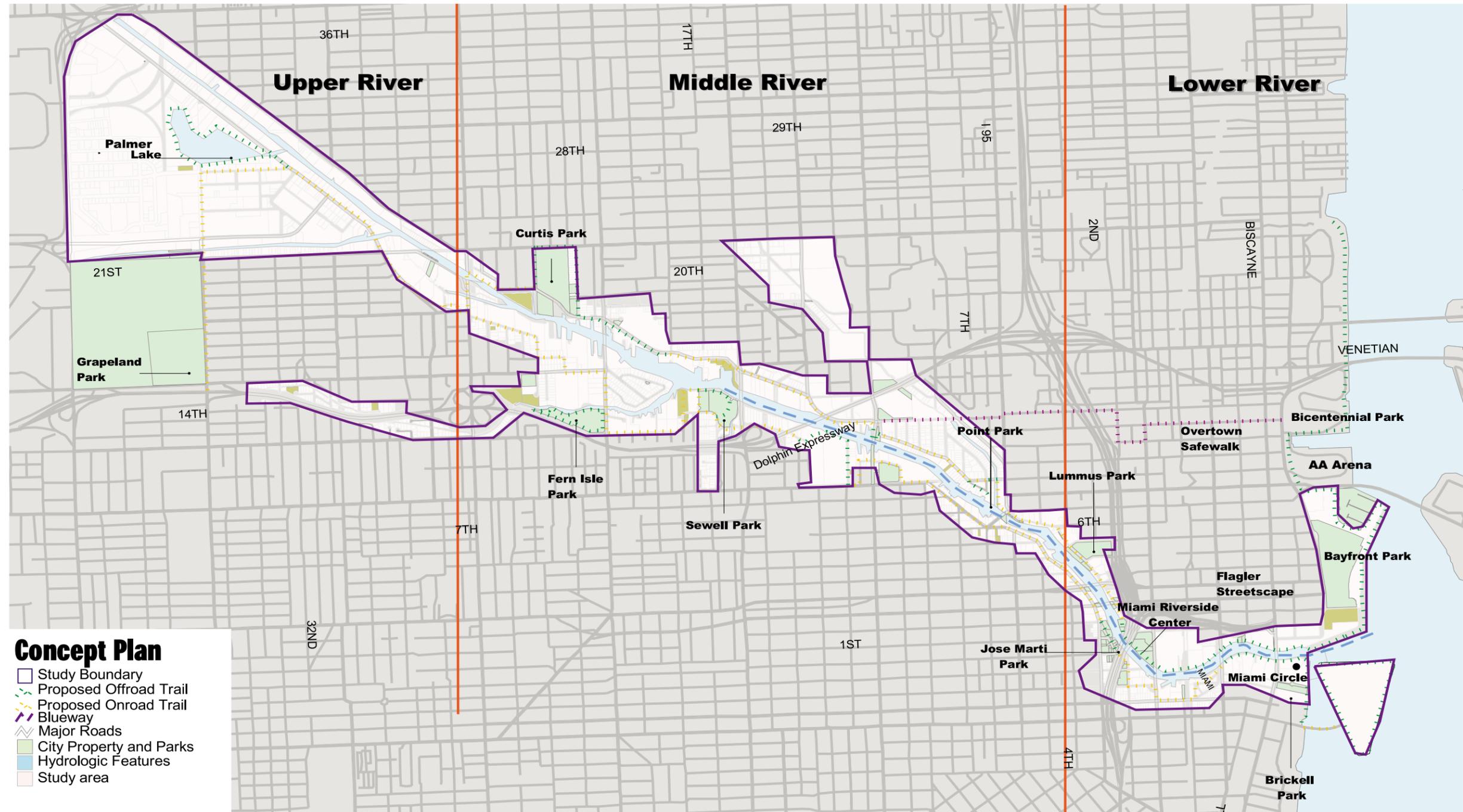


Figure 15: From the Brickell Key Greenway trail users have an excellent view of downtown Miami and the mouth of the Miami River.



# Miami River Greenway Action Plan

Map 1



**Concept Plan**

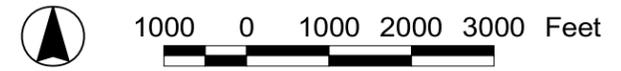
- Study Boundary
- Proposed Offroad Trail
- Proposed Onroad Trail
- Blueway
- Major Roads
- City Property and Parks
- Hydrologic Features
- Study area

March 2001

Prepared for:  
Miami River Commission  
Greenway Subcommittee

Source of GIS information:  
Florida Power and Light

Prepared By:



# Lower River Recommendations

The lower river section of the Miami River extends from Brickell Key at Biscayne Bay to the 5th Street bridge, a total distance of approximately 1.5 miles (see Map 2). The key river themes for this section of the river are: *River is a Destination Landscape*, *River is a Working River*, *River is Part of Our Heritage*, and *River is an Economic Resource*. (See Map 2: Lower River)

The key Greenway design development recommendations for the lower river section are to complete the Miami Riverwalk on both sides of the river from Bayfront Park to Lummus Park on the north shore and Sheraton hotel to the Jose Marti Park on the south shore. Future conservation and access development for the Miami Circle site is also critical in this section, as this site has the opportunity to become a significant tourist attraction for the downtown area. Lummus Park and Jose Marti Park are scheduled to receive some much needed improvements along the river's edge. Finally, a comprehensive signage program will greatly improve access to the river from surrounding businesses and residential areas.

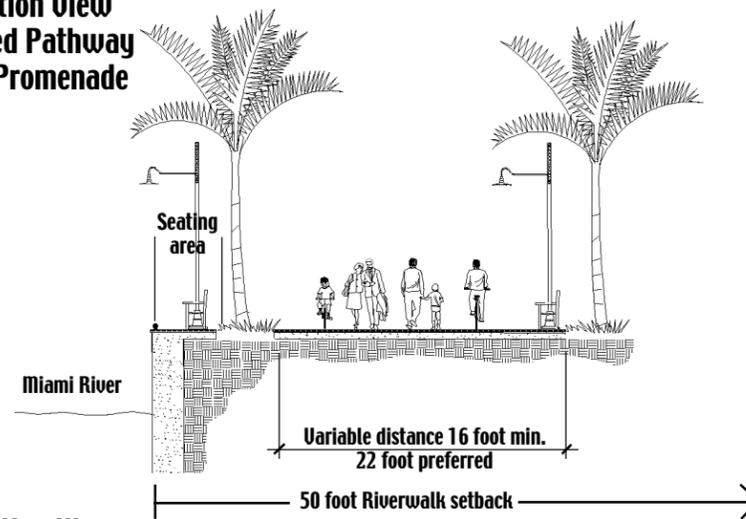


Figure 16: Aerial of Lower Miami River.

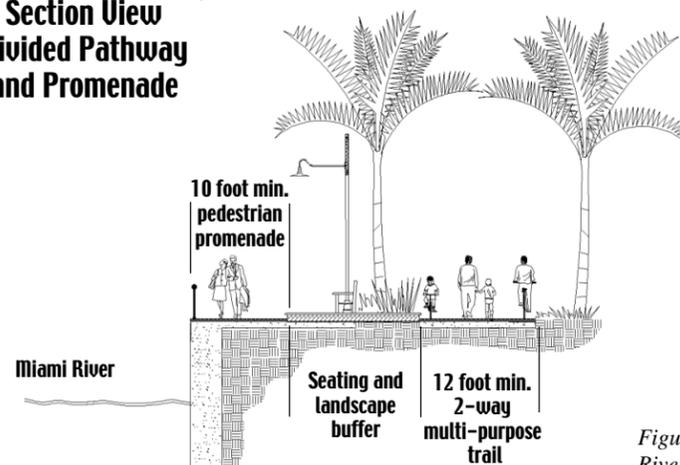
## Miami Riverwalk

Completion of the Miami Riverwalk is one of the most critical elements of the greenway program for the lower river. Through completion of the riverwalk, continuous public access will be provided from Biscayne Bay to Lummus Park and Jose Marti Park. The riverwalk is envisioned to continue as one of two developed landscapes: 1) as a broad shared pathway and promenade along the river's edge or 2) as a divided pathway and pedestrian promenade along the river's edge. In certain locations a riverside location is not possible due to existing water dependent businesses. At these locations, the riverwalk would be linked through both sidewalks and bicycle facilities around these landscapes and back to riverwalk development. The riverwalk is developed within a protected setback zone of 50 feet that is measured from the top of the river bank. No privately owned buildings are allowed to be constructed within this 50 foot setback area.

### Section View Shared Pathway and Promenade



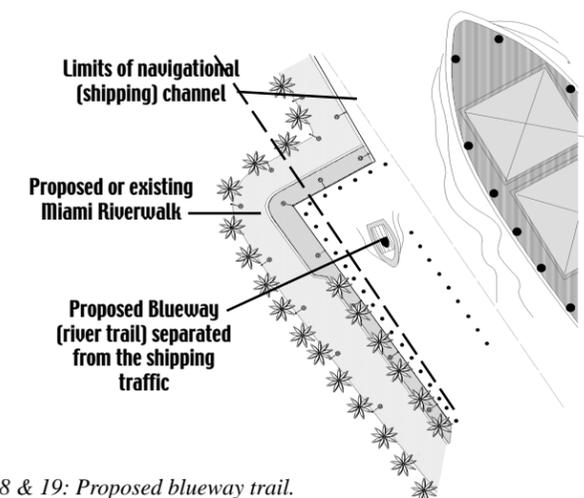
### Section View Divided Pathway and Promenade



Figures 17 & 18: Riverwalk trails.

## Miami River Trail Blueway

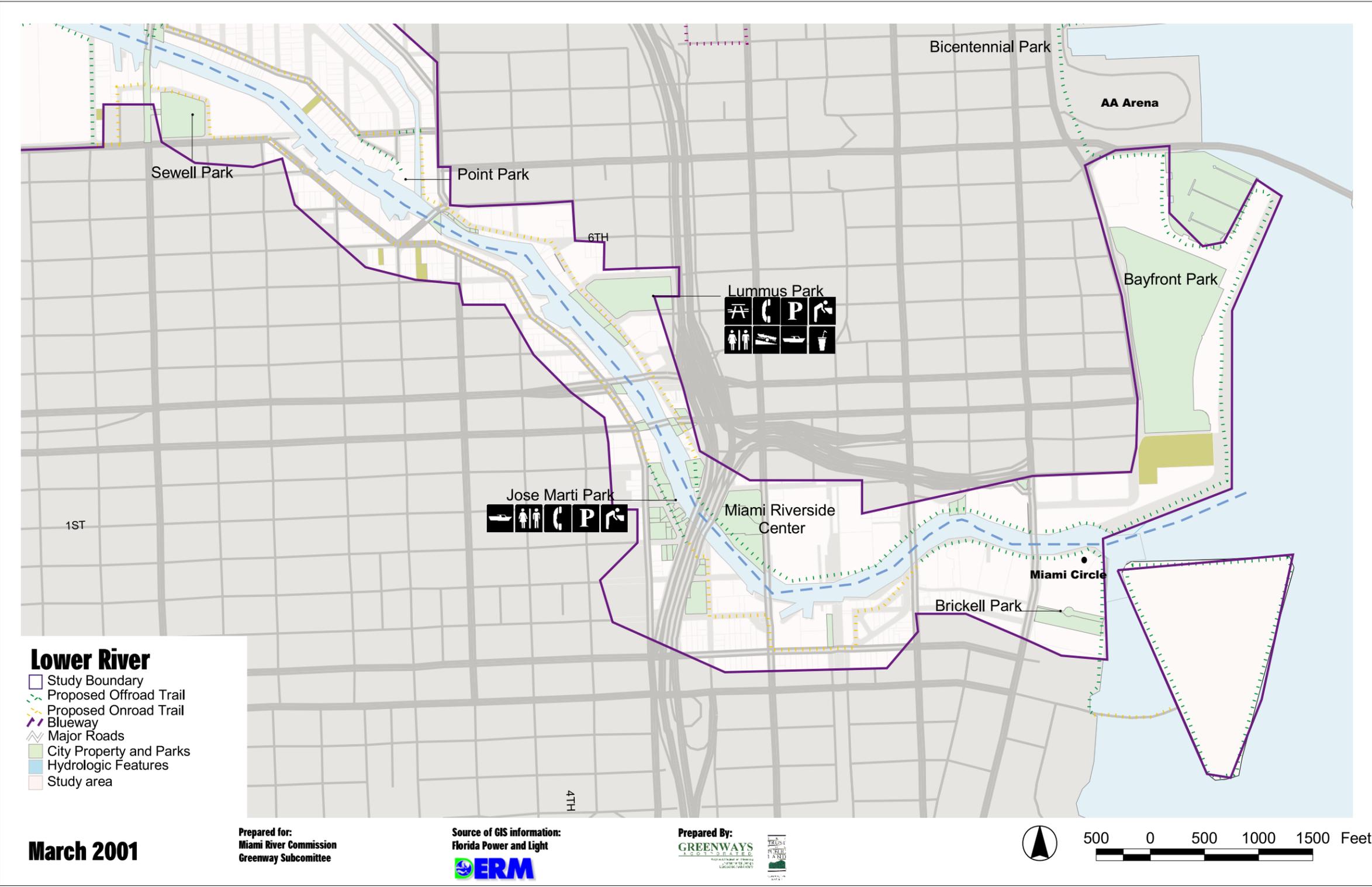
Many local residents expressed an interest in seeing a water trail established in the lower section of the Miami River to link activity/destination centers on Biscayne Bay to destinations along the Miami River. The photo below has been digitally enhanced to suggest how such a blueway could be established. Critical to its success, the blueway would be located **outside** the Miami River navigational channel **so as not to interfere with daily shipping traffic**. The blueway would be designated with markers placed in the water. Access to the river's edge is critical and would need to be provided at public parks and other points along the river. If a water taxi system is implemented on the river, additional public access points could occur at the hotels that are found along the river, and also at the new Marlins baseball stadium.



Figures 18 & 19: Proposed blueway trail.

# Miami River Greenway Action Plan

# Map 2



## Mouth of the River to Brickell Avenue Bridge

The first segment of the Greenway project consists of building off-road trails along the waterfront. A boardwalk would be developed on the north riverbank adjacent to the DuPont Plaza Hotel to link Bayfront Park to the Hyatt Riverwalk. It is hoped that eventually the Miami River Greenway trail system will link to an improved Baywalk system of trails that will extend to Bicentennial Park and Pace Park along Biscayne Bay. On the south riverbank, a trail system would be developed from the Sheraton Baywalk to the Brickell Avenue Bridge, through the Miami Circle Site. Eventually, the trail system would extend past the Sheraton Baywalk, through Brickell Park to the Brickell Key Causeway, where it can be linked to trails that extend around the perimeter of Brickell Key.

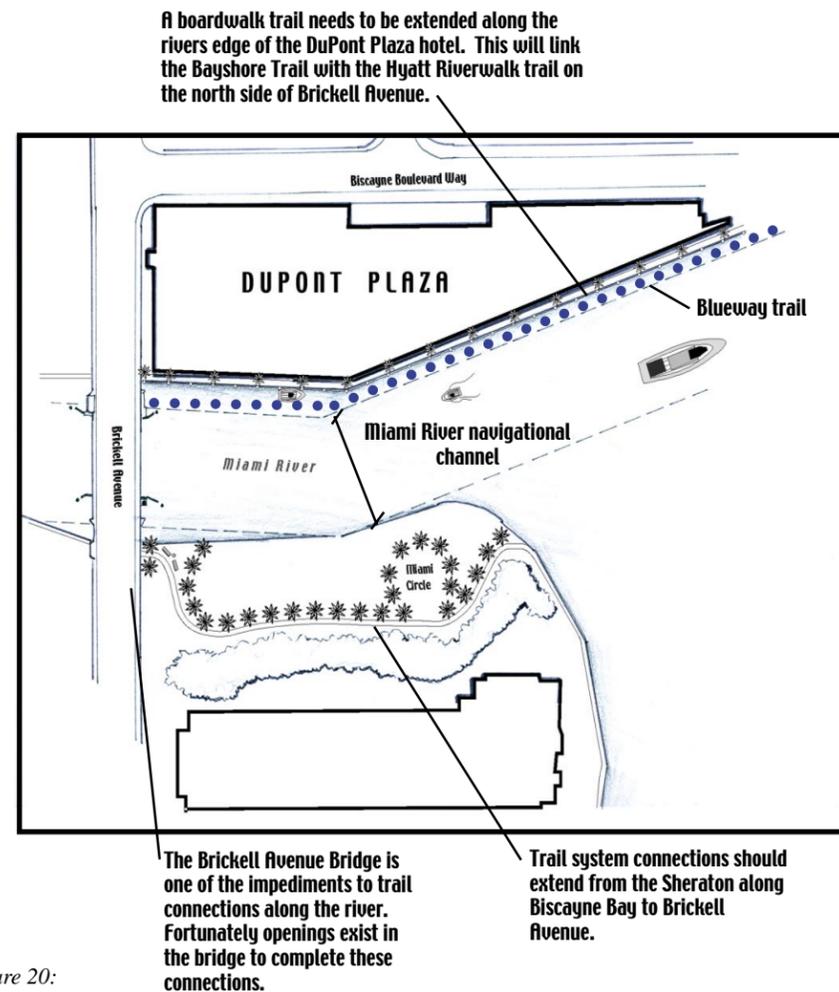


Figure 20: Mouth of the River.

## Miami Circle Archaeological Site

The Miami Circle site is the most historically significant landscape on the river. The State of Florida is charged with creating a preservation/development plan for this site. As such, the future conservation and development of the site is undetermined as of the date of this action plan. Two possible greenway facility development scenarios are possible: 1) a riverwalk promenade along the south shoreline of the Miami River, with appropriate fencing and interpretive exhibits for the Circle; or 2) an interior trail that is constructed between the Sheraton property and the Circle with fencing and interpretive exhibits. Under the second development scenario, the River's edge would be restored using soil bioengineering techniques. A trail connection is highly desired at this location for links to Brickell Avenue residential and business development activities.

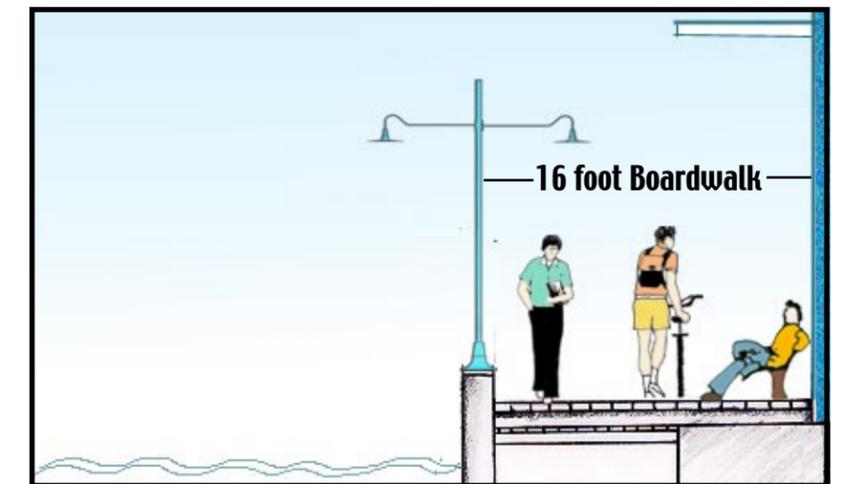
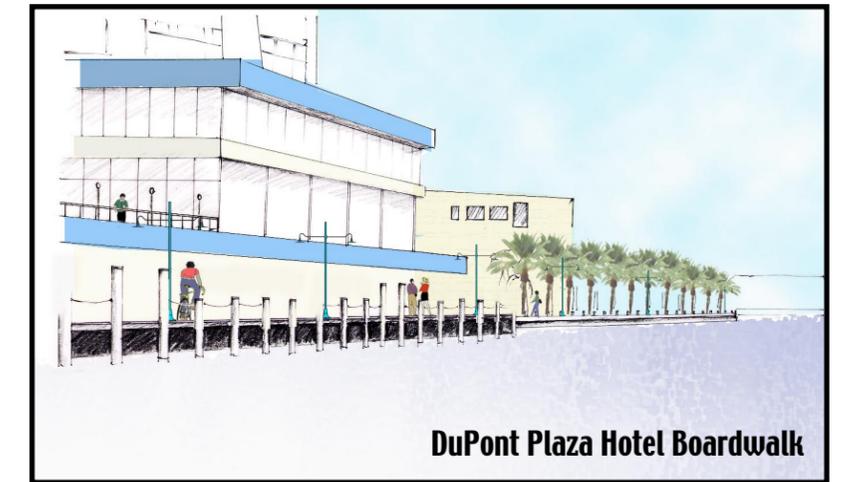


Figures 21 & 22: Riverwalk at Miami Circle.

## DuPont Plaza Hotel

The DuPont Plaza Hotel is currently engaged in a \$35 million renovation program. It is hoped that this will include the addition of the Riverwalk along the Miami River frontage. A riverside connection from Bayfront Park to the Riverwalk at the Hyatt is very highly desired. This can be accomplished by constructing a boardwalk on the riverside facade of the DuPont Plaza Hotel. This boardwalk would be extended out over the water's edge approximately 16 feet. The boardwalk would be supplemented with lighting and bench seating to offer both hotel guests and tourists with a bird's-eye view of the mouth of the river.

Figures 23 & 24: Riverwalk at DuPont Plaza.



## Miami One Project

The Miami One Project, is a new mixed use development recently approved for construction along the Miami River extending from the east end of the DuPont Plaza Hotel to the Bayfront Park. This residential, office and commercial complex will feature a new 20 foot wide riverwalk development along with a 5,000 square foot restaurant overlooking the mouth of the river and Biscayne Bay.

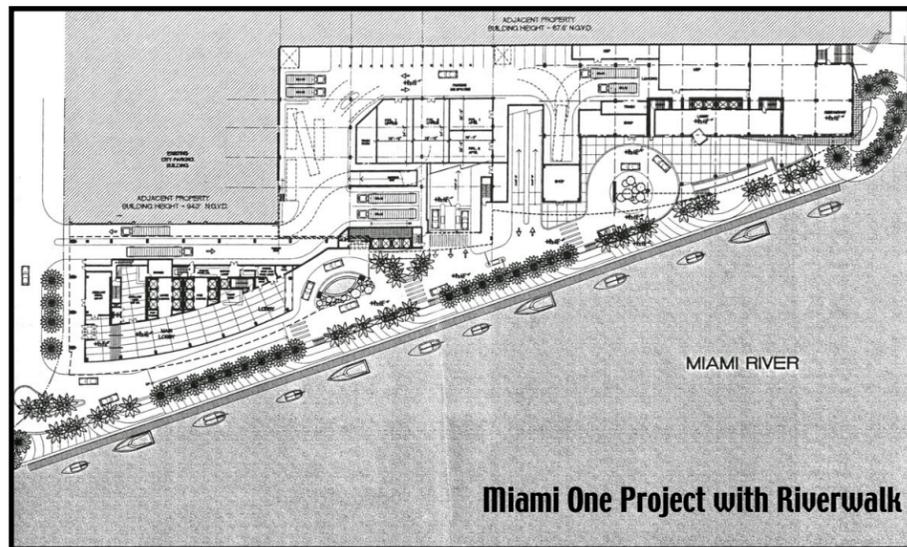
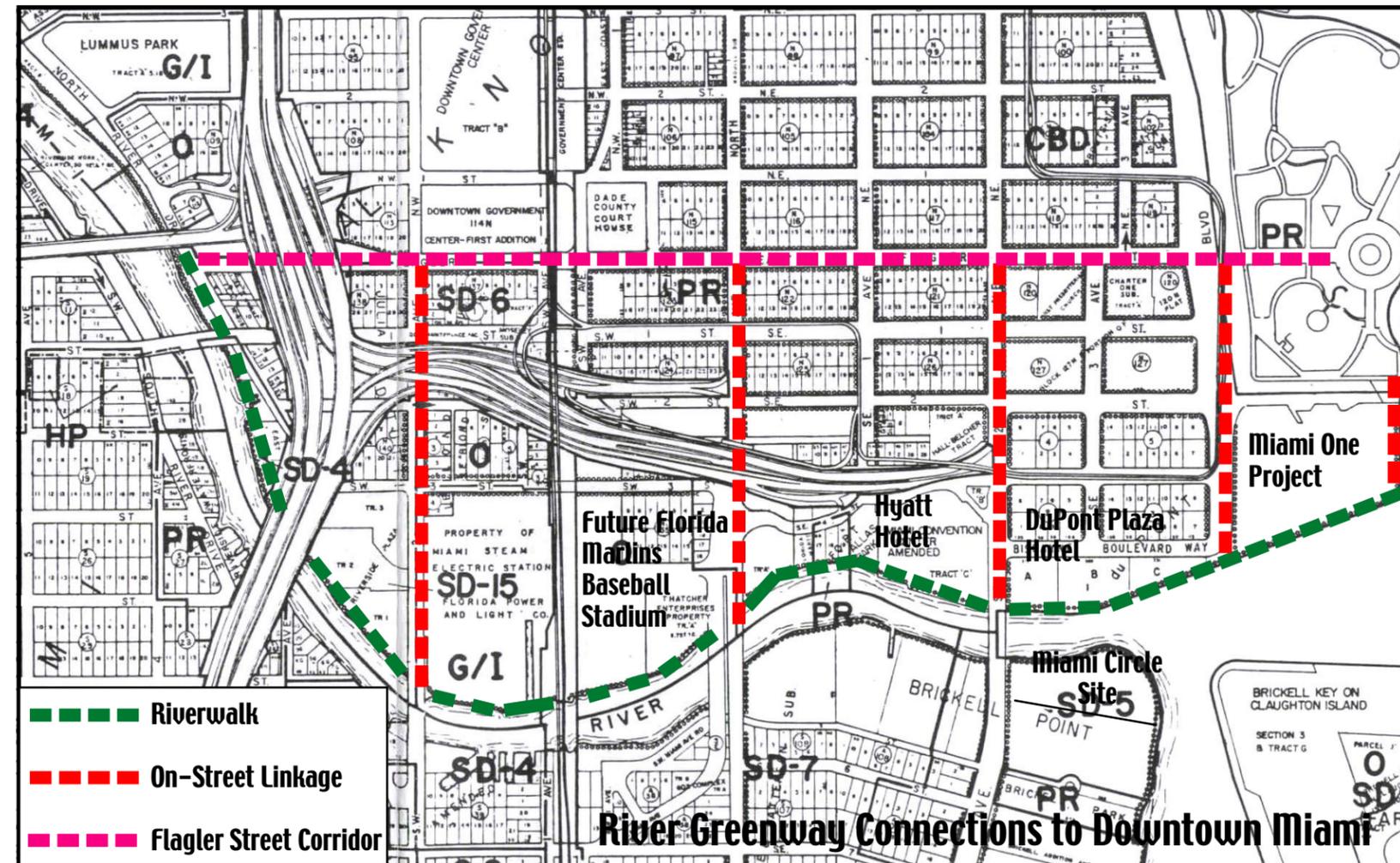


Figure 25: Riverwalk at Miami One.

## Flagler Street/Downtown Business District Linkage

One of the most important links to the Miami River Greenway corridor will be connections to the Flagler Street corridor and the Downtown Business District. Links can occur at several locations north of the river into the downtown area. Future extensions of the Riverwalk trail to the existing Baywalk trail system will provide the best opportunity for visual and physical connections to the Miami River corridor. At the Hyatt Hotel, an existing walkway connection has been fenced off for security purposes, which could be opened to establish an important link along the west side of Brickell Avenue into downtown Miami. Sidewalks along South Miami Avenue and NW 2nd Avenue would provide links to the Flagler Street corridor. With the future development of the Marlins Baseball stadium, it may also be possible to have a link from the river to the downtown under the MetroMover system. A direct link is also possible from the river corridor along Flagler Street.

Figure 26: Greenway connections to Downtown Miami.



## Brickell Avenue Bridge to South Miami Avenue Bridge

From the Brickell Avenue Bridge, the north riverbank off-road trail already exists in the form of the Hyatt Riverwalk. On the south riverbank, an off-road boardwalk trail would be constructed from the Brickell Avenue Bridge to South Miami Avenue on land currently owned by Terramark.

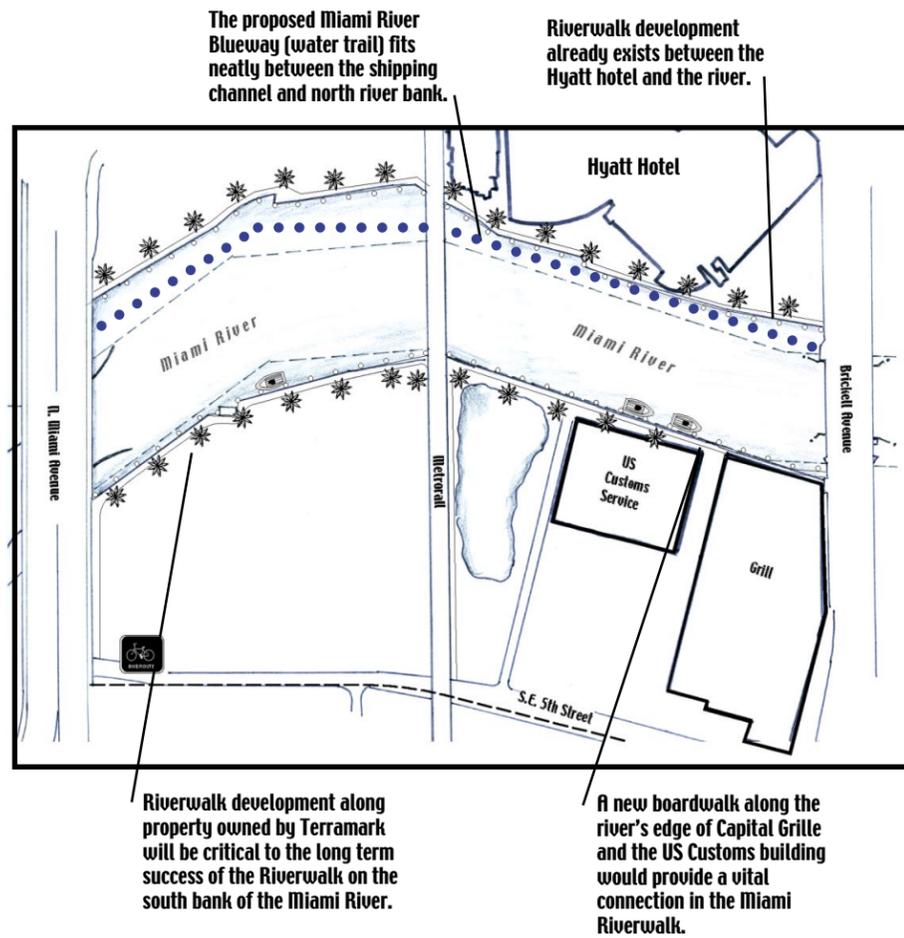


Figure 27: Riverwalk at Brickell Avenue.

## Brickell Avenue Bridge

Crossing beneath the Brickell Avenue bridge will be one of the challenges in the lower river section. Fortunately, the bridge was constructed with pedestrian access in mind. Both the north and south ends of the bridge currently offer arched openings for future access. On the north side of the bridge, construction of a boardwalk adjacent to the DuPont Plaza hotel and removal of an existing chain link fence will provide continuous access to the Riverwalk at the Hyatt. On the south side of the bridge, riverwalk development at the Miami Circle and a boardwalk behind the US Customs building will provide for access east and west of the bridge. An existing opening on either side of the bridge will provide the linkage.

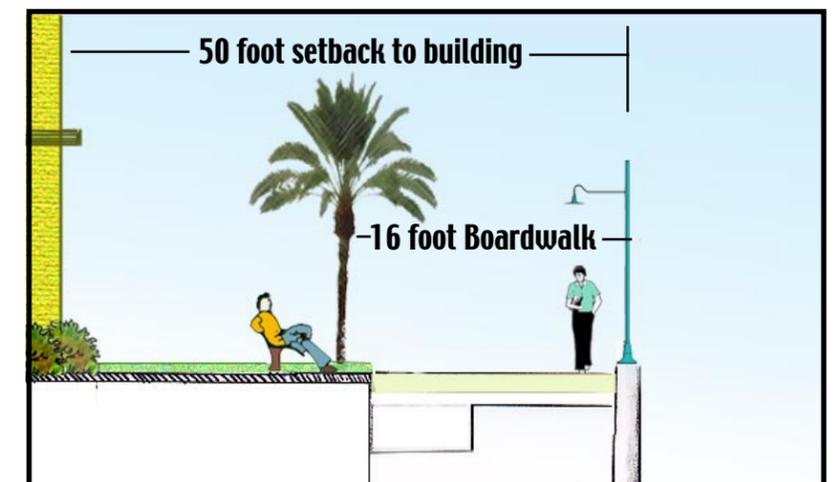
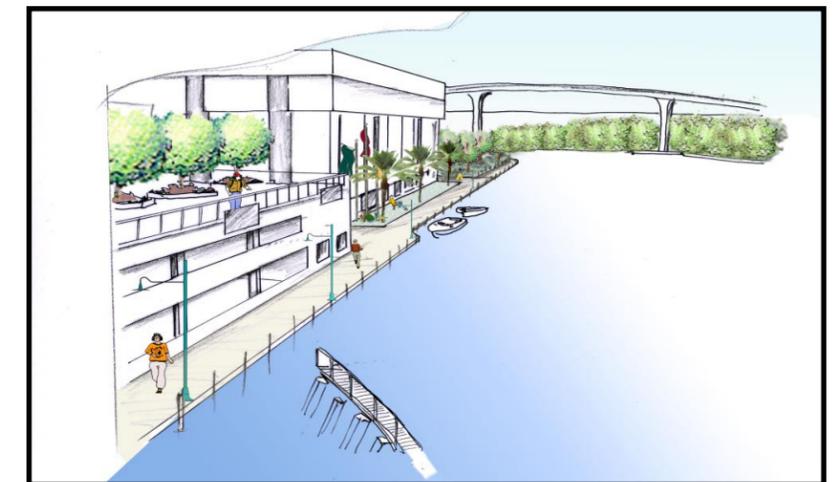


Figure 28: Brickell Avenue Bridge.

## US Customs Building

While it may at first appear difficult, Riverwalk development on the river's edge of the US Customs Building and the Capital Grille is essential to have a continuous walkway system along the Miami River. There is approximately 12 feet between the edge of the riverbank and the navigational channel to install a boardwalk trail from Brickell Avenue Bridge all the way to property owned by Terramark Development Company.

Figures 29 & 30: Riverwalk at Capital Grille.



## Terramark Property

Terramark envisions a mixed use residential, retail and commercial development on a parcel of land that fronts on the southern shoreline of the Miami River. Terramark has expressed an interest in participating in the development of the Miami Riverwalk system and in having linkage to both the Miami Circle and Jose Marti Park. Within properties owned by Terramark, and other private properties in the area, it would be desirable to develop a Riverwalk landscape that consists of a divided multipurpose pathway and separate pedestrian promenade (below). This development pattern will enable more users to access the Riverwalk and make use of the facility in the safest possible manner. The divided pathway/promenade design can help to reduce conflict among multiple user groups.

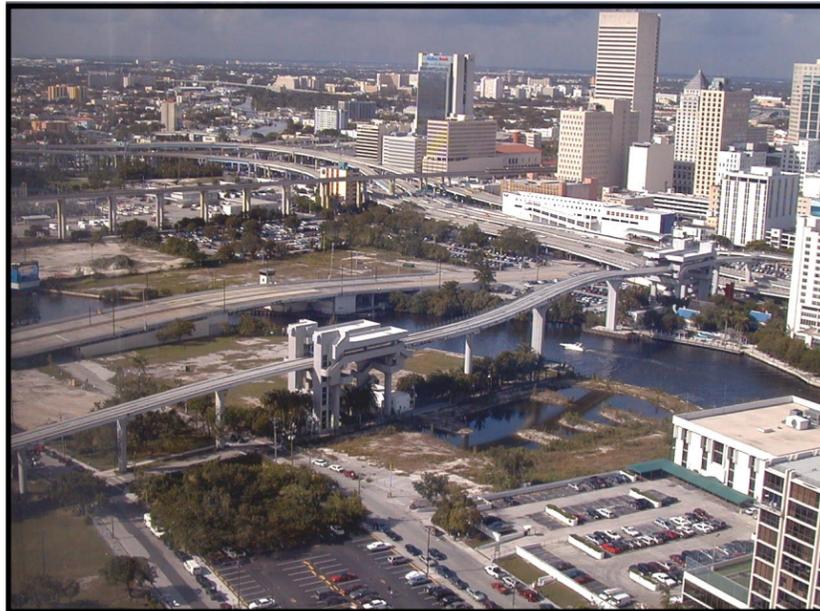
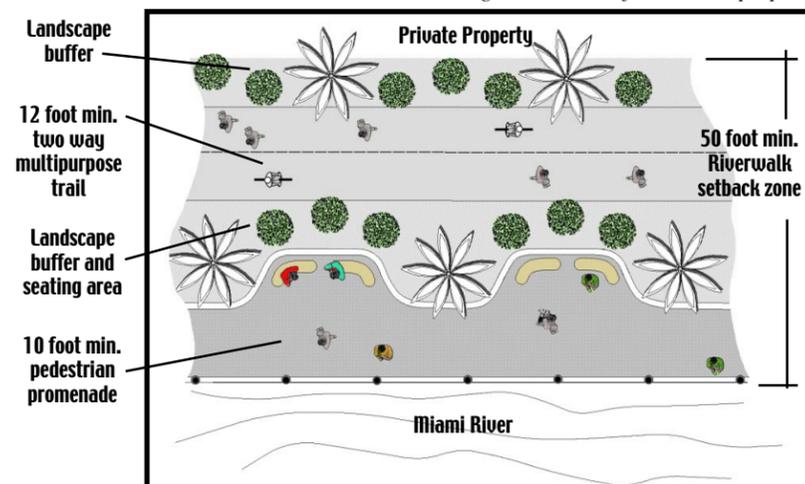


Figure 31: View of Terramark property.



## Future Site for Marlins Baseball Stadium

The City of Miami has selected a site on the riverfront for a new baseball stadium for the Florida Marlins team. The City of Miami has already secured a \$1.26 million grant to develop a portion of the Miami Riverwalk along this property. A riverfront baseball stadium would be in keeping with recent trends in ballpark construction throughout the nation. The image below right is from the Pacific Bell Ballpark in San Francisco, home to the national league Giants franchise (designed by HOK Sports of Kansas City, MO). The Florida Marlin's new stadium could be situated in a similar waterfront manner on the riverfront site (below). A minimum of 50 feet should exist from the stadium structure to the edge of the river to allow for the development of the Miami Riverwalk. (below right)

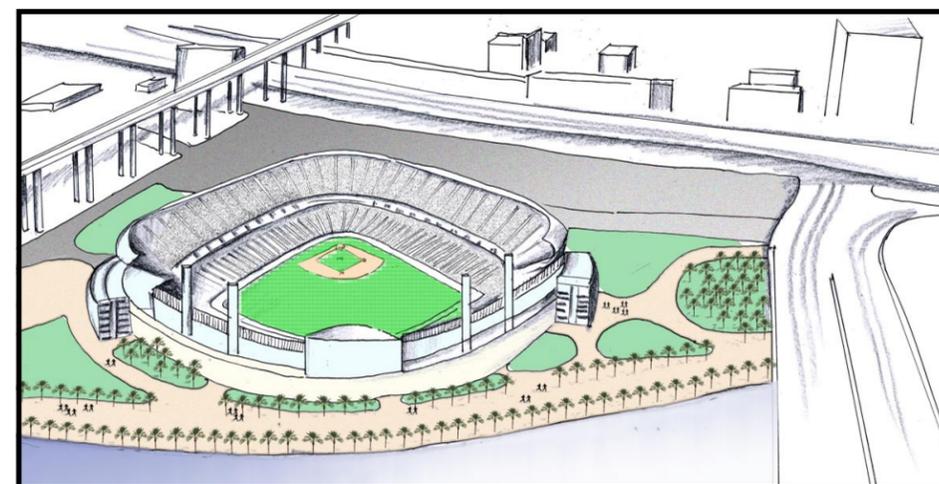


Figure 32-34: Future Marlins Baseball stadium.

### South Miami Avenue Bridge to SW 2nd Avenue Bridge

From South Miami Avenue, greenway facility development would need to occur on both sides of the river. On the north riverbank, an extension of the Miami Riverwalk is proposed. On the south riverbank, the off-road trail will need to be routed on-road as a bicycle route and sidewalk extension. From the Metro Rail, greenway facility development will need to occur on the southside of the river only, since the north riverbank is already developed with the FP&L Riverwalk. The southside trails system is an on-road bicycle route with improved sidewalks and is routed around the historic Brickell Shipyard. The SW 2nd Avenue Bridge is schedule to be replaced in 2001 by FDOT. The new bridge will provide an underpass for the Miami Riverwalk.

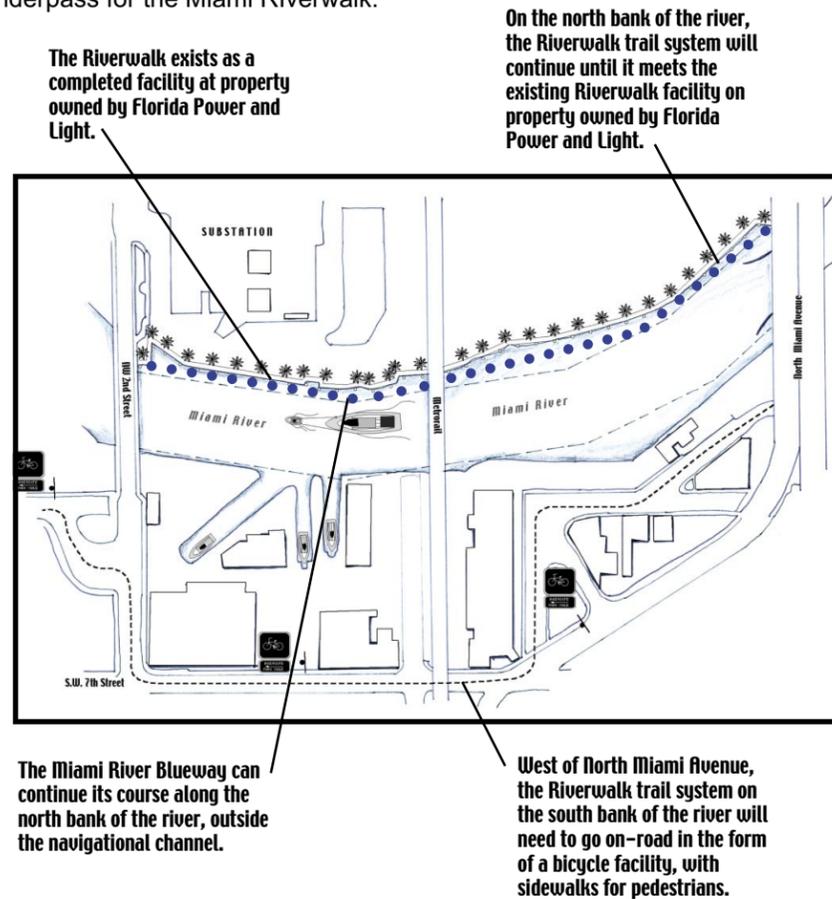


Figure 35: Riverwalk at South Miami Avenue.

### Riverwalk at FP&L Property

The Riverwalk trail system is in place along the north bank of the Miami River. This segment of Riverwalk could eventually be linked to trails at the City of Miami Riverside Center to the west and the Hyatt Hotel Riverwalk to the East.



Figure 36: View of completed Riverwalk at Florida Power and Light substation.

### Miami River Overlook at Metro Rail

An opportunity exists to reopen a portion of off-road trail that lies beneath the existing Metro Rail on the south bank of the Miami River. The illustration below indicates the placement of new trail on the western boundary of the Metro Rail right-of-way, with an overlook and seating area installed. From the overlook, greenway users would have a fantastic view of the site where the proposed Marlins baseball stadium will be constructed.

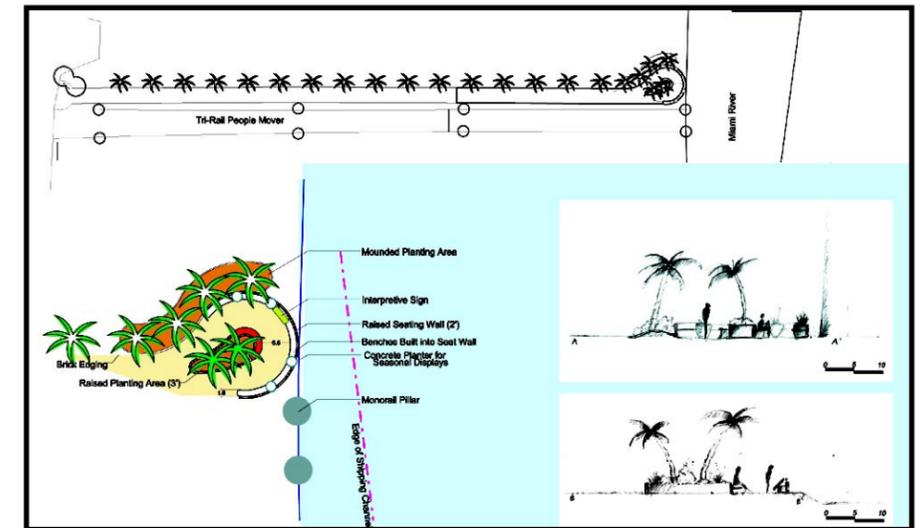
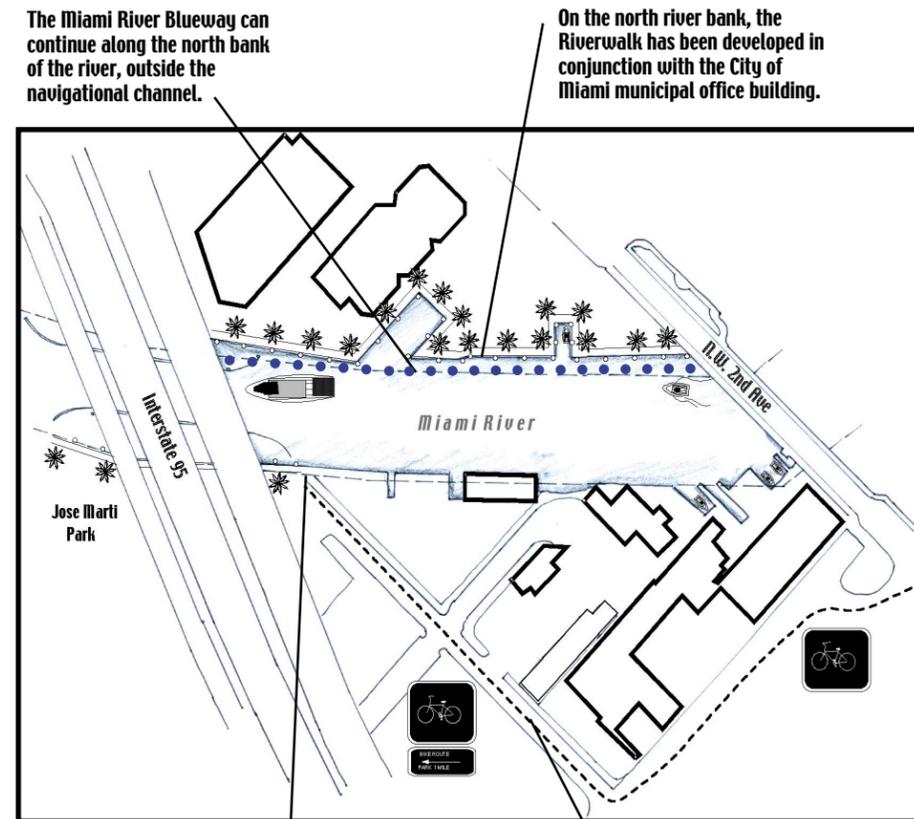


Figure 37 and 37A: A new river access can be installed under the existing Metro Rail, with a pedestrian friendly seating area overlooking the Miami River. Photo is of the existing fenced off landscape and trail.



## SW 2nd Avenue Bridge to Interstate 95

From SW 2nd Avenue, greenway facility development is required on both sides of the river. On the northside of the river, trail development will be possible as a Riverwalk component under I-95. The Riverwalk already exists at the City of Miami office building, but would need to be extended under I-95. On the southside, the on-road bike route would be routed along SW 3rd Avenue and into Jose Marti Park, where it could be developed as a Riverwalk section under I-95 and through the park. Additionally, the historic Atlantic Boatyard is currently developing plans for an indoor restaurant.



The Miami River Blueway can continue along the north bank of the river, outside the navigational channel.

On the north river bank, the Riverwalk has been developed in conjunction with the City of Miami municipal office building.

As the Greenway trail enters Jose Marti Park from the east, it can again be developed as an element of the Miami Riverwalk.

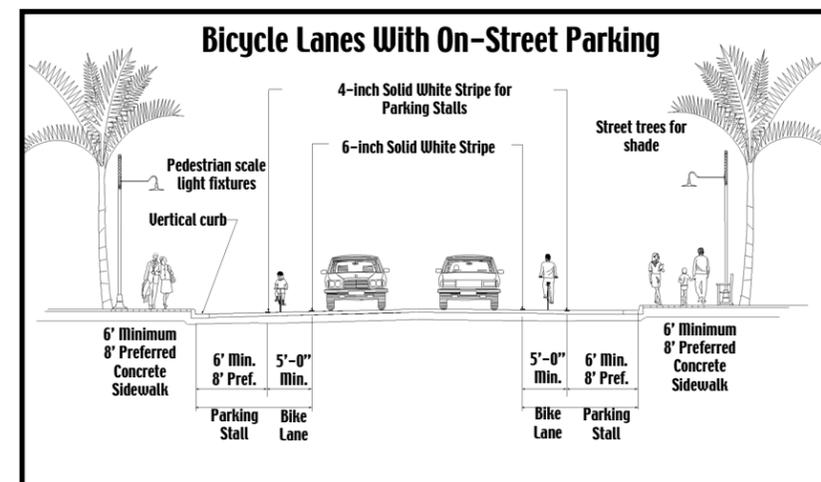
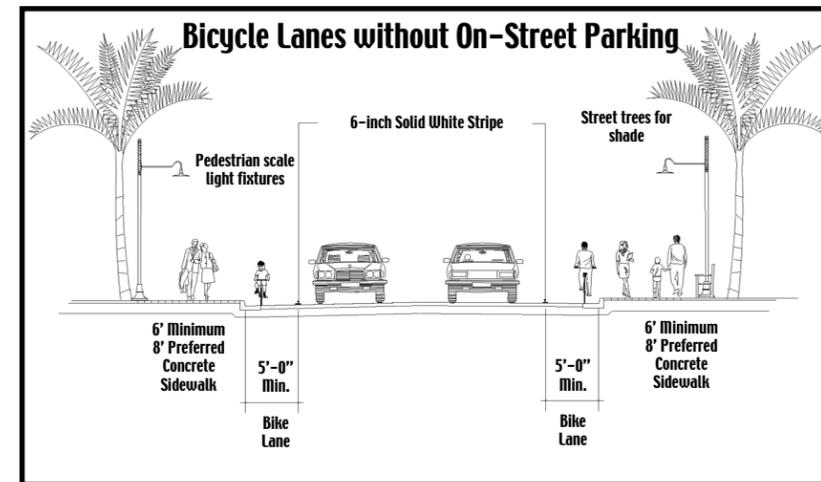
West of NW Second Avenue and south of the river, the Greenway trail facility will continue to be an on-road facility (see details (right) of on-road facility development).

Figure 38: Riverwalk at 2nd Avenue Bridge.

## On-Road Bicycle/Pedestrian Facilities

It will be necessary to develop much of the Miami River Greenway trail elements as on-road facilities due to the lack of publicly owned riverfront properties and the amount of water dependent businesses that reside along the river channel. To accomplish this, two different type of bicycle and pedestrian facilities are recommended: a bicycle lane and pedestrian facility; and a bicycle route and pedestrian facility. The bicycle lane will be designated by on-road striping of the road pavement. Five foot travel lanes would be designated for travel in both directions along the roadway. The bicycle route facility will be designated by signage only and will not have associated pavement markings.

Figures 39 & 40: Bicycle facility details.



## City of Miami Administrative Building

The Miami Riverwalk has been constructed along the river's edge between NW 2nd Avenue and the I-95 bridge complex, adjacent to the City of Miami Administrative Building, called "Miami Riverside Center." This is an excellent waterfront walkway system with a massing of palm trees for shade, picnic tables, grassed mounds and bollard lighting.

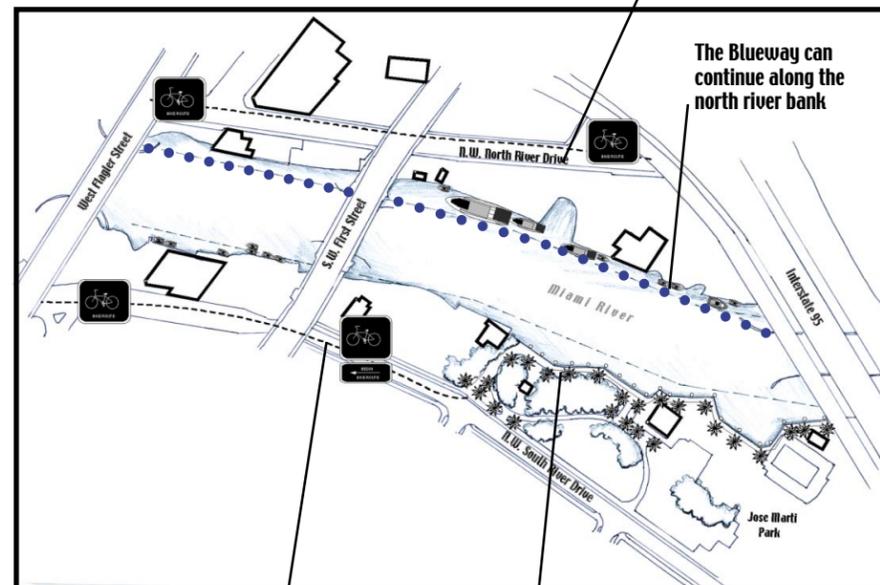


Figure 41: View of existing Riverwalk at Miami Riverside Center.

## Interstate 95 to West Flagler Street

West of I-95, the Greenway would be developed on both sides of the river. On the north riverbank, it would be ideal to link the City office building to Lummus Park with a Riverwalk component. This will require some property acquisition. The south riverbank could be developed as a Riverwalk using existing facilities in Jose Marti Park, and then be routed on-road, past the Miami River Inn. From SW 1st Street, Greenway facility development would be on-road on both sides of the river. On the north side of the river, the Greenway would utilize SW North River Drive as a bike route, with improved sidewalks. On the south side of the river, the Greenway would utilize SW 4th Avenue/NW South River Drive as a bike lane facility and improved sidewalks.

On the north side of the river, the Greenway trail facility will be an on-road bike route with improved sidewalks, unless riverfront property can be acquired to construct another segment of the Miami Riverwalk.



The Blueway can continue along the north river bank

West of Jose Marti Park, the Greenway trail will become an on-road bike lane facility along NW South River Drive.

Within Jose Marti Park, the Greenway trail facility should be developed as an element of the Miami Riverwalk. This will need to be accomplished in partnership with park managers so as not to disrupt existing park service areas.

Figure 42: Riverwalk at Flagler Street Bridge.

## Jose Marti Park

The City of Miami is currently planning improvements to Jose Marti Park. Greenway facility development could benefit both the park and the surrounding East Little Havana neighborhood. The most critical area for development is beneath the I-95 network of bridges. A riverwalk trail system can and should be extended between NW 3rd Avenue and the park.



Figures 43 & 44: Riverwalk at Jose Marti Park.

## NW South River Drive

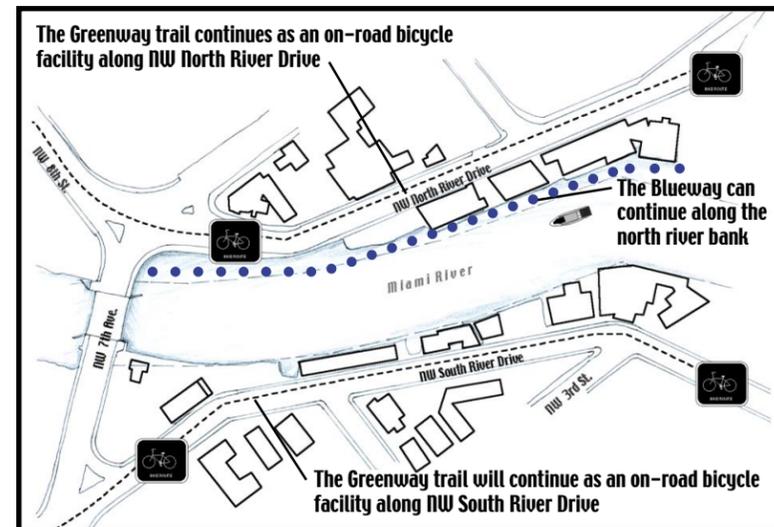
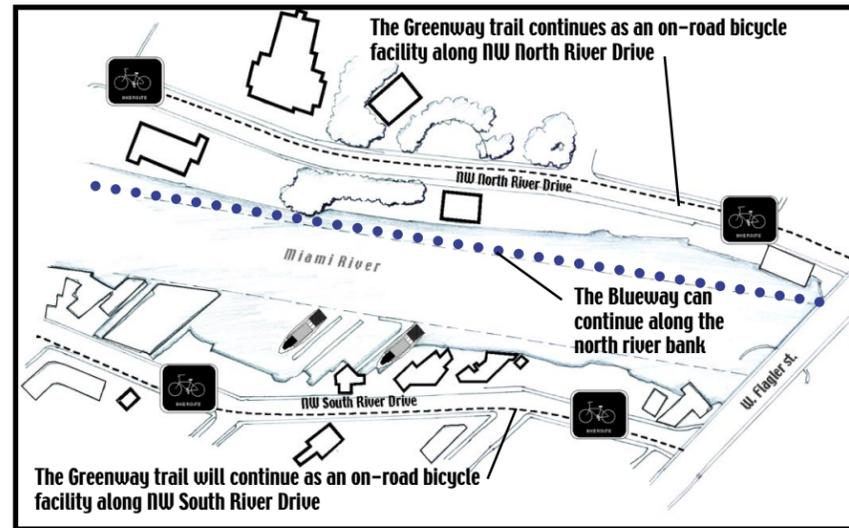
The Greenway trail can be developed as both an on-road bicycle lane facility and on-road bicycle route facility, with improvements made to the sidewalks on either side. On-site determinations will be required to determine the most appropriate facility type for each section of the roadway. This will be influenced by such factors as on-street parking, driveway access, loading and unloading zones and available pavement width. The photos below illustrate how a portion of NW South River Drive could be transformed into a bicycle lane facility in front of the Miami River Inn.

Figures 45 & 46: Bicycle lanes on NW South River Drive near Miami River Inn.



## West Flagler Street to NW 5th Avenue

West of W. Flagler Street, the Greenway would be an on-road and an off-road facility. On the north side of the river, the Greenway would enter the Lummus Park area and is envisioned as a boardwalk/Riverwalk element at the river's edge. West of Lummus Park, the Greenway would again become an improved sidewalk and bike route along NW North River Drive all the way to 5th Street. On the south side of the river, the Greenway would follow NW South River Drive as a bike route facility to 5th Street.

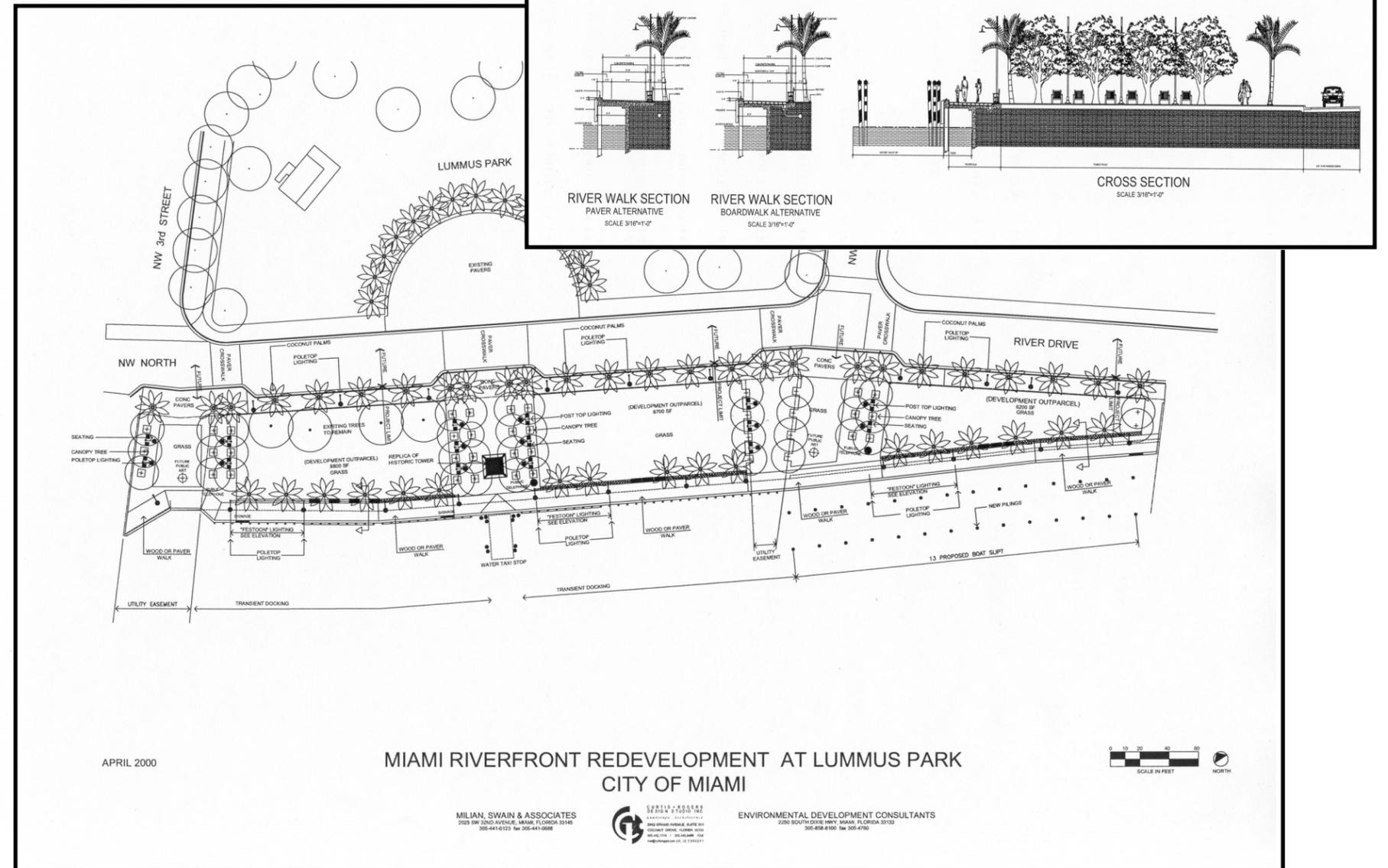


Figures 47 & 48: Riverwalk at 5th Street Bridge.

## Lummus Park

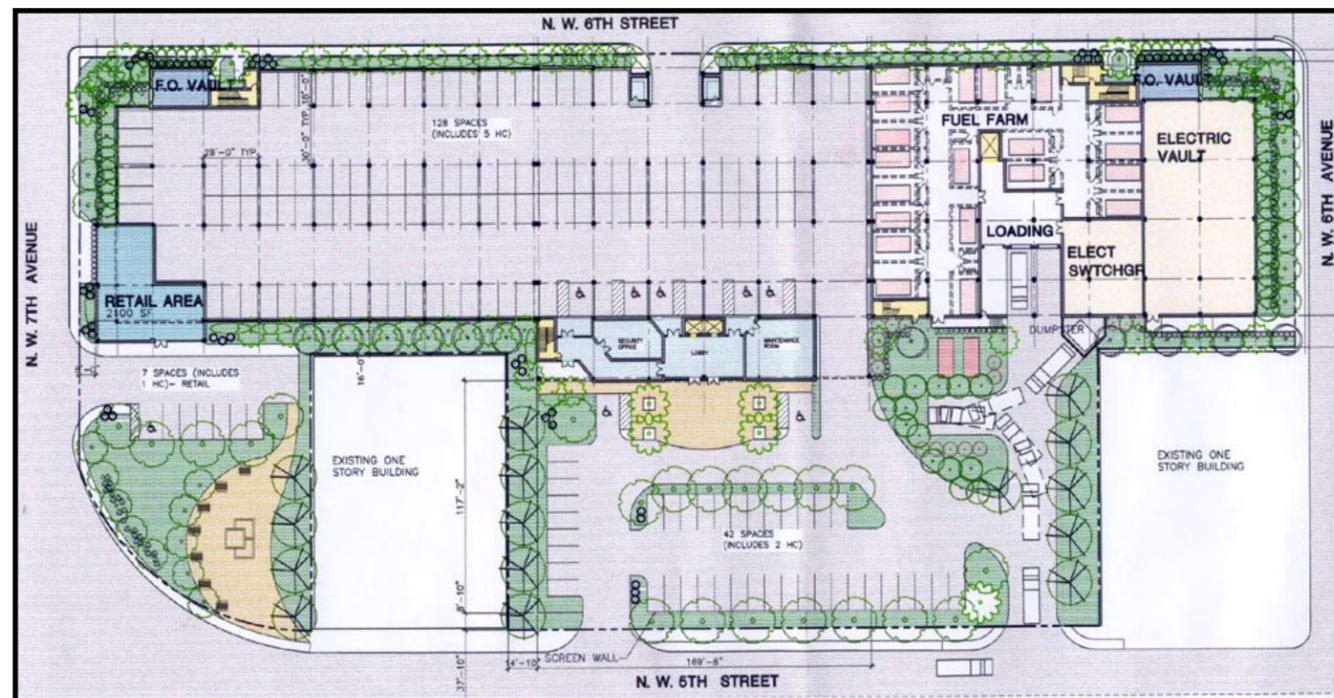
The City of Miami has developed extensive construction documents for the installation of riverwalk improvements at Lummus Park. These drawings were prepared by the Miami firm Milian, Swain and Associates. Plan and section drawings show a boardwalk extending over the Miami River, with ample space for seating and shade trees provided at three principal points of entry off NW North River Drive. Land is reserved along the waters edge for future commercial and retail business development.

Figures 49 & 50: Lummus Park master plan.



## Lummus Park to 5th Street Bridge

From Lummus Park, the route of the Miami River Greenway would follow the existing sidewalks and link to TRI Technology Center that is under construction at the corner of NW 5th Street and NW 7th Avenue. The developer of this site, Trinity Resources International, Inc., will develop a sidewalk and small park at the intersection of NW 5th Street and NW 7th Avenue in support of the Miami River Greenway. From this Park, the route of the greenway will follow NW 7th Avenue and cross into the Spring Garden neighborhood at the Humpback Bridge.



Figures 51: The developer of this building, TRI Tehnology Center, has already agreed to support the Miami River Greenway project by constructing a wide sidewalk along both NW 5th Street and NW 7th Avenue, and through the development of a small pocket park at the intersection of these roads.

# Middle River Recommendations

The middle river section of the Miami River Greenway extends from the 5th Street Bridge to the 27th Avenue Bridge, a distance of approximately 2.5 miles. The principal land use in this section is the residential neighborhoods that border the river landscape. The key river themes for this section of the river are: *River is Our Home*, *River is an Environmental Resource at Risk*, *River is a Part of Our Heritage* and *River is a Destination Landscape*.

The key greenway design development recommendations for the middle river section are to improve access to the river's edge, through improvements to public park facilities, and to develop a comprehensive system of on-road bicycle and pedestrian facilities. Key landscapes in this section include the newly opened Point Park in the Spring Garden Neighborhood, Sewell Park, Fern Isle Park and Curtis Park. As with the lower river, this section will benefit greatly from a comprehensive signage program that directs greenway users to the resources of the river from surrounding neighborhoods and businesses. Another key element of this section will be the establishment of the Overtown Greenway, which begins at the Winn Dixie Supermarket in the Spring Garden Neighborhood.



Figure 52: Aerial view of Middle River.

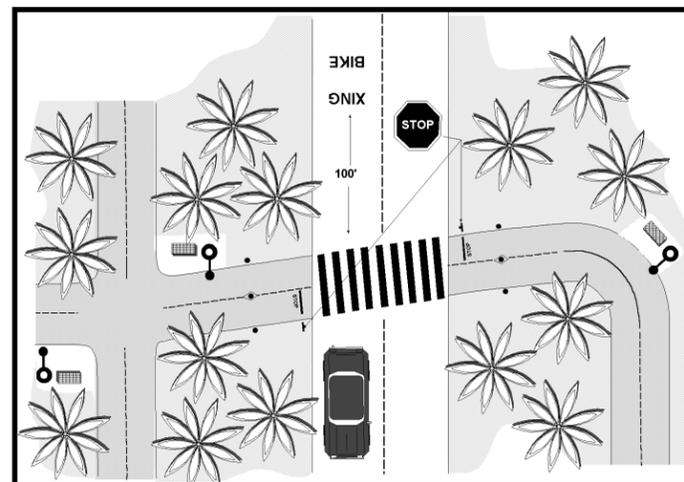
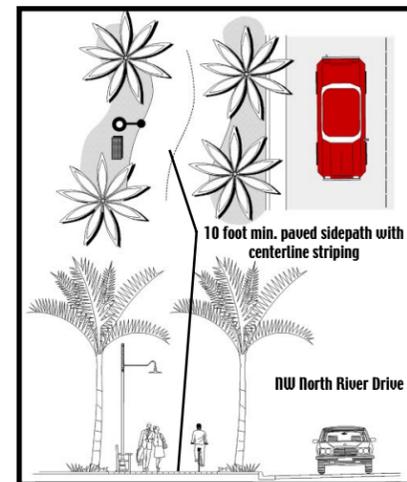
## Riverside Trail

The "riverside" trail system is essentially an assemblage of on-road bicycle and pedestrian facilities along the length of this section of the river. The primary purpose of the riverside trail system will be to encourage and facilitate non-motorized travel between key destination landscapes that include parks, residential neighborhoods, shopping centers, medical facilities and area businesses.

Some sections of the riverside trail system will be capable of being developed as a sidepath trail system, parallel to the roadway. Such could be the case in the Spring Garden Neighborhood, where space is sufficient to develop such a greenway facility (illustrated in the graphic below).

These two graphics illustrate the future development of a Greenway sidepath trail adjacent to NW North River Drive. The graphic below shows how the trail could cross existing residential roadways that intersect with trail development.

Figures 53 & 54: On-road facilities.



## Miami River Trail Blueway

The Blueway trail should be able to continue uninterrupted through much of the middle section of the greenway. Principally, the blueway would be located adjacent to the north bank of the river; however, access to Sewell Park and Fern Isle Park may be accommodated through future development.

## Boat Ties and Docks

At specific locations along the Miami River new boat docks and water craft tie-up facilities are needed. These should, at a minimum be located along the entire length of the proposed blueway system as defined in this action plan. Principally, docks and tie-ups should be located at public access areas, such as public parks and dock facilities at the Convention center. Some private properties would also be good locations for tie-ups, including the Miami One project, Terramark properties and the proposed Marlins baseball stadium site.

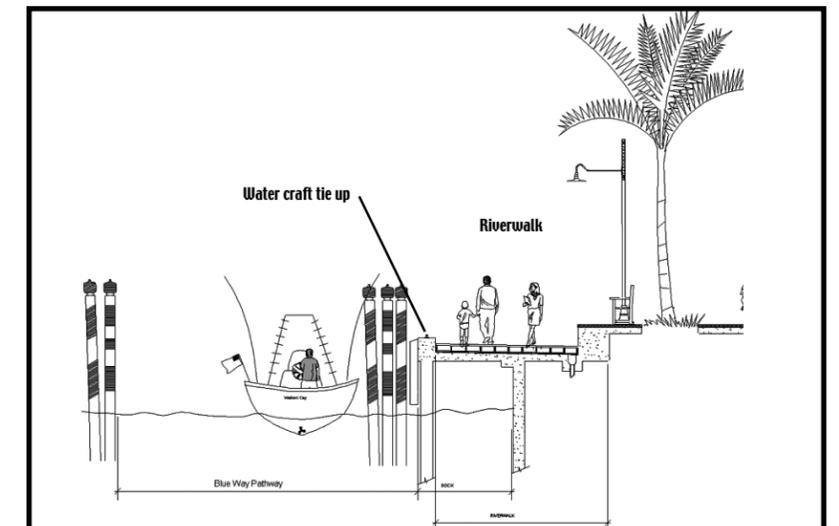
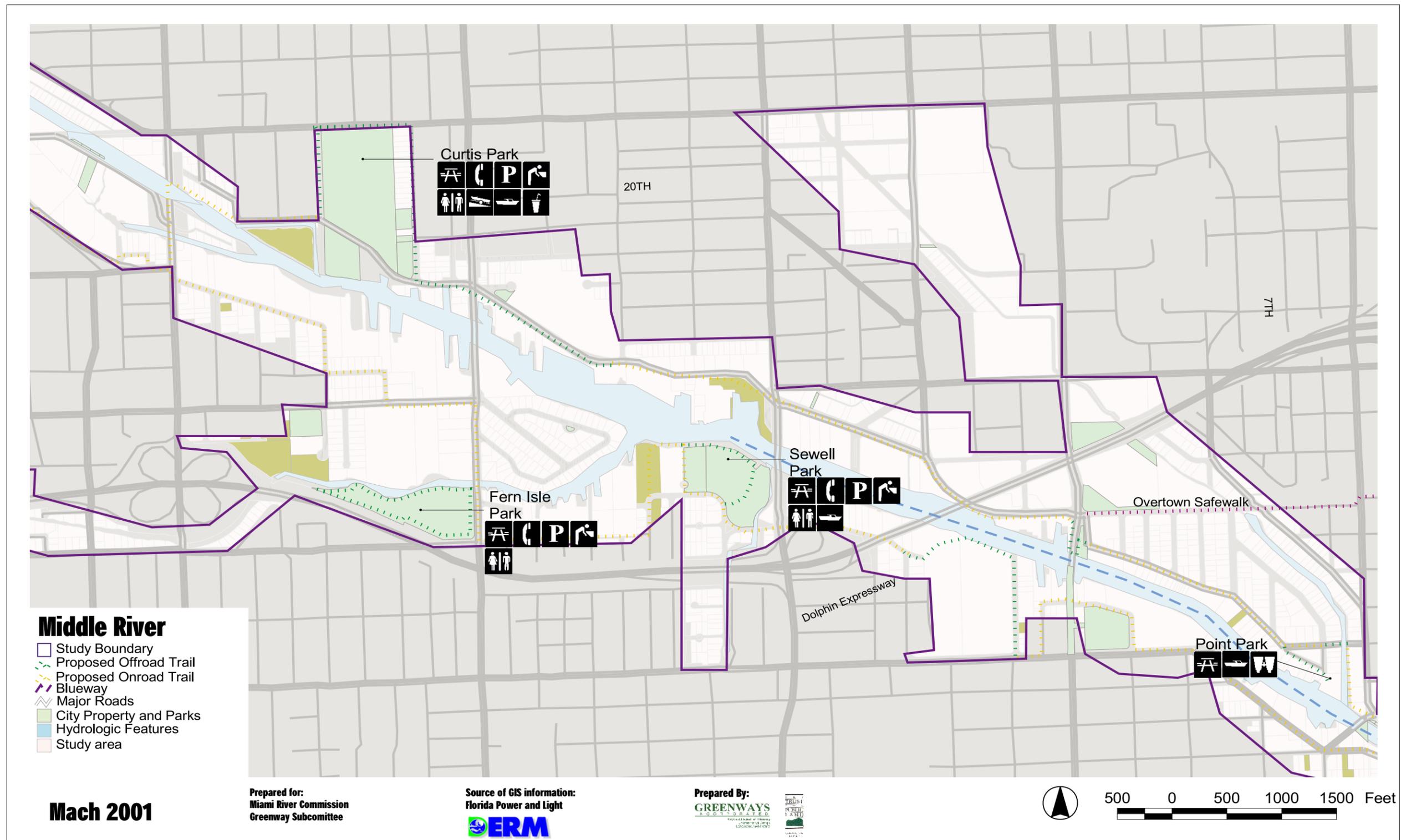


Figure 55: Cross section of dock structure.

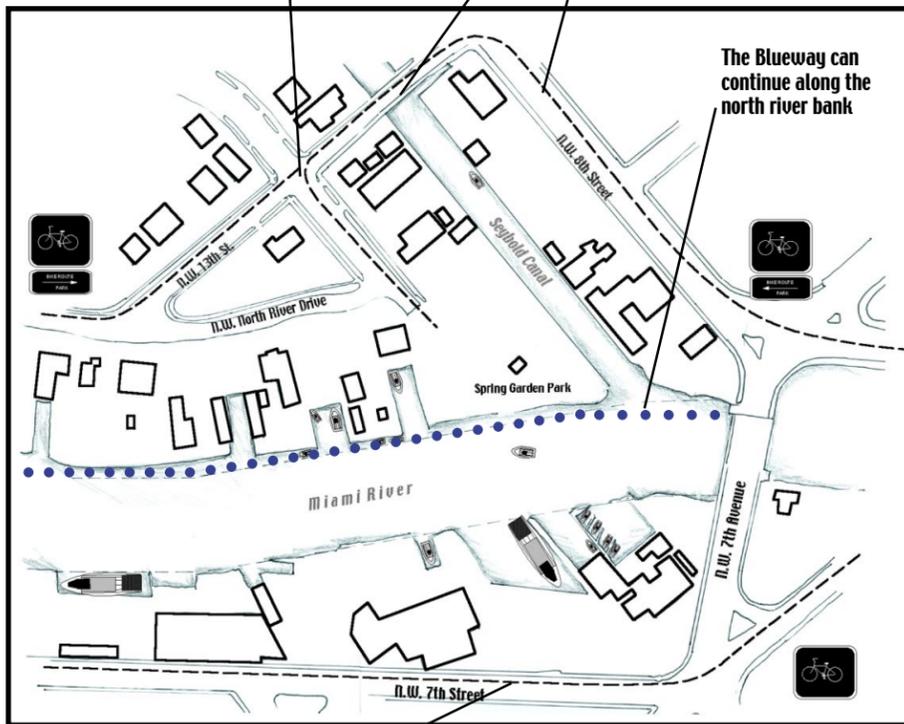


## NW 5th Street to NW 12th Avenue

At 5th Street, the Greenway will begin to move away from the river, on both sides, as a riverside trail feature. On the north side of the river, the Greenway would follow NW 7th Avenue, to the Humpback Bridge entrance into the Spring Garden neighborhood where it will link with Point Park. Within the neighborhood, the Greenway would be routed as a sidepath trail adjacent to NW 12th Avenue. On the south side of the river, the Greenway would follow NW South River Drive as a bike route to the intersection with NW 7th Street. One block west, it would again follow NW South River Drive until it intersects with 12th Avenue.

Within the Spring Garden Neighborhood, the Greenway trail will become a recreation trail along NW North River Drive and will link to Point Park and Greenfield Community Park.

The Greenway trail facility continues as an on-road bicycle facility with improved sidewalks along NW 7th Avenue to the Humpback Bridge where it will enter into the Spring Garden Neighborhood.



On the south side of the river the Greenway trail facility continues as an on-road bicycle facility with improved sidewalks along NW South River Drive.

Figure 56: River greenway at 12th Street Bridge.

## Spring Garden Point Park

Point Park is the most recent public park facility to open along the Miami River corridor. Located at the intersection of Wagner Creek and the river, Point Park is an historic parcel of land, the former "Alligator Joe's Tropical Farm." The Alligator Farm was at one time one of the largest attractions in South Florida. The Trust for Public Land worked with the Florida Communities Trust, Miami-Dade County and the City of Miami to acquire the property, which will be managed by the Spring Garden Neighborhood Association for the next 7 years. The illustrative master plan for the park (below) was prepared by local landscape architecture firm BEA, and shows a walkway, wetland gardens and mangrove forest along the river's edge.

Figure 57: Point Park Master Plan.



## Spring Garden Neighborhood Greenway

The Spring Garden Neighborhood has developed a master plan for how the Greenway would extend along NW North River Drive through the neighborhood. The greenway trail would be developed on the south side of NW North River Drive as a recreational trail, linking both Point Park and the Greenfield Garden, a neighborhood park, together. The illustration below is from "A Self Guide to Spring Garden," produced by the neighborhood association.

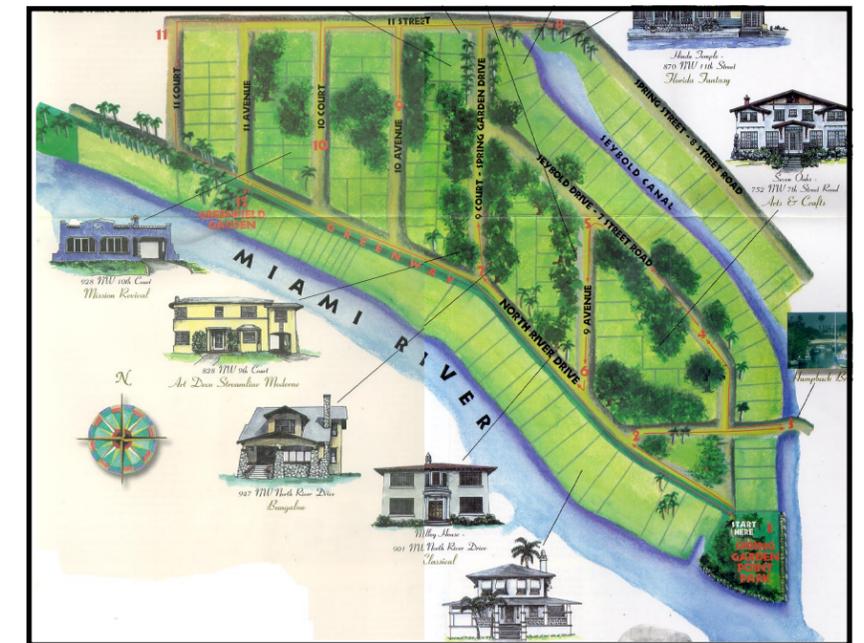


Figure 58: Spring Garden Greenway.

## NW 12th Avenue Bridge

The illustrative sketch prepared by the engineering firm HNTB (below) shows the improvements that will be made to the NW 12th Avenue Bridge. The bridge will be raised above the river, and will provide for the completion of a segment of Riverwalk under the bridge on either side of the north river bank. The 12th Avenue Bridge will be replaced in 2001 at a cost of \$14.5 million. The renovation of this bridge could create an opportunity to develop a signature color and lighting scheme for bridges along the river.

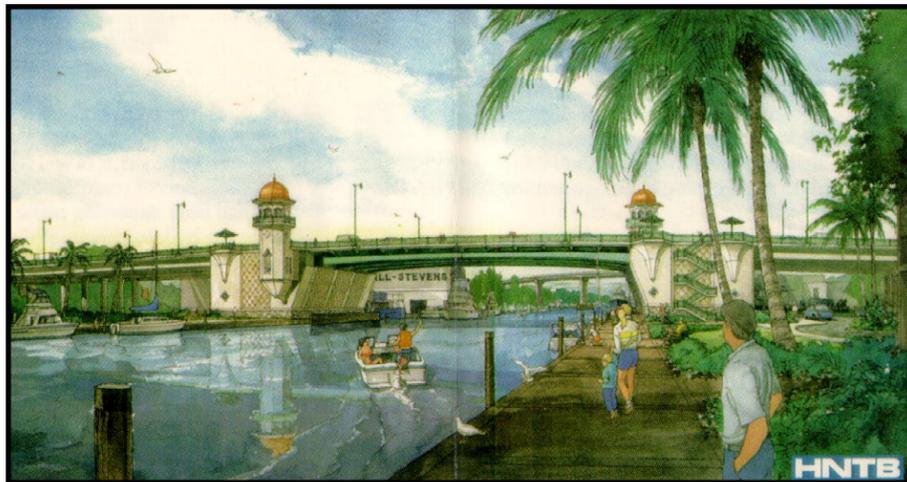
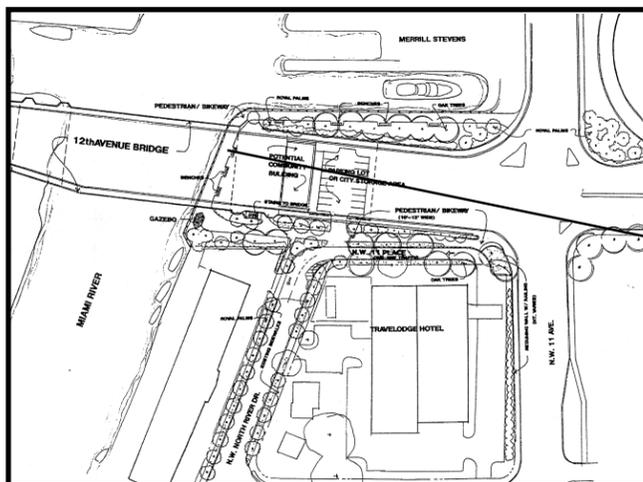


Figure 59: 12th Street Bridge rendering. Figure 59A: Plan view of 12th Ave. Bridge



Riverwalk trail beneath 12th Avenue Bridge

## Overtown Greenway

The neighborhoods of Overtown, Spring Garden and Highland Park will benefit greatly from the future development of an urban greenway from the Winn Dixie Supermarket at NW 12th Avenue to Bicentennial Park on Biscayne Bay. The plan for the Overtown Greenway is patterned after the Safewalk concept originated in the United States in 1993, and has been successfully implemented in several urban communities. The photo below depicts the nation's first Safewalk, designed by Greenways Incorporated, in Nashville, TN. The Overtown Greenway will be comprised of new streetscape improvements, outdoor celebration areas, pocket parks and comprehensive signage. It will serve as a landscaped passageway for neighborhood residents and visitors and will help to spur economic revitalization of surrounding neighborhoods.



Figure 60: Shelby Safewalk, Nashville, TN





## Sewell Park

The Greenway trail would enter Sewell Park from the east as an on-road bicycle facility. Once inside the park, the Greenway trail would become an off-road trail and element of the Miami Riverwalk. As a promenade along the south bank of the Miami River, the Greenway would offer improved access to the river for strolling and viewing of the shipping activity. The Blueway trail would have an access point on the eastern edge of the park. A loop trail through the park would connect users to adjacent residential neighborhoods as well as other amenities within the park.

### Images from Sewell Park

Sewell Park is one of the gems and important park nodes along the Miami River corridor. Greenway facility development could help to strengthen the park as an important destination landscape and hub of activity for the surrounding residential neighborhoods. These photos illustrate some of the attributes of the park, a vegetated, green oasis with wonderful views and access to the river.

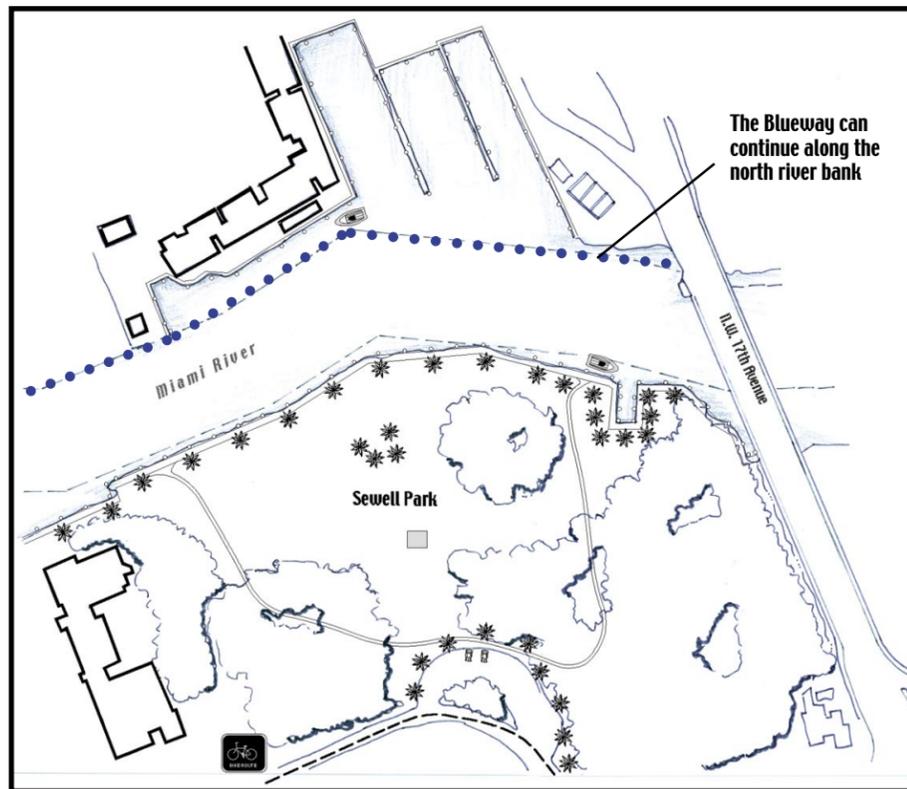


Figure 61: Sewell Park Greenway.



Figure 62: View of river at Sewell Park.



Figures 63 & 64: Sewell Park.

## Curtis Park

The City of Miami has already constructed portions of the Riverwalk trail along the north bank of the river. Under this proposal a loop trail around the perimeter of the park would be added, and a bicycle facility along NW North River Drive would link greenway users east and west to other segments of the Greenway system. The photograph (right) shows the prominent riverfront landscape of Curtis Park.

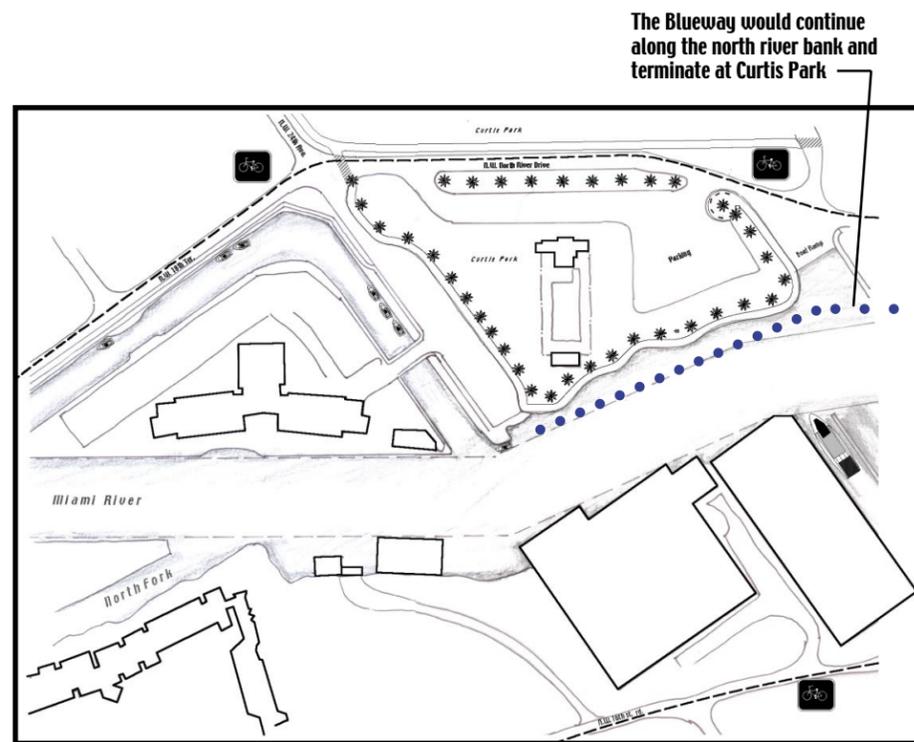


Figure 65: Greenway at Curtis Park.



Figures 66: View of Curtis Park from Miami River.

## Fern Isle Park

Greenway linkage to Fern Isle Park would provide area residents with improved access to this neighborhood park facility. A loop trail is envisioned around the perimeter of the park, following the south bank of the South Fork of the Miami River. The trail would also connect with other existing park facilities and to an on-road bicycle facility and improved sidewalks along NW 22nd Avenue.

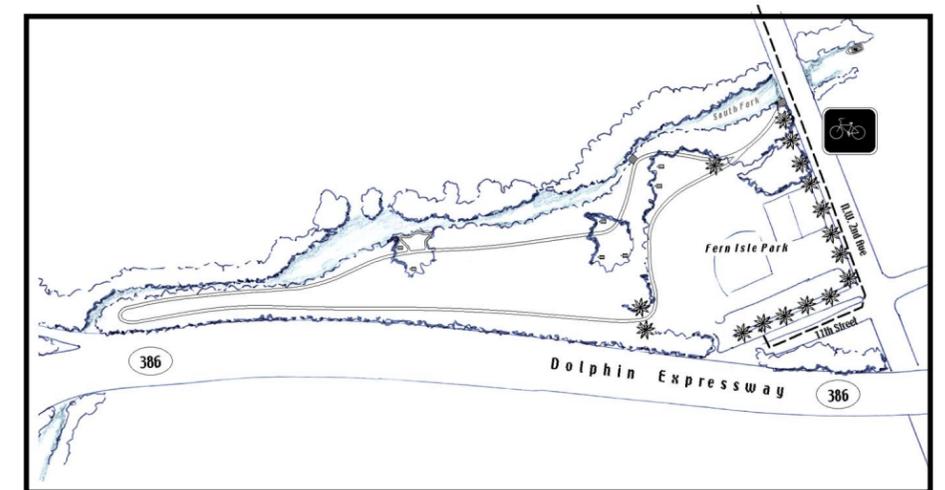


Figure 67: Greenway at Fern Isle Park.

# Upper River Recommendations

The upper river section of the Miami River Greenway extends from the 27th Avenue Bridge to Palmer Lake, the Salinity Dam, and to Grapeland Park, a distance of approximately 1.5 miles. The principal land use in this section is the marine industrial complex that borders both sides of the Miami River and the Tamiami Canal. The key river themes for this section of the river are: *The Miami River is a Working River, an Economic Resource and an Environmental Resource at Risk.*

The key greenway design development recommendations for the upper river section is to provide linkage to the middle section of the river greenway system and to Palmer Lake and Grapeland Park. Key landscapes in this section include Miami Rapids Park, the old river bed of the Miami River, Palmer Lake and Grapeland Park as destinations. This section of the river greenway corridor will benefit from a comprehensive signage program that can direct employees of the marine businesses and greenway users to area resources.



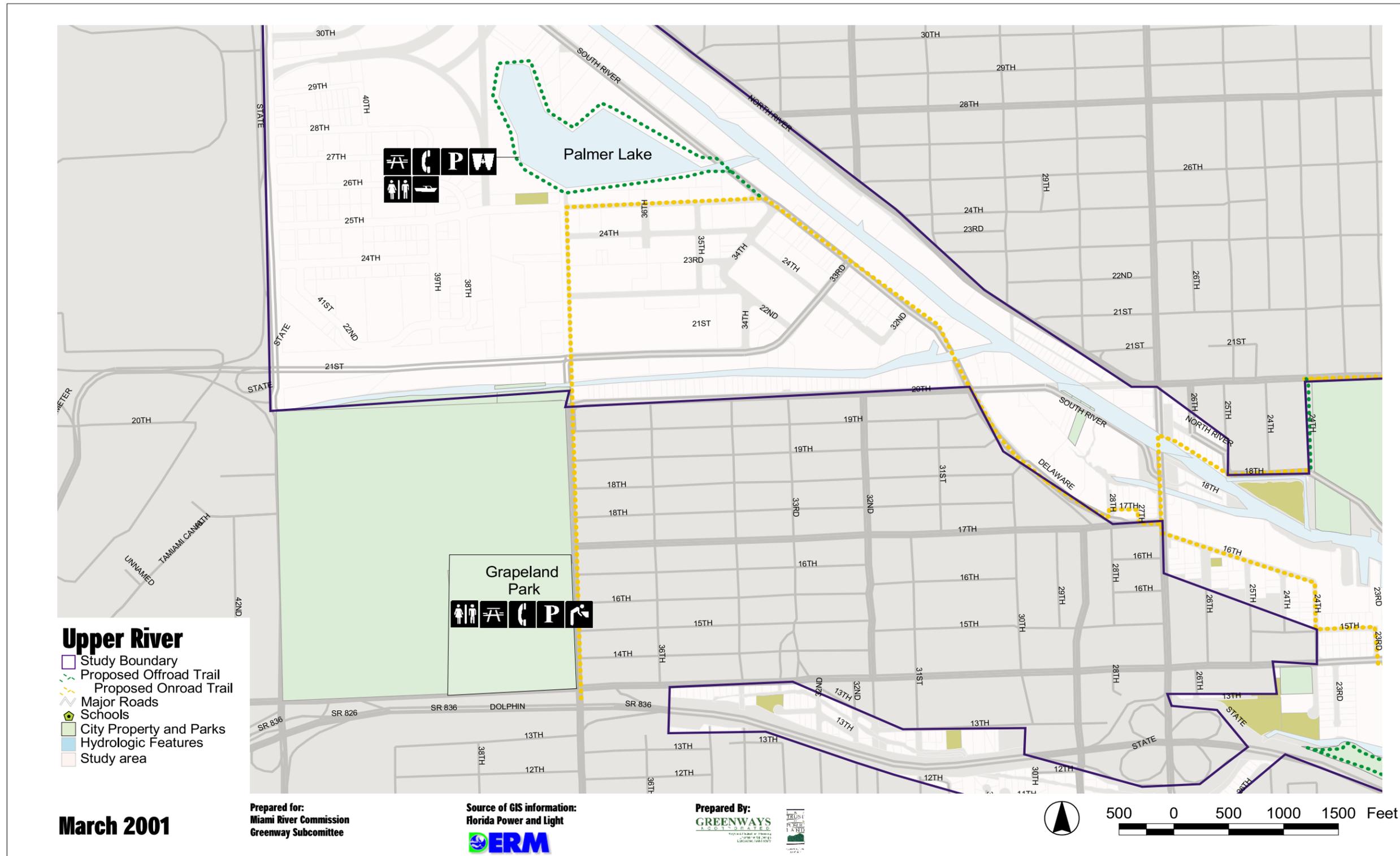
Figure 68: Aerial view of Upper Miami River.

## Roadside Trail

The only possible greenway facility within the upper river section would be an on-road bicycle and pedestrian facility. Routing should avoid conflict with marine shipping operations, but at the same time provide improved access to key destination landscapes. The route of the roadside trail exists on the south side of the river only, and generally follows NW South River Drive and Delaware Parkway and NW 37th Avenue. The photos below illustrate a possible transformation of the existing landscape character along NW South River Drive to support bicycle and pedestrian travel.

Figures 69 & 70: Streetscape improvements.







## Miami Rapids Park

On the south side of the Miami River channel and the west side of the NW 27th Avenue bridge is the remnants of the old Miami River channel. Miami Rapids Park is a historic reminder of the former river flow. The rapids park is so named because this is where the line of limestone rock, or escarpment, separated the Everglades from the tidal Miami River. Water from the Everglades would tumble over this limestone formation and was thus known as the “rapids.” It is hoped that future development of the Greenway would enable this landscape to be better interpreted. The joining of the North Fork of the Miami River and the Miami Canal (the river corridor west of NW 27th Avenue) marks the formal beginnings of the Miami River.

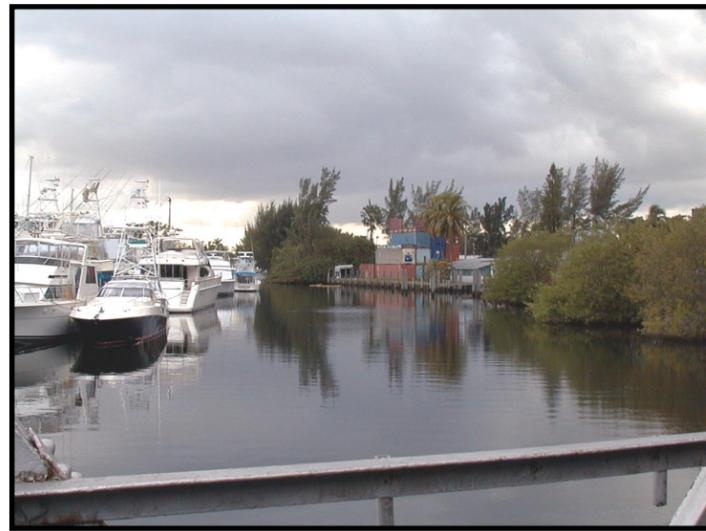


Figure 72: View of Tamiami Canal.

## Palmer Lake

The body of water that is joined to the Miami Canal is known as Palmer Lake. Although this resource has been severely polluted over time, it remains an important habitat for manatee and other aquatic wildlife. The proposed Greenway solution would be to clean up the lake and create a parkland environment around the lakeshore. A loop trail, boardwalk, fishing pier and boat dock could be constructed along the lake’s perimeter. A new public parking lot would be installed. Connections would be made to the Greenway bicycle and pedestrian facilities along NW 25th Street and NW South River Drive.

Figure 73: Proposed greenway facilities at Palmer Lake.

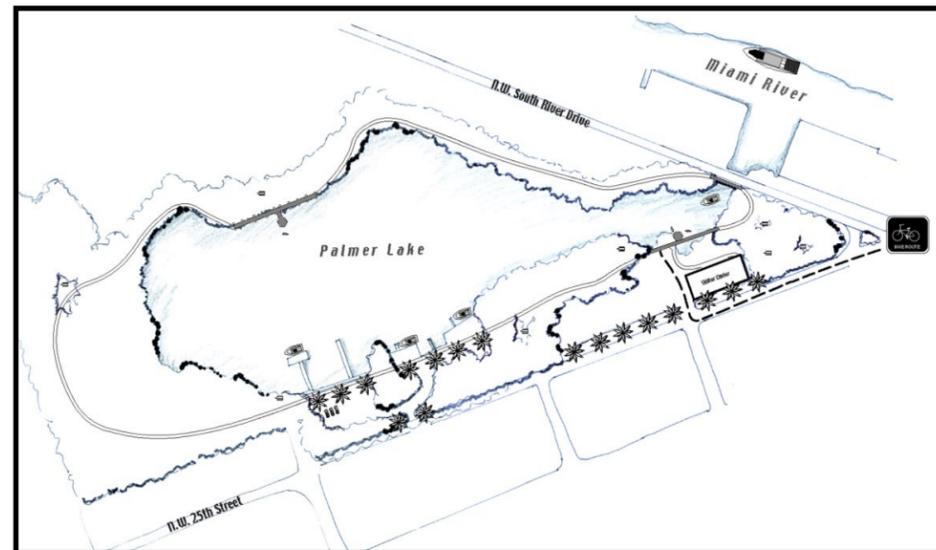


Figure 74: View of Palmer Lake.

## Grapeland Park

The western end of the Greenway will terminate at Grapeland Park on NW 37th Avenue. An on-road Greenway facility would extend from NW 25th Street at Palmer Lake to Grapeland Park. Immediately after crossing the Tamiami Canal, it may be possible to develop an off-road trail in the form of a sidepath on the western edge of NW 37th Avenue all the way to the park. Linkage to the park will offer Greenway users access to park facilities including restrooms, parking, drinking fountains and telephones.



Figure 75: View of Grapeland Park.



# Greenway Features and Amenities

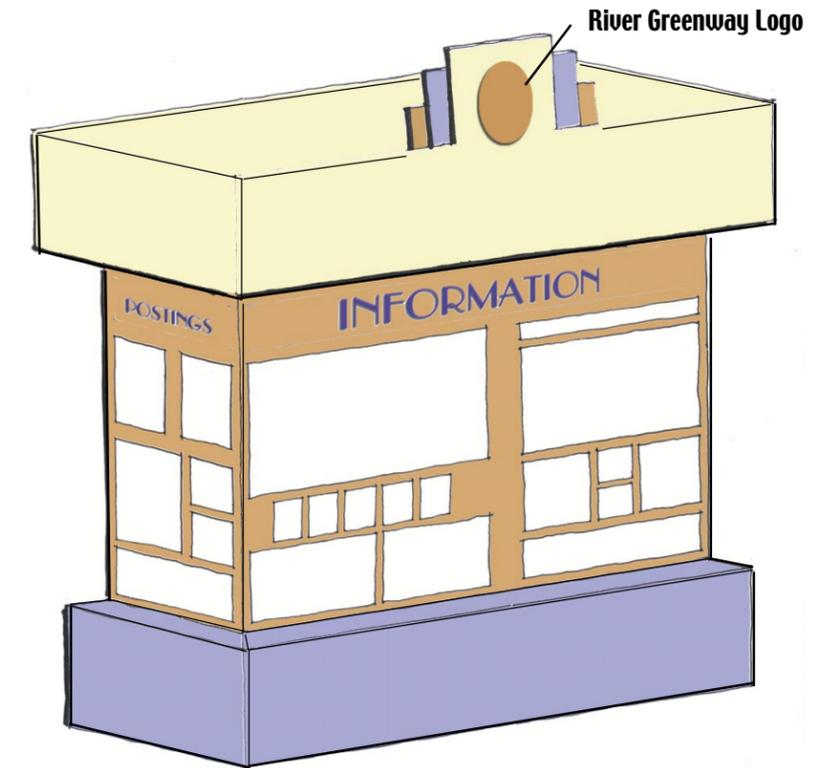
## Comprehensive Signage Program

It is very evident that finding the Miami River can be a challenging endeavor. A comprehensive signage program would provide residents and tourists with important and essential information about the river, how to gain access to public parks and facilities, and where to find key points of interest. Such a program should be integrated with other signage programs for the downtown area. Below are some ideas and requirements for a comprehensive signage program for the Miami River Greenway.

Several different types of signs are needed throughout the river corridor, including information kiosks located at strategic points along the corridor, major and minor entry signs at key public access areas, regulatory signs to define behavior and use, directional signs to provide guidance to resources, bollards and mile markers to define position along the Greenway and interpretive signs to document and display information about natural systems and historical landscapes. The signage program illustrated on this page is influenced by Miami's art deco heritage. A river greenway logo should be developed as a recognized icon for the river, and used both along the river greenway system and throughout the adjacent neighborhoods.



Figure 76: Street signs will also be necessary to indicate where to gain access to the River Greenway system. (Signage by Fireform)



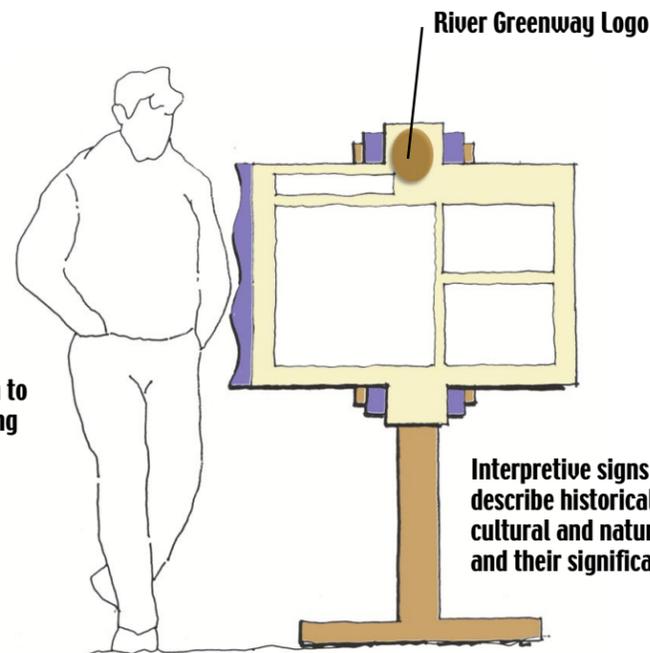
Information kiosks will be strategically located in a few landscapes along the river greenway system and will be used to provide a variety of information pertaining to both the river greenway system as well as the surrounding neighborhoods.

## Information Kiosk



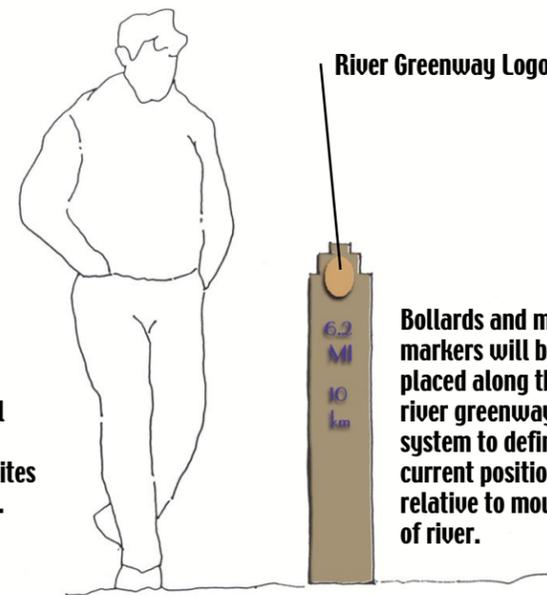
Directional signs will contain distances and directional information to major destinations along river greenway system

Directional Sign



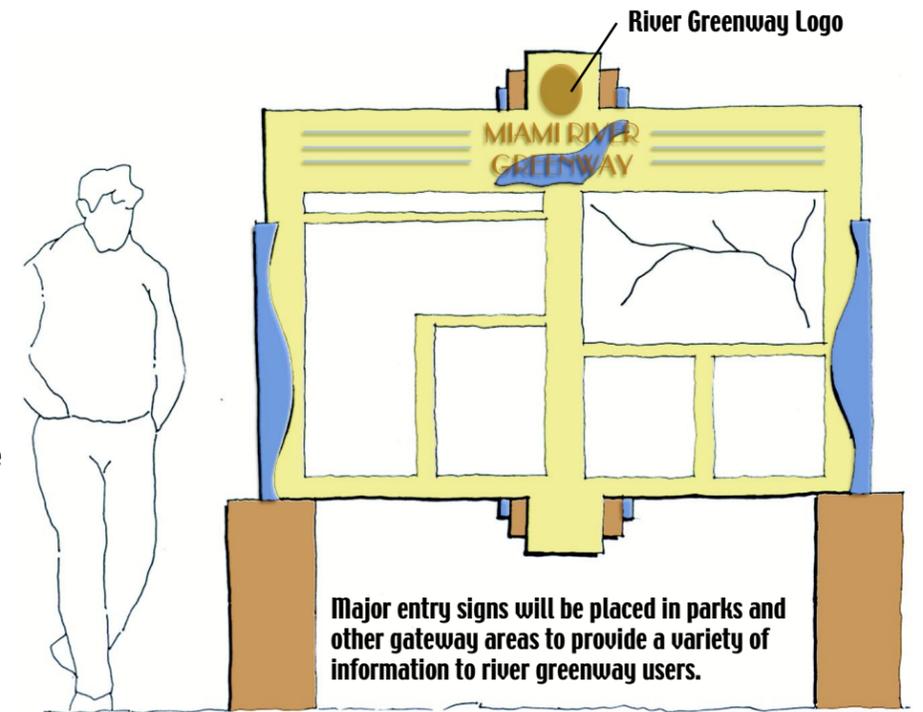
Interpretive signs will describe historical, cultural and natural sites and their significance.

Interpretive Sign



Bollards and mile markers will be placed along the river greenway system to define current position relative to mouth of river.

Bollard/Mile Marker

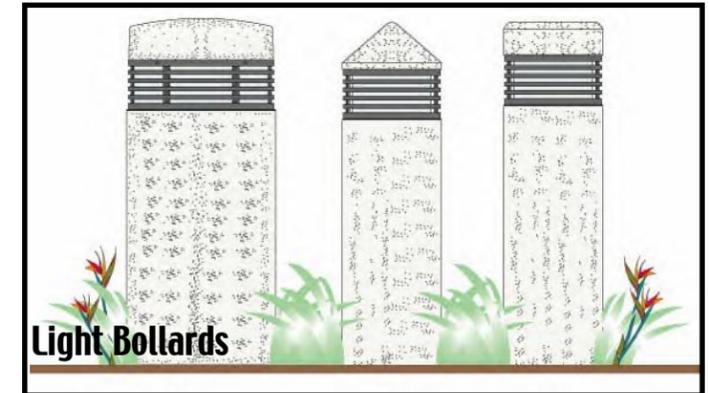
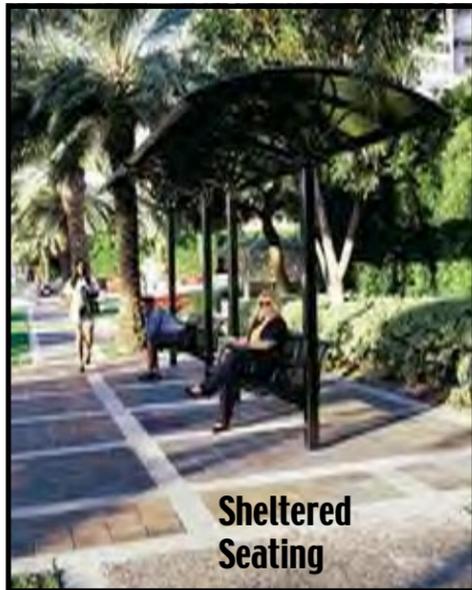
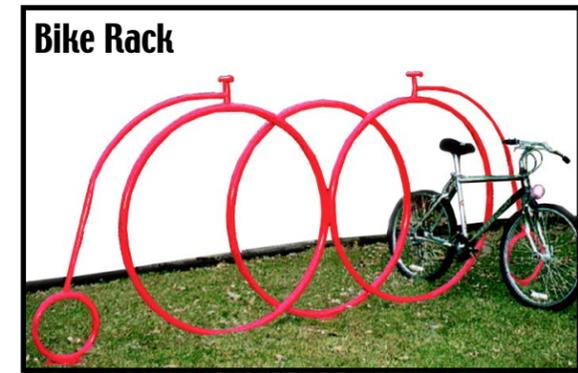
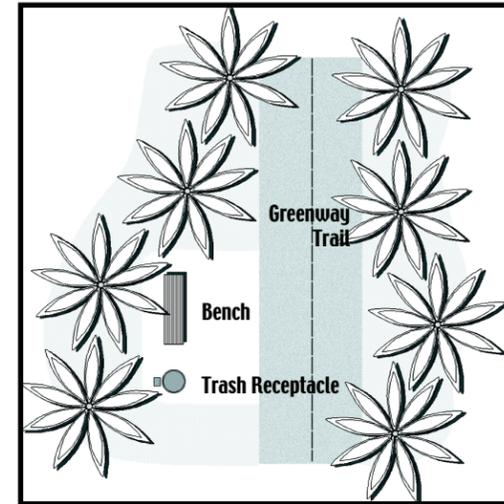


Major entry signs will be placed in parks and other gateway areas to provide a variety of information to river greenway users.

Major Entry Sign

## Greenway Furniture and Furnishings

The Miami River Greenway should have a comprehensive and coordinated set of furniture and furnishings throughout the project corridor. This should consist of light fixtures, benches, trash receptacles, bollards, bicycle racks, drinking fountains, picnic tables, emergency phones and landscape plantings. Concepts and ideas for elements of this furniture and furnishings package are provided on this page. (Figures 77-85)



## Coloring and Lighting River Bridges

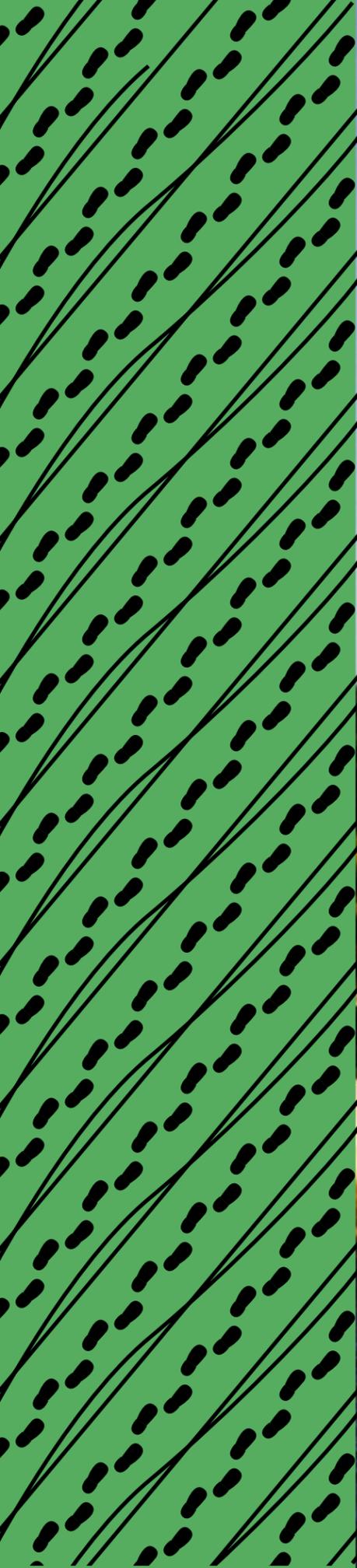
Of the many signature features and elements of the Miami River, none are more visible than the bridges that cross over the river, linking activity north and south throughout the community. In the past efforts have been made to distinguish the bridges using architectural and engineering features. This Plan proposes that each bridge should have a unique color and night lighting scheme that would further enhance the aesthetic and functional qualities of the bridges.

Coloring and lighting the bridges would also aid in navigation of the river and assist in defining address or locational issues related to river related uses. While a specific color scheme is not specifically proposed, this plan advocates the use of colors and lighting schemes that celebrate and compliment the heritage of Miami.



*Figures 86 and 87: Existing bridges should have a unique color code and lighting scheme so that they are distinguishable and improve aesthetics along the river channel. Some efforts have begun in this direction, such as the Tequesta Indian statue and unique architecture of the Brickell Avenue Bridge.*





# **Miami River Greenway Action Plan**

## **Plan of Action**

# Action Plan

Successful implementation of the Miami River Greenway Action Plan will require a coordinated effort among local government agencies, private sector organizations, business and industry, civic groups, and community residents. These groups, organizations and agencies ultimately must assume a leadership position and take necessary actions if the Greenway is to become the valuable community asset that this Plan envisions. Local, state and federal agencies will need to provide funding and programs to support the establishment of the Greenway and to assist in future implementation of the key elements of this Plan.

This section of the Plan defines some of the most important actions that will need to be undertaken to achieve the vision defined by this Plan. This chapter defines an overall implementation strategy for the Greenway, and outlines some practical “next steps” for implementing this Plan.

## Operations and Implementation

### Adoption of this Greenway Action Plan

One of the first steps to be taken by the local governments in Miami-Dade County would be to adopt this Greenway Action Plan as an element of their comprehensive plan, specifically under the transportation sections, and implement the recommendations contained herein. The Miami River Commission should also forward the Greenway Action Plan recommendations as a component of the urban infill plan map amendments. Likewise, other agencies, organizations and businesses within the communities should also incorporate the aspects of this plan that directly relate to their individual mission, goals and objectives.

### Designation of a Lead Agency

Two options for a lead agency are provided in this Action Plan. One option is for the Miami River Commission to be designated as the lead agency/organization for the coordination and implementation of this Action Plan. As such, the Commission will need to incorporate the recommendations contained in the Operations and Management section of this report. The Commission would also need to prepare an operations and implementation strategy for how it will meet the obligations associated with lead agency/organization and file such a strategy with local governments, the State of Florida and federal agencies. A second option is for the Miami River Commission to work in partnership with the City of Miami and Miami-Dade County to create the “Miami Riverfront Corporation,” a non-profit organization that would derive its mission principally from the recommendations provided within this master plan. The corporation would be established as a non-profit organization under IRS code 501 C3, would employ staff and would work in partnership with local government and businesses to implement the recommendations of this Action Plan.

### Private Sector Support

The designated lead organization should work with private sector organizations and businesses on the Miami River to gain acceptance and approval for the implementation of the recommendations within this Action Plan. The Commission will need to be prepared to answer questions regarding the impact that Greenway implementation will have on specific private properties within the project corridor.

### Dredging of the River

Dredging of the Miami River is a critical first step in the process of cleaning up the river and making it more suitable for Greenway development strategies. Dredging activities are scheduled to begin in 2001 and should be completed by 2005.

## Funding

One of the first considerations for future implementation of the Miami River Greenway project is to secure funding for the project. Several different funding sources have been defined in the funding chapter of this Action Plan. The following steps should be undertaken.

### a) Public Sector Funding

A significant amount of public sector funding is currently available for the construction of the Miami River Greenway project. The City of Miami has secured an estimated \$2.1 million for Riverwalk development in the lower river section of the Greenway corridor. These funds are through the Miami Transportation Improvement Program, Enhancement Funds. The Miami River Commission should work with local governments to obtain information on appropriate funding sources and funding cycles for Greenway projects and begin to file applications for these funds.

### b) Private Sector Funding

Currently, Terramark Properties and Harvey Taylor Properties have shown interest in financially participating in the development of Riverwalk sections in the lower river section of the Greenway. A dollar amount has not been determined at this time. The Miami River Commission should work with private property owners to determine if other partnerships are possible throughout the corridor. Additionally, the Commission should apply for grants from private foundations and local business groups that offer community grants (such as Wal Mart and Target).

### c) Miami River Greenway Trust Fund

It is recommended that a private greenway trust fund be established to help finance the development and maintenance of the Miami River Greenway project. The trust fund can be set up by the Miami River Commission in partnership with local banks, and should receive both public and private funds.



## Greenway Facility Implementation

The following provides a listing of specific actions that should be undertaken for each of the key Greenway facilities defined within this Plan.

### Bridge Beautification/Lighting Program

The bridges along the Miami River are a signature feature of the river and the “working river” experience. Some of the bridges are scheduled for replacement in the coming years. It is recommended that a bridge beautification and lighting program be undertaken to improve the aesthetics of these bridges. Each bridge should have distinctive night lighting and a color theme. Additionally, all bridges should be developed to include pedestrian and bicycle compatible underpasses on both the north and south banks of the Miami River for future riverwalk trail development.

### Miami Circle Site Development

- Prepare master plan for Miami Circle site.
- Review completed master plan with local government, state and federal agencies.
- Finalize master plan by spring 2003.
- Apply for funding for project site.
- Apply for all required local, state and federal permits.

### Riverwalk Segment: Bayfront Park Trail to Hyatt Riverwalk (north bank)

- Work with the DuPont Plaza hotel ownership to complete design development program for a boardwalk trail between the river and hotel property.
- Review completed plans with local government, state and federal agencies.
- Finalize design plans.
- Apply for all required permits.
- Encumber funds into an appropriate account.
- Finalize construction documents.
- Begin construction of Riverwalk segment with a proposed start date of summer 2002.

### Riverwalk Segment: Hyatt Riverwalk to Lummus Park (north bank)

- Prepare construction documents for Riverwalk Segment beginning in the fall 2001 to include the Riverwalk from the existing Hyatt Riverwalk to Lummus Park, including the on-road segment of greenway facility to NW 7th Avenue.
- Review completed plans with local government, state and federal agencies.
- Conduct neighborhood reviews.
- Review completed plans and obtain cooperation/coordination with private property owners for construction of their segment of the Riverwalk.
- Finalize design plans.
- Apply for all required permits.
- Encumber funds into an appropriate account.
- Finalize construction documents.
- Begin construction of Riverwalk segment with a proposed start date of summer 2002.

### Riverwalk Segment: Sheraton Baywalk Trail to Metro Mover (south bank)

- Prepare construction documents for Riverwalk Segment beginning in conjunction with Miami Circle site plans.
- Review completed plans with local government, state and federal agencies.
- Review completed plans and obtain cooperation/coordination with Terramark Properties for construction of their segment of the Riverwalk.
- Conduct neighborhood reviews.
- Finalize design plans.
- Apply for all required permits.
- Encumber funds into an appropriate account.
- Finalize construction documents.
- Begin construction of Riverwalk segment with a proposed start date of fall 2001.

### Spring Garden Neighborhood Greenway

- Prepare construction documents for Spring Garden Neighborhood Greenway segment beginning in winter 2001.
- Review completed plans with local government, state and federal agencies.
- Conduct neighborhood reviews.
- Finalize design plans.
- Apply for all required permits.
- Encumber funds into an appropriate account.
- Finalize construction documents.
- Begin construction of Spring Garden Neighborhood Greenway segment with a proposed start date of summer 2002.

### Riverside Trail Segment: Jose Marti Park to Sewell Park (south bank)

- Work with FDOT and local transportation planning agencies to prepare design development plans for an on-road trail segment from Jose Marti Park to Sewell Park. The route of travel will roughly follow NW South River Drive.
- Review completed plans with local, state and federal transportation officials.
- Conduct community review of Riverside Trail Segment with adjacent neighborhood groups.
- Finalize implementation plans, including sidewalk improvements, signage and striping program.
- Apply for required permits.
- Apply for funds to build facilities.
- Obtain funds.
- Finalize construction documents.
- Begin construction of on-road trail system with a proposed start date in 2002.

### Overtown Greenway

- Prepare Overtown Greenway Master Plan by Spring 2002.
- Review master plan with local governments and conduct neighborhood reviews.
- Apply for funding for construction document preparation and site development activities.
- Finalize implementation plans, including sidewalk improvements, signage and

striping program.

- Complete construction documents for first phase of construction activity.
- Apply for all necessary permits.
- Begin construction of safewalk by Spring 2003.

### Riverside Trail Segment: Metro Mover to Jose Marti Park (south bank)

- Work with FDOT and local transportation planning agencies to prepare design development plans for an on-road trail segment from Metro Mover to Jose Marti Park.
- Review completed plans with local, state and federal transportation officials.
- Conduct community review of Riverside Trail Segment with adjacent neighborhood groups.
- Finalize implementation plans, including sidewalk improvements, signage and striping program.
- Apply for required permits.
- Apply for funds to build facilities.
- Obtain funds.
- Finalize construction documents.
- Begin construction of on-road trail system with a proposed start date of 2003.

### Riverside Trail Segment: Spring Garden Neighborhood to Curtis Park and NW 27th Avenue (north bank)

- Work with FDOT and local transportation planning agencies to prepare design development plans for an on-road trail segment from Spring Garden Neighborhood Greenway to Curtis Park and NW 27th Avenue. The route of travel will roughly follow NW North River Drive.
- Review completed plans with local, state and federal transportation officials.
- Conduct community review of Riverside Trail Segment with adjacent neighborhood groups.
- Finalize implementation plans, including sidewalk improvements, signage and striping program.
- Apply for required permits.
- Apply for funds to build facilities.
- Obtain funds.
- Finalize construction documents.
- Begin construction of on-road trail system with a proposed start date of 2003.

### Riverside Trail Segment: Sewell Park to NW 27th Avenue Bridge (south bank)

- Work with FDOT and local transportation planning agencies to prepare design development plans for an on-road trail segment from Sewell Park to the 27th Avenue Bridge. The route of travel will roughly follow NW South River Drive.
- Review completed plans with local, state and federal transportation officials.
- Conduct community review of Riverside Trail Segment with adjacent neighborhood groups.
- Finalize implementation plans, including sidewalk improvements, signage and striping program.
- Apply for required permits.



- Apply for funds to build facilities.
- Obtain funds.
- Finalize construction documents.
- Begin construction of on-road trail system with a proposed start date of 2004.

### **Riverside Trail Segment: NW 27th Avenue Bridge to Grapeland Park (south bank)**

- Work with FDOT and local transportation planning agencies to prepare design development plans for an on-road trail segment from NW 27th Avenue Bridge to Grapeland Park. The route of travel will roughly follow NW South River Drive and NW 37th Avenue.
- Review completed plans with local, state and federal transportation officials.
- Conduct community review of Riverside Trail Segment with adjacent neighborhood groups.
- Finalize implementation plans, including sidewalk improvements, signage and striping program.
- Apply for required permits.
- Apply for funds to build facilities.
- Obtain funds.
- Finalize construction documents.
- Begin construction of on-road trail system with a proposed start date of 2005.

### **Palmer Lake Restoration Project**

- Work with the South Florida Water Management District, the US Army Corps of Engineers, the EPA, local governments and private property owners to develop a restoration and development plan for Palmer Lake.
- Review completed plans with local, state and federal officials.
- Conduct community review of Palmer Lake project with adjacent neighborhood groups.
- Finalize master plan.
- Apply for required permits.
- Apply for funds to build facilities.
- Begin restoration of Palmer Lake in spring 2006.



## Programmatic Recommendations

The following represents some of the programmatic recommendations for the Miami River.

### Miami River Overlay Planning District

To make appropriate land use decisions that are in the best interest of the entire corridor it would be useful to establish, by Resolution of the Miami-Dade County Commission and City of Miami Commission, a Miami River Corridor Overlay District. The river overlay planning district would ensure that coordinated and compatible development would occur. It would be established jointly by the Miami River Commission, City of Miami and Miami-Dade County. Further study is required in order to determine the exact boundaries of this overlay district. Changes in land use within a defined boundary would be first subject to the conditions of the overlay district.

### Streamlined Permit Process for Compliant Projects

One of the action elements that would serve to support sustainable development and quality growth objectives along the river would be the development of a streamlined permitting process within the City of Miami and Miami-Dade County. In association with the Overlay Planning District concept, a streamlined planning and permitting program would be instituted and used when applicants comply with a set of specific standards for development applicable to the river. If these are satisfied, a permit could be automatically issued. If not satisfied, applicants would go through the more lengthy normal review process.

### South Florida Design Center

A South Florida Design Center is envisioned as a physically and professionally accessible center that would house models of good design, information on design opportunities and tools, powerful data and mapping resources. It would also provide a venue for residents, professionals and academics to engage in discussion and advocate for good urban, architectural and landscape architectural design for South Florida. The design center is based on successful models found in Chattanooga, TN, Minneapolis, MN, Chicago, IL and Baltimore, MD, to name a few. The physical location of the design center has not been determined, however, several Miami River locations are being considered.

## Events Programming of the Greenway Corridor

One of the early action initiatives that can be undertaken by public and private sectors alike is to sponsor and host events within the river corridor. This can serve several purposes: 1) educate the public as to the existence of the River Greenway system and share future goals and objectives for its development and operation; 2) promote goodwill and community spirit through events that occur throughout the year, which could help bring community residents together; 3) generate revenue from Greenway events that could help to offset costs associated with facility development and operation.

### Goals of Event Programming

- Promote The Greenway as a community amenity
- Make use of various Greenway facilities throughout the year
- A way to generate funds to offset costs of Greenway maintenance
- Promote the community nationwide
- Keep interest and excitement in Greenway plans

### Existing and possible new Greenway events

The following is a list of existing and possible events that could happen within the proposed greenway corridor. This is a wish list.

#### January

First Night RiverFest (in conjunction with Downtown Hotels)

#### February

Greenway Clean-up  
Greenway Jazz Festival

#### March

Children's Festival

#### April

Earth Day

#### May

Bike-to-Work Day  
Arbor Day  
Historic Preservation Month  
National Tourism Week

#### June

National Trails Day  
Miami RiverFest  
Parks and Recreation Month

#### July

Fourth of July RiverFest

#### August

Lazy Days Festival

#### September

Greenway 5K Walk/Run (similar to the 1985 Miami River race)

#### October

River Canoe and Kayak Race

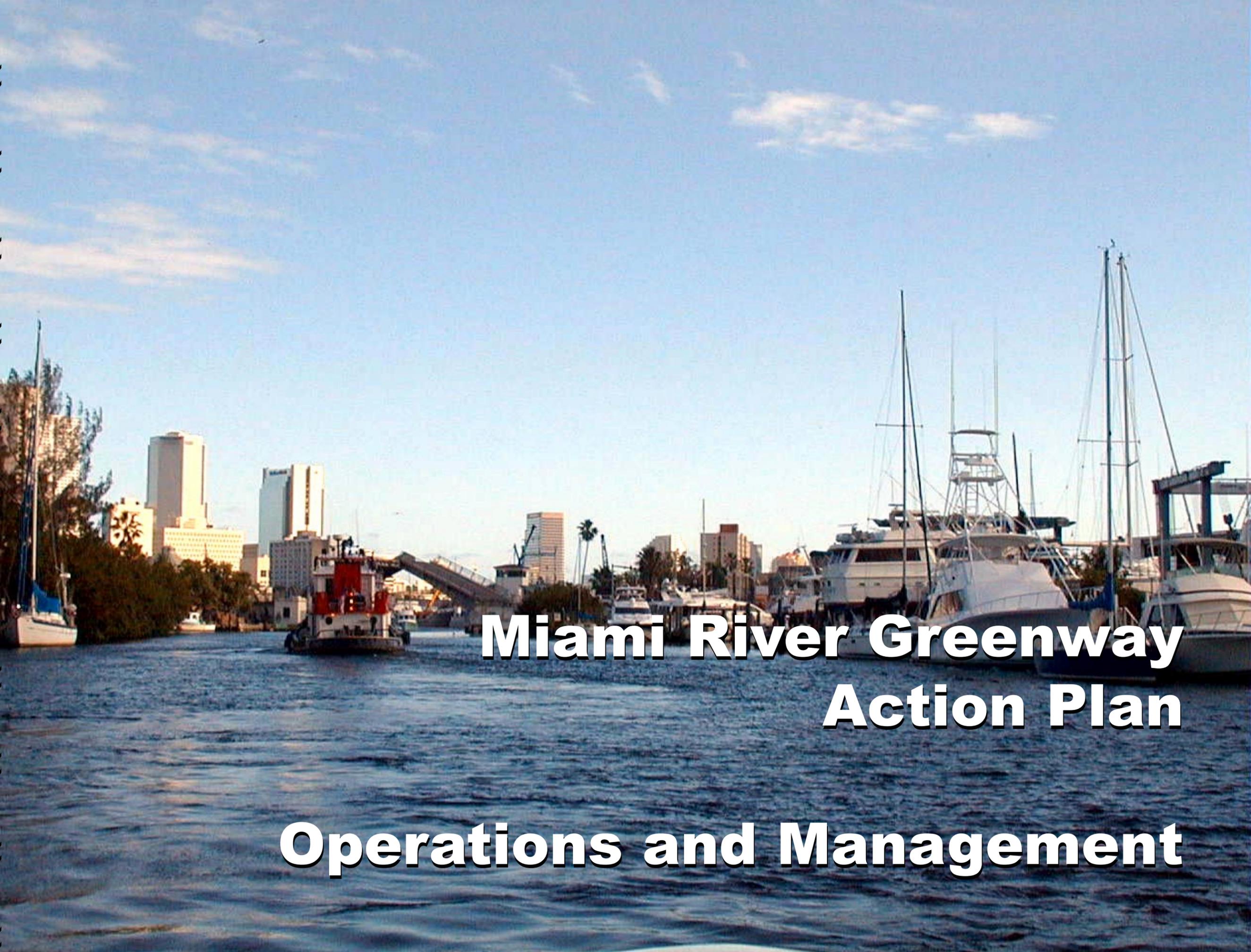
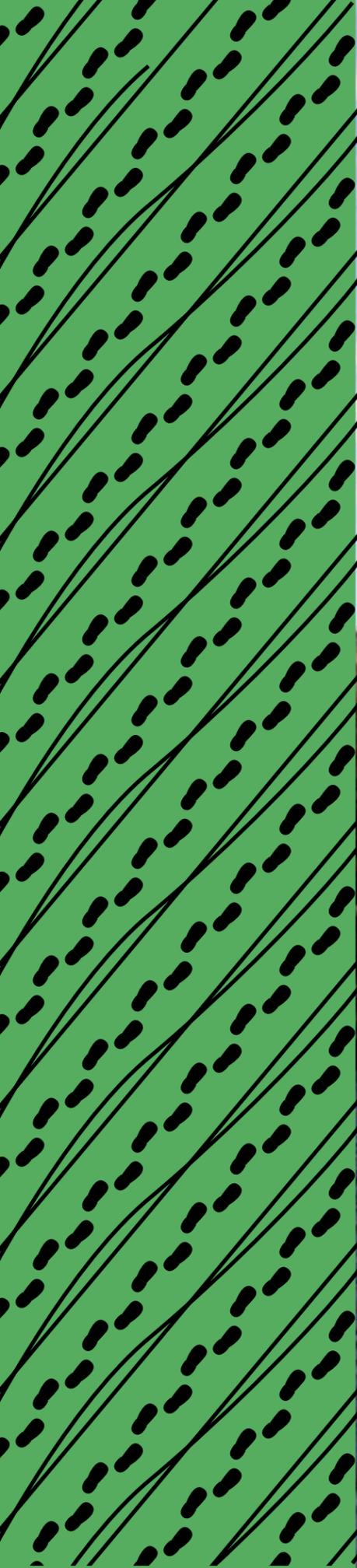
#### November

Greenway Bike Race

#### December

Festival of Lights  
Miami River Holiday Boat Parade





**Miami River Greenway  
Action Plan**

**Operations and Management**

# Greenway Operations/Management

Operating, maintaining and managing the Miami River Greenway will require a coordinated effort between the a designated lead organization, private sector businesses and landowners along the rivers edge, public sector organizations including the Miami River Commission, City of Miami, Miami-Dade County, and a host of state and federal agencies that have regulatory concerns over the river. The following text defines the key aspects of greenway system management, beginning with operational policies and followed by facility management, land management, safety and security, trail user rules and regulations, an emergency response plan, and a risk management plan.

Irrespective of the agreements entered into by the various management entities, the Greenway should have a uniform maintenance and management program. The following pages of this section of the Action Plan report outline key issues that should be addressed by each of the principal management entities. A uniform method of maintenance, management and operations should be developed and achieved by all agencies to adopt and follow.

## Implementing Organization

Nationally, successful greenway projects typically have a lead agency or group that oversees development and operations. Most often the leadership group becomes the **champion** for the master development plan and facilitates the orderly implementation of the plan in partnership with other local groups, organizations and agencies. This Action Plan forwards two recommendations that will require further study and consideration. Recommendation one is to designate the Miami River Commission serve as the lead organization for implementing the Miami River Greenway project and program. Recommendation two is to consider establishing a new organization that would be called the Miami Riverfront Corporation. Both of these options are described in greater detail in the following text.

### Option 1: Miami River Commission as Lead Organization

As lead organization for implementation of this Action Plan, the Miami River Commission could serve as the champion, facilitator and coordinator for the project. Under this scenario, the Commission would choose to become directly involved in implementation of specific projects along the river corridor. Most often, it will partner with other groups to accomplish project implementation. The Commission would also focus its efforts on raising funds for the project, furthering partnership efforts for implementation and management of greenway projects, and track the progress of implementation of the action plan.

It would be necessary, and desirable for the Commission to employ a full-time Greenway Coordinator for a period of time in order to carry out its duties and responsibilities with respect to the greenway project. A full-time dedicated staff position would help to maintain communications, provide continuity of project development and secure resources for funding and operations.

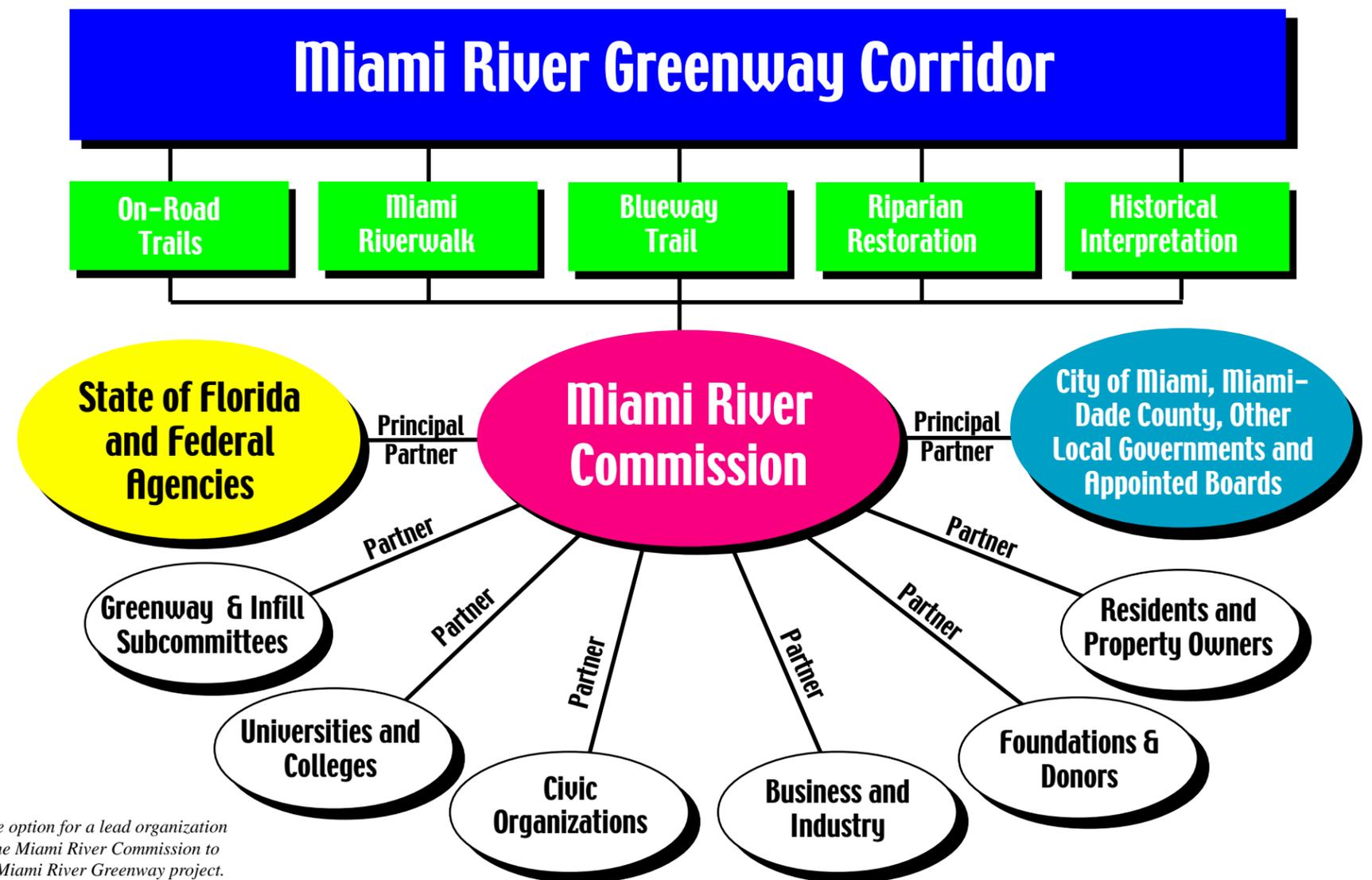


Figure 88: One option for a lead organization would be for the Miami River Commission to champion the Miami River Greenway project.

## Option 2: Establish the Miami Riverfront Corporation

A popular method among other riverfront communities throughout the nation for designating a lead organization would be establishing a Riverfront Corporation. Most of these corporations are set up as non-profit organizations, under IRS code 501 C3. As a non-profit, the Corporation would raise funds for the Miami River project, partner with other organizations and agencies throughout the community including the Miami River Commission, work in partnership with existing landowners and water-dependent businesses and serve as champion for the river Greenway project.

As a new organization, the Miami Riverfront Corporation would be governed by a Board of Directors. These directors could be appointed by the State of Florida, City of Miami, Miami-Dade County and the Miami River Commission. Directors would serve limited terms and should be representative of the community at-large. It would also be necessary for the Corporation to have its own staff. Typically, an executive director, project manager and office manager/secretary are the minimum staff necessary to make the Corporation functional.

## Role of City of Miami

The City of Miami is a key partner in this project. The City has significant land holdings on the river corridor and operates a number of the key parks that will serve as principal entrance points to the Greenway corridor. The vast majority of the project corridor is located in the City's jurisdiction. The City has made a significant commitment to the river through the inception of the Miami Riverwalk. The City also has a labor force, through its Parks and Recreation Department and Police Department, that will be valuable to the implementation and management of the greenway corridor.

## Role of Miami-Dade County

Miami-Dade County is also a significant partner for the Greenway project. Miami-Dade County is a land owner within the corridor, and the County can provide funding assistance, technical assistance and other in-kind services that support project development. The County, through the Metropolitan Planning Organization (MPO), is also the principal funding agency for transportation improvements within the river corridor.

## Role of State of Florida

There are numerous state agencies that can and should provide technical and financial assistance to the Miami River Commission for the future implementation of the Miami River Greenway. The Florida Coastal Management Program, Florida Inland Navigational District and Florida Office of Greenways and Trails can become powerful allies for the Miami River Greenway.

## Role of Federal Agencies

Several federal agencies are already very involved in the Miami River corridor, including the Miami River Quality Action Team, US Army Corps of Engineers and Environmental Protection Agency. A number of federal agencies have programs that would provide oversight, safety, technical and financial assistance to the project.

## Role of Local Businesses and Property Owners

The Miami River Marine Group, the Marine Council, other local businesses and property owners are critically important to the successful implementation of the Miami River Greenway Action Plan. Businesses can volunteer to improve their property for private purposes. They can also, in partnership with the Commission, City of Miami and Miami-Dade County, make improvements to their private lands to reduce pollution in the Miami River. Some landowners may also wish to protect land along the river by donating conservation easements to a local unit of government.

## Role of Citizens, Civic, Environmental and other Organizations

Local neighborhoods, civic organizations and environmental groups can play a vital role in detailed planning, creation, and maintenance of the Miami River Greenway. These groups can also host events to raise funds for the greenway. Local residents that are interested in developing portions of the Miami River Greenway can participate by donating their time, labor and expertise, as well as funds. Residents might choose to volunteer alone or with a local group to adopt a section of the Greenway for maintenance and management purposes. Individuals can volunteer to plant trees, shrubs and flowers along segments of the greenway.

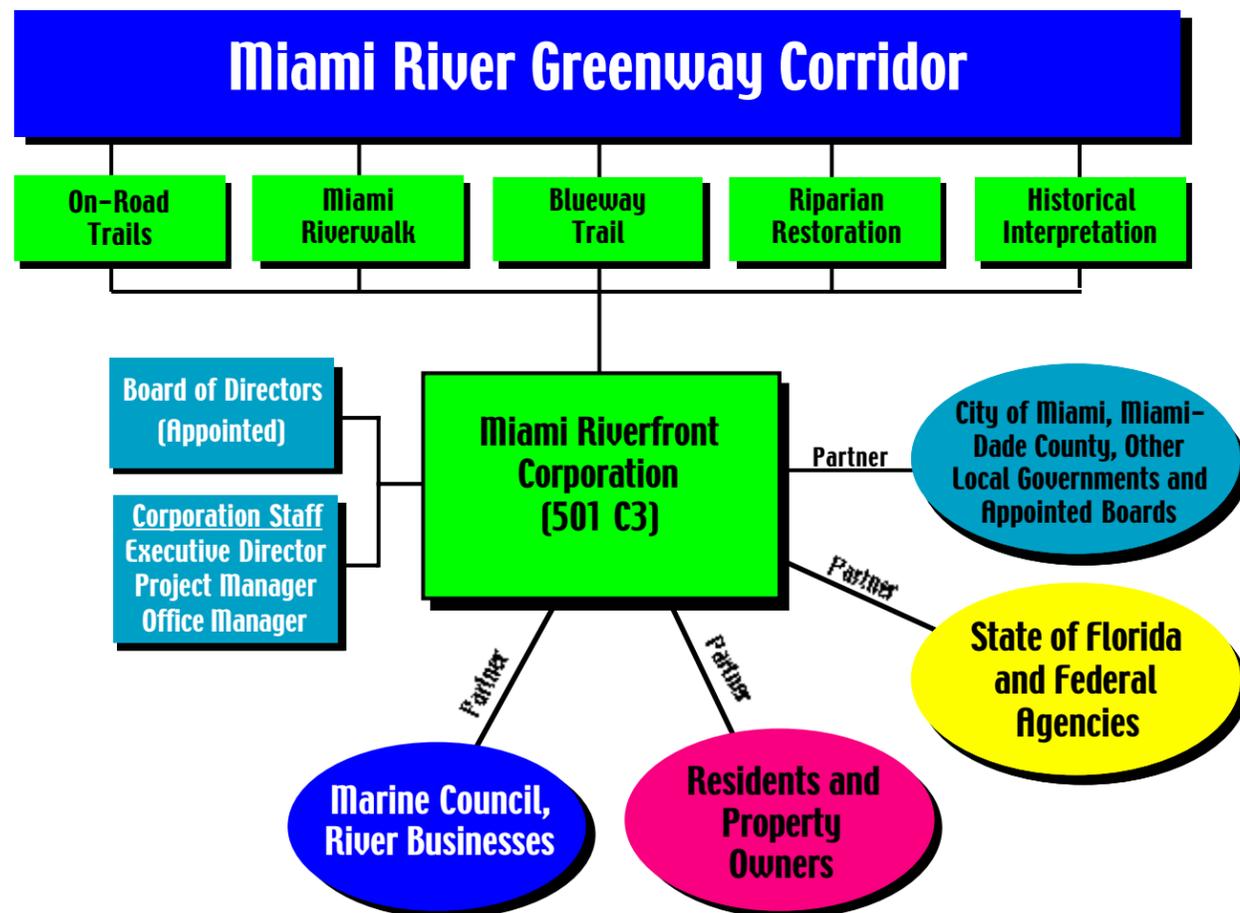


Figure 89: A second option for a lead organization would to establish the Miami Riverfront Corporation, a new non-profit that could partner with other local groups to implement the recommendations of this Action Plan report.

## Operation Policies and Programs

### Land Ownership

Under this proposal it is anticipated that the property within the Greenway would be owned by a variety of private individuals, and public sector organizations and agencies. **It is not necessary for a property to be in public ownership in order for the landowner to participate in the Miami River Greenway project.** It may be desirable to consider some landscapes that are currently in private ownership, and are either vacant or underutilized, as being acquired for the public use portion of the Greenway. Perhaps the most critical issue will be the right of public access and use of properties along the rivers edge. The Greenway facility plan illustrates that much of the riverfront trail development will occur in the lower river section of the project corridor. Within the middle and upper river sections, trail development would occur along existing public roads and streets.

### Right of Public Access and Use of Trail Lands

The general public should have free access to and use of those greenway lands that support public use (i.e. trail development), and that are owned by the City of Miami, Miami-Dade County, the State of Florida or the United States Government, or on land where the right of public access and use has been secured. All access and use should be governed by existing policies and should also be governed by a proposed Greenway Trail Ordinance (found in this chapter). The use of all off-road trails should be limited to non-motorized uses, including hiking, bicycling, running, jogging, wheelchair use, skateboarding, rollerblading, mountain biking, and other uses that are determined to be compatible with the greenway trails.

### Adopt-a-Greenway Program

An Adopt-a-Greenway Program should be established by the Miami River Commission to encourage community groups, families, businesses, school groups, civic clubs and other organizations to join in managing the greenway system. The Commission should continue and expand this program for each greenway facility, and work closely with local organizations to ensure that these groups manage and maintain trails in a manner that is consistent with overall Greenway objectives. The Commission should develop written agreements for each Adopt-a-Greenway entity and keep a current record of this agreement on file. Adopt-a-Greenway entities could be assigned a specific section of the greenway system, defined by location or milepost. The activities of each organization should be monitored by the Commission or its designee. Agreements for management can be amended or terminated at any time by either party, giving 30 days written notice.

### Management Agreements

Management Agreements should be established between the public and private organizations wishing to assist with the management of designated segments of the Greenway. The objective of these agreements is to define areas of maintenance and management that are compatible with existing land management



Figure 90: Local corporations challenge each other to see who can plant more trees along the Platte River in downtown Denver, CO “10,000 Trees” community stewardship program.

activities, especially where the Greenway intersects with public or private properties and/or rights-of-way. Management agreements spell out specific duties, responsibilities and activities of the public or private organization that wishes to assist with management activities. They can be amended or terminated at any time by either party, giving 30 days written notice.

### Greenway Facility Management

The Miami River Greenway should be maintained in a manner that promotes safe use. All facilities should be managed by the Miami River Commission and its partners, the City of Miami, or Miami-Dade County. Riverwalk and on-road trail maintenance should include the removal of debris, trash, litter, obnoxious and unsafe man-made structures, and other foreign matter so as to be safe for public use. Trail heads, points of public access, rest areas and other activity areas should be maintained in a clean and usable condition at all times. The primary concern regarding maintenance should always be public safety.

All walking and riding surfaces should be maintained in a safe and usable manner at all times. Rough edges, severe bumps or depressions, cracked or uneven pavement, gullies, rills and washed-out treads should be repaired immediately. Non-native volunteer vegetation occurring in the tread of the trail should be removed in such a manner so that the trail surface is maintained as a continuous, even and clean surface.

### Land Management

Property owned or used by the managing entities for the public use portions of the greenway shall be maintained in a condition that promotes safety and security for Greenway users and adjacent property owners. To the extent possible, the property shall also be maintained in a manner that enables the corridor to fulfill multiple functions (i.e. passive recreation, alternative transportation, stormwater management and habitat for wildlife). Property that is owned or managed by other entities should be managed and maintained in accordance with the policies of that public body responsible for the affected parcel.

Vegetation within each greenway corridor shall be managed to promote safety, serve as wildlife habitat, buffer public trail use from adjacent private property (where applicable), protect water quality, and preserve the unique aesthetic values of the natural landscape. Removal of native vegetation shall be done with discretion, removal of exotic species should be accomplished in a systematic and thorough manner.

Vegetation adjacent to trails shall be managed as necessary to maintain clear and open lines of sight along the edge of the trail, and eliminate potential hazards that could occur due to natural growth, severe weather or other unacceptable conditions. To promote safe use of any greenway trail, all vegetation should be clear cut to a minimum distance of three (3) feet from each edge of a trail. Selective clearing of vegetation should be conducted within a zone that is defined as being between three (3) to ten (10) feet from each edge of a trail.

The managing entity or its designated agent should be responsible for the cutting and removal of vegetation. Removal of vegetation by an individual or entity other than the managing entity or its designee shall be deemed unlawful and subject to fines and/or prosecution.

### Safety and Security

Safety is a duty and obligation of all public facilities. In order to provide a standard of care that offers reasonable and ordinary safety measures, the Miami River Commission should consider establishing a Safety and Security Program for the Greenway. This program should consist of well-defined safety and security policies; the identification of trail management, law enforcement, emergency and fire protection agencies; the proper posting, notification and education of the trail user policies; and a system that offers timely response to the public for issues or problems that are related to safety and security. The safety and security of the greenway system will need to be coordinated with local law enforcement officials, local neighborhood watch associations, and Adopt-a-Greenway organizations.

Important components of the safety and security program include the following. The managing entities should:

- 1) work with law enforcement agencies to establish a Greenway Safety and Security Committee that can meet periodically to discuss management of the greenway system.



- 2) prepare a Greenway Safety Manual and distribute this to management agencies and post it at all major trail heads.
- 3) post User Rules and Regulations at all public access points to greenway trails.
- 4) work with the management agencies to develop Trail Emergency Procedures.
- 5) prepare a Safety Checklist for the greenway system, and utilize it monthly during field inspection of greenway facilities.
- 6) prepare a Greenway User Response Form for complaints and compliments and provide copies at all trail heads.
- 7) work with management agencies to develop a system for accident reporting analysis.
- 8) conduct a regular Maintenance and Inspection Program, and share the results of these investigations with all management agencies.
- 9) coordinate other Public Information Programs that provide information about greenway events and activities that City residents can participate in.
- 10) have an ongoing evaluation of greenway program objectives.

### User Rules and Regulations

The Miami Riverwalk and other trails within the greenway should be operated like all other parks within the City of Miami and Miami-Dade County, open for public use from sunrise to sunset, 365 days a year, except as specifically designated. Individuals who are found to be using unlighted facilities after dusk and before dawn should be deemed in violation of these hours of operation and treated as trespassers. Where trails are lighted for nighttime use, the rules established within the Trail Ordinance (following text) should govern permitted uses and activities.

The managing entities should always discourage the general public from using any segment of a greenway trail that is under construction. Trail segments should not be considered officially opened for public use until such time as a formal dedication ceremony and official opening has been completed. Individuals who use greenway segments that are under construction, without written permission from the managing entity, should be deemed in violation of this access and use policy and treated as a trespasser.

### Recommended Greenway Ordinance

Multi-use conflict is a national problem for greenways. Typically, conflicts are caused by overuse of a greenway; however, other factors may be problematic including poorly designed trails, inappropriate user behavior, or inadequate facility capacity. The most effective conflict resolution plan is a well-conceived safety program that provides the individual user with a Code of Conduct for the greenway trail, sometimes called a "Trail Ordinance." Several communities across the United States have adopted progressive trail ordinances to govern public use and keep trails safe for all users. The following Rules and Regulations are recommended for the Greenway. These rules should be displayed both on brochures and information signs throughout the greenway system.

- 1) **Be Courteous:** All Greenway users, including bicyclists, joggers, walker and in-line skaters, should be respectful of other users regardless of their mode of travel, speed, or level of skill. Never spook animals; this can be dangerous for you and other users. Respect the privacy of adjacent land-owners!
- 2) **Keep Right:** Always stay to the right as you use the Greenway, or stay in the lane that has been designated for your user group. The exception to this rule occurs when you need to pass another user.
- 3) **Pass on the Left:** Pass others going in your direction on their left. Look ahead and behind to make sure that your lane is clear before you pull out and around the other user. Pass with ample separation. Do not move back to the right until you have safely gained distance and speed on the other user. Faster traffic should always yield to slower on-coming traffic.
- 4) **Give Audible Signal When Passing:** All users should give a clear warning signal before passing. This signal may be produced by voice, bell or soft horn. Voice signals might include "Passing on your left!" or "Cyclist on your left!" Always be courteous when providing the audible signal - profanity is unwarranted and unappreciated.
- 5) **Be Predictable:** Travel in a consistent and predictable manner. Always look behind before changing position on the Greenway, regardless of your mode of travel.
- 6) **Control Your Bicycle:** Lack of attention, even for a second, can cause disaster - always stay alert! Maintain a safe and legal speed at all times.
- 7) **Do not Block the Greenway:** When in a group, including your pets, use no more than half the trail, so as not to block the flow of other users. If your group is approached by users from both directions, form a single line or stop and move to the far right edge of the Greenway to allow safe passage by these users.
- 8) **Yield when Entering or Crossing Trails:** When entering or crossing the Greenway at an uncontrolled intersection, yield to traffic already using the other trail.
- 9) **Do not Use this Greenway Under the Influence of Alcohol or Drugs:** It is illegal to use this Trail if you have consumed alcohol in excess of the statutory limits, or if you have consumed illegal drugs. Persons who use a prescribed medication should check with their doctor or pharmacist to ensure that it will not impair their ability to safely operate a bicycle or other wheeled vehicle.
- 10) **Clean-up Your Litter:** Please keep this Greenway clean and neat for other users to enjoy. Do not leave glass, paper, cans or any other debris on or near the Greenway. Please clean up after your pets. Pack out what you bring in - and remember to always recycle your trash.
- 11) **Keep Pets on Leashes:** All pets must be kept on secure and tethered leashes. Keep pets off of adjacent private property. Failure to do so will result in a fine.

### Emergency Response Plan

In order to effectively patrol the greenway and respond to the potential for fire, floods and other natural or human-caused disasters, the managing entities shall jointly develop and adopt a Greenway emergency response plan. This plan defines a cooperative law enforcement strategy for the greenway based on services required and those that are typically provided by police, sheriff, fire and EMS agencies. Specifically, the Greenway should be provided with an address system that denotes specific locations throughout the corridor. A site plan that illustrates points of access to the Greenway should be produced and kept on file at the offices of the managing entities and provided to each agency. The Greenway should be designed to permit access for law enforcement, fire and EMS agencies and vehicles that are not in excess of 6.5 tons gross vehicle weight. Typically, inter-governmental agreements are executed for this. A system of cellular-type emergency phones should be located in remote sections of the system, providing users with access to the area 911 Emergency System.

The emergency response plan should also define the agencies that should respond to 911 calls, and provide easy to understand routing plans and access points for emergency vehicles. Local hospitals should be notified of these routes so that they may also be familiar with the size and scope of the project.

### Risk Management Plan

The purpose of a Risk Management Plan is to increase safety for the users of the Greenway and reduce the potential for accidents to occur within the system or on lands adjacent to the system. While it is impossible to guarantee that all risk will be eliminated by a Risk Management Plan, implementation of a plan is in fact a critical step to reduce liability and improve safety. A Risk Management Plan establishes a methodology for greenway management that is based on current tort liability and case law in the United States related to the development, operation and management of public use greenway lands and facilities.

The ultimate responsibility for managing the greenway system, as defined within this Plan, rests with the principal project partners, the Miami River Commission, City of Miami and Miami-Dade County. The Risk Management Plan has as its major goals:

- 1) Risk Identification: determining where risk (threat to safety or potential loss) exists within the corridor.
- 2) Risk Evaluation: conducting appropriate examination of areas defined as a risk and determining the factors that contribute to risk.
- 3) Risk Treatment: defining and implementing an appropriate solution to the area of risk in accordance with one of the four options:
  - a) risk avoidance: prohibiting use of a risk area.
  - b) risk reduction: limit use of area and repair risk area immediately.
  - c) risk retention: obtain waivers from all potential users of the risk area.
  - d) risk transfer: transfer risk area (property) to an agency better suited to manage the area.

The following sixteen step plan should be implemented by the managing entities to establish a Risk Management Plan for the Greenway.



- 1) Develop a policy statement about risk management.
- 2) Conduct a needs assessment for the greenway program.
- 3) Determine goals and objectives for risk management - what are acceptable and not an acceptable management levels.
- 4) Develop specifications for site and facility development.
- 5) Establish a clear and concise program for risk management.
- 6) Define supervision and responsibility for risk management.
- 7) Define appropriate rules and regulations that govern the use of the trail system.
- 8) Conduct routine/systematic inspections and investigations of the trail system.
- 9) Develop an accident reporting and analysis system.
- 10) Establish procedures for handling emergencies.
- 11) Develop appropriate releases, waivers and agreements for use and management.
- 12) Identify best methods for insuring against risk.
- 13) Develop a comprehensive in-service training program for employees of the managing entities.
- 14) Implement a public relations program that can effectively describe the risk management program and activities.
- 15) Conduct periodic reviews of the Risk Management Plan by outside agents to ensure that the Plan is up to date.
- 16) Maintain good legal and insurance representation.

## Liability

The design, development, management, and operation of the Miami River Greenway must be carefully and accurately executed in order to provide a resource that protects the health and welfare of the public. Liability may occur when a facility has been under-designed to handle its intended volume of use, when management of the facility is poor, or when unexpected accidents occur because the trail manager failed to recognize the possibilities of a potentially hazardous situation. To reduce the possibility and exposure to liability, the managing entity should have in operation the following measures prior to opening the first segment of a greenway:

- 1) A thorough Maintenance Program that provides the appropriate duty or level of care to greenway users;
- 2) A Risk Management Plan that appropriately covers all aspects of the greenway system, and as necessary, adjacent landowners;
- 3) A comprehensive working knowledge of public use laws and recent case history applicable in Florida.

Trails are no greater liability to communities than park and recreation resources. The managing entities should review their current policies and check coverages to be certain that all aspects of its policies are up to date. The managing entity should exercise reasonable care in the design and construction of all greenway facilities to reduce hazardous, public nuisance and life threatening situations. Recreational Use Statutes in Florida may serve to reduce the exposure that adjacent landowners might expect to realize from the proximity of trails to private property.

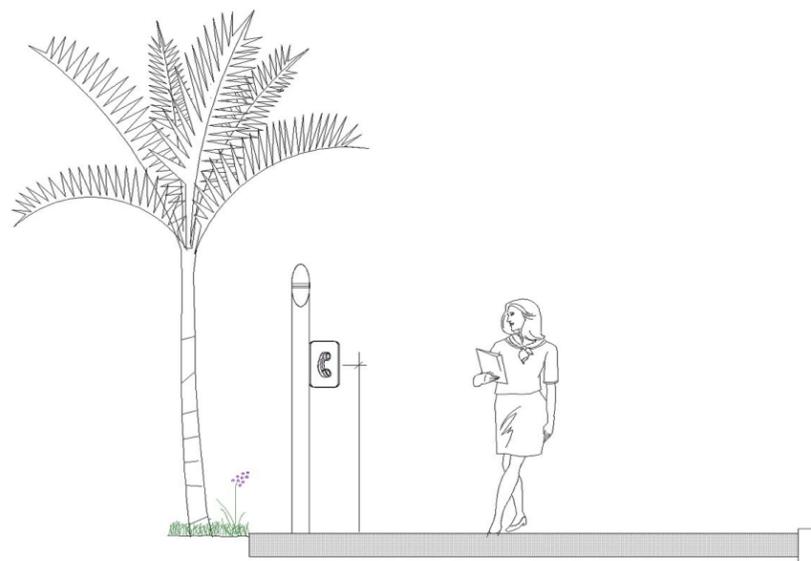
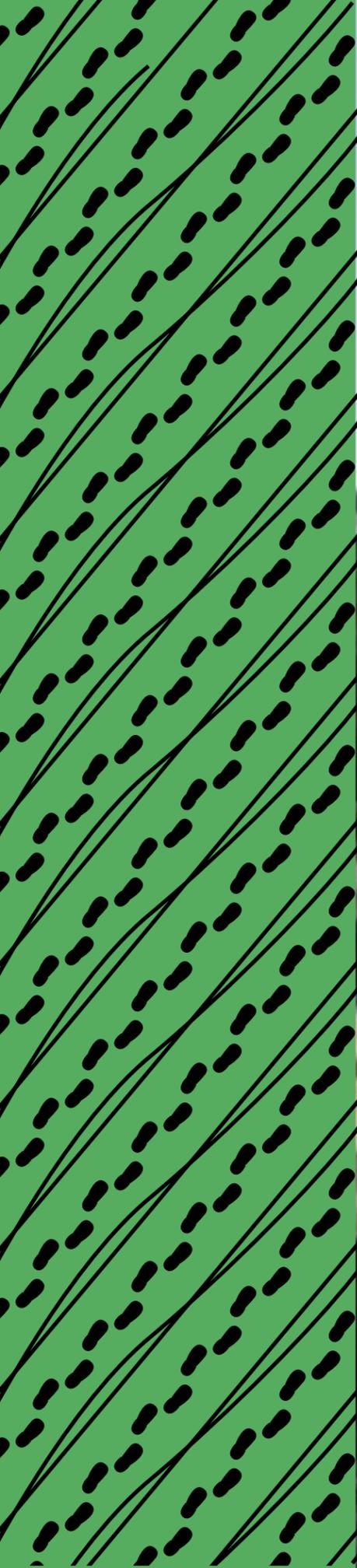


Figure 91: Cellular based emergency phones will make the Miami River Greenway system a safer outdoor landscape.





# **Miami River Greenway Action Plan**

## **Development Funding and Cost Estimates**

# Greenway Development Funding and Cost Estimates

The following information provides both typical and site specific cost estimates and budgets for Greenway facility development in the Greater Miami area. A discussion of development costs is followed by a listing of funding resources that should be tapped to fund both capital construction and operations of the Miami River Greenway.

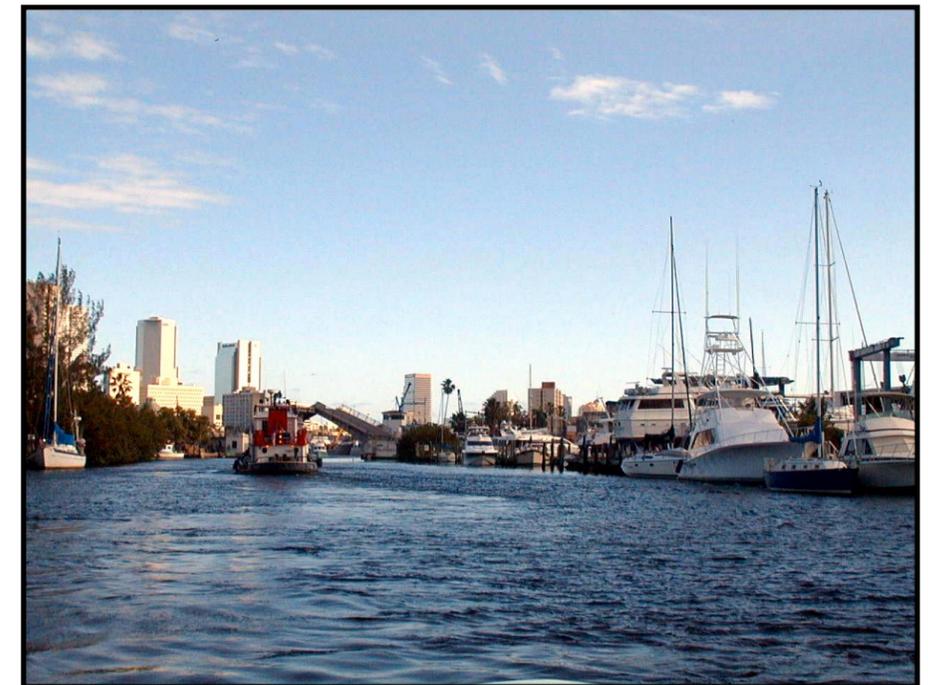
## Dredging the Miami River

Technically, greenway facility development and dredging of the river are not linked in a financial manner. However, it is fair to assume that greenway facility development will not be as successful without a cleaner and more navigable river. Dredging of the river is a very important project. The \$75 million Miami River Dredging project is funded 80% Federal, 10% State of Florida, 5% Florida Inland Navigational District grant, 2.5% City of Miami and 2.5% Miami-Dade County. The Corps of Engineers will cover of the costs associated with the dredging project, however, the local match is estimated to be \$13 million for operating costs and approximately \$7 million for land acquisition. The project is expected to extend five years from start to finish. Currently, it is estimated that the State of Florida will support about \$10 million of the total \$20 million local match requirement.

## Greenway Facility Development Costs

The following defines typical costs for greenway facility development. These are draft cost estimates that may change as more detailed design work is completed. The purpose of defining these costs is to establish a budget for future greenway facility implementation. The first table of costs offers some typical unit estimates for greenway facilities that are likely to be developed throughout the Miami River Greenway corridor. This is followed by a series of spreadsheets that offer detailed budgets for segments of the Greenway.

<b>Trail Treads</b>	<b>Unit Costs</b>
16-foot Marine Wood Boardwalk Trail	\$1000 foot
16-foot Concrete Multi-Purpose Trail	\$350 foot
<b>Signage</b>	
Information Kiosks	\$5000 each
Major Entrance Signage	\$2500 each
Minor Entrance Signage	\$1500 each
Educational/Interpretive Signage	\$2000 each
Bridge Identification Signage	\$1800 each
Information Signs	\$250 each
Direction Signs	\$250 each
Warning Signs	\$250 each
Mile Markers	\$250 each
<b>Furniture/Furnishings</b>	
Benches	\$600 each
Drinking Fountains	\$2200 each
Picnic Tables	\$450 each
Trash Receptacles	\$200 each
Bollards	\$250 each
Security Bollards	\$250 each
Bicycle Racks	\$500 each
911 Emergency Phones	\$3500 each
Lighting	\$1800 each
<b>On-Road Facilities</b>	
Bicycle Route Signs	\$250 each
Crosswalks	\$22 foot
<b>Vegetation</b>	
Trees (3" caliper)	\$350 each
Shrubs (3 gallon)	\$25 each
<b>Streambank Stabilization (Bioengineering)</b>	
	\$25-55 foot
	\$40-45 foot



# Estimate of Greenway Facility Development

The following text summarizes the segment by segment costs for greenway facility development. This is followed by detailed spreadsheets which will illustrate how these costs were derived. Where the term “both sides” is used, this refers to both sides of the river. This term is used because some greenway facility development has already occurred.

## Segment 1: Mouth of River to Brickell Bridge (both sides)

The first segment of the Greenway project consists of building off-road trails along the waterfront. A boardwalk could be developed on the north riverbank adjacent to the DuPont Plaza Hotel to link Bayfront Park to the Hyatt Riverwalk. On the south riverbank, a trail system would be developed from the Sheraton Baywalk to the Brickell Avenue Bridge, through the Miami Circle Site. Total project costs are estimated at \$1,209,915.00.

## Segment 2: Brickell Bridge to South Miami Avenue (south side only)

From the Brickell Avenue Bridge, the north riverbank off-road trail already exists in the form of the Hyatt Riverwalk. On the south riverbank, an off-road boardwalk trail would be constructed from the Brickell Avenue Bridge to South Miami Avenue on land currently owned by Terramark. The cost for project development in this section is estimated at \$742,555.00.

## Segment 3: South Miami Avenue to Metro Rail (both sides)

From South Miami Avenue, Greenway facility development would need to occur on both sides of the river. On the north riverbank, an extension of the Miami Riverwalk is proposed. On the south riverbank, the off-road trail will need to be routed on-road as a bicycle route and sidewalk extension. Estimated costs for project development would be \$282,532.00.

## Segment 4: Metro Rail to SW 2nd Avenue (south side only)

From the Metro Rail, greenway facility development will need to occur on the southside of river only, since the north riverbank is already developed with the FP&L Riverwalk. The south side trails system begins with an off-road spur beneath the Metro Rail and would also include an on-road bicycle route with improved sidewalks routed around the historic Brickell Shipyard. Project costs for this segment are \$138,264.50.

## Segment 5: SW 2nd Avenue to Interstate 95 (both sides)

From SW 2nd Avenue Greenway facility development is required on both sides of the river. On the northside of the river, trail development will be possible as a Riverwalk component under I-95. The Riverwalk already exists at the City of Miami office building, but would need to be extended under Interstate 95. On the southside, the on-road bike route would be routed along SW 3rd Avenue

and into Jose Marti Park, where it could be developed as a Riverwalk section. The estimated costs for this segment would be \$274,275.00.

## Segment 6: Interstate 95 to SW 1st Street (both sides)

West of Interstate 95, the Greenway would be developed on both sides of the river. On the north riverbank, it would be ideal to link the City administration building with Lummus Park with a Riverwalk component, this will require some property acquisition. The south riverbank could be developed as a Riverwalk using existing facilities in Jose Marti Park, and then be routed on-road, past the Miami River Inn. The estimated costs for this segment would be \$375,107.00.

## Segment 7: SW 1st Street to West Flagler Street (both sides)

From SW 1st Street, Greenway facility development would be on-road on both sides of the river. On the north side of the river, the Greenway would utilize SW N River Drive as a bike route, with improved sidewalks. On the south side of the river, the Greenway would utilize SW 4th Avenue/NW South River Drive as a bike route along with improved sidewalks. The estimated costs for building this segment would be \$6,152.50.

## Segment 8: West Flagler Street to NW 5th Street (both sides)

West of W. Flagler Street, the Greenway would be an on-road and an off-road facility. On the north side of the river, the Greenway would enter the Lummus Park area and is envisioned as a boardwalk/Riverwalk element at the rivers edge. West of Lummus Park, the Greenway would again become an improved sidewalk and bike route along NW North River Drive all the way to 5th Street. On the south side of the river, the Greenway would follow NW South River Drive as a bike route facility to 5th Street. Cost for project development would be about \$18,503.50.

## Segment 9: NW 5th Street to NW 12th Avenue (both sides)

At 5th Street, the Greenway will begin to move away from the river, on both sides as a waterside trail feature. On the north side of the river, the Greenway would follow 5th Street, to the Humpback Bridge entrance into the Spring Garden neighborhood, where it will link with Spring Garden Point Park. Within the neighborhood, the Greenway would be routed as a side path trail adjacent to NW 12th Avenue. On the south side of the river, the Greenway would follow NW South River Drive as a bike route to the intersection with NW 7th Street. One block west, it would again follow NW South River Drive until it intersects with 12th Avenue. The estimated cost for building this segment is \$756,136.50.

## Segment 10: NW 12th Avenue to NW 17th Avenue (both sides)

From NW 12th Avenue, the Greenway would be routed as an on-road facility, following NW North River Drive on the north side of the river. On the south side of the river, the Greenway would follow NW 8th Terrace, NW 12th Court and NW 7th Street as a bike facility. It would then enter the eastern side of the Miami Housing project in the Grove Park neighborhood and become an element of the Riverwalk. From the HUD site, the Greenway would be routed under the

Dolphin Expressway and parallel to the off-ramp to NW 17th Avenue. The cost for developing this segment of the Greenway would be \$7,199.00

## Segment 11: NW 17th Avenue to NW 22nd Avenue (both sides)

West of NW 17th Avenue, the Greenway will become a combination of on-road and off-road trails. On the north side of the river, the Greenway will continue to follow NW North River Drive as a bike route facility and improved sidewalks. On the south side of the river, the Greenway would enter Sewell Park as Riverwalk facility. The Greenway exits on the west side of Sewell Park onto 11th Street west to 22nd Avenue. The cost for developing this section of the Greenway is \$873,459.50.

## Segment 12: NW 22nd Avenue to NW 27th Avenue (both sides)

From NW 22nd Avenue, the Greenway becomes both an on-road and off-road trail. On the north side of the river, the Greenway is routed on-road along NW North River Drive/NW 16th Terrace to Curtis Park. A Riverwalk segment already exists within Curtis Park, an additional loop trail around the perimeter of the park is proposed. Exiting Curtis Park, the Greenway would follow NW 18th Terrace to NW North River Drive to NW 27th Avenue. On the south side of the river, the Greenway would be an on-road bike route following NW 14 Street to NW 24th Street to NW 16th Street Road to NW 27th Avenue. The trails on both side of the river would meet at the NW 27th Avenue bridge. The cost for developing this segment of trail would be \$1,105,391.50.

## Segment 13: NW 27th Avenue to NW 20th Street (south side only)

From NW 27th Avenue, Greenway facility development will be restricted to the south side of the river only, due to limited availability of land and the industrial character of the roadway environment on the north side of the river. It is envisioned that the Greenway would be able to follow the original river bed of the Miami River west of 27th Avenue, past the Miami Rapids Park. This would be an-off road segment of trail, hopefully a boardwalk trail. From the Rapids Park, the trail would become an on-road segment following NW South River Drive up to NW 20th Street. The cost for this segment would be \$1,152,012.50.

## Segment 14: NW 20th Street to Grapeland Park (south side only)

From NW 20th Street, the Greenway would again be an on-road segment following NW South River Drive across the Tamiami Canal up to Palmer Lake. The Greenway would follow NW 25th Street to a new entrance into Palmer Lake. The Lake would be cleaned up under this proposal, and be outfitted with a boardwalk system that would surround the lakeshore. Exiting Palmer Lake, the Greenway would follow NW 37th Avenue as an on-road facility south to Grapeland Park. The cost for building this segment, including those elements associated with Palmer Lake, would be \$2,039,801.00.



### Segment 15: Baywalk Trail: Brickell Key to Margaret Pace Park

Provisions have been made within this Action Plan to link the Miami Riverwalk to the Biscayne Baywalk trails system. Cost estimates are provided for the extension of the existing Baywalk trail from Brickell Key to the Miami Circle, and from Bayfront Park, through Bicentennial Park to an end point within Margaret Pace Park. The total estimated cost for completing these trail segments would be \$1,830,052.50.

### Segment 16: Overtown Greenway

An urban segment of Greenway is being planned for development within the Overtown neighborhood, and would begin at the Winn-Dixie on NW 12th Avenue. Conceptually, it would follow NW 11th Street, heading east to NW 7th Avenue, where it would head north for one half block, and then east again on NW 11th Street, under I-95. At the intersection with NW 3rd Avenue, the Overtown Greenway would go north to NW 20th Street and south to NW 9th Street connecting with the existing 9th Street Pedestrian Mall which terminates at Biscayne Boulevard near the American Airlines Arena and Bicentennial Park. This project is principally an on-road trail system that will involve significant streetscape and landscape improvements. The total estimated cost for completing this urban greenway would be \$2,834,290.00

### Total Estimated Costs for Greenway Development

The estimated total costs for Greenway facility development are determined by first calculating the cost for each of the 16 segments defined herein. Additionally, cost estimates are provided for the acquisition of land from willing sellers (as necessary), landscape plantings, employment of land surveyors, landscape architects and engineers to prepare construction documents for the projects, performance of environmental assessments for each of the project sites within the study area and permitting costs. A summary of these costs are provided for all projects as follows:

Total Estimated Costs for All Segments	\$13,635,652.00
Estimates for Landscape Planting	\$4,500,000.00
Estimates for Land Acquisition	\$ 3,000,000.00
Estimates for Environmental Assessments	\$250,000.00
Fees for Surveying, Landscape Architecture and Engineering	\$2,000,000.00
Estimates for Permitting Fees	<u>\$200,000.00</u>
<b>Total Estimates for Associated Costs</b>	<b>\$23,585,652.00</b>

These estimates should be used to establish project budgets only. More detailed estimates would be prepared for each project. Projects may not follow the exact segmentation that has been defined by this Action Plan report.



# COST ESTIMATE FROM MOUTH OF RIVER TO METRO RAIL

## SEGMENT I, II, III

No.	Item	Qty.	Unit	Price	Total
<b>I. Mouth of River to Brickell Bridge (Both Sides)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	675	lf	\$1,000.00	\$675,000.00
	16' concrete Trail	900	lf	\$350.00	\$315,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	0 total distance			
	Crosswalks	0	lf	\$22.00	\$0.00
	Route Signage	0	each	\$250.00	\$0.00
<b>C. SITE FURNISHINGS</b>					
	Benches	10	each	\$600.00	\$6,000.00
	Bicycle Racks	4	each	\$500.00	\$2,000.00
	Drinking Fountains	2	each	\$2,200.00	\$4,400.00
	Information Kiosk w/tables	2	each	\$5,000.00	\$10,000.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	8	each	\$200.00	\$1,600.00
	Bollards	10	each	\$250.00	\$2,500.00
<b>D. ELECTRICAL</b>					
	Lighting	8	each	\$1,800.00	\$14,400.00
	Phones	1	each	\$3,500.00	\$3,500.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	4	each	\$250.00	\$1,000.00
	Directional	4	each	\$250.00	\$1,000.00
	Educational	4	each	\$2,000.00	\$8,000.00
	Bridge Identification	4	each	\$1,800.00	\$7,200.00

No.	Item	Qty.	Unit	Price	Total
<b>II. Brickell Bridge to South Miami Avenue (South Side Only)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	300	lf	\$1,000.00	\$300,000.00
	16' concrete Trail	900	lf	\$350.00	\$315,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	0 total distance			
	Crosswalks	0	lf	\$22.00	\$0.00
	Route Signage	0	each	\$250.00	\$0.00
<b>C. SITE FURNISHINGS</b>					
	Benches	8	each	\$600.00	\$4,800.00
	Bicycle Racks	2	each	\$500.00	\$1,000.00
	Drinking Fountains	1	each	\$2,200.00	\$2,200.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	2	each	\$450.00	\$900.00
	Trash Receptacles	6	each	\$200.00	\$1,200.00
	Bollards	4	each	\$250.00	\$1,000.00
<b>D. ELECTRICAL</b>					
	Lighting	6	each	\$1,800.00	\$10,800.00
	Phones	1	each	\$3,500.00	\$3,500.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	2	each	\$250.00	\$500.00
	Directional	2	each	\$250.00	\$500.00
	Educational	1	each	\$2,000.00	\$2,000.00
	Bridge Identification	1	each	\$1,800.00	\$1,800.00

No.	Item	Qty.	Unit	Price	Total
<b>III. South Miami Avenue to Metro Rail (Both Sides)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	635	lf	\$350.00	\$222,250.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	900 total distance in linear feet			
	Crosswalks (1)	40	lf	\$22.00	\$880.00
	Route Signage	2	each	\$250.00	\$500.00
<b>C. SITE FURNISHINGS</b>					
	Benches	6	each	\$600.00	\$3,600.00
	Bicycle Racks	1	each	\$500.00	\$500.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	3	each	\$450.00	\$1,350.00
	Trash Receptacles	3	each	\$200.00	\$600.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	4	each	\$1,800.00	\$7,200.00
	Phones	1	each	\$3,500.00	\$3,500.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	3	each	\$250.00	\$750.00
	Directional	1	each	\$250.00	\$250.00
	Educational	1	each	\$2,000.00	\$2,000.00
	Bridge Identification	1	each	\$1,800.00	\$1,800.00

SEGMENT ONE	
ITEM	COST
A. OFF ROAD FACILITIES	\$990,000.00
B. ON ROAD FACILITIES	\$0.00
C. SITE FURNISHINGS	\$26,500.00
D. ELECTRICAL	\$17,900.00
E. SIGNAGE	\$17,700.00
SUBTOTAL	\$1,052,100.00
15% Contingency	\$157,815.00
<b>GRAND TOTAL:</b>	<b>\$1,209,915.00</b>

SEGMENT TWO	
ITEM	COST
A. OFF ROAD FACILITIES	\$615,000.00
B. ON ROAD FACILITIES	\$0.00
C. SITE FURNISHINGS	\$11,100.00
D. ELECTRICAL	\$14,300.00
E. SIGNAGE	\$5,300.00
SUBTOTAL	\$645,700.00
15% Contingency	\$96,855.00
<b>GRAND TOTAL:</b>	<b>\$742,555.00</b>

SEGMENT THREE	
ITEM	COST
A. OFF ROAD FACILITIES	\$222,250.00
B. ON ROAD FACILITIES	\$1,380.00
C. SITE FURNISHINGS	\$6,050.00
D. ELECTRICAL	\$10,700.00
E. SIGNAGE	\$5,300.00
SUBTOTAL	\$245,680.00
15% Contingency	\$36,852.00
<b>GRAND TOTAL:</b>	<b>\$282,532.00</b>

# COST ESTIMATE FROM METRO RAIL TO SW FIRST STREET

## SEGMENT IV,U,VI

No.	Item	Qty.	Unit	Price	Total
<b>IV. Metro Rail to SW 2nd Avenue (South Side)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	300	lf	\$350.00	\$105,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	600	total distance in linear feet		
	Crosswalks (1)	40	lf	\$22.00	\$880.00
	Route Signage	1	each	\$250.00	\$250.00
<b>C. SITE FURNISHINGS</b>					
	Benches	4	each	\$600.00	\$2,400.00
	Bicycle Racks	1	each	\$500.00	\$500.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	0	each	\$200.00	\$0.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	4	each	\$1,800.00	\$7,200.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	2	each	\$250.00	\$500.00
	Directional	4	each	\$250.00	\$1,000.00
	Educational	1	each	\$2,000.00	\$2,000.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

No.	Item	Qty.	Unit	Price	Total
<b>U. SW 2nd Ave. to I-95 (Both Sides- Including Underpass)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	600	lf	\$350.00	\$210,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	1200	total distance in linear feet		
	Crosswalks	0	lf	\$22.00	\$0.00
	Route Signage	3	each	\$250.00	\$750.00
<b>C. SITE FURNISHINGS</b>					
	Benches	6	each	\$600.00	\$3,600.00
	Bicycle Racks	3	each	\$500.00	\$1,500.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	1	each	\$5,000.00	\$5,000.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	6	each	\$200.00	\$1,200.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	2	each	\$1,800.00	\$3,600.00
	Phones	2	each	\$3,500.00	\$7,000.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	3	each	\$250.00	\$750.00
	Directional	4	each	\$250.00	\$1,000.00
	Educational	0	each	\$2,000.00	\$0.00
	Bridge Identification	2	each	\$1,800.00	\$3,600.00

No.	Item	Qty.	Unit	Price	Total
<b>VI. I-95 to SW 1st Street (Both Sides)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	900	lf	\$350.00	\$315,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	600	total distance in linear feet		
	Crosswalks (1)	40	lf	\$22.00	\$880.00
	Route Signage	1	each	\$250.00	\$250.00
<b>C. SITE FURNISHINGS</b>					
	Benches	2	each	\$600.00	\$1,200.00
	Bicycle Racks	0	each	\$500.00	\$0.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	2	each	\$200.00	\$400.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	2	each	\$1,800.00	\$3,600.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	1	each	\$250.00	\$250.00
	Directional	2	each	\$250.00	\$500.00
	Educational	0	each	\$2,000.00	\$0.00
	Bridge Identification	2	each	\$1,800.00	\$3,600.00

SEGMENT FOUR	
ITEM	COST
A. OFF ROAD FACILITIES	\$105,000.00
B. ON ROAD FACILITIES	\$1,130.00
C. SITE FURNISHINGS	\$2,900.00
D. ELECTRICAL	\$7,200.00
E. SIGNAGE	\$4,000.00
<b>SUBTOTAL</b>	<b>\$120,230.00</b>
15% Contingency	\$18,034.50
<b>GRAND TOTAL:</b>	<b>\$138,264.50</b>

SEGMENT FIVE	
ITEM	COST
A. OFF ROAD FACILITIES	\$210,000.00
B. ON ROAD FACILITIES	\$750.00
C. SITE FURNISHINGS	\$11,300.00
D. ELECTRICAL	\$10,600.00
E. SIGNAGE	\$5,850.00
<b>SUBTOTAL</b>	<b>\$238,500.00</b>
15% Contingency	\$35,775.00
<b>GRAND TOTAL:</b>	<b>\$274,275.00</b>

SEGMENT SIX	
ITEM	COST
A. OFF ROAD FACILITIES	\$315,000.00
B. ON ROAD FACILITIES	\$1,130.00
C. SITE FURNISHINGS	\$1,600.00
D. ELECTRICAL	\$3,600.00
E. SIGNAGE	\$4,850.00
<b>SUBTOTAL</b>	<b>\$326,180.00</b>
15% Contingency	\$48,927.00
<b>GRAND TOTAL:</b>	<b>\$375,107.00</b>

Note: These costs include proposed facilities. Existing facilities may need to be retrofitted to meet proposed design.

# COST ESTIMATE FROM SW 1st STREET TO 12th AVENUE

## SEGMENT VII, VIII, IX

No.	Item	Qty.	Unit	Price	Total
<b>VII. SW 1st Street to West Flagler Street (Both Sides)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	0	lf	\$350.00	\$0.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	625	total distance in linear feet		
	Crosswalks (1)	0	lf	\$22.00	\$0.00
	Route Signage	1	each	\$250.00	\$250.00
<b>C. SITE FURNISHINGS</b>					
	Benches	0	each	\$600.00	\$0.00
	Bicycle Racks	0	each	\$500.00	\$0.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	0	each	\$200.00	\$0.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	2	each	\$1,800.00	\$3,600.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	2	each	\$250.00	\$500.00
	Directional	2	each	\$250.00	\$500.00
	Educational	0	each	\$2,000.00	\$0.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

No.	Item	Qty.	Unit	Price	Total
<b>VIII. West Flagler Street to 5th Street (Both Sides)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	0	lf	\$350.00	\$0.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	3875	total distance in linear feet		
	Crosswalks(3)	120	lf	\$22.00	\$2,640.00
	Route Signage	6	each	\$250.00	\$1,500.00
<b>C. SITE FURNISHINGS</b>					
	Benches	0	each	\$600.00	\$0.00
	Bicycle Racks	0	each	\$500.00	\$0.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	0	each	\$200.00	\$0.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	2	each	\$1,800.00	\$3,600.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	3	each	\$250.00	\$750.00
	Directional	6	each	\$250.00	\$1,500.00
	Educational	1	each	\$2,000.00	\$2,000.00
	Bridge Identification	2	each	\$1,800.00	\$3,600.00

No.	Item	Qty.	Unit	Price	Total
<b>IX NW 5th Street to NW 12th Ave. (Both Sides)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	1725	lf	\$350.00	\$603,750.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	4875	total distance in linear feet		
	Crosswalks(2)	80	lf	\$22.00	\$1,760.00
	Route Signage	5	each	\$250.00	\$1,250.00
<b>C. SITE FURNISHINGS</b>					
	Benches	6	each	\$600.00	\$3,600.00
	Bicycle Racks	2	each	\$500.00	\$1,000.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	6	each	\$200.00	\$1,200.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	18	each	\$1,800.00	\$32,400.00
	Phones	2	each	\$3,500.00	\$7,000.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	3	each	\$250.00	\$750.00
	Directional	2	each	\$250.00	\$500.00
	Educational	1	each	\$2,000.00	\$2,000.00
	Bridge Identification	1	each	\$1,800.00	\$1,800.00

SEGMENT SEVEN	
ITEM	COST
A. OFF ROAD FACILITIES	\$0.00
B. ON ROAD FACILITIES	\$250.00
C. SITE FURNISHINGS	\$0.00
D. ELECTRICAL	\$3,600.00
E. SIGNAGE	\$1,500.00
<b>SUBTOTAL</b>	<b>\$5,350.00</b>
15% Contingency	\$802.50
<b>GRAND TOTAL:</b>	<b>\$6,152.50</b>

SEGMENT EIGHT	
ITEM	COST
A. OFF ROAD FACILITIES	\$0.00
B. ON ROAD FACILITIES	\$4,140.00
C. SITE FURNISHINGS	\$0.00
D. ELECTRICAL	\$3,600.00
E. SIGNAGE	\$8,350.00
<b>SUBTOTAL</b>	<b>\$16,090.00</b>
15% Contingency	\$2,413.50
<b>GRAND TOTAL:</b>	<b>\$18,503.50</b>

SEGMENT NINE	
ITEM	COST
A. OFF ROAD FACILITIES	\$603,750.00
B. ON ROAD FACILITIES	\$3,010.00
C. SITE FURNISHINGS	\$5,800.00
D. ELECTRICAL	\$39,400.00
E. SIGNAGE	\$5,550.00
<b>SUBTOTAL</b>	<b>\$657,510.00</b>
15% Contingency	\$98,626.50
<b>GRAND TOTAL:</b>	<b>\$756,136.50</b>

Note: These costs include proposed facilities. Existing facilities may need to be retrofitted to meet proposed design requirements.

# COST ESTIMATE: FROM NW 12th Avenue to NW 27th Avenue

## SEGMENT X, XI, XII

No.	Item	Qty.	Unit	Price	Total
<b>X</b>	<b>NW 12th Ave to NW 17th Ave (Both Sides)</b>				
<b>A.</b>	<b>OFF ROAD FACILITIES</b>				
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	0	lf	\$350.00	\$0.00
<b>B.</b>	<b>ON ROAD FACILITIES</b>				
	Bike Route	6150	total distance in linear feet		
	Crosswalks (2)	80	lf	\$22.00	\$1,760.00
	Route Signage	5	each	\$250.00	\$1,250.00
<b>C.</b>	<b>SITE FURNISHINGS</b>				
	Benches	0	each	\$600.00	\$0.00
	Bicycle Racks	0	each	\$500.00	\$0.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	0	each	\$200.00	\$0.00
	Bollards	0	each	\$250.00	\$0.00
<b>D.</b>	<b>ELECTRICAL</b>				
	Lighting	0	each	\$1,800.00	\$0.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E.</b>	<b>SIGNAGE</b>				
	Mile Markers	3	each	\$250.00	\$750.00
	Warning Signs	5	each	\$250.00	\$1,250.00
	Directional	5	each	\$250.00	\$1,250.00
	Educational	0	each	\$2,000.00	\$0.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

No.	Item	Qty.	Unit	Price	Total
<b>XI</b>	<b>NW 17th Ave to NW 22nd Ave (Both Sides)</b>				
<b>A.</b>	<b>OFF ROAD FACILITIES</b>				
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	2100	lf	\$350.00	\$735,000.00
<b>B.</b>	<b>ON ROAD FACILITIES</b>				
	Bike Route	5625	total distance in linear feet		
	Crosswalks(1)	40	lf	\$22.00	\$880.00
	Route Signage	3	each	\$250.00	\$750.00
<b>C.</b>	<b>SITE FURNISHINGS</b>				
	Benches	4	each	\$600.00	\$2,400.00
	Bicycle Racks	2	each	\$500.00	\$1,000.00
	Drinking Fountains	1	each	\$2,200.00	\$2,200.00
	Information Kiosk w/tables	1	each	\$5,000.00	\$5,000.00
	Picnic Tables/tables	3	each	\$450.00	\$1,350.00
	Trash Receptacles	4	each	\$200.00	\$800.00
	Bollards	0	each	\$250.00	\$0.00
<b>D.</b>	<b>ELECTRICAL</b>				
	Lighting	2	each	\$1,800.00	\$3,600.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E.</b>	<b>SIGNAGE</b>				
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	5	each	\$250.00	\$1,250.00
	Directional	4	each	\$250.00	\$1,000.00
	Educational	1	each	\$2,000.00	\$2,000.00
	Bridge Identification	1	each	\$1,800.00	\$1,800.00

No.	Item	Qty.	Unit	Price	Total
<b>XII</b>	<b>NW 22nd Ave to NW 27th Avenue (Both Sides)</b>				
<b>A.</b>	<b>OFF ROAD FACILITIES</b>				
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	2700	lf	\$350.00	\$945,000.00
<b>B.</b>	<b>ON ROAD FACILITIES</b>				
	Bike Route	9450	total distance in linear feet		
	Crosswalks(2)	80	lf	\$22.00	\$1,760.00
	Route Signage	7	each	\$250.00	\$1,750.00
<b>C.</b>	<b>SITE FURNISHINGS</b>				
	Benches	3	each	\$600.00	\$1,800.00
	Bicycle Racks	2	each	\$500.00	\$1,000.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	3	each	\$200.00	\$600.00
	Bollards	0	each	\$250.00	\$0.00
<b>D.</b>	<b>ELECTRICAL</b>				
	Lighting	1	each	\$1,800.00	\$1,800.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E.</b>	<b>SIGNAGE</b>				
	Mile Markers	3	each	\$250.00	\$750.00
	Warning Signs	4	each	\$250.00	\$1,000.00
	Directional	7	each	\$250.00	\$1,750.00
	Educational	2	each	\$2,000.00	\$4,000.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

SEGMENT TEN	
ITEM	COST
A. OFF ROAD FACILITIES	\$0.00
B. ON ROAD FACILITIES	\$3,010.00
C. SITE FURNISHINGS	\$0.00
D. ELECTRICAL	\$0.00
E. SIGNAGE	\$3,250.00
<b>SUBTOTAL</b>	<b>\$6,260.00</b>
15% Contingency	\$939.00
<b>GRAND TOTAL:</b>	<b>\$7,199.00</b>

SEGMENT ELEVEN	
ITEM	COST
A. OFF ROAD FACILITIES	\$735,000.00
B. ON ROAD FACILITIES	\$1,630.00
C. SITE FURNISHINGS	\$12,750.00
D. ELECTRICAL	\$3,600.00
E. SIGNAGE	\$6,550.00
<b>SUBTOTAL</b>	<b>\$759,530.00</b>
15% Contingency	\$113,929.50
<b>GRAND TOTAL:</b>	<b>\$873,459.50</b>

SEGMENT TWELVE	
ITEM	COST
A. OFF ROAD FACILITIES	\$945,000.00
B. ON ROAD FACILITIES	\$3,510.00
C. SITE FURNISHINGS	\$3,400.00
D. ELECTRICAL	\$1,800.00
E. SIGNAGE	\$7,500.00
<b>SUBTOTAL</b>	<b>\$961,210.00</b>
15% Contingency	\$144,181.50
<b>GRAND TOTAL:</b>	<b>\$1,105,391.50</b>

Note: These costs include proposed facilities. Existing facilities may need to be retrofitted to meet proposed design requirements.

# COST ESTIMATE FROM NW 27th Avenue to Grapeland Park

## SEGMENT XIII, XIV, TOTAL

No.	Item	Qty.	Unit	Price	Total
<b>XIII NW 27th Avenue to NW 20th Street (South Side only)</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	1000	lf	\$1,000.00	\$1,000,000.00
	16' concrete Trail	0	lf	\$350.00	\$0.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	4650	total distance in linear feet		
	Crosswalks (1)	0	lf	\$22.00	\$0.00
	Route Signage	3	each	\$250.00	\$750.00
<b>C. SITE FURNISHINGS</b>					
	Benches	0	each	\$600.00	\$0.00
	Bicycle Racks	0	each	\$500.00	\$0.00
	Drinking Fountains	0	each	\$2,200.00	\$0.00
	Information Kiosk w/tables	0	each	\$5,000.00	\$0.00
	Picnic Tables/tables	0	each	\$450.00	\$0.00
	Trash Receptacles	0	each	\$200.00	\$0.00
	Bollards	0	each	\$250.00	\$0.00
<b>D. ELECTRICAL</b>					
	Lighting	0	each	\$1,800.00	\$0.00
	Phones	0	each	\$3,500.00	\$0.00
<b>E. SIGNAGE</b>					
	Mile Markers	2	each	\$250.00	\$500.00
	Warning Signs	0	each	\$250.00	\$0.00
	Directional	2	each	\$250.00	\$500.00
	Educational	0	each	\$2,000.00	\$0.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

No.	Item	Qty.	Unit	Price	Total
<b>XIV NW 20th Street to Grapeland Park, incl. Palmer Lake</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	4950	lf	\$350.00	\$1,732,500.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	7875	total distance in linear feet		
	Crosswalks(3)	120	lf	\$22.00	\$2,640.00
	Route Signage	3	each	\$250.00	\$750.00
<b>C. SITE FURNISHINGS</b>					
	Benches	10	each	\$600.00	\$6,000.00
	Bicycle Racks	3	each	\$500.00	\$1,500.00
	Drinking Fountains	1	each	\$2,200.00	\$2,200.00
	Information Kiosk w/tables	1	each	\$5,000.00	\$5,000.00
	Picnic Tables/tables	6	each	\$450.00	\$2,700.00
	Trash Receptacles	10	each	\$200.00	\$2,000.00
	Bollards	2	each	\$250.00	\$500.00
<b>D. ELECTRICAL</b>					
	Lighting	4	each	\$1,800.00	\$7,200.00
	Phones	2	each	\$3,500.00	\$7,000.00
<b>E. SIGNAGE</b>					
	Mile Markers	7	each	\$250.00	\$1,750.00
	Warning Signs	3	each	\$250.00	\$750.00
	Directional	5	each	\$250.00	\$1,250.00
	Educational	0	each	\$2,000.00	\$0.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

TOTAL ALL SEGMENTS WITH 15% CONTINGENCY FEE	
ITEM	ESTIMATE OF COSTS
I Mouth of River to Brickell Bridge (Both Sides)	\$1,209,915.00
II Brickell Bridge to South Miami Avenue (South Side Only)	\$742,555.00
III South Miami Avenue to Metro Rail (Both Sides)	\$282,532.00
IV Metro Rail to SW 2nd Avenue (South Side)	\$128,264.50
V SW 2nd Avenue to I-95 (Both Sides- Including Underpass)	\$274,275.00
VI I-95 to SW 1st Street (Both Sides)	\$375,107.00
VII SW 1st Street to West Flagler Street (Both Sides)	\$6,152.50
VIII West Flagler Street to NW 5th Street (Both Sides)	\$18,503.50
IX NW 5th Street to NW 12th Avenue (Both Sides)	\$756,136.50
X NW 12th Avenue to NW 17th Avenue (Both Sides)	\$7,199.00
XI NW 17th Avenue to NW 22nd Avenue (Both Sides)	\$873,459.50
XII NW 22nd Avenue to NW 27th Avenue (Both Sides)	\$1,105,396.50
XIII NW 27th Avenue to NW 20th Street (South Side Only)	\$1,152,012.50
XIV NW 20th Street to Grapeland Park, incl. Palmer Lake	\$2,039,801.00
XV Baywalk Trails: Brickell Key to Margaret Pace Park	\$1,830,052.50
XVI Overtown Greenway	\$2,834,290.00
<b>GRAND TOTAL:</b>	<b>\$13,635,652.00</b>

SEGMENT THIRTEEN	
ITEM	COST
A. OFF ROAD FACILITIES	\$1,000,000.00
B. ON ROAD FACILITIES	\$750.00
C. SITE FURNISHINGS	\$0.00
D. ELECTRICAL	\$0.00
E. SIGNAGE	\$1,000.00
<b>SUBTOTAL</b>	<b>\$1,001,750.00</b>
15% Contingency	\$150,262.50
<b>GRAND TOTAL:</b>	<b>\$1,152,012.50</b>

SEGMENT FOURTEEN	
ITEM	COST
A. OFF ROAD FACILITIES	\$1,732,500.00
B. ON ROAD FACILITIES	\$3,390.00
C. SITE FURNISHINGS	\$19,900.00
D. ELECTRICAL	\$14,200.00
E. SIGNAGE	\$3,750.00
<b>SUBTOTAL</b>	<b>\$1,773,740.00</b>
15% Contingency	\$266,061.00
<b>GRAND TOTAL:</b>	<b>\$2,039,801.00</b>

Note: These costs include proposed facilities. Existing facilities may need to be retrofitted to meet proposed design requirements.

# COST ESTIMATE: Baywalk Trail & Overtown Greenway

## SEGMENTS XV, XVI

No.	Item	Qty.	Unit	Price	Total
<b>XU Baywalk Trail - Brickell Key to Paces Park</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	16' concrete Trail	4000	lf	\$350.00	\$1,400,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	5000	total distance in linear feet		
	Crosswalks (10)	400	lf	\$22.00	\$8,800.00
	Route Signage	20	each	\$250.00	\$5,000.00
<b>C. SITE FURNISHINGS</b>					
	Benches	25	each	\$600.00	\$15,000.00
	Bicycle Racks	10	each	\$500.00	\$5,000.00
	Drinking Fountains	8	each	\$2,200.00	\$17,600.00
	Information Kiosk w/tables	4	each	\$3,500.00	\$14,000.00
	Picnic Tables/tables	15	each	\$450.00	\$6,750.00
	Trash Receptacles	25	each	\$200.00	\$5,000.00
	Bollards	100	each	\$250.00	\$25,000.00
<b>D. ELECTRICAL</b>					
	Lighting	25	each	\$1,800.00	\$45,000.00
	Phones	4	each	\$3,500.00	\$14,000.00
<b>E. SIGNAGE</b>					
	Mile Markers	16	each	\$250.00	\$4,000.00
	Warning Signs	12	each	\$250.00	\$3,000.00
	Directional	16	each	\$250.00	\$4,000.00
	Educational	6	each	\$2,000.00	\$12,000.00
	Bridge Identification	4	each	\$1,800.00	\$7,200.00

No.	Item	Qty.	Unit	Price	Total
<b>XVI Overtown Greenway</b>					
<b>A. OFF ROAD FACILITIES</b>					
	Boardwalk	0	lf	\$1,000.00	\$0.00
	12' concrete Trail	8000	lf	\$275.00	\$2,200,000.00
<b>B. ON ROAD FACILITIES</b>					
	Bike Route	8000	total distance in linear feet		
	Crosswalks(20)	800	lf	\$22.00	\$17,600.00
	Route Signage	35	each	\$250.00	\$8,750.00
<b>C. SITE FURNISHINGS</b>					
	Benches	25	each	\$600.00	\$15,000.00
	Bicycle Racks	15	each	\$500.00	\$7,500.00
	Drinking Fountains	5	each	\$2,200.00	\$11,000.00
	Information Kiosk w/tables	10	each	\$3,500.00	\$35,000.00
	Picnic Tables/tables	25	each	\$450.00	\$11,250.00
	Trash Receptacles	25	each	\$200.00	\$5,000.00
	Bollards	50	each	\$250.00	\$12,500.00
<b>D. ELECTRICAL</b>					
	Lighting	40	each	\$1,800.00	\$72,000.00
	Phones	10	each	\$3,500.00	\$35,000.00
<b>E. SIGNAGE</b>					
	Mile Markers	16	each	\$250.00	\$4,000.00
	Warning Signs	15	each	\$250.00	\$3,750.00
	Directional	25	each	\$250.00	\$6,250.00
	Educational	10	each	\$2,000.00	\$20,000.00
	Bridge Identification	0	each	\$1,800.00	\$0.00

SEGMENT THREE	
ITEM	COST
A. OFF ROAD FACILITIES	\$1,400,000.00
B. ON ROAD FACILITIES	\$13,800.00
C. SITE FURNISHINGS	\$88,350.00
D. ELECTRICAL	\$59,000.00
E. SIGNAGE	\$30,200.00
SUBTOTAL	\$1,591,350.00
15% Contingency	\$238,702.50
<b>GRAND TOTAL:</b>	<b>\$1,830,052.50</b>

SEGMENT NINE	
ITEM	COST
A. OFF ROAD FACILITIES	\$2,200,000.00
B. ON ROAD FACILITIES	\$26,350.00
C. SITE FURNISHINGS	\$97,250.00
D. ELECTRICAL	\$107,000.00
E. SIGNAGE	\$34,000.00
SUBTOTAL	\$2,464,600.00
15% Contingency	\$369,690.00
<b>GRAND TOTAL:</b>	<b>\$2,834,290.00</b>

Note: These costs include proposed facilities. Existing facilities may need to be retrofitted to meet proposed design requirements.

# Sources of Funding for Greenway Development

## Federal

Several federal programs offer financial aid for projects that aim to improve community infrastructure, transportation, housing, and recreation programs. Some of the federal programs that can be used to fund greenways include:

### US Army Corps of Engineers

The Corps will fund 100 percent of the costs for dredging the Miami River navigational channel, 80 percent of the costs related to the handling, transportation and final upland disposal of contaminated dredged materials. The Corps will not pay for any costs associated with acquiring or leasing land for drying sediment or final disposal site.

The Corps also offers other funding programs that can be of assistance in greenway development.

### Transportation Equity Act for the 21st Century (TEA21)

A primary source of federal funding for greenways is through the Transportation Equity Act of 1998 (TEA21), formerly the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA provided millions of dollars in funding for bicycle and pedestrian transportation projects across the country and will provide millions more as TEA21.

There are many sections of TEA21 that support the development of bicycle and pedestrian transportation corridors. Florida currently administers the TEA21 program for on-road and off-road bicycle and pedestrian transportation facilities using the following funding formula - 80/20. Projects must be programmed by the Metropolitan Planning Organization (MPO). The following three divisions of the TEA21 program can be accessed to support Greenway facility development.

#### a) Surface Transportation Program (STP) funds

These funds can be used for bicycle and pedestrian facility construction or non-construction projects such as brochures, public service announcements, and route maps. The projects must be related to bicycle and pedestrian transportation and must be part of the Long Range Transportation Plan. These funds are programmed by the MPO in the Transportation Improvement Program.

#### b) Transportation Enhancements Program

The Transportation Enhancements (TE) program is the most popular source of funds for Greenway trail development. Enhancements provide a 10% set aside of the total Surface Transportation Program (STP). The enhancements program

has been divided into several subsets under TEA21. TE funds can be used as a match for other federal funding sources.

#### c) Recreational Trails Program

A component of TEA21, the Recreational Trails Program (Symms Act) is a funding source to assist with the development of non-motorized and motorized trails. The Program uses funds paid into the Highway Trust Fund from fees on non-highway recreation fuel used by off-road vehicles and camping equipment. This money can be spent on the acquisition of easements and fee simple title to property, trail development, construction and maintenance. Project amounts vary by state, with most ranging from \$2,000 to \$30,000.

Through state agencies, a total of \$45 million per year is available to private and public sector organizations. Projects are 80% federally funded, and grant recipients must provide a 20% match. Federal agency project sponsors or other federal programs may provide additional federal share up to 95%. Local matches can be in the form of donations of services, materials or land. Projects funded must be consistent with the Statewide Comprehensive Outdoor Recreation Plan.

#### Community Development Block Grant Program

The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. The Overtown Greenway is being funded with CDBG grant funds.

#### US Fish and Wildlife Service

The US Fish and Wildlife Service can contribute money or assist with programming of environmental education activities within the Greenway.

#### Land and Water Conservation Fund (LWCF) Grants

This federal funding source was established in 1965 to provide park and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases and surplus federal land sales. LWCF funds are used by federal agencies to acquire additions to National Parks, Forests, and Wildlife Refuges. In the past, Congress has also appropriated LWCF moneys for so-called "state-side" projects. These "state-side" LWCF grants can be used by communities to acquire and build a variety of park and recreation facilities, including trails and greenways.

"State-side" LWCF funds are annually distributed by the National Park Service. Communities must match LWCF grants with 50% of the local project costs through in-kind services or cash. All projects funded by LWCF grants must be used exclusively for recreation purposes, in perpetuity.

#### Watershed Protection and Flood Prevention (Small Watersheds) Grants

The USDA Natural Resource Conservation Service (NRCS) provides funding to state and local agencies or nonprofit organizations authorized to carry out, maintain and operate watershed improvements involving less than 250,000 acres. The NRCS provides financial and technical assistance to eligible projects to improve watershed protection, flood prevention, sedimentation control, public water-based fish and wildlife enhancements, and recreation planning. The NRCS requires a 50% local match for public recreation, and fish and wildlife projects.

#### EPA 319 NonPoint Source Implementation Grants

Funds are provided to States to carry out nonpoint source projects and programs pursuant to Section 319 of the Clean Water Act as amended by the Water Quality Act of 1987. Under Section 319 (h), funds awarded for implementing States' nonpoint source management programs remain available for obligation by the State for the Federal fiscal year in which they are awarded and for the subsequent fiscal year. Other requirements under Section 319 (h) include: Nonfederal matching funds of at least 40% of project costs (except for tribal grants where financial hardship is demonstrated); maintenance of effort; proceeds of State grants may be used for financial assistance to individual persons in the case of demonstration projects only; limit on administrative costs; annual reporting; and EPA determinations of adequate State progress before additional funding. Funding may be used only to support implementation of EPA-approved State nonpoint source management programs, as opposed to development of new programs or plans. Currently applicable EPA guidance issued on May 16, 1996, identifies the process and funding schedule.

#### EPA Brownfields Program

The City of Miami is in receipt of a grant from the EPA Brownfields Program to clean up certain landscapes that are along the riverfront. The \$138,000 grant will pay for site inventory, assessment, recommended strategies, cost benefit analysis, and stakeholder meetings.

#### EPA Sustainable Development Challenge Grants

These funds may be used to (1) catalyze community-based and regional projects and other actions that promote sustainable development, thereby improving environmental quality and economic prosperity; (2) leverage significant private and public investments to enhance environmental quality by enabling community sustainability efforts to continue past EPA funding; (3) build partnerships that increase a community's long-term capacity to protect the environment through sustainable development; and (4) enhance EPA's ability to provide assistance to communities and promote sustainable development, through lessons.



### Conservation Reserve Program

The U. S. Department of Agriculture, through its Agricultural Stabilization and Conservation Service, provides payments to farm owners and operators to place highly erodible or environmentally sensitive landscapes into a 10-15 year conservation contract. The participant, in return for annual payments during this period, agrees to implement a conservation plan approved by the local conservation district for converting these sensitive lands to a less intensive use. Individuals, associations, corporations, estates, trusts, cities, counties and other entities are eligible for this program. This program can be used to fund the maintenance of open space and non-public use greenways along water bodies and ridge lines.

### Wetlands Reserve Program

The Department of Agriculture provides direct payments to private landowners who agree to place sensitive wetlands under permanent easements. This program can be used to fund the protection of open space and greenways within riparian corridors.

### FEMA Hazard Mitigation Grant Program

The Federal Emergency Management Agency (FEMA) provides grants to state and local governments for implementing long-term hazard mitigation measures following a major disaster declaration. Eligible projects include the acquisition and relocation of repetitive flood structures. Such lands, once acquired, can be converted into greenways for flood mitigation purposes. A 25 percent local match is required. All applications must be submitted no later than 90 days following FEMA's approval of the State Hazard Mitigation plan.

### FEMA Flood Mitigation Assistance

This FEMA program provides funds to states and communities to help reduce the long-term risk of flood damage to structures. Eligible projects include acquisition and relocation of insured structures. Grantees must participate in the National Flood Insurance Program and a 25 percent local match is required. The total amount of Flood Mitigation Assistance Grants provided during any 5-year period cannot exceed \$10 million to any state or \$3.3 million to any community.

## State Resources

### Florida Communities Trust

The Florida Communities Trust (FCT) is an independent agency within the Florida Department of Community Affairs that provides matching grants to local governments and nonprofit organizations for the acquisition of community-based projects, urban open spaces, parks, and greenways to implement local government comprehensive plans. Created in 1989, FCT will receive \$66 million annually through the Florida Forever program. FCT projects are competitively ranked and awarded by a six-member Governing Board on an annual basis. Grant awards are capped at ten percent of total funding available annually, approximately \$6 million. Local governments must provide a minimum 25 percent match.

### Office of Greenways and Trails

The Office Greenways and Trails (OGT) in the Florida Department of Environmental Protection serves as a clearing house for the greenways and trails system in Florida. OGT administers both the Greenways and Trails Acquisition Program under Florida Forever and federally funded Recreational Trails Program (SEE Federal Resources above). Under Florida Forever, OGT will receive \$4.5 million annually to acquire land for the statewide system of greenways and trails. Local governments are eligible to apply. Projects are ranked annually on a competitive basis by the Florida Greenways and Trails Council.

### Florida Recreation Development Assistance Program

The Florida Department of Environmental Protection administers the Florida Recreational Development Assistance Program (FRDAP), a competitive grant program for the acquisition or development of land for public outdoor recreational use. FRDAP will receive \$6 million annually from Florida Forever, in addition to annual line item appropriations from the Florida Legislature. Local governments may apply for grants of up to \$200,000. Match requirements vary based on the award amount requested, from a one-to-one match for grants of \$50,000 or less to a fifty percent match for grants over \$150,000. Due to the limit on grants of \$200,000, these funds are typically used for recreational development projects, including for active recreation, rather than acquisition.

### Division of Historical Resources Grants Programs

The Florida Department of State, through the Bureau of Historic Preservation in the Division of Historical Resources, administers two historic preservation grants programs to assist in the identification and preservation of historic structures and archaeological sites. The *Historic Preservation Grants* program, also known as "acquisition and development grants," awards \$2 million annually in basic matching grant assistance for the acquisition and restoration of historic structures, archaeological excavations, recording of historic and archaeological sites, and historic preservation education programs. Funding for Historic Preservation grants program is from both state and federal sources. A fifty

percent local match is required. The *Special Category Grants* program funds major historic building restoration, archaeological excavations, and museum exhibit projects on the human occupation of Florida. Funding for Special Category Grants is dependent on an annual appropriation of by the Florida Legislature, which has averaged \$10 million in recent years. Typical grant amounts range from \$50,000 to \$250,000. Local matching funds are required. Grants for both programs are selected awarded annually on a competitive basis by the Historic Preservation Advisory Council. Both local governments and nonprofit organizations are eligible for these two historic preservation grant programs.

### Coastal Partnerships Initiative Grants

This grant program is administered by the Florida Coastal Management Program (FCMP) within the Florida Department of Community Affairs. The Coastal Partnership Initiative is designed to support innovative local-level coastal management projects in four program areas: public access, Remarkable Coastal Places, Working Waterfronts, and community initiatives. Governmental, educational, and nonprofit entities can apply. In addition to grants, the FCMP offers technical assistance and training. Grant recipients are required to provide 100 percent (one-to-one) matching funding, which may be either cash or in-kind. Approximately \$600,000 is available annually from the federal National Oceanic and Atmospheric Administration in the U.S. Department of Commerce. Typical grants range from \$25,000 to \$50,000. Projects can be extremely diverse, ranging from dune revegetation projects to citizen water quality monitoring efforts to community-wide waterfront revitalization projects.

### Florida Inland Navigation District

The Florida Inland Navigation District (FIND) performs the function of the "local sponsor" of the Atlantic Intracoastal Waterway project, a State/Federal navigation project. The District's Waterways Assistance Program provides funding to governments to develop waterway improvement projects such as access channels, boat ramps, public marinas, fishing piers, boardwalks, waterfront parks, environmental enhancement/restoration, environmental education and boating safety. Funding is limited to the amount of taxes paid by the County applying for funds. The District provides up to 75% funding for environmental education, up to 90% for public navigation projects and up to 50% for all others. Cash, in-kind services and other grants can be used as a local match. Annually, FIND allocates approximately \$7 million for this program.



## Local Resources

Fortunately, the community has already begun to raise funds for development and redevelopment activities along the riverfront area. The biggest source of funds came from the Safe Neighborhood Park Bond program that was passed in 1996. For future greenway facility development, the City of Miami and Miami-Dade County will need to provide matching funds for grants secured from other public sector and private sector funders. Listed below are a few areas where it is envisioned these resources could come from.

### a) Tax Increment Financing District

A proposal has been advanced by Miami-Dade County to create a funding mechanism to support the dredging and cleanup of the Miami River. Creation of the Miami River Tax Increment District would not cost property owners more than they would otherwise pay in property taxes to the County and City. The County proposes to capture 50 percent of the incremental taxable value growth for the focused development on the river. This would serve as an economic development tool for the river as well. The boundary for the district would be established as 660 feet from both sides of the river. Establishment of the district would serve to support activities similar to those proposed by the Miami River Greenway initiative. The County estimates that the TIF would generate an estimated \$30 million in revenue source for the dredging project and other river related projects during a 10-year period.

### b) Miami-Dade County Bicycle/Pedestrian Program

Funds from the State of Florida Department of Transportation will be used to support development of several Greenway projects in the river corridor. The following funds have been awarded from the Enhancement Funds to the City of Miami:

Project # 251262: "Fort Dallas Park" (between SW 2nd Avenue and Metromover) \$1,260,000 has been programmed for use in FY 2001

Project # 251281: "Lummus Park" (between I-95 and NW 4th Avenue) \$900,000 has been programmed for use in FY 2002

Project #410578: "Riverwalk Extension" (between Flagler Street Bridge and SW 2nd Avenue).

### c) Safe Neighborhood Park Bond Program

The Safe Neighborhood Park Bond Program has successfully awarded hundreds of thousands of dollars to projects throughout the Miami River corridor for improvements to park and recreation facilities. Some of these improvements have already been made, others are scheduled in the coming years. The projects and award amounts are as follows:

Bayfront Park	\$100,000	Lighting of walkway
Lummus Park	\$1,000,000	Development of new facilities
Jose Marti Park	\$800,000	Development of new facilities
Gibson Park	\$800,000	Development of new facilities
Sewell Park	\$100,000	Development of new facilities
Fern Isle Park	\$400,000	Development of new facilities
Curtis Park	\$350,000	Development of new facilities
Grapeland Park	\$150,000	Development of new facilities



## Private Funding Sources

Many communities have solicited greenway funding from a variety of private foundations, corporations, and other conservation-minded benefactors. As a general rule, local foundations and businesses will have a greater interest in and be more likely to fund local projects. A substantial number of local foundations with the potential to support greenway development have been identified.

## Local Foundations

Local foundations and charitable organizations can serve to support Greenway facility development. A listing of applicable foundations and charitable organizations in the South Florida area is provided below, and includes:

AK Media  
Adorno & Zeder Employee's Charitable Trust  
Allegany Fanciscon Foundation  
American Airlines  
The Ruth Anderson Foundation  
Auto Nations, Inc.  
Deutsche Bank American Foundation  
The Batchelor Foundation, Inc.  
The Frank Stanley Beverage Foundation, Inc.  
Citibank Florida  
The Columbine Foundation, Inc.  
The Elizabeth Ordway Dunn Foundation, Inc.  
First Union National Bank  
Florida Power and Light  
Foundation of Jewish Philanthopies  
Philanthropic Fund for Greenberg Traurig  
Merrill G. and Erita E. Hastings Foundation  
Home Depot  
The Forrest C. Lattner Foundation, Inc.  
The Charles N. and Eleanor Knight Leigh Foundation  
Local Initiatives Support Coalition (LISC)  
John D. and Catherine T. MacArthur Foundation  
The Alex and Agnes O. McIntosh Foundation  
The Curtis and Edith Munson Foundation  
Peacock Foundation, Inc.  
The Joseph H. and Florence Roblee Foundation  
The William J. and Tina Rosenberg Foundation  
Royal Caribbean International and Celebrity Cruises  
Ryder System Charitable Foundation, Inc.  
Sears-Swetland Family Foundation  
Richard H. Simons Charitable Trust  
Windmere-Durable Holdings, Inc  
Women's Fund of Miami-Dade County

## Local Businesses

Local industries and private businesses might agree to provide support for development of the Miami River Greenway. Some of the ways this could occur include:

- donations of cash to a specific greenway segment;
- donations of services by corporations to reduce the cost of greenway implementation, including equipment and labor to construct and install elements of a trail;
- reductions in the cost of materials purchased from local businesses which support greenway implementation and can supply essential products for facility development.

To date, commitments in support of the Miami River Greenway have come from several land development groups. While specific numbers have not been determined, the developers understand the value of future Greenway development, would like to see physical improvements made to the riverfront landscape, and have agreed in principal that financial resources from their development activities could be applied to these landscapes.

## Greenway Sponsors

A sponsorship program for greenway amenities allows for smaller donations to be received both from individuals, businesses and organizations. The program should be well planned and organized, with design standards and associated costs established for each amenity. Project elements which may be funded can include wayside exhibits, personalized brick pavers, benches, trash receptacles, entry signage, and picnic areas. Usually, plaques recognizing the individual contributors are placed on the constructed amenities or at a prominent entry point to the trail.

## Volunteer Work

Community volunteers may help with trail construction, as well as fund raising. Potential sources of volunteer labor in the Greater Miami area could include local bicyclists, local historical groups, neighborhood associations, local churches, conservation groups, school groups, and local civic clubs.

A good example of a volunteer greenway program is Cheyenne, Wyoming, which generated an impressive amount of community support and volunteer work. The program has the unusual problem of having to insist that volunteers wait to begin landscaping trails until construction is completed. A manual for greenway volunteers was developed in 1994 to guide and regulate volunteer work. The manual includes a description of appropriate volunteer efforts, request forms, waiver and release forms, and a completion form (volunteers are asked to summarize their accomplishments). Written guidelines are also provided for volunteer work in 100-year floodplains. To better organize volunteer activity, Cheyenne developed an "Adopt-a-Spot" program. Participants who adopt a segment of trail are responsible for periodic trash pick-up, but can also install landscaping, prune trail-side vegetation, develop wildlife enhancement projects, and install site amenities. All improvements must be consistent

with the Greenway Development Plan and must be approved by the local Greenway Coordinator. Adopt-a-Spot volunteers are allowed to display their names on a small sign along the adopted section of greenway.

## "Buy-a-Foot" Programs

"Buy-a-Foot" programs have been successful in raising funds and awareness for trail and greenway projects across the country. Under local initiatives, citizens are encouraged to purchase one linear foot of the greenway by donating the cost of construction. An excellent example of a successful endeavor is High Point, North Carolina's Greenway "Buy-a-Foot" campaign, in which linear greenway "feet" were sold at a cost of \$25 per foot. Those who donated were given a greenway T-shirt and a certificate. This project provided an estimated \$5,000 in funds.

## American Greenways DuPont Awards

The Conservation Fund's American Greenways Program has teamed with the DuPont Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, building trails, and other creative projects. Grants cannot be used for academic research, institutional support, lobbying or political activities. For more information, contact The Conservation Fund at (703) 525-6300.

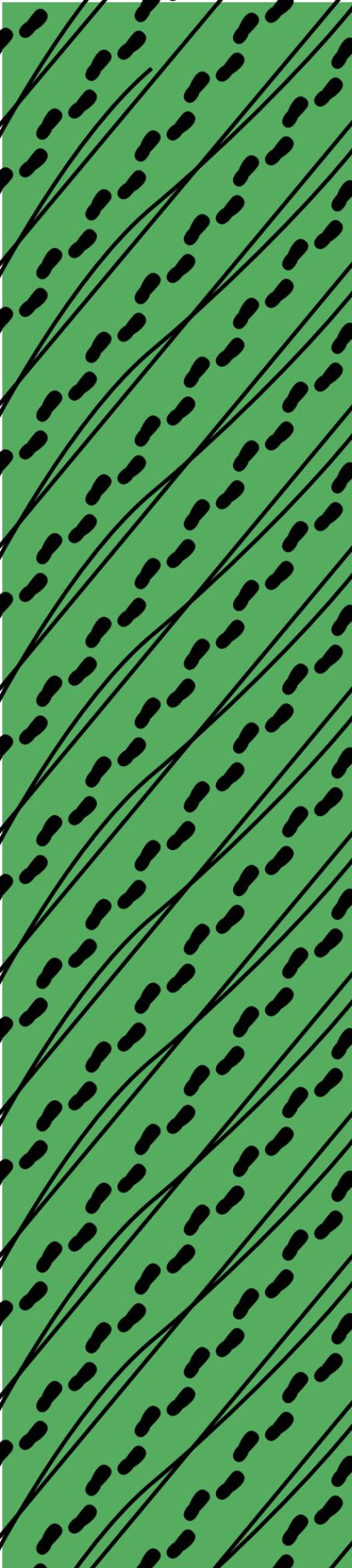
## REI Environmental Grants

REI (Recreational Equipment Incorporated) awards grants to organizations in protecting and enhancing natural resources for outdoor recreation. Grants of up to \$2,000 are available through this program and can be used for:

1. Preservation of wildlands and open space;
2. Advocacy-oriented education for the general public on conservation issues;
3. Building the membership base of a conservation organization;
4. Direct citizen action (lobbying) campaigns for public land and water recreation issues; and
5. Projects that serve to organize a trail constituency or enhance the effectiveness of a trail organization's work as an advocate.

Grants cannot be used for trail construction and maintenance. For more information, call REI's Grantline at (253) 395-7100.





# **Miami River Greenway Action Plan**

## **Appendix A Existing Conditions**

# Appendix A

## The Miami River Today: Existing Conditions

The first step in the greenway master planning process was to inventory the existing conditions within the proposed Miami River Greenway corridor. Information for the Inventory was collected in several ways. First, an exhaustive search was conducted for all past plans, studies, and reports conducted by various government agencies with jurisdiction over the Miami River. These reports were collected and reviewed by The Trust for Public Land (TPL). A list of the documents collected is listed at the conclusion of this chapter. Second, working with the Miami-Dade County Department of Environmental Resources Management (DERM), computer generated, digital Geographic Information System (GIS) maps were produced for various sets of data. These maps include: Landownership, Existing Land Use, Zoning, Transportation Systems (including roadways, proposed improvements and mass transit) Historic Sites, Archaeological Sites, Parks and Recreation, and Special Jurisdictions. Information depicted on these maps was confirmed and checked by a driving tour of adjacent roads and properties and boat tours of the River Study Area. In addition, the Greenway Subcommittee of the Miami River Commission, serving as the “citizens advisory committee” for the master planning process, reviewed the maps and this report. With collective knowledge of the Study Area, the Subcommittee members assisted staff in field checking the maps and modifying the maps based on their knowledge of the Study Area. All of the above methods were used to compile the following greenway corridor Inventory Report.

### Study Area

The Miami River Greenway Study Area consists of the easternmost 5.5 miles of the Miami River, from the Salinity Dam located at approximately NW 36 Street and NW 40 Avenue, to the mouth of the River at Biscayne Bay. The Study Area consists of those lands on both sides of the River, extending out approximately 2,500 feet from the river at the longest point on either side. The land on both sides of the Comfort Canal (also known as South Fork), Wagner Creek and the Tamiami Canal extends out approximately 500 feet at the longest point on either side.

SEE Map 5 - Special Jurisdictions

### History

Although the Miami River is a short river, its history is long. The Miami River evolved over thousands of years from a tidal channel into a freshwater stream that carried water from the Everglades to Biscayne Bay. The river is the oldest natural landmark in southeast Florida.

Native Americans first inhabited the area, as evidenced by the recently-discovered [Miami Circle](#), a prehistoric feature created approximately 2,000 years ago when native people cut a pattern of circular holes and basins into the limestone bedrock. This pre-historic structure is located on the south bank of the mouth of the Miami River and was recently preserved through the assistance of The Trust for Public Land. Sequentially, Indians, Spaniards, Englishmen, Bahamians and North American settlers chose the banks of the river for their settlements.

In the early 1800s, white settlers established residences along the River. In 1844 William English built a plantation at the mouth of the River on the north bank. During the second and third Seminole Wars, William English’s plantation was occupied by the US Army which used the buildings for its headquarters, naming it Ft. Dallas. Julia Tuttle moved to Florida from Ohio and purchased the William English plantation. She persuaded Henry Flagler to extend his railroad to the Miami River which was accomplished in 1896. The City of Miami was also incorporated in that year. At the turn of the century, Flagler built the magnificent Royal Palm Hotel at the mouth of the river. Residents and tourists enjoyed expeditions up the river to Musa Isle and Coppinger’s Indian village tourist attractions. Musa Isle was the last stop of a paddle wheel boat trip that offered fifty cent “jungle cruises” for four and a half miles to the rapids where the Miami River began. The rapids were created by water from the Everglades spilling over a six foot high natural ridge.

After the turn of the century, activities on the river reflected the needs of the new and rapidly developing city. No longer limited to serving as a transportation route or a defense post, the river developed a new working character. Various employment opportunities became available as warehouses and docks were established along the river by the Florida East Coast Railroad. Winter vegetables brought in by boats from outlying areas were loaded on the freight cars for shipment to northern states. Residents could buy seafood, fruits and vegetables daily at the river banks.

From 1909 to 1933 the river was lengthened and widened. The famous Miami rapids ceased in 1909 when the Miami Canal was built as part of the Everglades drainage project. Remnants of the rapids can be seen at the City of Miami’s Paradise Point Park. When dredging for the Miami Canal began, the water table dropped dramatically and Everglades muck slid into the once clear waters of the river.

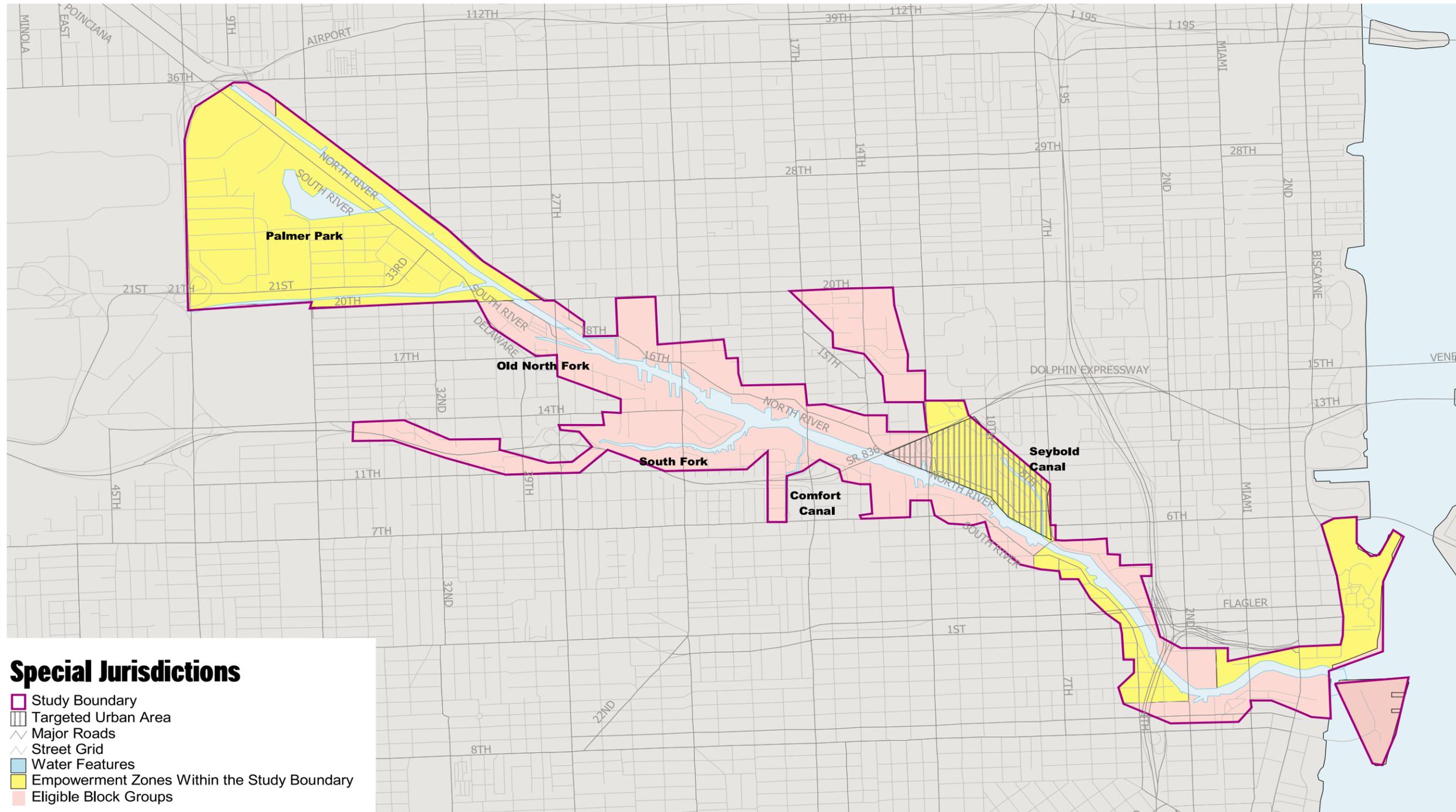
Today the length of the dredged canal extends over 80 miles from Lake Okeechobee to Biscayne Bay. However, only the last 5.5 miles are navigable due to the presence of the salinity dam at NW 36<sup>th</sup> Street which was constructed to stem the tide of salt water intrusion. Even prior to the dredging of the river in 1933, the river was becoming polluted. By the mid twenties citizens were calling for a sewage plan to eliminate pollution in the downtown segment of the Miami River, but further to the west children swam off the 17<sup>th</sup> Avenue Bridge up until the mid 1930s.

Concern over environmental degradation, water pollution, bridge openings and the generally unkept appearance of the Miami River has been voiced since the 1940s. In the early 1970s studies were undertaken by the Chamber of Commerce, the City of Miami, the Dade County Pollution Control Department, the US Geological Survey, the Central and Southern Flood Control District, the US Army Corps of Engineers, Secretary of State Richard Stone’s Office and the Dade County Planning Advisory Board on the deplorable conditions along and within the River. As a result there were code enforcement sweeps to clean up. The 1976-86 Miami Com-

prehensive Neighborhood Plan recognized the River as a special district and stated that “the Miami River is a working river and a major resource. It is presently underutilized and offers many redevelopment opportunities”. As we enter the 21st Century, the Miami River is beginning to realize its potential as a major community resource through this Greenway Plan.



Figure A1: A sketch of the Royal Palm Hotel along the Miami River, circa 1898.



## Special Jurisdictions

- Study Boundary
- Targeted Urban Area
- Major Roads
- Street Grid
- Water Features
- Empowerment Zones Within the Study Boundary
- Eligible Block Groups

March 2001

Prepared for:  
Miami River Commission  
Greenway Subcommittee

Source of GIS information:  
Florida Power and Light

Prepared By:



1000 0 1000 2000 3000 Feet



## Land Ownership

For purposes of the Inventory, the Study Area focused only on those parcels of land directly adjacent to the River and its tributaries. In addition, parcels along North River Drive and South River Drive, roadways which parallel the River for much of its length, were also part of the focus area. There are approximately 854 parcels of land within the Study Area, 215 of which are in public ownership and 639 are privately owned. The governmental jurisdictions that own property within the study area include the following: Miami-Dade County, the State of Florida, the South Florida Water Management District, the City of Miami, and the School Board of Miami-Dade County.

SEE Map 6 - Property Distribution

## Existing Land and Water Uses

The Study Area, located in the heart of the City of Miami, is predominantly an urban working river with a wide variety of different land uses along the corridor. Existing land uses identified by DERM GIS mapping include: airports/ports; communications, utilities, terminals, plants; industrial; industrial extraction; institutional; mobile home parks; multi-family; parks (including preserves and conservation); shopping centers, commercial and office, stadiums, tracks; single-family; streets/roads, expressways and ramps; townhouses; transient-residential (hotels/motels); two-family (duplexes); vacant (unprotected); vacant (government owned).

The Miami River enters Biscayne Bay in the Brickell area of downtown Miami. Land uses in this area consist of high-rise office, condominium, and apartment buildings. For the purpose of the Existing Land Use Map, these uses are classified as high density mixed use.

As the River passes under Interstate 95 (I-95), it enters the East Little Havana Neighborhood on the south side of the River and the community of Overtown on the north side. From I-95 to N.W. 7th Avenue, the land use is primarily multi-family and duplex residential. This area also has a few parcels of single-family home development and institutions. Moving west along the River, between N.W. 7th Avenue and N.W. 12th Avenue, the north side of the River is predominately single family residential, and several institutions, including the Jackson Memorial Hospital Complex and the Justice Center Complex. The south side of the River in this area consists of mostly multi-family residential, several institutional uses, and commercial facilities, most of which are located along the riverfront.

Between N.W. 12th Avenue and N.W. 17th Avenue, the River passes under State Road 836, a major limited access highway that runs parallel to Miami International Airport and eventually connects with I-95. Approximately 80 percent of this area is characterized by institutional uses, mostly on the north side of the River. The balance of the land uses within this area, including parcels on the south side of the River, consists of multi-family residential, a large area of single-family residential, parks and commercial uses.

From N.W. 17th Avenue to N.W. 22nd Avenue, a variety of land uses exist, however, as a whole, single-family residences comprise the majority of land uses. The area, which also includes the point at which the South Fork enters the Miami River, also includes a large amount of waterfront land uses, such as commercial and parks. This area also includes some industrial and shipping terminal uses.

Continuing westward on the River, the segment between N.W. 22nd Avenue and N.W. 27th Avenue, State Road 836 crosses the Comfort Canal in the southern portion of the study area. The area south of the River contains a mixture of the following uses: institutional, parks, single-family and multi-family residential, commercial, industrial, and shipping terminals. Gerry Curtis Park is located on the north bank of the River in this area, in close proximity to mostly single-family and multi-family residential development. This area also includes some institutional and commercial land uses.

From N.W. 27th Avenue to N.W. 37th Avenue, the southernmost portion of the Study Area follows the Comfort Canal. Single-family homes and duplexes make up the majority of land uses in this area. Continuing along the River within this one mile area and stretching farther west to N.W. 42 Avenue, industrial and commercial land uses dominate, however, ports, communications, single-family residential, institutional and transient land uses exist as well.

SEE Map 7 - Existing Land Use

## Zoning

There are **eighteen** City of Miami zoning classifications for land within and around the Miami River Greenway study area boundaries which are defined in the following text.

The Conservation district (CS) is restricted to environmentally sensitive areas that will remain in an essentially natural state. Only activities that reinforce the area's character are allowed and minimum development is permitted conditionally. Sewell Park, located immediately west of NW 17 Avenue on NW South River Drive, is an example of a Conservation District in the river corridor.

The River Quadrant Mixed-Use District (SD-15) encourages high-intensity mixed-use development of office, hotel, residential, retail, service, cultural and entertainment uses along the Miami River, adjacent to the Central Business District. This special designation is of substantial public interest because of its potential affect on traffic reduction in downtown Miami, support of existing and future transit facilities, energy conservation

Under the Historic Preservation Overlay District (HP), the City has the intent of preserving and protecting its heritage through restoration, rehabilitation and adaptive use of Miami's historic and architectural resources. In addition, the district is intended to promote the adaptive use of historic sites and districts within the City.

The Restricted Commercial (C-1) use zoning category is dispersed throughout the Miami River Study Area and includes offices, commercial marinas, and live aboard vessels. In addition, mixed use, or commercial retail activities, are permitted, including residence hotels, lodging houses and tourist homes, restaurants, and retail establishments for automobiles, motorcycles, new boats, marine motors, parts equipment and accessories.

The Liberal Commercial (C-2) use zoning category is an expansion of the restricted commercial designation and includes marinas, docks or slips, wholesaling or warehousing of merchandise, repair service establishments, in addition to a variety of other uses. There are several areas along the River zoned for Liberal Commercial.

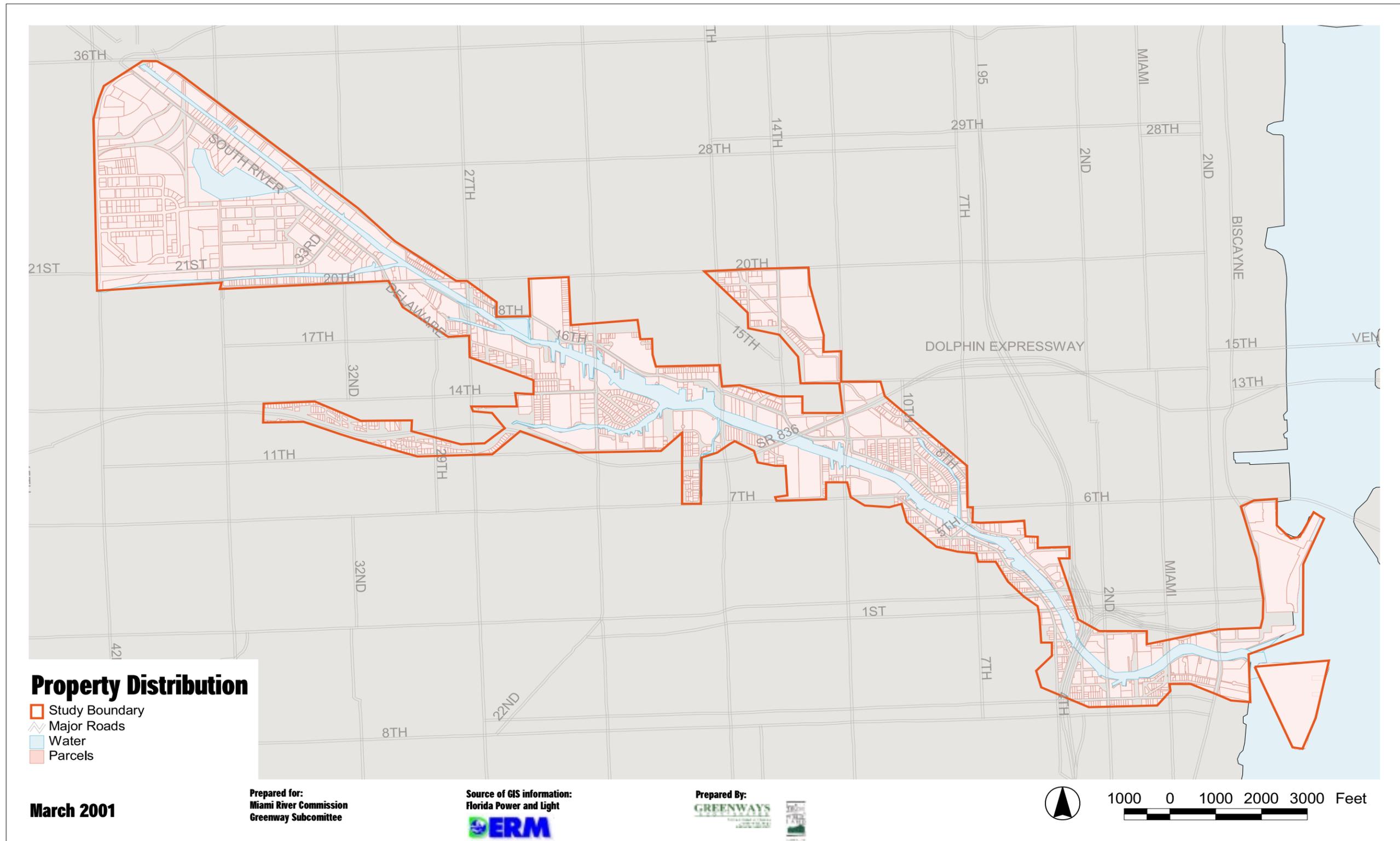


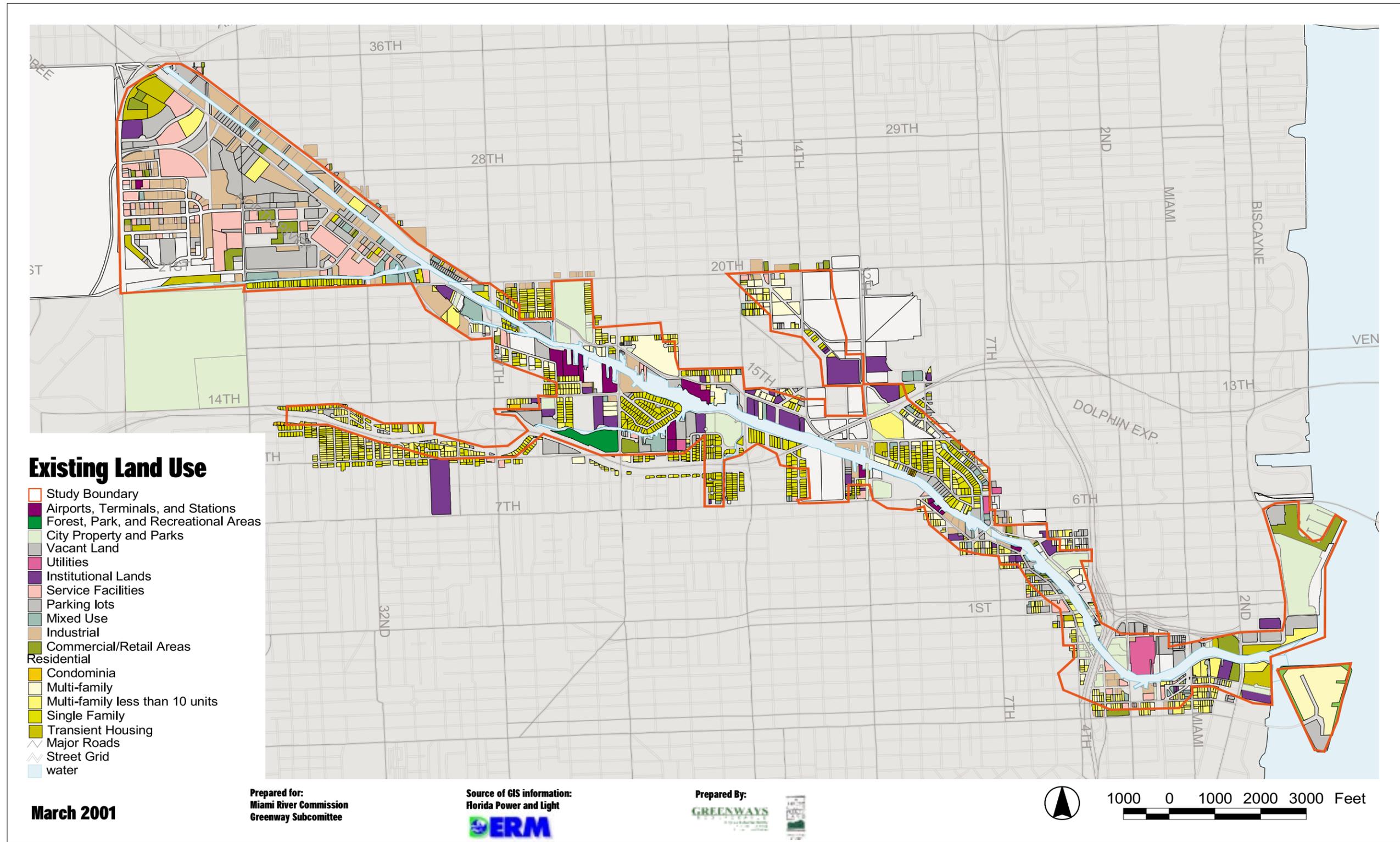
Figures A2-4: Various land uses border the Miami River, including restaurants, retail, marine industrial and residential.



# Miami River Greenway Action Plan

# Map 6





The Central Business District (CBD) commercial category applies to the central commercial, financial, and office core of the metropolitan area and allows a mix of uses. The CBD is located on the north side of the Miami River, from Biscayne Bay to the west side of the South Miami Avenue Bridge. It also includes Biscayne Boulevard to N.E. 5th Street. While examples of CBD uses include high-density multi-family residential and high-intensity office, parking lots, and garages, its permitted accessory uses specifically include wet docks or moorage of private pleasure craft on the shoreline and cellular communications sites. Furthermore, conditional principal uses allow for major sports, exhibition and entertainment facilities and convention centers, bars, saloons, taverns and supper clubs.

Under the Government and Institutional (G/I) zoning category, the following uses are permitted: fine arts facilities, financial institutions, schools, adult and child day care, hospitals, places of worship and jails. The largest portion of the Study Area zoned G/I is the Civic Center Complex, located on the north side of the River in the center of the Study Area. There are several other portions of the Study Area zoned G/I, including the Miami-Dade Stephen P. Clark Government Center, located at 111 N.W. 1st Street.

The Industrial (I) category permits a host of marine uses such as bases of operation for marine dredging, salvage, towing, marine construction offices and yards, and piloting headquarters. Other permitted establishments include facilities for construction, maintenance, service, repair, supply or storage of vessels, as well as piers, wharves, docks and boat building and repair businesses. There are approximately five areas zoned Industrial, four of which are located on the north side of the River. From west to east, the parcels are found at the following locations: N.W. 7th Street and N.W. 7th Avenue, N.W. 20th Street between N.W. 12th Avenue and N.W. 14th Avenue, N.W. 20th Street between N.W. 14th Avenue and N.W. 17th Avenue and N.W. 20th Street between N.W. 22nd Avenue and N.W. 25th Avenue.

The Industrial - Light Manufacturing District (IU-1 ) allows for uses such as boat or yacht building, repairing or overhauling, and boat slips. In addition, facilities for storage of dredging supplies, boats and machinery are also permitted in the IU-1 category. The only area zoned IU-1 within the boundaries is located on N.W. 20th Street between N.W. 27th Avenue and N.W. 31st Avenue.

The Office (O) zoning designation allows for offices that do not sell merchandise on the premises, medical or dental offices, government offices, and educational facilities. Uses within this category can be found throughout the Study Area and many are located on the banks of River. Claughton Island, also known as Brickell Key, is located in Biscayne Bay at the mouth of the Miami River. The island is zoned Office and is developed with high-rise condominiums, shopping centers, and offices.

The Parks and Recreation (PR) category allows for public and private parks, recreational, educational, and cultural facilities, as well as marine and marina facilities. There are nine parks located throughout the Study Area, which are described in the following text. (See [Recreation](#).)

Under the Single-Family Residential (R-1) zoning designation, the following categories are allowed: single family homes (1 unit per lot of record), community-based residential facilities for six or less residents, adult daycare, and private pleasure craft as living quarters and house barges on the River. Most of the R-1 zoned

sites are located west of N.W. 7th Avenue, beginning with the Spring Garden neighborhood.

There are numerous areas zoned Two-Family Residential (R-2) within the study boundaries. R-2 permits the following uses: single-family homes with one or two units and community-based residential facilities housing seven to fourteen clients. Occupancy of private pleasure craft as living quarters and house barges are also permitted in the zoning classification, but only on the River. The first area zoned Two-Family Residential (R-2) category in the Study Area is found on the south side of the River, immediately west of I-95.

The Medium-Density Residential (R-3) zoning designation allows single-family, duplex and multi-family structures including low-rise apartments with a maximum density of sixty-five units per acre. In addition, places of worship, schools, daycare, community-based residential facilities and convenience establishments are also permitted. A significant portion of the Study Area is zoned R3, beginning with the area directly west of I-95, up the River to N.W. 27th Avenue.

Under the Multi-Family High Density Residential (R-4) zoning category, the following uses are allowed: single-family, duplex, and multifamily structures up to and including high-rise apartments, one-family, 2-family and multi-family buildings, hotels, motels, tourist homes, guest homes, and occupancy pleasure craft as living quarters and house barges on the Miami River. With the exception of one of the areas zoned R-4, each area designated as such is located on the River or on Wagner Creek.

The Waterfront Industrial District (SD-4) was designed to secure riverfront property for water dependent businesses. The SD-4 code permits such uses and structures as piers, wharves, docks, facilities for warehousing and storage, packing, and crating of materials from or for marine shipment, passenger terminals, and commercial marinas. The largest area of SD-4 in the Study Area extends from where S.W. 1st Court would be located on the south side of the River and includes the majority of land on the River bank between I-95 at Flagler Street and S.R. 836. The area from N.W. 22nd Avenue east towards the River on South Fork and land from the southern tip of North Fork, east approximately one-half mile is also zoned SD-4. On the north side of the River there are several areas classified as SD-4, comprising about one mile of River frontage.

The Brickell Avenue Area Office-Residential District (SD-5) is located along Biscayne Bay and the Miami River and allows for high-rise offices with banking, finance, international trade, and other professional office uses in the district. In addition, the district allows multifamily residential occupancy either in separate buildings or in combination with office and supporting retail and service uses.

The Central Brickell Rapid Transit Commercial Residential District (SD-7) is designated for high-intensity mixed use development of residential, office, retail and service uses. The district, located from the south bank of the River to S.W. 13th Street, between the Metrorail and Brickell Avenue, includes residential uses on the upper levels of ground floor retail and service establishments. Cultural and entertainment uses at ground level are also permitted under SD-7. The district is designed to accommodate intensive pedestrian traffic, especially along the Brickell Promenade, Miami Avenue and S.W. 10th Street.

SEE Map 8 - Existing Zoning

## Environmental

### Vegetation

Due to the urban character of the Study Area, many of the native plants that were originally found along the Miami River have been destroyed. However, some native and exotic vegetation does still exist in the parks and a few other undeveloped parcels found in the Study Area.

Vegetation native to the study area include: Red Mangroves, White Mangroves, Leather Fern, Live Oaks, Hardwood Hammock, Glade, Sabal Palms, Gumbo Limbo, Silver Buttonwood, Strangler Figs and Ficus. Exotic vegetation includes: Washingtonian palms, Brazilian pepper, Australian pine, Umbrella Tree, Women's Tongue and Banyan.

### Geology

The dominant geological feature of the Study is Northern Biscayne Bay, which is 2 to 6 miles in width and about 24 miles in length. A shallow bedrock basin of Pleistocene limestone underlays the Bay. An eastern ridge, made of Key Largo limestone and the oolitic Miami limestone forms the Atlantic Coastal Ridge, defining the western bay shore and separating Biscayne Bay from the Everglades.

The Atlantic Coastal Ridge runs north and south through the Study Area and crosses the Miami River at the historic Miami River Rapids, which were located on the North Fork in the vicinity of N.W. 27th Avenue. The Atlantic Coastal Ridge served as a dam under natural drainage conditions. Fresh water from the Everglades Basin flowed into the River through the historic rapids. The rapids were destroyed when the River was dredged and channelized in 1909.

### Soils

According to the soil survey map, the following types of soils are located within the Study Area: Davie Fine Sand, Rockdale Fine Sand and Arzell Fine Sand.

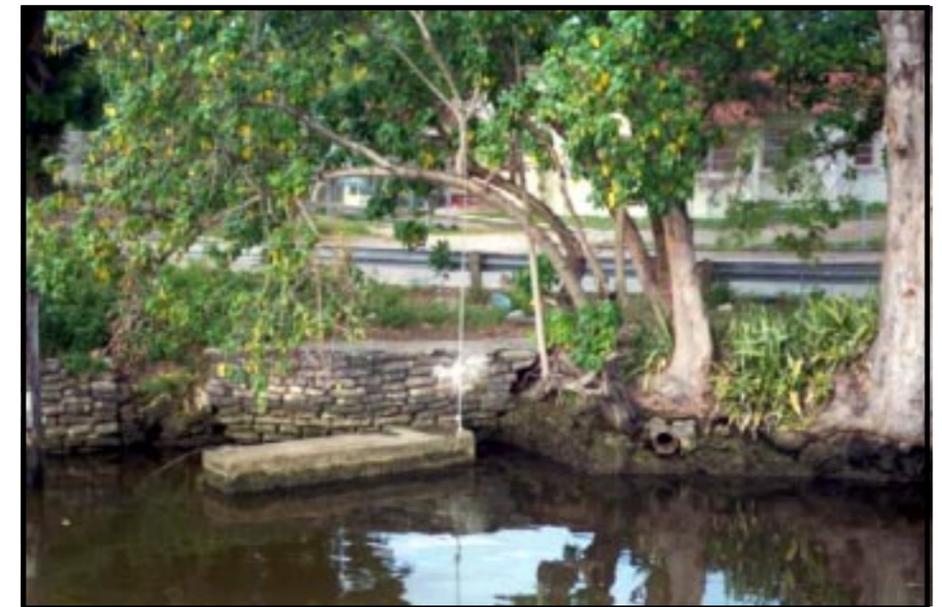
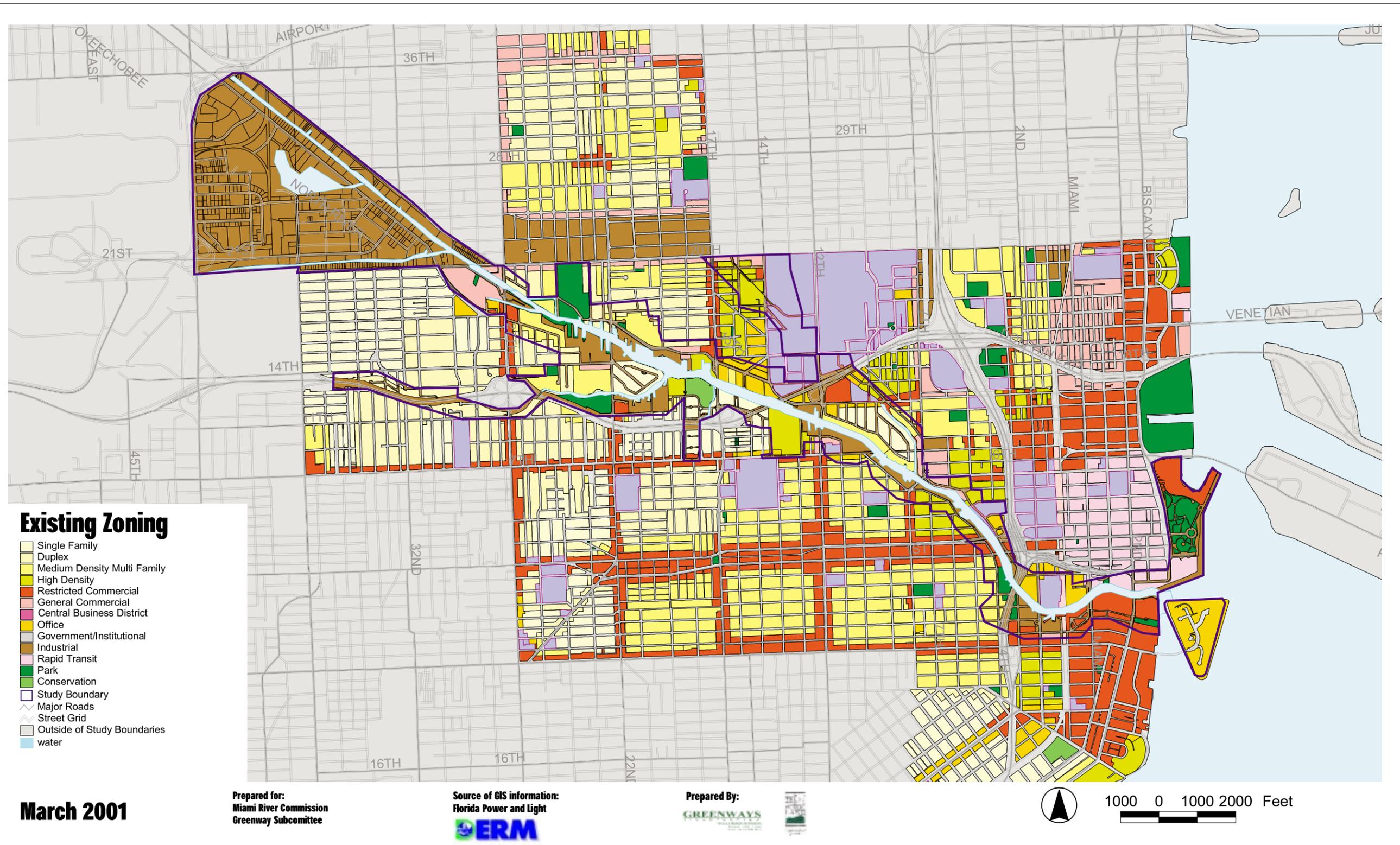


Figure A5: Limestone is a naturally occurring feature along the river banks. Here it is used to build a retaining wall along a portion of the River.





## Hydrology

The Miami River originates in the Florida Everglades and ends at the River's mouth, where it empties into Biscayne Bay. The watershed of the River covers a total drainage area of 69 square miles. The Miami River has three main tributaries within the Study Area. From east to west, these tributaries are the Seybold Canal, the Comfort Canal and the Tamiami Canal. The Seybold Canal, originally known as Wagner Creek, enters the Miami River near 8th Avenue and runs north to N.W. 20th Street. The Comfort Canal originates just east of N.W. 37th Avenue around N.W. 13th Street and flows into the River at what is known as South Fork, between N.W. 13th Street and N.W. 14th Street at N.W. 9th Avenue. The Tamiami Canal enters the River at approximately N.W. 21st Street and N.W. 30th Avenue. The Tamiami canal links the Miami River to the Florida Everglades and can be attributed to the River's inclusion in the Central and Southern Florida Restudy Project.

## Topography

Little change in topography exists in the Study Area, which has little relief, except at Sewell Park. This is due in large part to the urban nature of the Study Area; development over the last century has significantly altered much of the original topography. The United States Department of Interior's Geological Survey Topographic map of the Miami Quadrangle shows that the majority of the Study Area along the River banks has an elevation of 5' above sea level. However, the highest elevation in the corridor is at 15' feet in an area zoned for single family residences across from the Orange Bowl, between N.W. 7 Street and the River, from approximately N.W. 13 Avenue to N.W. 14 Avenue. Additionally, on the north side of the River, 10' feet of elevation can be found at the Civic Center Complex.

## Wildlife

In spite of the urban character of the Study Area and the resulting habitat destruction, some native animal and plant species that were originally found along the Miami River are still in existence. Furthermore, the Miami River still provides habitat value for aquatic species, particularly the West Indian Manatee. In addition, certain migratory species are known to use the Study Area during migration.

### Wildlife

- West Indian Manatee (endangered)
- Snook
- Pelicans
- Great Blue Heron
- Little Blue Heron
- Black Crow
- Black or Yellow Crowned
- White Ibis
- Wood Stork
- Great Egret
- Cattle Egret
- Tri-colored Heron
- Brown Pelican
- Osprey
- Red Shouldered Hawk
- American Kestrel
- Ruby Throated Hummingbirds

### Migratory Species



Figure A6: The West Indian Manatee, photographed along a seawall along the Miami River in November 1999 by the consultant, is currently listed as an endangered species.

- Spot Breasted Oriole
- Eastern King Bird
- Gray King Bird
- Iguana

## Access and Transportation

### Roadways and Proposed Roadway Improvements

The Miami River is surrounded by a network of local streets, collector streets, arterials, minor and major thoroughfares, bridges, and the Interstate Highway System. From Biscayne Bay, Interstate 95 (I-95) is the first major roadway that crosses the Miami River. It consists of as many as ten north and south bound lanes at certain points on the Interstate.

State Road 836, is a major limited access highway that criss-crosses the Comfort Canal on the Southwest side of the River and finally crosses the Miami River at a point approximately located between N.W. 14th Court and N.W. 14th Avenue from N.W. 10th Street to N.W. 11th Street. State Road 112, parallels the northwest boundary of the Study Area, essentially running along the eastern boundary of Miami International Airport and the western boundary of the proposed Miami Intermodal Center.

In close proximity to the Miami River, North River Drive and South River Drive parallel the River on the north and south, winding through historic neighborhoods, marine shipping and fishing businesses, as well as restaurants.

There are 15 bridges that cross the Miami River within the Study Area, 11 bascule and 4 fixed (Metromover, Metrorail Rapid Transit, North-South Expressway and East-West Expressway). The Florida Department of Transportation has jurisdiction over the following bridges: Brickell Avenue, S.W. 1st Street, Flagler Street, 5th Avenue, 12th Avenue, and 27th Avenue.

Miami-Dade County has jurisdiction over the following bridges: Tamiami Trail, N.W. South River Drive, N.W. 22nd Avenue, N.W. 17th Avenue, S.W. 2nd Avenue, and South Miami Avenue. Following is a description of each bridge starting from west to east in the Miami River Study Area.

The 27th Avenue Bridge crosses the Miami River between N.W. 18 Terrace and N.W. 19 Street. The 22nd Avenue Bridge crosses the River at approximately N.W. 14 Terrace and also crosses the Comfort Canal, south of the River near where N.W. 18 Street would be located.

The 17th Avenue Bridge connects N.W. South River Drive with N.W. North River Drive and is located just to the east of Sewell Park, located on the south side of the Miami River at theoretical N.W. 13 Street.

Planning is underway for the reconstruction of the 12th Avenue Bridge. with. The plans are pedestrian friendly and the designs compliment the concept of a future Miami River Greenway. The new structure will allow a greenway to be constructed under the bridge at the River's edge.

The 5th Street Bridge is the link between the communities of East Little Havana and Overtown. In addition, the "Humpback Bridge" can also be found on N.W. 7th

Avenue at N.W. 7th Street. This bridge crosses Wagner Creek, from east to west, and connects the historic neighborhood of Spring Garden to the Overtown community.

Flagler Street represents the centermost line between north and south Miami-Dade County and is located between S.W. 1st Street and N.W. 1st Street. The Flagler Street Bridge crosses the Miami River and provides a connection to I-95 at N.W. 3rd Avenue.

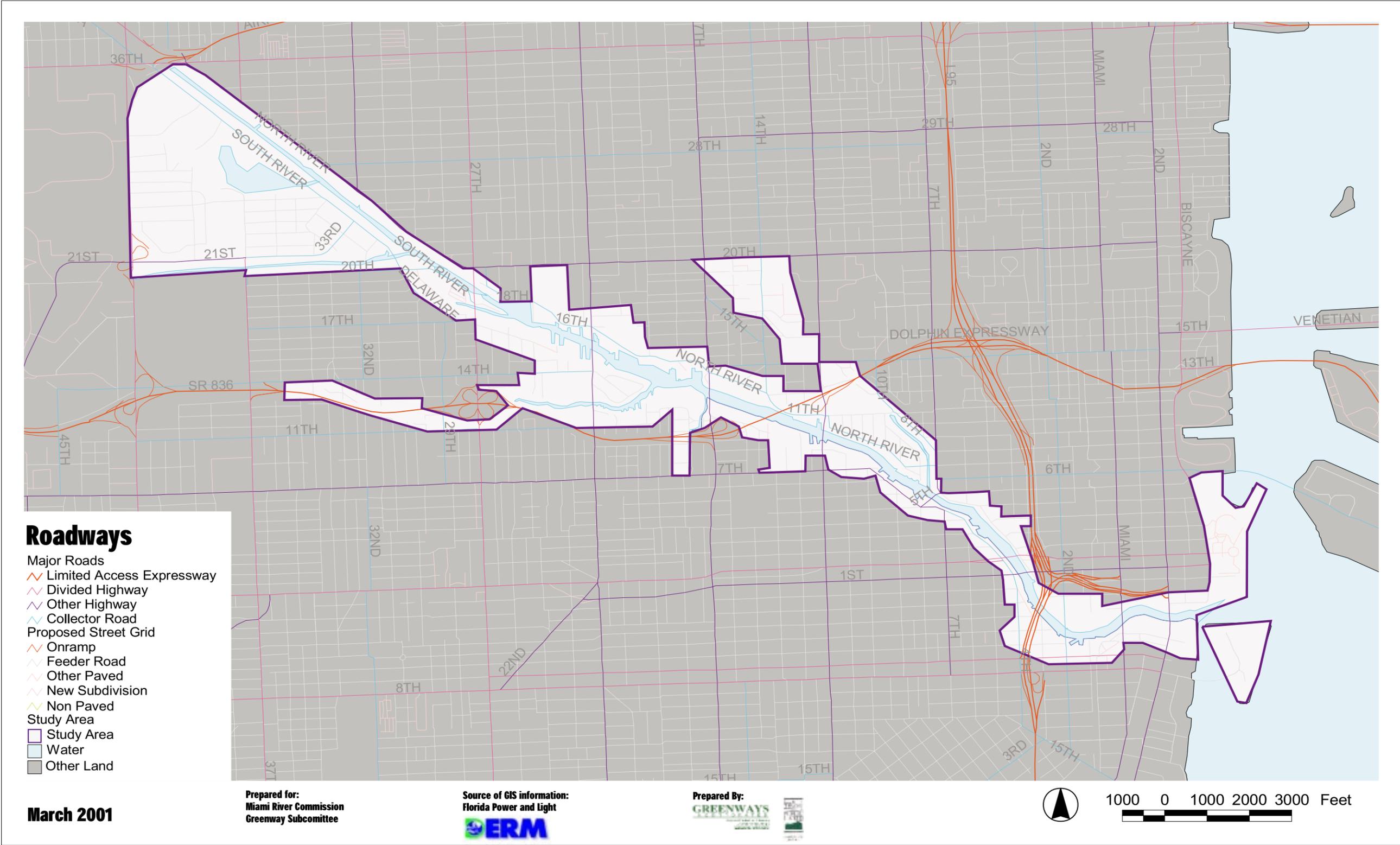
Planning is underway for the reconstruction of the SW 2nd Avenue Bridge. The plans are pedestrian friendly and the designs compliment the concept of a future Miami River Greenway.

Continuing east towards the Biscayne Bay, the South Miami Avenue bridge crosses the River just north of S.W. 5th Street. Finally, the recently renovated Brickell Avenue Bridge is the last bridge to cross the River before it empties into Biscayne Bay. These two bridges provide a direct link between downtown Miami and the Brickell Avenue office and residential district.

SEE Map 9 - Roadways



Figures A7 & 8: The 27th Avenue (top) and 17th Avenue bridges are among those on the Miami River that must open to allow boat traffic to access the upper river channel.



## Mass Transit

Passengers utilizing Miami-Dade County's mass transit system, Metro Rail and Metro Mover, have an opportunity to see the River from a magnificent overhead view. Metro Rail crosses the River near S.W. 5th Street between the Brickell (south side) and Government Center (north side) Stations, and between 2nd Avenue on the west and S.W. 1st Avenue on the east.

The Metro Mover is an extension of the rail system that forms a transit loop around downtown Miami. The Brickell loop of the Metro Mover crosses the Miami River between S.E. 5th Street and S.E. 3rd Street, between the 5th Street and Riverwalk stations.

Miami-Dade County is on the verge of expanding its rapid transit system with the construction of the two major transportation projects in South Florida: the East-West Corridor of Metro Rail and the Miami Intermodal Center (MIC). The MIC is the core stop on the East-West Corridor and will be the central connecting point for Tri-Rail, Metrorail, Amtrak, buses, private automobiles, bicycles and pedestrians. The proposed MIC will be located within the north western boundary of the Study Area and the East-West corridor is proposed to run through the Study Area, virtually parallel to the Miami River. The proposed 27th Avenue Station, one of six new Metrorail stations to be located along the East-West corridor, will be located between the Miami River and SR 836. Each station is being designed to offer joint public/private development and enhancement of the surrounding area. The objective is to provide transit access as well as businesses and jobs to the surrounding environment.

SEE Map 10 - Transportation



Figure A9: Aerial view of the Metro Rail that spans over the Miami River near downtown.

## Socioeconomic Governmental Jurisdictions

A total of 36 agencies from the federal, state, county and city levels of government have jurisdiction on the Miami River.

### Federal

U.S. Drug Enforcement Agency  
U.S. Federal Bureau of Investigation  
U.S. Immigration and Naturalization Service  
U.S. Coast Guard  
U.S. Customs Service  
U.S. Border Patrol  
U.S. Army Corps of Engineers  
U.S. Department of Agriculture  
U.S. Marshals Service  
U.S. Occupational Safety & Health Administration  
U.S. Department of Transportation - Maritime Administration  
U.S. Alcohol, Tobacco & Firearms  
U.S. Environmental Protection Agency  
U.S. Department of Interior

### State

Florida Department of Law Enforcement  
Florida Department of Environmental Protection (DEP)  
Florida Department of Transportation  
Florida Marine Patrol (FMP)  
Florida Fish and Wildlife Conservation  
South Florida Water Management District  
Florida Department of Children and Family Services  
Miami River Commission

### County

Miami-Dade County Planning and Zoning  
Miami-Dade County Fire Department  
Miami-Dade County Public Works Department  
Miami-Dade County Solid Waste Department  
Miami-Dade County Department of Environmental Resources Management (DERM)  
Miami-Dade Police Department

### City

City of Miami Building and Zoning Department  
City of Miami Fire Department, City of Miami Marine Operations  
City of Miami Parks & Recreation Department  
City of Miami Community Planning and Revitalization Department  
City of Miami Police Department  
City of Miami General Services Administration  
City of Miami Solid Waste Department

The Miami River Study Area overlaps with several boundaries of special jurisdic-

tion each designed for specific purposes in an effort to enhance the area economically, environmentally and recreationally. The following areas represent the special jurisdictions that overlap either partially or completely, the Study Area boundaries: Empowerment Zone, Miami River Brownfields Redevelopment Assessment, Community Development Target Area, and the Urban Economic Advisory Task Force Area.

A portion of the Miami River Study Area lies within the Miami-Dade County Federal Empowerment Zone boundaries. Designated in January 1999, urban Empowerment Zones provide tax incentives and performance grants to create jobs and expand business opportunities. In addition, the incentives enhance and support workforce development activities including job training and transportation.

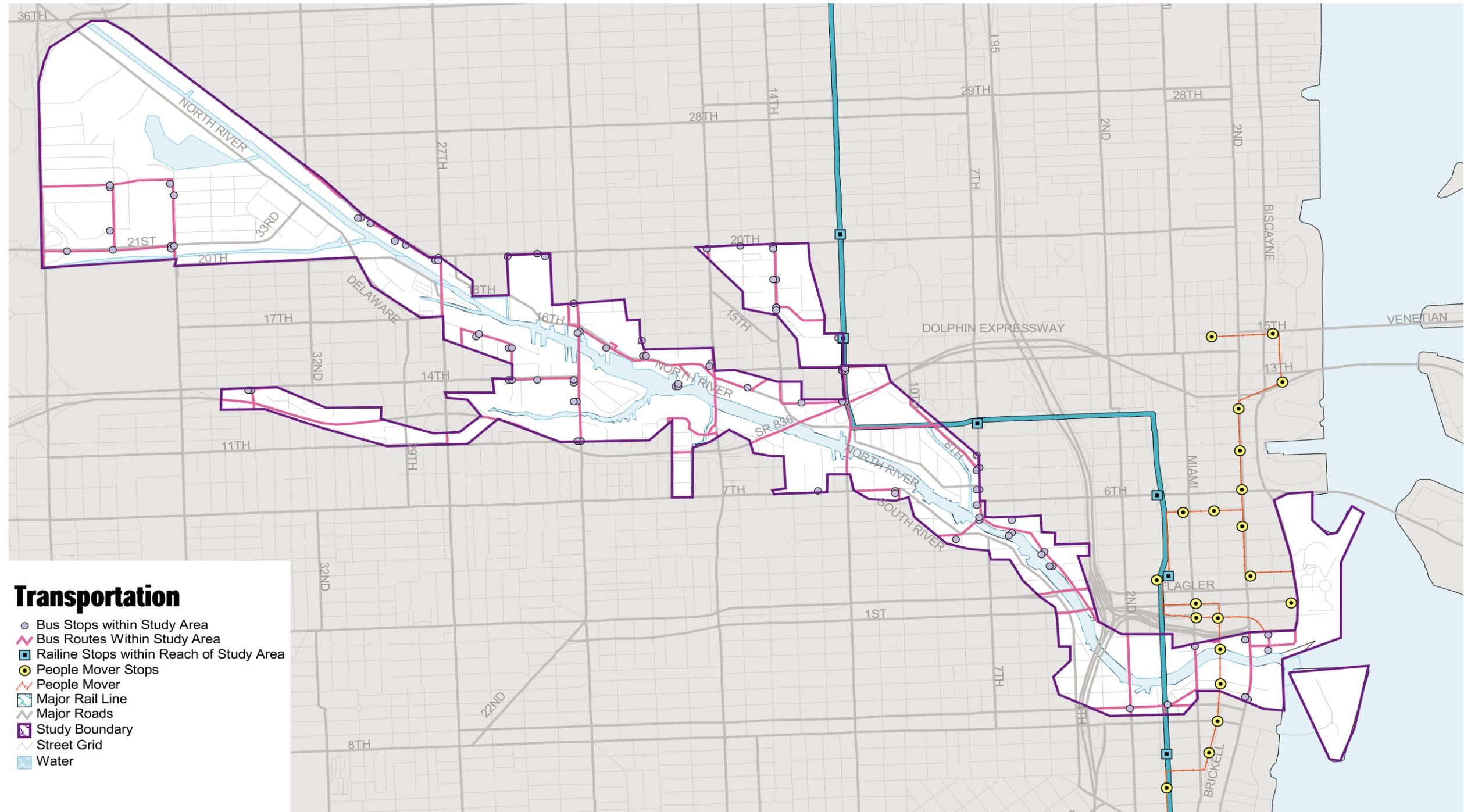
The Miami River Brownfields Assessment boundaries also overlap a portion of the Miami River Greenway Study Area. From east to west, the Pilot Project area is between SE 2nd Avenue and N.W. 7th Avenue. The boundaries on the north and south sides of the River include the communities of Overtown and East Little Havana.

Community Development Block Grant (CDBG) target area designation entitles communities to receive funding for economic development primarily for job creation and new and/or expanding businesses. There are five CDBG target areas within the City of Miami: Downtown, Overtown, Allapattah, Little Havana and Melrose.

The Urban Economic Advisory Task Force was established to prepare economic development plans for 20 urban communities throughout Miami-Dade County. The community of Overtown is one of the Targeted Urban Areas and has a portion of its boundaries overlapping the Miami River Study Area boundaries.

The Eastward Ho! Initiative was proposed by the Governor's Commission on a Sustainable South Florida in 1995. With little or no room for westward development, Eastward Ho! recommends that developers fill in vacant land. The county's Infill Strategy Task Force is studying ways and incentives to implement this concept.





## Transportation

- Bus Stops within Study Area
- ▬ Bus Routes Within Study Area
- Railine Stops within Reach of Study Area
- People Mover Stops
- ▬ People Mover
- ▬ Major Rail Line
- ▬ Major Roads
- ▬ Study Boundary
- ▬ Street Grid
- ▬ Water

March 2001

Prepared for:  
Miami River Commission  
Greenway Subcommittee

Source of GIS information:  
Florida Power and Light  
**ERM**

Prepared By:  
**GREENWAYS**



## Schools

There are approximately fifty schools in and around the Miami River Study Area, within the following expanded boundaries: N.W. 54th Street (north), S.W. 40th Street (south), N.W. 42nd Avenue (west) and Biscayne Boulevard (east). Elementary Schools located in and around the Study Area are:

- Shadowlawn
- Kelsey L. Pharr
- Allapattah
- Olinda
- Floral Heights
- Lorah Park
- Melrose
- Santa Clara
- Miramar
- Citrus Grove
- Maya Angelou
- Comstock
- Dunbar
- Silver Bluff
- Riverside
- Southside
- Buena Vista
- Auburndale
- Earlington Heights
- Phyllis Wheatley
- Kensington Park
- Shenandoah
- Coral Way
- Frederick Douglass
- Citrus Grove
- Henry M. Flagler
- Kinloch Park

The Middle Schools located in and around the Study Area are:

- Allapattah
- Brownsville
- Booker T. Washington
- Shenandoah
- Citrus Grove
- Kinloch Park

The High Schools located in or near the Study Area boundaries are:

- Design and Architecture
- Miami Jackson
- New World School of the Arts
- Miami Senior

Within the next 2 years, Ada Merritt High is scheduled to be opened within the Study Area boundaries.



Figure A10: A local school near the Miami River celebrates Christmas.

In addition to K-12 educational facilities, there are several vocational/adult schools as well as special schools and centers near the Miami River Study Area. Vocational Schools include:

- Miami Skill Center
- Lindsey Hopkins Technical
- Baker Aviation School
- The English Center

Special Schools and Centers include:

- Continuous Opportunity for Purposeful Education (COPE) Center North
- Juvenile Justice Center
- Corporate Academy
- Merrick Education Center
- Center for Environmental Education

## Recreation

### Parks

Existing parks within the Study Area are: Brickell Park, Claughton Island Linear Park, Bayfront Park, Miami Riverwalk, Jose Marti Park, Lummus Park, Spring Garden Point Park, Greenfield Park, Miami River Rapids Park, Fern Isle Park, E.G. Sewell Park, and Gerry Curtis Park.

Claughton Island Linear Park is a mile-long public recreation area that borders the island, also known as Brickell Key. Located at the mouth of the Miami River in the Biscayne Bay, the park is managed by the Brickell Key Master Association.

Bayfront Park is a 34-acre park located on the east side of Biscayne Boulevard between Chopin Plaza (theoretical S.E. 2nd Terrace) and N.E. 3rd Street in downtown Miami. Owned by the City of Miami and managed by the Bayfront Park Management Trust, the park hosts an average of 100 different festivals, concerts and celebrations each year. Bayfront Park features a Baywalk, a Rock Garden, the AT&T Amphitheater, the world's largest free standing laser light tower, the Mildred and Claude Pepper Fountain, as well as the Challenger Memorial.

The City of Miami's Land Development Division of the Planning Department oversees development of the Miami Riverwalk. This partly developed linear park currently provides pedestrian access to the river front at the following locations: Chopin Plaza and the Biscayne Bay, S.W. 8th Street and the Biscayne Bay, the Miami River and the area immediately west of S.W. 2nd Avenue, and on North River Drive and the area immediately west of S.W. 7th Avenue. These Riverwalk sites are not currently connected.

Developed in 1984 and named in honor of the hero of Cuban independence, Jose Marti Park is a City of Miami Park located on the south side of the River, just west of Interstate Highway 95, between S.W. 2nd Street and S.W. 5th Street. Facilities in the park include basketball courts, a baseball field and a pool. In addition, a recreation center is scheduled for construction.

Located on the north side of the River between S.W. 2nd and S.W. 3rd Streets, the 7-acre Lummus Park holds the distinction of being the City of Miami's first park and houses two buildings of historic significance: Fort Dallas and the William Wagner House. The City's Parks and Recreation Department manages and operates both parks.

The Spring Garden Point Park, located at the point where Wagner Creek flows into the River, will soon be developed as a passive park neighboring the historic Spring Garden Community. This new community park site was acquired by The Trust for Public Land (TPL) from the Hewes family using funding from the Florida Communities Trust program and the Miami-Dade County Safe Neighborhoods Park Act Bond. TPL will convey the property to the City of Miami. "The Point" Park will initially be managed by the Spring Garden Civic Association.

Greenfield Park is a newly created passive park located on a small lot (122' feet by 50' feet) on North River Drive in the historic Spring Garden neighborhood. Formerly neglected and the site of illegal dumping, this pocket park has been transformed by the Spring Garden Civic Association into a garden-spot for residents, visitors, and employees of the area.

E.G. Sewell Park is located between N.W. 17th Avenue and N.W. 19th Avenue on land that was once considered to be the most beautiful residential site on the River because of the high ridge that was located at the bend. The park continues to have beautiful greenspace and will feature a new kiosk in 2001. The park is managed by the City of Miami.

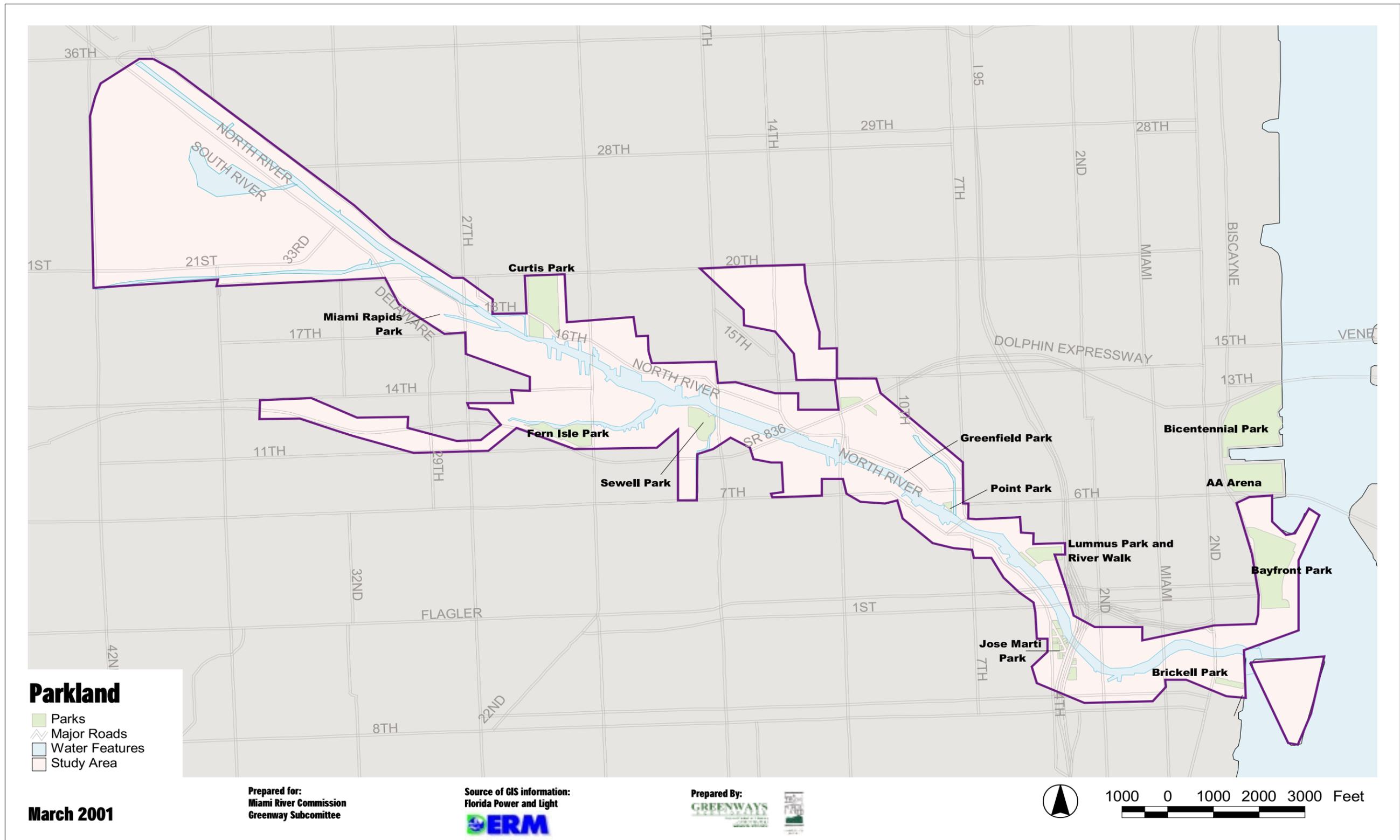
On the north shore of the River between N.W. 23rd Avenue and N.W. 24th Avenue, Gerry Curtis Park once hosted a wide array of high school athletic events and today is often used for celebrations and other activities on the River. The City of Miami manages the park.

SEE Map 11 - Parkland



Figure A11: Jose Marti Park is one of several that border the Miami River.

# Miami River Greenway Action Plan



## Community Points of Interest

In addition to the schools and parks, there are many other community points of interest adjacent to the Miami River and within the Study Area. These areas would serve as destinations for users of the proposed Greenway. The community points of interest include: Mahi Temple, Miami Dade Justice Building, Cedars Medical Center, Civic Center Area, US Veterans Administration Hospital, Jackson Memorial Hospital, Victoria Hospital, The Orange Bowl Stadium, Harbor View Hospital and the City of Miami Riverside Building. Mahi Temple is a Masonic lodge that is used to host community events. The Miami Medical and Justice Centers are headquarters to several major institutions including the Miami Dade Justice Building, Cedars Medical Center, the U.S. Veterans Administration Hospital, and Jackson Hospital, in addition to institutions of higher learning.

## Historic and Cultural

### Historic Resources

The Study Area contains numerous historic resources of national, state, and local significance. One of the most significant historic buildings in the Study Area is the Scottish Rite Temple. This 1924 Egyptian-inspired temple is located at 471 N.W. 3rd St. directly across from the historic Lummus Park and is used today to host special community events. The architecture of the temple is noteworthy for combining classical detail with Art Deco abstraction in elements such as two-headed eagles and a ziggurat roof.

The Miami Canoe Club clubhouse was constructed in 1921, with two houses on the west side of South River Drive, at 118 S.W. South River Drive. Those two houses have been beautifully restored and joined to form an elegant bed-and-breakfast known as the Miami River Inn. These buildings are included within the South River Drive Historic District, which is listed in the National Register of Historic Places and is also a locally designated historic district.

The building known as Fort Dallas was constructed in 1844 as slave quarters on the William English plantation on the north bank at the River mouth. After English left in 1849, the Army headquartered on the plantation and in 1855 Fort Dallas was established on the compound during the 3rd Seminole War. This historic building has been relocated to Lummus Park, the City of Miami's first park. Fort Dallas is a locally designated historic site and is owned by Daughters of the American Revolution.

The Wagner House is the oldest standing house in Miami-Dade County. The pre-1858 pine house, also located at Lummus Park, is a hand hewn, peg fastened and wood shingled example of mid-19th century shelters. The Wagner House has been designated locally as a historic site. It is owned by the Dade Heritage Trust.

The City of Miami designated the neighborhood of Spring Garden a Historic District in June 1997. Established in 1916, Spring Garden was home to many early pioneers, including Miami Herald managing editor Frank Stoneman, whose late daughter, Marjorie Stoneman Douglas, authored the seminal book *The Everglades, River of Grass* and was the foremost advocate for protection of the Florida Everglades.

Opened in 1917, Coppinger's Tropical Gardens, Alligator Farm and Seminole Indian Village became Florida's first commercial Indian village. The Gardens were located west of Harbor View Hospital at today's River Club townhouse complex. There are no remaining structures associated with this site.

Musa Isle --"Amusa" is the botanical name for bananas--is located on the south shore of Old North Fork, and was the area's first mail-order fruit business, established in the late 1800's. In 1907, a wooden tower was constructed on Musa Isle, which enabled tourists to view the Everglades. A "Seminole village" was added in 1919, featuring a trading post, craft work, alligator wrestling, tropical plants and a zoo. There is a historic rock wall still standing that was associated with this site.

The Hindu Temple, located at 870 N.W. 11th St., is a locally designated historic site that was built by John Seybold, a German baker and prominent citizen. Its design was patterned after the "Hindu temple" built in Spring Garden by a production crew for the 1919 film "The Jungle Trail."

Palm Cottage, formerly known as Flagler Worker's House, is listed on the National Register and has been designated locally as a historic landmark. The house has been moved to 64 S.W. 4th Street, the current site of Bijan's on the River Restaurant & Raw Bar. Palm Cottage was one of at least thirty houses built for workers constructing Henry Flagler's Royal Palm Hotel, formerly located at the mouth of the River and the terminus of Flagler's Florida East Coast Railway. Palm Cottage was originally located along what was then 14th Street (now S.W. 1st Street) between S.E. 1st and 2nd Avenues. Henry Flagler, is said to have personally selected the site and ordered the construction after seeing his workers and their families living in tents. The Flagler Worker's House is the earliest known residence remaining in downtown Miami.

Built in 1937, Atlantic Gas Station is an example of the Mediterranean Revival style architecture that was popular in South Florida in the 1920s and 1930s. It is unique because the original owner, Atlantic Refining Company, tried to make the gas station aesthetically pleasing rather than simply utilitarian. Atlantic Gas Station is the only station in the City of Miami today patterned after Mediterranean Revival style architecture.

East Coast Fisheries was established in 1933 by Max Swartz, who had sold Maryland oysters in Florida since 1918. Built around 1924, it still offers customers today, a feel of "old Miami by the river." Originally home to Walter R. Miller's Riverside Fish Market, it was the second building to be constructed on an approach to a bridge. The building has been used as a lobster canning factory as well as a restaurant and fish market where fish were exported to major U.S. cities and to Europe.

## Archaeological Resources

The largest archaeological site in the Miami River Study Area is the Village of Tequesta which was located at the mouth of the river on the north and south banks. The largest part of the Village was on the north bank and included the current resources known as the Dupont Plaza Archaeological Site and the Granada Site.

The Granada Site was part of the largest Indian settlement in southeastern Florida and thereafter, was the location of Miami's first condominium apartment building. Located at the corner of Brickell Avenue and Biscayne Boulevard Way on the current site of the Hyatt Regency Hotel, the apartment homes were completed in 1923 and were demolished in 1973 to make way for construction of the Hyatt.

The southern part of the Village of Tequesta, today's Brickell Point, encompasses the most recently discovered archaeological site on the Miami River, the Tequesta Circle. Located at the mouth of the River, "the Circle" is 37 feet in diameter and is characterized by 24 basin holes cut into the limestone bedrock that creates its circumference. Although the exact function of the Circle is not yet known, the site's importance as a ceremonial feature is clearly established based on its astronomical markings, two possible animal offerings and several other distinct characteristics. Based on radiocarbon tests performed, the Miami Circle may be about 2,000 years old.

The Miami River Rapids Archaeological Site is located at the tributary known as North Fork. Water flowing out of the Everglades spilled down a 6 foot natural ridge, until 1912, when the rapids were dynamited during dredging for the opening of the Miami Canal drainage project. The Rapids has been designated locally as a historic site and is owned by the City of Miami.

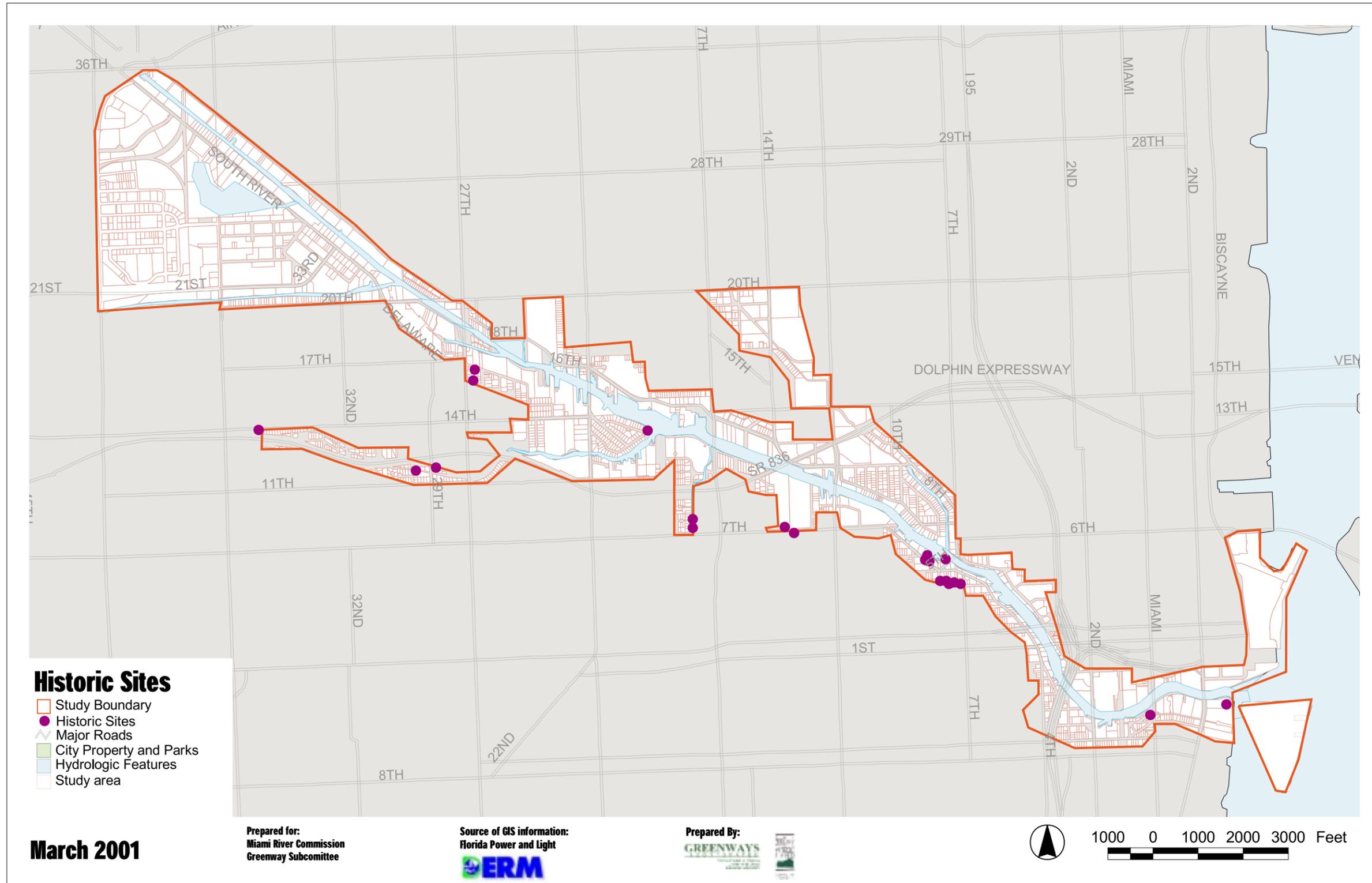
The Jose Marti Park archaeological site once housed a small pre-historic camp dating back to circa 1000 B.C. where a single human burial was found during construction of the park.

SEE Map 12 - Historic and Cultural Sites



Figure A12: Archaeologists examine the "Miami Circle" (right), a formulation presumed to have been created by the Tequesta Indians.





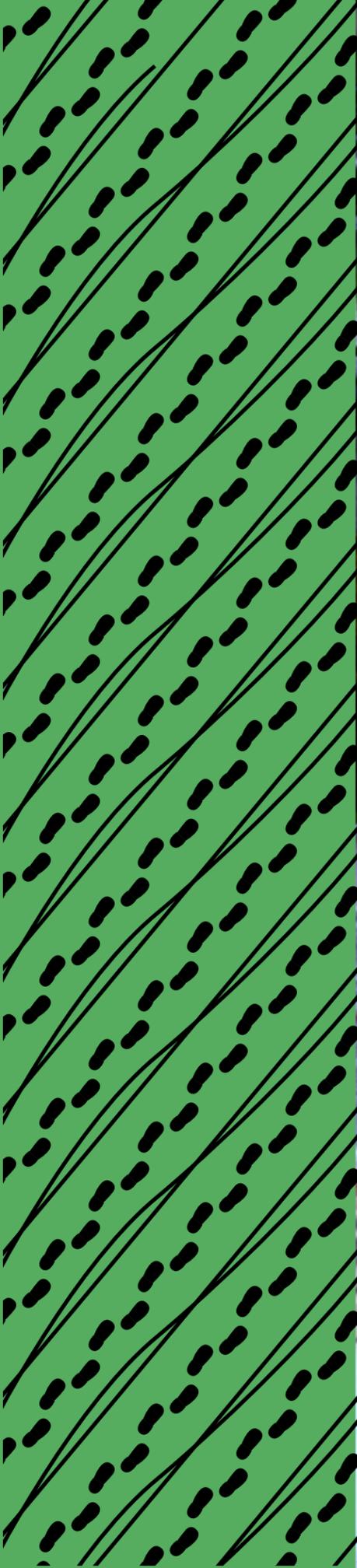
## Infrastructure

The Miami-Dade County Information Technology Department has photographed the entire county within the Urban Development Boundary line through digital orthophotography. The black and white images overlay the County's Geographic Information System maps, enabling users to view them on a scale as close as 1' foot by 1' foot, including utility corridors such as water and sanitary sewer, electrical, natural gas and petroleum, stormwater and fiber optic service lines

## Sources of Information

- "An Historical Guide to the Miami River and its Tributaries," by Donald Gaby
- Bob Carr, Executive Director of the Archaeological & Historic Conservation, Inc. and former Director of Miami-Dade County Division of Historic Preservation
- City of Miami Parks Department
- City of Miami Department of Planning
- City of Miami Department of Real Estate and Economic
- City of Miami Code, Articles 4 and 6
- City of Miami Office of Historic Preservation
- The Dade Heritage Trust
- East/West, Solving Miami-Dade County's East-West Transportation Needs Vol.2, No.1, Winter 1999
- Florida Department of Transportation
- Interim Parcel Inventory Report, Brownfields Initiative for the Miami River Target Area, Miami-Dade County, FL
- Miami-Dade County Transit Agency
- Miami River Greenway Inventory Map: Transportation Systems, Roadways and Mass Transit.
- Miami-Dade Empowerment Trust, Inc. "The Zone" Vol. 1 Issue 1 Spring 1999
- Miami- Dade County Office of Community and Economic Development
- Miami-Dade County Division of Historic Preservation
- Miami River Quality Action Team Annual Report 1996-1997
- Miami Dade Public Schools Department of Information Services
- Miami River Map & Guide (1993-1994)
- Miami-Dade County Department of Environmental Resources Management
- Natural Resources Conservation Service Soils Maps and Index
- The Spring Garden Point Park on the Miami River application to the Florida Communities Trust Preservation 2000 Program
- Spring Garden Civic Association
- United States Department of the Interior Geological Survey Map, Miami Quadrangle
- United States Department of the Interior Geological Survey Map, Hialeah Quadrangle





# **Miami River Greenway Action Plan**

## **Appendix B Public Response**

# Appendix B

## Public Response to the Miami River Greenway Action Plan

Meaningful public involvement has been critically important in the preparation of the Miami River Greenway Action Plan. Several methods have been used to solicit input from Miami-Dade residents. First, numerous stakeholder meetings have occurred between the consultant and various interest groups; second, public worksessions have been held at various locations throughout the study area to provide residents with an opportunity to view and comment on draft recommendations; third, a newsletter has been published several times providing an update of the planning process and draft recommendations; fourth, a public opinion survey was distributed, collected and compiled to solicit specific information from the public. The following provides a more detailed discussion for each of these methods of public input.

### Stakeholder Meetings

More than 50 stakeholder meetings have been held with groups throughout the Miami-Dade metropolitan area to discuss the proposed Miami River Greenway Action Plan including the following:

- Miami River Commission
- Miami Marine Council
- Miami River Marine Group
- Greater Miami Chamber of Commerce Environmental Affairs Group
- Greater Miami Chamber of Commerce Executive Committee
- Florida Department of Transportation Planning Division
- Urban Environment League
- Overtown Neighborhood Advisory Board
- Brickell Homeowners Association
- Miami-Dade County Department of Environmental Resource Management
- City of Miami Planning Department
- City of Miami Parks and Recreation Department
- Miami-Dade County Information Technology Department
- Terramark Development
- Harvey Taylor Properties
- South Florida Regional Planning Council
- South Florida Water Management District Staff
- LISC
- WAGES
- Bankers Empowerment Trust
- Main Street Program – Urban Design Committee
- Dade Heritage Trust and Historic/Archaeological Groups
- City of Miami Historic and Environmental Preservation Advisory Board
- City of Miami Planning Advisory Board
- City of Miami Waterfront Advisory Board
- City of Miami Parks Advisory Board
- City of Miami Urban Design Review Advisory Board
- Miami-Dade Bicycle and Pedestrian Advisory Committee

The River Action Team also met with numerous individuals to discuss the proposed Miami River Greenway Action Plan, including Commissioner Arthur Teele, Commissioner Bruno Barreiro, Maurice Ferre, Former Mayor, Bernard Zyscovich, Architect, Liz Plater-Zyberk, Dean, University of Miami School of Architecture, Bryon Finnie, Executive Director of the Empowerment Zone Trust.

The majority of these stakeholders are supportive of the Greenway concept and feel that it would be in the best interest of the community to see the River corridor landscape transformed into an amenity. Many groups expressed a concern over who would operate, manage and maintain a future greenway system along the river. Many expressed doubts that either the city or county would be able to allocate operational functions. Some stakeholders expressed distrust in government based on a history of “broken promises.”

There was overwhelming support for expansion and completion of the Miami Riverwalk trail system in the lower part of the river corridor. For the middle river segments, many stakeholders envisioned a balance of riverside trails and on-road bicycle and pedestrian facilities. The shipping and marine organizations questioned the need for any greenway facility development beyond NW 27th Avenue.

The vast majority of stakeholders were very concerned about improving water quality and with dredging of the river channel for navigation. Stakeholders felt that if these things were not accomplished, it would be very difficult to attract people to the river corridor.

Many stakeholders felt that the river corridor was poised for successful urban development strategies in the coming years. Of particular note was the rising real estate values in the Brickell area.



Figure B1: Local residents examine a concept plan map of the Miami River Greenway at the Overtown Earthday celebration held at Gibson Park during April 2000.



## Public Worksessions

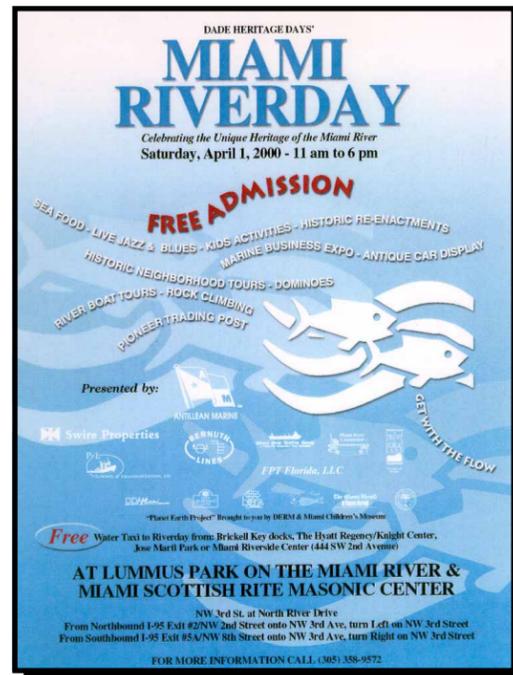
Public worksessions were held during the months of April and November. The worksessions began with the consultant team participating three in the Miami RiverDay festival, which was held on Earth Day, April 1, 2000. In addition, public worksessions were held in the Allapattah neighborhood at Curtis Park, in East Little Havana at Centro Mater School, and in the Spring Garden neighborhood at the Travel Lodge hotel.

## Miami Riverday

Thousand Miami residents and visitors enjoyed Miami RiverDay Festival 2000. Greenway Concept maps were on display at three sites along the river corridor: Jose Marti Park, Lummus Park and the Spring Garden Neighborhood. The consultant distributed a public opinion survey to gather more indepth information from RiverDay participants. The participants were excited to learn of the plan for a river corridor greenway system. An overwhelming majority expressed support for the future development of more public access points, riverside trails and open green spaces.

## Worksession at Curtis Park

The public worksession at Curtis Park in the Allapattah neighborhood became an “outdoor” affair. Several hundred residents were jogging, bicycling, playing baseball and spectating within the park boundary. Many of the residents that were interviewed were supportive of a greenway system along the river. Some were surprised to learn how far they could go along the river with the development of a system of trails and on-road bicycle facilities. Many residents were supportive of an organized and systematic approach to making improvements to the river corridor, especially cleaning the river itself and keeping trash out of the river. Finally, residents were very interested in having the existing riverwalk at Curtis Park extended up and down river to form a continuous riverfront trail system.



## Worksession at Centro Mater School

A small but very energetic group of residents attended the second public worksession at Centro Mater School in the East Little Havana neighborhood. The largest concerns among these residents included how local park facilities, like Jose Marti, could be improved and better linked to other river resources and neighborhood resources. Many residents expressed a concern for public safety and the need to redirect and assist the homeless people from the river corridor.

## Worksession at Spring Garden Neighborhood

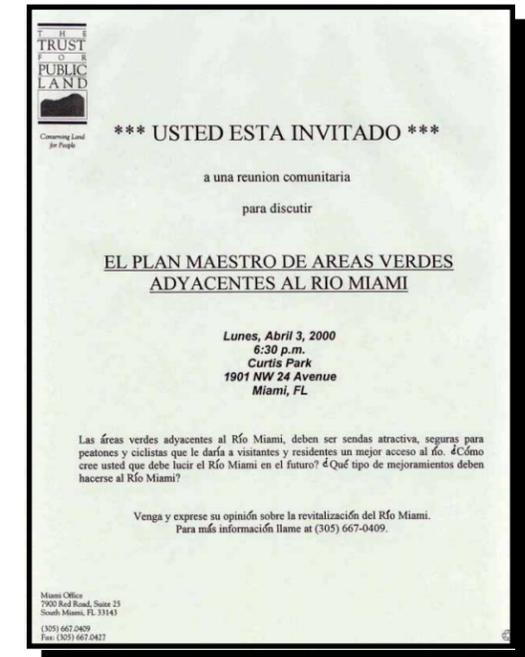
Good attendance by neighborhood residents marked the third and fourth public worksession at the Travel Lodge motel in the Spring Garden neighborhood. Most of the worksession participants were enthusiastic about the greenway facilities. They expressed interest in funding and financing mechanisms including a Tax Increment Financing strategy. Participants also expressed support for the Overtown Greenway project.



Figure B2: Local residents examine a concept plan map of the Miami River Greenway at the Miami River Days festival in April 2000.

## Bi-Lingual Publications

Worksession announcements and the final master plan have been provided to local residents in both English and Spanish in order to effectively communicate with the multi-national population that resides within the project corridor.



## Public Opinion Survey

A public opinion survey was prepared, distributed, collected and tallied by the consultant. In total, 120 public comment forms were returned to the consultant. The purpose of the survey was to gather public input and gauge public opinion on some of the key issues influencing the design and development of the Miami River Greenway. The results of this survey are as follows.

### Miami River Greenway Public Comment Form

#### What should be accomplished by Greenway development?

Please check all that you feel should be accomplished

- Improve access to the river's edge.
- Build a trail system along the river.
- Remove unnecessary fences that block access to the river.
- Establish a better maintenance program for the public lands adjacent to the river.
- Acquire more land for public uses.
- Clean the water that flows in the river.
- Provide opportunities for more public parking near the river.
- Encourage more water related retail and commercial businesses and restaurants to locate adjacent to the river.
- Create new employment opportunities from Greenway development.
- Link neighborhoods to local parks.
- Interpret the unique history of the river.
- Other: \_\_\_\_\_

#### What is a Greenway?

A greenway is:

- A way of connecting people and places along natural or man-made corridors;
- A linear feature that protects the natural, historic and social character of an area;
- A compilation of areas for people to play, walk, bicycle, socialize and relax.

#### Who should manage and care for the Greenway?

Choose only one

- The City of Miami
- Miami-Dade County
- Miami River Commission
- The State of Florida
- A Partnership of Public Agencies
- A Partnership of Private Organizations
- A Partnership of Public and Private Organizations
- Private Sector Organizations and Landowners
- Other: \_\_\_\_\_

#### Are you most likely to use the Greenway?

- Use a motor boat on the river.
- Play in a local park
- Picnic with friends or family
- Eat at a local restaurant
- Sit and watch the shipping activity.
- Ride my bike to work
- Walk to work
- Learn about the history of the river from the interpretive signs.
- Volunteer to help with clean up of the public lands adjacent to the river.
- Shop at a retail store
- Attend an outdoor event such as a concert or festival
- Volunteer to plant native trees and other vegetation along the banks of the river.
- Other: \_\_\_\_\_

#### Do you support using public funds for the development of the Greenway?

Yes  
 No  
 Not Certain at this time

#### What section of the river is in need of immediate attention and Greenway development?

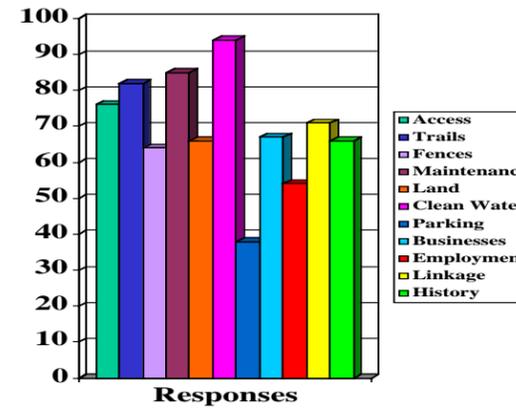
Lower Section: Mouth of River to 5th Street Bridge  
 Middle Section: 5th Street Bridge to 22nd Avenue Bridge  
 Upper Section: 22nd Avenue Bridge to Miami International Airport

To Learn More about the Greenway please visit:  
<http://www.tp.org/nearu/sero/index.html>

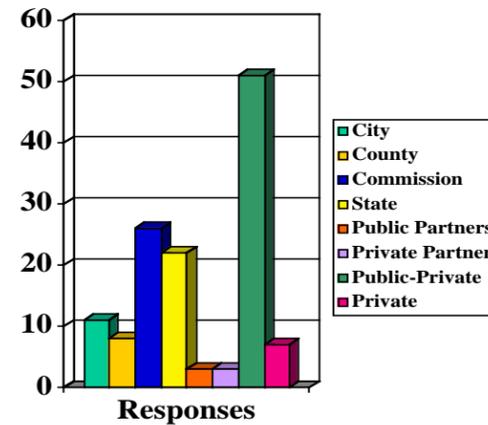
Please mail this Form to:  
The Trust for Public Land  
7900 Red Road, Suite 25  
South Miami, FL 33143

Please fill out the back side of this form

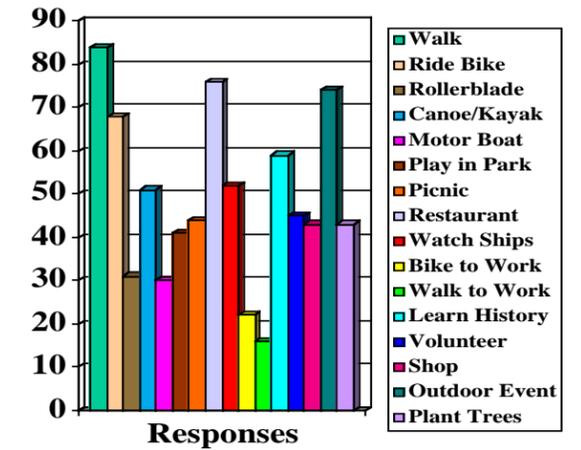
1. **What should be accomplished by Greenway Development?** The top issues included cleaning the water in the river, improving maintenance of land and water and developing more trails for the public to use. The lower ranked issues included providing more parking and generating new employment opportunities.



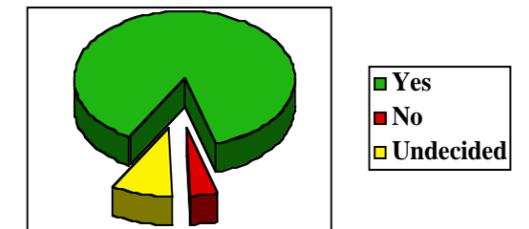
2. **Who should manage and care for the Greenway?** The leading vote getters were a public-private partnership and the Miami River Commission.



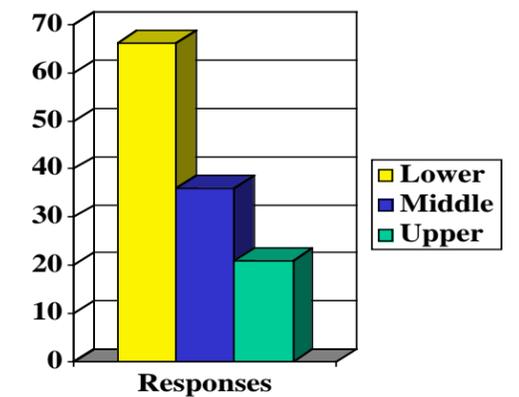
3. **What activities are you most likely to do along the Greenway?** The top activities along the river included walking, eating at a local restaurant and attending an outdoor concert. Respondents also favored riding a bike, learning about the history of the river, watching the ships go up and down the river and canoeing or kayaking the river.



4. **Do you support using public funds to develop the Greenway?** An overwhelming majority of respondents favor using public funds to develop the greenway along the Miami River.



5. **What section of the River is in need of immediate attention?** The lower river section received the most votes for early action.



## Miami River Greenway Newsletter

Throughout the planning process for the Miami River Greenway, the consultant has published three issues of the *Miami River Greenway Newsletter* specifically for this project. More than 1200 copies of this newsletter have been distributed throughout the community. An example of the newsletter published by the Team is illustrated within this chapter. The newsletter has offered an explanation of the planning process, a summary of key recommendations, and the results of public comment. The consultant recommends continuing the newsletter during the development phase of the Greenway and transforming it into a permanent source of information about greenway events. Copies of the Greenway Newsletters are available at the Trust for Public Land and the Miami River Commission. The newsletter is also available for viewing by visiting [www.tpl.org](http://www.tpl.org).

## Miami River Greenway News

A Joint Project of the Trust for Public Land and Greenways Incorporated January 2000

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### Greenway Action Plan Underway

The Trust for Public Land, Miami office, and Greenways Incorporated have launched an action plan for developing a greenway along the Miami River. This promises to be different from previous plans because it is completely funded by private dollars, involves a variety of stakeholders, and will contain solid recommendations for actions to be taken.

A series of stakeholder meetings are taking place this winter to gather input from government officials, developers, shippers, neighborhoods, environmentalists, and other interested groups. Public education and partnership building are essential components of this planning process, and will continue with public workshops to be held in the spring. The final plan should be released in late fall of 2000.

The location and dates of these meetings will be available in the next edition of this newsletter.

#### What is a Greenway?

A greenway is:

- A way of connecting people and places along natural or man-made corridors;
- A linear feature that protects the natural, historic and social character of an area;
- A compilation of areas for people to play, walk, bicycle, socialize and relax.

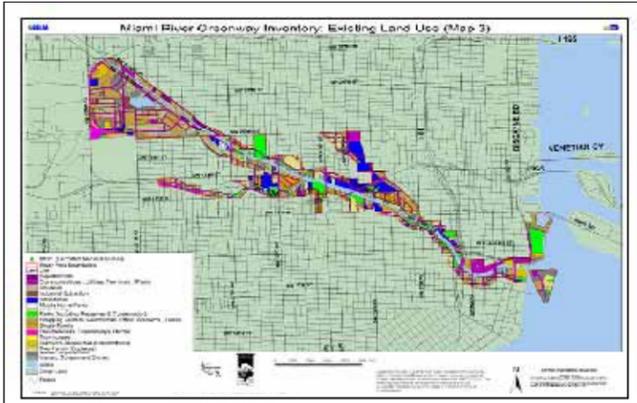
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### How Will a Greenway Improve the River?

The Miami River Greenway will benefit everyone who lives, works, learns and plays near the River through:

- **Providing Safe Opportunities for Outdoor Recreation**--Public open space is limited near the River to-

(Continued on Back)



The Action Plan will focus on the Miami River and adjacent lands, from Biscayne Bay to 42nd Ave. This map, produced by DERM, shows existing land use in the corridor.

## Miami River Greenway News

A Joint Project of the Trust for Public Land and Greenways Incorporated March 2000

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### Public Workshops to be Held for Miami River Greenway Plan

**Monday, April 3 at 6:30pm**  
Curtis Park  
1901 NW 24 Avenue

**Tuesday, April 4 at 6:00pm**  
Centro Mater Neighborhood Center  
420 SW 4 Street

**Wednesday, April 5 at 7:30pm**  
Travel Lodge (in Spring Garden)  
1170 NW 11 Street

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### Future of the River to be Discussed at Workshops

What do you think the Miami River should look like in ten years? Twenty years? What is important about the River that should be preserved? What types of improvements should be made?

The Trust for Public Land and Greenways Incorporated will be asking local residents to answer these and other questions during a series of public workshops on April 3, 4, and 5.

These groups have already been hard at work, meeting with local residents and developing a vision and goals for the Miami River Greenway. A framework for action will be based on these goals.

Residents are urged to come to one of these workshops and learn about the Miami River Greenway Plan. Workshops will be given in English and Spanish.

Participants will be asked to comment on the draft Miami River Greenway Vision and Goals, as follows.

Vision & Goals  
The Miami River is a valuable natural and historic resource and the namesake of our community. We envision the Miami River as an ecological system that serves to enrich the lives of residents throughout the Miami metropolitan area.

The Miami River Greenway will help to improve the future economic well-being of our community by:

- increasing public access to the waterway
- sustaining the "working river" maritime shipping industry
- restoring water quality in the river channel
- serving as an attractive destination for local residents and visitors
- encouraging appropriate adjacent land use
- fostering an ethic of stewardship for plants and animals native to the river landscape
- celebrating the multi-cultural ethnicity of our community



A boat drifting on the Miami River can be seen from the edge of Sewell Park.

Figure B3: Three community newsletters were distributed during the planning process to inform local residents about the planning process and solicit public input.

## Miami River Greenway News

A Joint Project of the Trust for Public Land and Greenways Incorporated March 2001

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### Ambitious Program of Action Featured in Final Report

Final recommendations have been completed for the Miami River Greenway Action Plan. The Trust for Public Land, in partnership with Greenways Incorporated, has unveiled an ambitious and aggressive development program for the Miami River Greenway. These recommendations have been advanced to the Miami River Commission for final approval. The Action Plan defines strategies for

- sustaining the "working river" maritime shipping industry,
- restoring water quality in the river channel through dredging and revegetation of stream banks,
- improving land use along the river to serve as an attractive destination for local residents and visitors,
- completing sections of the Miami Riverwalk in the lower sections of the river channel,
- completing bicycle and pedestrian facilities in the middle and upper river sections to link neighborhoods to the river
- developing new public parkland and neighborhood gateways to improve access to the river.

The plan includes detailed strategies for funding proposed improvements. The plan also provides direction for op-

erations, maintenance, security and safety programs the river greenway system. An aggressive five year action plan is outlined in the report document. It is envisioned that several different local partners will be involved with project development activities.

The action plan report has been reviewed an approved several local organizations throughout the Miami Metro area, including:

- Miami Urban Development Review Board
- Miami Parks Advisory Board
- Miami Planning Advisory Board
- Miami-Dade MPO Bicycle Advisory Committee
- Waterfront Advisory Board
- Historic and Environmental Preservation Board

To learn more about detailed recommendations featured in the Action Plan report, see the reverse side of this newsletter. To obtain a digital copy (Adobe Acrobat reader required) of the final action plan report please contact Lavi Freeman with the Trust for Public Land.



Miami River Greenway - Public Response

Appendix B - 4