Florida Keys Overseas Heritage Trail Master Plan

Prepared for and partially funded by:

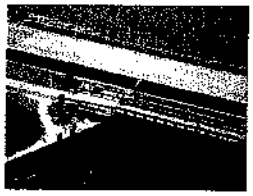
THE BOARD OF COUNTY COMMISSIONERS
MONROE COUNTY, FLORIDA
August 2000

With partial funding and planning review by the:

FLORIDA DEPARTMENT OF TRANSPORTATION
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATIONAL PARK SERVICE

Prepared by:

MICHAEL DESIGN ASSOCIATES PLANNING TEAM
RAILS TO TRAILS CONSERVANCY
CLEAN FLORIDA KEYS
ENVIRONMENTAL MANAGEMENT SYSTEMS
BORRELLI & ASSOCIATES
URS GRIENER WOODWARD CLYDE



U.S. 1 and a Historic Bridge in use by the public

FLORIDA KEYS OVERSEAS HERITAGE TRAIL
FINAL MASTER PLAN, AUGUST 2000

PREPARED FOR:

COUNTY OF MONROE
BOARD OF COUNTY COMMISSIONERS
(Project Administration and 1/3 Planning Funding)

Mayor Shirley Freeman, District 3
Mayor Pro Tem George Neugent, District 2
Commissioner Wilhelmina Harvey, District 1
Commissioner Nora Williams, District 4
Commissioner Mary Kay Reich, District 5
Upper Keys: 305-852-1469
Middle Keys: 305-743-0079
Lower Keys: 305-294-4641

Growth Management Division
Kim Ogren 2798 Overseas Highway, Suite 400
Marathon, Florida 33050
Telephone: 305-289-2500
Fax: 305-289-2536

PARTNER AGENCIES:

FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 6
(1/3 Planning Funding)
Planning and Programs Department
602 South Miami Avenue
Miami, Florida 33128

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
(1/3 Planning Funding)
Office of Greenways and Trails
MS 795
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
Phone: 850-488-3701
Division of Recreation and Parks
Office of Park Planning
MS 525
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
Phone: 850-488-2200

NATIONAL PARK SERVICE
(Final Printing Funding)
Rivers and Trails Conservation Assistance Program
Florida Field Office
Historic Herald Square
531 Pineapple Avenue, Suite #8
Sarasota, Florida 34236
Phone: 941-330-8047

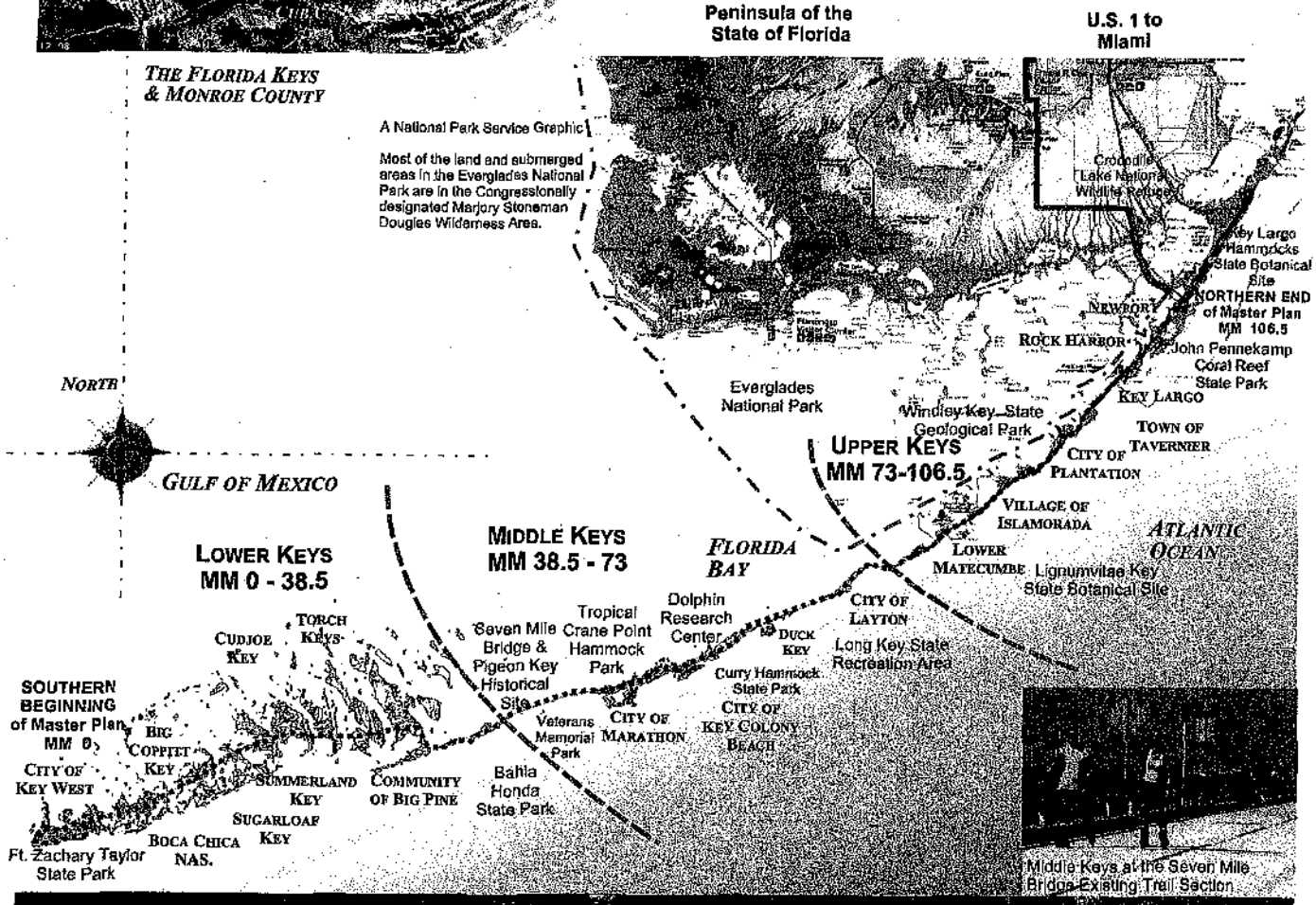
PREPARED BY:

MICHAEL DESIGN ASSOCIATES PLANNING TEAM RESPONSIBILITIES:

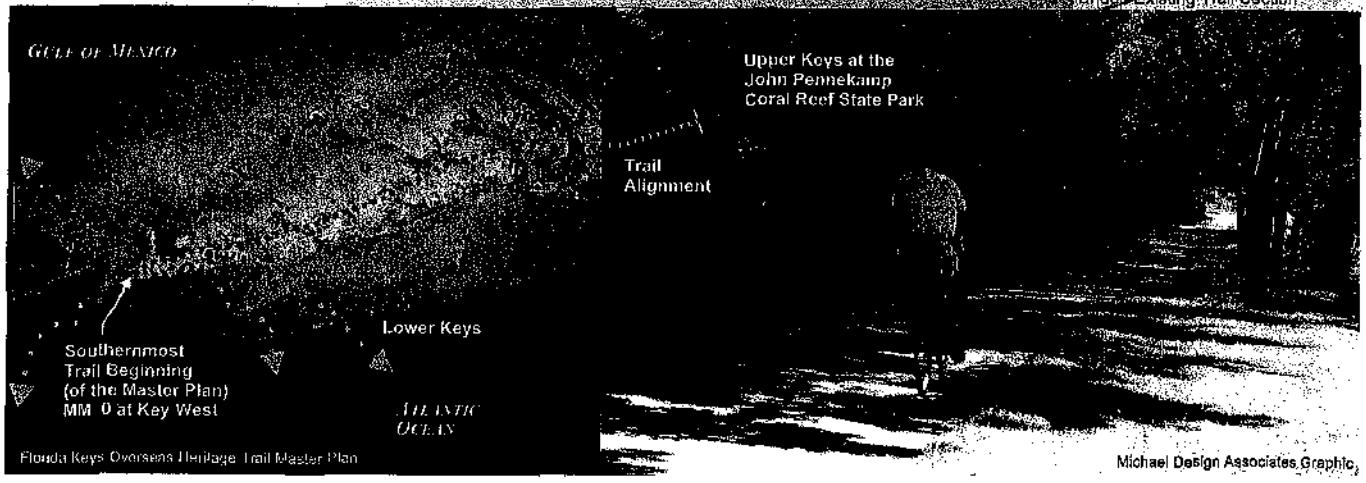
Michael Design Associates - Prime Consultant
Trail Planning and Public Involvement
Phone: 407-645-3377
Rails to Trails Conservancy, Florida Field Office
Trail Planning and Public Involvement
Clean Florida Keys
Public Involvement and Planning Assistance
Environmental Management Systems
Environmental Planning
Borrelli & Associates
Architectural Narrative
URS Greiner Woodward Clyde
Engineering Consultation with FDOT

Trail Location Map

For the Upper Keys Middle Keys & the Lower Keys



Middle Keys at the Seven Mile Bridge Existing Trail Section



Michael Design Associates Graphic

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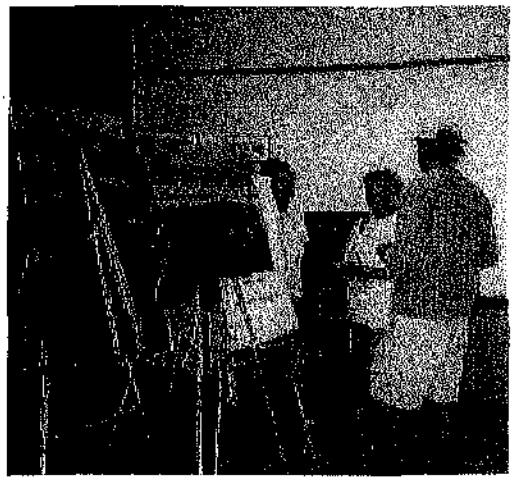
Section 1.0

PURPOSE

Goal 301 of the Monroe County 2010 Comprehensive Plan – Traffic Circulation Element has been established "to provide a safe, convenient, efficient, and environmentally compatible motorized and non-motorized transportation system for the movement of people and goods in Monroe County." Goal 1201 directs Monroe County to "provide a recreation and open space system to conserve valuable natural resources and to provide recreational opportunities adequate to serve the present and future population of Monroe County, including permanent residents and visitors."

These goals provide the basis for the implementation of the Florida Keys Overseas Heritage Trail Master Plan along the U.S. 1 corridor, the main arterial road through the Florida Keys. Policy 301.3.1 commits the County to prepare a coordinated bicycle path and pedestrian-way improvement plan.



In order to further these goals, the Monroe County Board of County Commissioners approved the Michael Design Associates Planning Team to develop the Florida Keys Overseas Heritage Trail Master Plan. The Master Plan will create safe and convenient non-motorized transportation that will connect communities, schools, and businesses along U.S. 1. The purpose of the Master Plan is to identify gaps and deficiencies in existing conditions, review other efforts undertaken by the County, and make recommendations on trail planning including trailheads, rest stops, use of the Historic Bridges, trail implementation, and trail management. The trail planning process promotes the sustainable use of the natural, cultural, and historical resources of the Florida Keys.

Section 2.0

PROJECT OVERVIEW

The first vision for a continuous trail the length of the Florida Keys that would utilize the Historic Bridges was formulated by individuals in the Monroe County Planning Department. Similar to the old trains that once traveled the length of the Florida Keys, support for the trail started out small, gradually picking up supporters along the way. Today, the trail has gained a strong local interest, positive media coverage, and the eye of state agencies.

2.1 NEED FOR A TRAIL

For years, Monroe County citizens have expressed the need for a trail along U.S. 1 that would enhance community recreation opportunities, provide safe non-motorized transportation to schools and businesses, and enable residents and visitors to enjoy the magnificent natural resources along this famous route. In response, Monroe County has been working to fulfill this vision of a continuous recreational trail that traverses the length of the Florida Keys and provides alternative transportation and recreational opportunities for citizens and visitors to the islands. The trail incorporates historic features such as Henry Flagler's Historic Bridges and significant environmental elements unique to the Florida Keys. The trail will also act as an economic stimulus for adjacent businesses and provide safe, convenient recreation and alternative transportation for children and families.

The county committed funds for a variety of local trail projects to begin this massive effort. County representatives also reached out to the Florida Department of Transportation (FDOT) for millions dollars in enhancement funding for trail projects in local communities. In 1996, the Barton - Aschman Monroe County Bicycle and Pedestrian Plan[2] was undertaken to inventory existing conditions for pedestrians and bicyclists, identify local facility needs, and to develop a bicycle and pedestrian system plan that would include the Overseas Heritage Trail as a major artery.

As interest in a continuous trail linking the Keys grew, FDOT continued to fund and design Monroe County trail projects, and other agencies, such as the Florida Department of Environmental Protection (FDEP) and the National Park Service (NPS), began to view the project as part of Florida's statewide trail system.

Various bicycle and running groups, civic clubs and environmental associations have actively worked toward the same goal. In 1997, Clean Florida Keys, Inc. (CFK), an affiliate of Keep America Beautiful Inc., was awarded a seed grant from FDEP to develop recommendations for the FKOHT along US 1 from Mile Marker (MM) 0 (Key West) to MM 20 (Sugarloaf). To accomplish this task, CFK, in cooperation with Monroe County, retained the services of Michael Design Associates and Rails to Trails Conservancy - Florida Field Office (RTC). After the conceptual plan was presented to the public for comment it was then brought before the Monroe County Board of County Commissioners (BOCC) on January 13, 1999 for review. The BOCC voted unanimously to support the trail effort. In May 1999, the BOCC recommended that Monroe County retain the services of the same team to develop the Florida Keys Overseas Heritage Trail Master Plan.

This Master Plan includes recommendations for trail planning, implementation, and management. This Master Plan provides Monroe County and its planning partners with a unified vision and common goals to develop a valuable environmental, cultural, and economic resource. This Master Plan study was equally funded by Monroe County BOCC, FDEP, and FDOT.

2.2 HISTORY OF THE U.S. 1 CORRIDOR

Henry Flagler realized the potential of connecting the Florida Keys when he created his Overseas Railroad, an extension of the Florida East Coast Railway, in 1905. At the time, Flagler's interest in building the railroad was peaked by the United States' announcement to construct the Panama Canal. The industrious Flagler realized Key West was the U.S.'s closest deep-water port and with the railroad, he could take advantage of Cuban and Latin American trade as well as significant trade possibilities with the west. *"At the turn of the century, when Henry Flagler announced his intention to build the Key West extension of his Florida East Coast Railway, everyone thought he was crazy. Almost everyone that is except the ingenious engineers and workers who helped him build the 156-mile railway through swamps and hammock, and over swift-current channels to the southernmost point in the continental U.S. When Flagler celebrated the connection of the final link in the crossover span in 1912, over 36 bridges connected the Florida Keys to the mainland for the first time." (excerpt from, Key Largo to Key West, Monroe County Planning Department, 1997).* A total of seventeen miles of concrete spandrel arches ranged in size up to seven miles long. In 1912, the first shipment of fresh Caribbean produce made its way to the U.S. mainland. The railroad's connection to the mainland and daily ferries to Cuba helped the Keys to prosper both economically and socially.

The Labor Day hurricane of 1935 would sever this tie, when it hit the Upper Keys with winds of 200 mph and an 18-foot tidal wave. Flagler's Overseas Railroad was destroyed and the Keys returned to boat transportation.

The government purchased the railroad and in 1938 the Florida Keys Overseas Highway opened. The highway, which was built on top of the old railroad bridges, once again connected the Keys to the mainland. The Overseas Highway was used until the early 1980's, when the newly constructed U.S. 1 opened for traffic adjacent to Flagler's abandoned bridges. At this time, several of the bridges were severed to allow for channel breaks and to prohibit public access.

Over the years, these bridges have stood as a reminder to residents and visitors of the Key's history. There is strong support to use the bridges for community and recreational projects.[3]

2.3 UNIQUE FLORIDA KEYS ENVIRONMENT

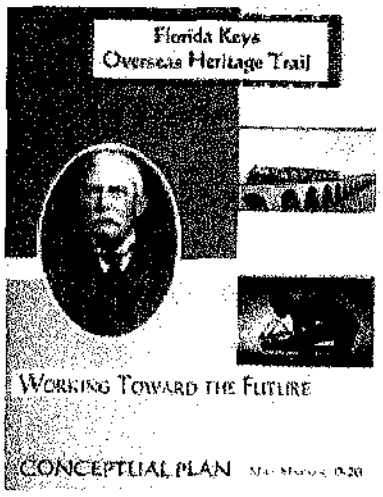
Monroe County is unique in that it consists of more water than land. The Keys contain innumerable tidal flats and estuaries with great swamps, savannas, and forests, rimmed by countless miles of ocean. Famous environmentalists from John James Audubon, Guy Bradley, Bob Allen, and John Pennekamp have fought to protect the pristine habitat and wildlife of the Florida Keys, such as the Florida Key Deer and the Great White Heron.

The Florida Keys Overseas Heritage Trail (FKOHT) is planned to incorporate the great teachings of past and present environmentalists. For the master planning process, the environment has been an important aspect for both protection and interpretation. The trail will act as safe alternative transportation for both residents and visitors, resulting in less pollution. Biking, hiking, walking, and non-motorized watercraft are low impact methods of transportation in the Keys. The trail will offer residents and visitors a unique way to see the raw beauty of the Florida Keys with amazing views and abundant wildlife. It will incorporate education through such elements as information kiosks and signage, as well as hands on exposure.

Section 3.0

PLANNING PROCESS

The planning team followed an established planning process approved by Monroe County in the Project Scope of Services. The planning milestones and stages include the Action Plan, Public Involvement, Data Collection, Alternatives Analysis, and the Master Plan. Further information on the Scope of Services can be provided by Monroe County. The planning process reviewed and updated the earlier concepts presented in the Conceptual Master Plan for the MM 0 – 20, prepared by Clean Florida Keys, Inc., and other studies relating to the trail.



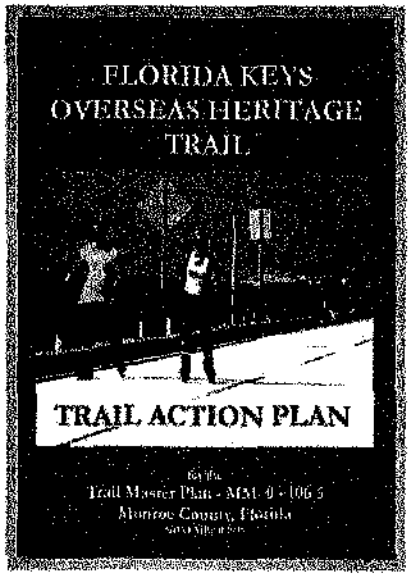
Due to the unique size and layout of the Florida Keys, the project was divided into three sub county areas. These sub county areas correspond to those outlined in the Monroe County Comprehensive Plan[1]. The sub county areas are the

- **Lower Keys** (Key West MM 0 to Bahia Honda MM 38.5),
- **Middle Keys** (Ohio Key MM 38.5 to Fiesta Key MM 73), and
- **Upper Keys** (Conch Key MM 73 to Key Largo MM 106.5).

Details for each sub county area are included throughout the Master Plan.

3.1 ACTION PLAN

This completed document provided a step-by-step description of the planning process, a "who, what, when, where, why, and how" plan. The Action Plan was distributed to citizens, local government, and agencies in early November.



3.2 PUBLIC INVOLVEMENT

Section 5.0 and Appendix 1 provide details on the Public Involvement Process. This ongoing process has been important to the

information presented in the Master Plan. Public involvement included two series of workshops in the Lower, Middle, and Upper Keys, newsletters, television and radio interviews, newspaper articles, public presentations, technical advisory group, Monroe County project contact person, traveling trail video presentation, and state trails and greenways conference presentation. A presentation of the trail was given in Tallahassee to the FDEP, Office of Greenways and Trails, and Division of Recreation and Parks (DRP). Please see Section 5.0 for further details on the Public Involvement.

3.3 DATA COLLECTION

The planning team collected all relevant field information to effectively plan the trail and conduct local workshops. Parks, businesses, existing trail sections, and other destinations along U.S. 1 were identified along the trail. Meetings with various environmental agencies and the FDOT were held to introduce the project and identify any concerns upfront. In February, a special historic bridges meeting was conducted at Pigeon Key with the Florida Department of State (FDOS) to determine the best steps for incorporating these valuable historic resources.

ALTERNATIVES ANALYSIS

Public comments, project goals, and information gained during the data collection were reviewed to help identify trail planning including trail alignment, trailheads and rest stops, and use of the Historic Bridges. Analysis and recommendations from existing plans, such as the Monroe County Bicycle and Pedestrian Plan and the Old Keys Bridges Task Force, were evaluated and integrated into the FKOHT Master Plan.

3.4 MASTER PLAN

The preferred trail plan is detailed in narrative and graphic form to convey the intent of the plan including elements of the trail alignment, trailheads and rest stops, and use of the Historic Bridges. The Master Plan went through several draft reviews by Monroe County, citizens, and a Technical Advisory Group (TAG) of agency representatives and trail professionals. Appendix I includes a list of Technical Advisory Group members. The Final Master Plan represents the results of the Board of County Commissioners, TAG, and public comments. It includes recommendations for the complete trail planning, trail implementation, and management.

Section 4.0

PROJECT GOALS

The project goals were developed to guide the Master Planning process. The goal topics were identified by Monroe County and the goal statements were developed through citizen involvement. There are seven general goals for the entire length of the trail and an additional section on the sub county area goals (Lower, Middle, and Upper Keys). In addition, the project partnering agencies have related the trail goals to their own governmental goals, relevant comprehensive plans, and other pertinent documents.

Trail Connectivity
Establish an interconnected linear trail for shared use, recreational use, and alternative transportation uses incorporating existing local pathways and the Historic Bridges into a continuous trail linking communities, parks, schools, and natural features along the U.S. 1 corridor from MM 0 (Key West) to MM 106.5 (Key Largo). Coordinate the trail alignment with the Keys citizens and communities, and with governmental entities with jurisdiction along the U.S. 1 corridor in Monroe County.

Safety
Establish a safe, two-way, non-motorized trail with secure trailheads, bathrooms, rest stops with shelter, drinking water, periodic call boxes or telephones, and safe travel clearances for all trail users. Limit vehicular traffic interaction with trail traffic, but when interaction must occur, provide warning to both drivers and trail users at all intersections. Maximize separation from U.S. 1, local streets, and congested parking areas by the use of traffic barriers, underpasses, overpasses, and the Historic Bridges.

Environmental Protection
Encourage the preservation and interpretation of the Florida Keys' natural resources and fragile ecosystem by promoting trail access to public parks and natural lands along the U.S. 1 corridor. Provide coordination with trail related environmental enhancements such as habitat restoration utilizing native species, future stormwater treatment facilities, and the encouragement of historic tidal flow restoration damaged by the construction of the Flagler Florida East Coast Railroad. Maintain and develop an interconnected safe trail for the public, while minimizing disturbance to all migratory and permanent wildlife of the Keys.

Sustainability
Preserve resources for future generations and minimize the impact of the trail throughout the trail development and maintenance stages. Reduce the use of new materials and reuse existing construction materials whenever feasible. Use existing public parks and facilities, and private business if offered, to provide trail support facilities. Promote non-polluting transportation in the Keys by not providing excessive vehicular parking at trailheads and by promoting the access of the trail from nearby hotels and residences.

Education
Promote the trail as an outdoor classroom for the Keys' citizens, school children, and visitors, advocating respect for the natural, historical, and cultural resources found along the U.S. 1 based trail corridor. Encourage partnerships with communities, agencies, and other entities that utilize educational signage and other programs, in an effort to maximize the educational experience for all trail users. Provide visible

and safe trail connections and trail oriented educational programs, especially around schools and community activity areas, where educational activities typically occur.

Needs and Desires of the Community
Provide community involvement throughout the planning and development of the trail, including interaction with each community and incorporation of their recommendations and existing planning efforts. Assure that the trail will enhance each community and connect common community elements, such as schools, parks, libraries, and businesses along the U.S. 1 corridor. Enhance the quality of life and interaction within each community by providing shared use recreational opportunities, alternative transportation, community heritage interpretation, and connections to nearby public natural areas.

Economic Development
Promote sustainable economic development within the Florida Keys through increased interaction between trail users and local businesses including restaurants, markets, recreational shops, hotels, campsites, and other trail related businesses. Provide convenient non-motorized trail access to and from U.S. 1 businesses located along the trail. Provide trail related improvements, such as landscape planting, intersection improvements, and well-placed trailheads and rest stops that will enhance the businesses along the U.S. 1 corridor.

Trail Maintenance
Create a viable maintenance/management plan that establishes partnerships with federal, state, and local agencies to provide various funding resources and ensure that no undesired financial strain is put on any one entity, including Monroe County or its citizens. Respect the local municipal jurisdictions that the trail enters and their potential desire to maintain the trail within their jurisdiction, even though the trail will be typically aligned on state lands. Encourage local jurisdiction to maintain and adopt the trail where feasible.

In addition to the general project goals, there were additional sub county area goals, which are listed below:

Lower Keys Goals
Incorporate equestrian use in the Big Pine area and Cudjoe Key area.

Provide safe, non-motorized access to local destinations such as Ft. Zachary Taylor State Park (MM 0), West Bartello Tower & Museum (Roosevelt Blvd.), Smather's Beach, Higgs Beach, Key West Airport, Bayview Park (MM 1.5), Key West Botanical Gardens (MM 4.2), Boca Chica Naval Air Station (MM 7.8), Wilhelmina Harvey Children's Park (MM 10), Bay Point Park (MM 15), Bat Tower (MM 16.6), Sugarloaf Schools (MM 19.3), Sheriff's substation (MM 20.9), Cudjoe Key Recreation Trail (MM 21 to MM 23), Mote Marine Lab (MM 24.5), Coupon Bight State Aquatics Preserve (MM 28.5), Great White Heron National Wildlife Refuge (MM 28.5 – 31.5), National Key Deer Refuge, Blue Hole & Jack Watson Nature Trail (MM 30.3), Lower Keys Chamber of Commerce (MM 30.8), Bahia Honda State Park (MM 37), and other areas of interest.

Utilize the Historic Bridges in this section with emphasis on the Bahia Honda Bridge, which is on the National Historic Register, for preservation, interpretation, and recreational use.

Encourage interaction between trail users and local businesses along the U.S. 1 corridor including the City of Key West (MM 0 to 4), Big Coppitt Community (MM 10.5), Sugarloaf Community (MM 15 – 16.5), Baby's Coffee (MM 15), Cudjoe Key Community (MM 21 to MM 23), Summerland Key Community Center (MM 24 – 25), and the Big Pine Commercial Area (MM 29.5 to MM 31.2).

Provide the most ecologically sensitive trail design in the Big Pine Key area, which is home to the endangered Key Deer.

Incorporate the City of Key West Bicycle/Pedestrian Strategic Plan and the CFK Florida Keys Overseas Heritage Trail MM 0 to MM 20 Conceptual Plan[5].

Middle Keys Goals

Limit vehicular traffic interaction with trail traffic, but when interaction must occur, provide warning to both drivers and trail users at all intersections. Special attention should be paid to the Marathon Commercial area between MM 48 and MM 60.

Provide safe, non-motorized access to local destinations located along the U.S. 1 corridor such as the Veteran Memorial Park (MM 40), Pigeon Key Foundation (MM 45), Marathon Government and Civic Center (MM 48 to MM 49), Marathon Community Park and Marina (MM 49), Jesse Hobbs Memorial Park (MM 49.7), Crane Point Hammock (MM 50.5), Museum of Natural History & Children's Museum (MM 50), Marathon Airport (MM 52), Marathon Visitors Center and Chamber of Commerce (MM 53.5), Curry Hammock State Park (MM 56.1), Dolphin Research Center (MM 59.2), Walker's Island (MM 62.3), Layton Nature Trail (MM 68.1), the KOA Campground (MM 70), and other areas of interest.

Utilize the Historic Bridges in this section with emphasis on the Long Key Bridge and the 7-Mile Bridge, which are both on the National Historic Register, for preservation, interpretation, and recreational use.

Encourage interaction between trail users and local businesses along the U.S. 1 corridor including Marathon Commercial Area (MM 49.8 to MM 52), City of Key Colony Beach Commercial Center (MM 52 to MM 54), and Layton City Center Area (MM 68.3).

Collaborate with the incorporated City of Marathon, City of Key Colony Beach, and City of Layton in an effort to create an identifiable and continuous trail.

Promote the findings of the Florida Keys Tidal Creek Restoration Project, especially those areas already identified as Tarpon Creek (MM 54), the unnamed creek between Fat Deer Key and Long Point Key (MM 56), Little Crawl Key (MM 56), and the area at MM 57. This is a project begun by FDEP to restore historic tidal flow through channels along U.S. 1 that were eliminated with the construction of Flagler's railroad. One such project was successfully completed at the Pul-N-Be Dam Creek at Key Colony Beach. Contact FDEP for further information on this project.

Upper Keys Goals

Limit vehicular traffic interaction with trail traffic, but when interaction must occur, provide warning to both drivers and trail users at all intersections. Special attention should be paid to the Key Largo commercial area between MM 100 and MM 106.5, and the Islamorada Commercial area between MM 81 and MM 84.

Provide safe, non-motorized access to local destinations such as the Anne's Beach (MM 73.2), Lignumvitae Botanical Site (MM 77.6 – off U.S. 1), Indian Key State Historical Site (MM 77.6 – off U.S. 1), Triangle of History (MM 78.5), Islamorada Public Library, Park and Hurricane Monument (MM 82), Island Christian School (MM 83.5), Windley Key State Geological Site (MM 84.5), Plantation Government Center (MM 88.8), Plantation Elementary School (89.6), Coral Shores High School (MM 89.7), Mariner's Hospital (91.8), Settler's Park (MM 92), Harry Harris Park (MM 94), Key Largo Community Park (MM 99.5), Friendship Park (MM 100.9), Key Largo Public Library (MM 101.5), U.S. Post Office (MM 102.4), John Pennekamp Coral Reef State Park (MM 102.5), Key Largo Elementary and Middle School (MM 104.8), Key Largo Chamber of Commerce (MM 106), Key Largo Hammocks State Botanical Site (MM 106.5), Crocodile Lake National Wildlife Refuge (S.R. 905), and other areas of interest.

Utilize Channel Two, the only Old Keys Bridge in this section for preservation, interpretation, and recreational uses.

Encourage interaction between trail users and local businesses along the U.S. 1 corridor, including Islamorada, Village of Islands Commercial Area (MM 81 to MM 84), the City of Plantation Town Center (MM 88.8) the Historic Tavernier Town Center (MM 93), and the Key Largo Commercial Center (MM 100 to MM 106.5).

Collaborate with the Islamorada, Village of Islands in an effort to create an identifiable and continuous trail. Section 5.19 contains

a list of items the Village would like incorporated with the FKOHT effort.
Incorporate existing trail segments into the Master Plan by closing the gaps and applying Master Plan trail standards to create an identifiable and unified trail.

Promote the findings of the Florida Keys Tidal Creek Restoration Project, especially the area at Snake Creek (MM 85).

4.1 GOAL MAKING PROCESS

The project goals are a direct result of public comments received during the first series of Public Workshops held the first week of December 1999 in the Lower, Middle and Upper Keys. After compiling comments received from a trail survey of workshop participants, goals were drafted and reviewed by Monroe County and the Planning Team. *Trail Talk: A Newsletter for the Florida Keys Overseas Heritage Trail, Issue 2* listed the draft goals and sought public comment through the Monroe County contact. The goals were enhanced throughout the Master Planning review process after interaction with the planning team, citizens, and other entities.

4.2 PARTNERING AGENCIES

Throughout the planning process, numerous federal and state agencies have been involved with the FKOHT Master Plan. Each agency has its own mission and goals that direct them during their involvement with the FKOHT.

4.2.1 National Park Service (NPS) – Rivers, Trails, and Conservation Assistance Program (RTCA)

The RTCA is a community level program that implements NPS's mission to preserve the natural and cultural resources for the enjoyment, education, and inspiration of present and future generations. Both NPS and RTCA work with partners to extend the opportunity for natural and cultural resource conservation and outdoor recreation across America. RTCA's vision for the 21st Century includes a network of trails that will promote quality of life and cultural and natural heritage. The FKOHT will promote this vision by connecting the communities and natural and cultural resources of the Keys by an outdoor recreational trail. The Master Plan has provided an avenue for Monroe County to become involved with a venerable agency, which will be a benefit to both entities in the future.

4.2.2 Florida Department of Environmental Protection

The FDEP has been involved on many levels, including the OGT, Division of State Lands (DSL), and the DRP. The FKOHT has been designated as one of three statewide priorities for FDEP under the direction of Governor Jeb Bush and Secretary David Struhs. The Division of Recreation and Parks has committed to managing the FKOHT (see Section 9.0 and 10.0). As a partnering agency, FDEP related the Project Goals to their Departmental Goals in the following:

GOAL 1 – CONNECTIVITY

OGT works to accomplish its primary goal of developing a statewide system of greenways and trails under Chapter 260.012, Florida Statutes. The FKOHT will include several key components identified in OGT's Five Year Implementation Program, including recreational corridors, scenic corridors, regional parks and preserves, and cultural/historical/recreational sites. This trail is significant to FDEP not only for the significant role it plays in "establishing a connected system of greenways and trails from one end of Florida to the other."

GOAL 2- RESPONSIBLE AND EFFICIENT TRAIL MANAGEMENT

DRP, which is authorized under Florida Statutes, Section 258.004, has a high priority of promoting ecotourism through the state by means of its state parks and state trails. DRP's respected reputation is a reflection of its responsible and efficient management over the facilities it administers. The FKOHT has been designated as one of three statewide trail priorities. DRP is committed to building and managing the trail. DRP's goal will ensure that the trail is completed in such a way that will ensure safety, protect the environment, and promote education and economic development, as well as meet the needs and desires of the community. The goals of the FKOHT will be consistent with DRP's mission to "provide resource based

recreation, while preserving, interpreting, and restoring natural and cultural resources".

GOAL 3 – PUBLIC LAND STEWARD

The Division of State Lands (DSL) acquires and disposes of lands under the direction of the Board of Trustees of the Internal Improvement Trust Fund. Numerous sections of the FKOHT are currently owned and managed by DSL.

4.2.3 Florida Department of Transportation

The FDOT's "mission is to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities."[26]. Under Chapter 335.065 Florida Statutes, the FDOT, in cooperation with FDEP, strives to establish a statewide-integrated system of bicycle and pedestrian ways to take full advantage of those already maintained by any governmental entity. One goal of the FDOT Year 2020 Florida Transportation Plan is "providing travel choices to ensure mobility, sustain the quality of the environment of the environment, preserve community values, and reduce energy consumption."[28]

The Florida Department of Transportation has been a primary funding agency throughout the planning process, including providing Monroe County with a full-time Bicycle/Pedestrian Coordinator. Some segments of the FKOHT have already been designed and funded for construction by FDOT staff. FDOT's continued technical involvement and funding support will be important for the continued success of the project. Much of the existing and proposed trail alignment lies in FDOT right-of-way and will require permit reviews and approvals. In addition to, the FDOT is funding a Structural Study of the Old Keys Historic Bridges, which is co-managed by staff from FDEP State Lands, FDOT District 6 Bridge Inspection, and FDOT District 6 Planning. The study will not only determine structurally sound uses of the Historic Bridges but also further develop the conceptual recommendations in this Master Plan.

4.2.4 Florida Department of State

Originally, the mission of the Department of State was to be keeper of the Great Seal of Florida and custodian of state laws. Today, the responsibilities of the DOS are much more diverse including the preservation and promotion of Florida's rich historical and cultural heritage. These responsibilities are to be administered in a manner that earns the highest degree of public confidence in the integrity, openness, fairness, effectiveness, and efficiency of the agency.

4.2.5 Rails to Trails Conservancy

Rails-to-Trails Conservancy (RTC) is a national non-profit organization dedicated to enhancing America's communities and countryside by converting thousands of miles of former rail lines and connecting corridors. Through this effort, RTC is connecting people to their communities and binding communities together in ever-expanding networks that enable people of all ages and abilities to travel in safety and comfort to work, school, or play.

Section 5.0

PUBLIC & INTERAGENCY INVOLVEMENT

There was a strong emphasis on both public participation and interaction with agencies having jurisdiction along the trail corridor in an effort to create a successful trail. This process is detailed below. Additional information is provided also in Appendix I that supports these efforts.

5.1 PUBLIC INVOLVEMENT APPROACH

At the center of the Master Planning Process is Public Involvement. In an effort to form a consensus on trail planning, various methods were available to the general public including the following:

5.1.1 Citizen Interaction

Feedback and interaction with the citizens of the Lower, Middle, and Upper Keys has guided the Planning Team throughout the master planning process. A series of ***Public Workshops*** were held in each sub-area the first week of December 1999 and the first week of May 2000. Public Workshops provide participants the opportunity to compare the FKOHT vision to the physical reality of the Keys' diverse communities. The workshops were set up to compliment the relaxed and open atmosphere of the Florida Keys.

At the December workshop series, participants interacted with planning team members on a one to one basis. Information was provided on the trail alignment, historic bridges, and trailheads and rest stops. Discussion tables with picture and graphic representations of each category were set up and participants were guided through in small interactive groups. Participants were encouraged to respond to a series of questions at each table through a discussion with a planning team member and Monroe County Representatives. The planning team received especially good feedback at the trail alignment where citizens were encouraged to draw on maps and indicate areas of scenic value, potential trail connections, community destinations, and safety concerns. Exhibits were set-up around the room by the NPS, FDEP - Office of Greenways and Trails, Florida Park Service, Monroe County Planning Department, RTC, and Clean Florida Keys (CFK). An on-going Power Point presentation and several trail related videos were also displayed. Upon exiting the workshop, participants were encouraged to take home information about the project and provide additional comments via mail to Monroe County.

The May series of Public Workshops provided information on the Draft Master Plan. Tables were again organized highlighting the trail alignment, historical bridges, and trailheads and rest stops. Examples of trail signage were also graphically displayed. Comment cards were available on all tables for participants to record their remarks. Information gained from this series of workshops has been reflected in the Final Master Plan Document.

Overall, the feedback from the workshops was positive and public comments reflected thoughtful and personal responses for the community-based trail. A summary of the Trail Survey Findings and Mapping Exercises is provided in Appendix I.

5.1.2 Advisory Group

The Florida Keys Scenic Highway Advisory Committee members participated and provided feedback throughout the Master Planning Process. Several members of the Advisory Group interacted with other Monroe County citizens through additional presentations and meetings. A list of Scenic Highway Members is included in Appendix I.

5.1.3 Newsletters and Press Releases

A series of three newsletters, entitled *Trail Talk: Newsletter for the Florida Keys Overseas Heritage Trail*, were mass mailed to residents and businesses throughout Monroe County. These newsletters announced important trail events, included articles on the benefits of trails and other successful trail projects across Florida, and offered a local perspective on the trail.

A series of three press releases were provided to The Keynoter, The Miami Herald, and The Reporter. Additional newspaper articles were written throughout the planning process providing information on the project.

5.1.4 County Contact

Through funding from the FDOT (District 6), Monroe County was able to employ a Bicycle Pedestrian Planner to aggressively oversee the project and to develop partnerships with local, state, and federal agencies.

5.1.5 Television and Radio Shows

Several television and radio shows discussed the trail and provided information to the general public on project updates and methods for getting involved. Representatives from the advisory group and Monroe County were interviewed about the trail and the master plan process.

5.1.6 Bicycle Ride

On February 5, 2000, a group of trail experts and bike enthusiasts made the 106.5 mile trek from Key Largo to Key West along the proposed trail route. The ride brought positive publicity to the project including NBC Channel 6 – Miami, The Keynoter, Miami Herald, WIOD Radio, and Florida Radio Network. Channel 6 produced a short news segment that was shown at the Public Workshops in May and will continue to provide updates to its viewers. Appendix I provides additional information on the ride.

5.1.7 OGT Greenways and Trails Video

The FDEP – OGT produced a Greenways and Trails video, which highlighted the FKOHT as one of three priority projects in the growing statewide trails system. The video was shown at the first series of Public Workshops and the Rails to Trails conference, as well as at other trail venues across the state.

5.1.8 Rails to Trails Conservancy Florida Trails and Greenways Conference Presentation

Monroe County, Michael Design Associates, Rails to Trails Conservancy, and Bob Ballard, Deputy Secretary of FDEP presented a session highlighting the trail effort at the annual RTC Trails and Greenways Conference. The project was also discussed in several other sessions and highlighted on several graphic displays.

5.1.9 Local Government Interaction

Monroe County conducted informative meetings with local governments throughout the County including Islamorada, Village of Islands, the City of Key West, City of Marathon, City of Key Colony Beach, and the City of Layton. These meetings helped to identify local community trail efforts and incorporate any existing information into the FKOHT Master Plan in order to ensure a continuous and identifiable trail. Additionally, these meetings will also help provide local direction for trail implementation.

City of Key West

The City of Key West's Department of Engineering has developed the Key West Bicycle/Pedestrian Strategic Plan, which proposes a citywide primary and secondary system. The FKOHT adopts this alignment (see Section 8.2.2.1). The secondary trail system will provide increased opportunities for trail access for residents and visitors in Key West.

Islamorada, Village of Islands

Islamorada, Village of Islands (MM 73 – 91) has an existing path through a majority of the village. The Planning Department provided information regarding existing and

future efforts pertaining to the FKOHT Master Plan. Although they have no formal documents, the Village has compiled a list of trail improvements they would like included as part of the FKOHT. Some of these improvements include:

- Complete gaps in Lower Matecumbe (MM 72.5 to MM 73.5), Windley Key (MM 85.9 to MM 86.7), and Plantation Key (MM 85.9 to 86.7and MM 90 to MM 91);
- Provide safe bridge crossings that are physically separated from vehicular traffic;
- Provide connections to local destinations;
- Increase trail width to accommodate shared uses;
- Program stormwater management funds as part of any surfacing agreement;
- and upgrade or add trailhead and rest stop facilities, with special consideration to Channel Two (MM 73) and Lignumvitae Roadside Recreation Area/Triangle of History (MM 78).

Additional items Islamorada, Village of Islands are interested in are detailed in Appendix I. The Village is also conducting the "Overseas Highway Corridor Study", which will describe the constraints and opportunities that will enhance the U.S. 1 corridor functionally, ecologically, and aesthetically. The FKOHT and Corridor Study are working towards similar enhancements along the U.S. 1 corridor. Future FKOHT project managers should contact the planning department to coordinate efforts.

5.2 AGENCY INTERACTION

The Planning Team and Monroe County worked with agencies having jurisdiction along the trail corridor throughout the planning process to identify and address concerns upfront. This proactive approach will help ensure the future success of the trail.

5.2.1 Florida Department of Transportation

On October 26, 1999, Monroe County and the planning team traveled to Miami for a meeting with FDOT District Six. The purpose of this meeting was to meet FDOT representatives, explain the schedule and scope of the Master Plan, learn the scope and schedule for existing enhancement projects, and to discuss funding options for implementation of the Master Plan. FDOT discussed the Five Year Work Program and what projects will be occurring in Monroe County. FDOT expressed the importance of completing the Work Program projects that were already designed and then enhancing them at a later date according to the recommendations of the FKOHT Master Plan. Other concerns discussed at this meeting include limited right of way, permitting, bridges, maintenance, costs, and the environment. FDOT emphasized the need for early, multidisciplinary scooping of proposed Keys projects by its own offices, as well as similar scooping at the local level by staff from Monroe County and its cities. On-going coordination with FDOT occurred throughout the Master Plan process. Most importantly, FDOT is allowing FDEP to administer future enhancement projects. Monroe County Resolution 205 formally requests FDEP to administer the un-designed FDOT enhancement projects.

5.2.2 Florida Department of Environmental Protection

On November 1, 1999, a meeting with Bob Ballard, Deputy Secretary of FDEP was conducted in Tallahassee with Monroe County, Rails to Trails Conservancy, and Michael Design Associates present. The meeting sought funding opportunities and support from FDEP. FDEP identified the FKOHT as one of its priority trails and agreed to help with permitting and long-term management. An OGT representative was appointed to assist with project tasks and attend important planning events. Additional meetings ultimately led FDEP to agree to build the trail, manage it, and to administer future FDOT enhancement projects through a LAP agreement. The LAP agreement allows FDEP to undertake the planning, design, and construction work associated with these projects. LAP agreements will

need to be written for sections of the FKOHT by FDOT, FDEP, and Monroe County.

5.2.3 Environmental Agency Meeting

On October 27, 1999, the trail team met with state and federal environmental agencies with jurisdiction along the trail corridor to identify permitting and environmental concerns relating to the trail planning. Attendees were informed of different potential trail planning options, including the trail boardwalks (see Figure 8.1.2). Options and challenges were discussed. SFWMD expressed a concern regarding the construction of boardwalks within 15-feet of the defined (pursuant to Rule 62-340, Florida Administrative Code) wetland boundary. Pursuant to Section 4.2.7 (a) of the SFWMD's Basis of Review (BOR), an average 25-foot, 15-foot minimum buffer between the wetland and adjacent development is presumed to avoid secondary impacts to the wetland as a result of the development. A project design that does not meet these buffer requirements must address the potential for secondary impacts to the wetland and will require additional mitigation to offset those impacts. A copy of this portion of the BOR is included in Appendix I. This discussion allowed the planning team to identify unique permitting requirements. Section 9.3 provides additional information on permitting. FDEP agreed to act as the permittee for environmental permits. This agreement should be more favorable to the permitting agencies because FDEP is viewed as a steward of the environment. Applicants for Overall, the meeting was positive and opened communication between the different agencies and the planning team. Many agency representatives saw the benefits of the FKOHT and expressed an interest in working together to create the best trail for both the environment and the people.

5.2.4 Historical Bridges Meeting

Meetings were held at the Pigeon Key Foundation on February 3rd and 4th, 2000 to discuss the Historic Bridges. The meetings' attendees included representatives from the Division of Historical Resources, Department of Transportation, Pigeon Key Foundation, and the Historic Florida Keys Foundation. The purpose of the meeting was to discuss potential uses of the Historic Bridges, modifications to existing Bridges on the National Register that would be acceptable to DOS, and to identify potential state and federal funding sources for the preservation of these significant historic resources. The Historic Bahia Honda Bridge, Historic Seven Mile Bridge, and Historic Long Key Bridge are listed on the National Historic Register. Monroe County and the planning team were encouraged to get all of the Historic Bridges listed. This designation increases the funding opportunities, including using the bridges as part of the FKOHT. Both NPS and DOS offered support to the Historic Florida Keys Foundation who would put together an application on behalf of Monroe County.

5.2.5 Technical Advisory Group (TAG)

The Technical Advisory Group reviewed the Draft Master Plan and provided comments on trail planning, trail management, permitting, and trail implementation. The TAG is composed of members of the Monroe County Board of Commissioners, other County and local government officials, and state and federal agencies. A complete list of TAG members is included in Appendix I.

Section 6.0

TRAIL CORRIDOR

There are numerous designations and studies that are relevant to the outcome of the Master Plan. The designations are important for the publicity and marketing of the trail and future connections. The previous studies provided a basis and a wealth of useful information that supports the findings of the Master Plan.

6.1 DESIGNATIONS

6.1.1 Overseas Heritage Trail

The trail corridor was originally designated the Florida East Coast Railway – Overseas Extension by Henry M. Flagler in 1905. This was the first attempt to take a railroad over vast miles of ocean leading many to call the railroad "the eighth wonder of the world". With the accomplishment of many engineering feats and Flagler's ambition, the railroad was completed in 1912 and ran successfully until 1935 when it was destroyed by a hurricane. In 1938, the bridges were used by the state highway system for the Overseas Highway Bridge and Toll Authority. In the 1980's, the Authority became part of the present day FDOT. Flagler's 1912-era Overseas Railway bridges with the 1930's era highway decking on top were abandoned for a more modern structure, which is known today as the current U.S. 1. By utilizing the abandoned Historic Bridges, the FKOHT will preserve a significant part of the Florida Keys heritage.[3] In 1993, members of Monroe County presented the concept of a continuous trail the entire length of the Keys at the annual RTC Florida Trails and Greenways Conference. This idea was then presented to state leaders and supporters and the effort has gained momentum ever since. In 1995, the Florida Keys Overseas Heritage Trail was proclaimed an official Florida Greenway.[3]

6.1.2 Lawton Chiles Trail

A section of the Florida Keys Overseas Heritage Trail in the Key Largo area is designated as the Lawton Chiles Trail in honor of the late Governor Lawton Chiles. The designation commemorates the 1,033-mile route Chiles traveled in his 1970 U.S. Senate campaign when he walked from the tiny Panhandle town of Century to Key Largo. [12]

6.1.3 East Coast Greenway/ Millennium Trail

The FKOHT will be an important segment and the southern most point of the East Coast Greenway (ECG). The ECG is a grassroots effort to link existing and planned trails to create a contiguous route from Maine to Florida. Currently, most of the trail is conceptual. The 905 Loop will be beneficial in linking the FKOHT to the ECG in Dade County and then continue up the east coast. Recently, at the request of local citizens, the Monroe County BOCC stopped pursuing a trail on this route. This route, however, may be more possible in the future. The White House Millennium Trails Council recently selected the ECG as a National Legacy Millennium Trail. Millennium Trails is an initiative developed by federal agencies to recognize and promote trails to "honor the past and imagine the future as part of America's legacy for the year 2000." Rails-to-Trails Conservancy has officially partnered with the White House Millennium Council and the US Department of Transportation to implement the program.

6.1.4 Florida Keys National Marine Sanctuary

In 1990, Senator Bob Graham introduced legislation that established the Florida Keys National Marine Sanctuary (FKNMS) in an effort to protect the natural beauty and resources found in the waters off the keys. The FKNMS is 2,800 square nautical miles, extends on both sides of the Florida Keys, and is the second largest marine sanctuary in the United States. National Sanctuaries protect entire ecosystems and strive to strike a balance among its many uses by both public and private interests. Included are both commercial and recreational activities, so long as the activity does not threaten the integrity of the ecosystem. [7]

The FKOHT promotes the efforts of the FKNMS. A Sanctuary representative has participated in many planning meetings and trail events, including reviewing the Draft Master Plan as part of the Technical Advisory Group. One idea that came from their involvement is to cooperate on any signage along the trail corridor, where the FKNMS currently has signage. This will create a more enjoyable and educational trail experience without cluttering the U.S. 1 corridor.

6.1.5 Scenic Highway Project

In 1995 the State of Florida, through the Department of Transportation, established a program to promote the recommendation of state roads for consideration as scenic highways. This state program mirrors many aspects of the long established federal program, and project sponsorship is achieved through a grassroots effort with broad-based public support. In 1996 community leaders identified Clean Florida Keys, Inc. (CFK), as a perfect choice for sponsorship given CFK's mission to keep the Keys clean and beautiful. CFK established a corridor advocacy group (CAG) to begin the enormous task of completing the required documentation of why U.S. 1 from MM 0 to MM 106.5, Key West to Key Largo, should be designated as a Florida scenic highway. The draft eligibility document was submitted in the beginning of 2000 and CAG continues to work with FDOT on this designation.

6.1.6 Area of Critical State Concern

The Florida Keys have been designated an "Area of Critical State Concern", F.S. 390.0552. Among the reasons given the intent included to establish a land use management system that conserves and promotes the natural environment of the Florida Keys, conserves and promotes the community character of the Florida Keys, and promotes and supports a diverse and sound economic base.

The Principles for Guiding Development contained in the statue (380.0552 (7) specify to:

(f) "To enhance natural scenic resources, promote the aesthetic benefits of the natural environment, and ensure that development is compatible with the unique historic character of the Florida Keys."

(g) "To protect the historical heritage of the Florida Keys."

(h) "To protect the value, efficiency, cost effectiveness, and amortized life of existing and proposed major public investments, including:

5. Transportation facilities;
6. Federal parks, wildlife refuges, and marine sanctuaries;
7. State parks, recreation facilities, aquatic preserves, and other public owned properties."

6.2 OTHER TRAIL STUDIES AND DOCUMENTS

6.2.1 CFK Conceptual Trail Plan[5]

In 1997, the FDEP awarded funding to Clean Florida Keys, Inc., an affiliate of Keep America Beautiful, Inc., to develop a conceptual trail along U.S.1 from MM 0 Key West to MM 20 Sugarloaf. CFK retained the planning team of Michael Design Associates, Rails to Trails Conservancy, and the National Park Service to accomplish this task. The Florida Keys Overseas Heritage Trail Conceptual Plan[5] provided a vision to the Lower Keys for a scenic, recreational, and safe form of alternative transportation.

Upon completion of the Conceptual Plan, the Monroe County BOCC voted unanimously to support the trail effort. This document helped to increase interest and awareness for the FKOHT Master Plan.

Information from this plan is enhanced for the Master Planning Process.

6.2.2 Old Keys Bridges Task Force[3]

On August 14, 1997, the Old Keys Bridges Task Force was appointed by Governor Lawton Chiles by executive order 97-253, in response to public demand to use Henry Flagler's Old Keys Bridges. The Task Force reviewed and analyzed all aspects of the Old Keys Bridges and provided their findings in "The Old Keys Bridges Task Force: A Report to Governor Lawton Chiles". The report developed recommendations for upkeep and use of the bridges and changes to Chapter 86-304, Laws of Florida, which governs the Old Keys Bridges. The changes included successful legislation, which mandates that the bridges can be offered for lease, but must retain their value for recreation and historic preservation.

The thorough bridge analysis provided in the Report was helpful in determining bridge recommendations. The FKOHT Master Plan provides recommendations that ensure the Old Keys Bridges are used in a way to benefit the entire community and bring new recreational and economic opportunities to Keys' residents and visitors. The feasibility of these recommendations will be analyzed in the FDOT/FDEP Old Keys Bridges Structural Study

6.2.3 Monroe County Bicycle and Pedestrian Plan[2]

In 1997, the firm of Barton-Aschman Associates, Inc. prepared the Monroe County Bicycle and Pedestrian Plan. This comprehensive plan inventoried existing conditions, analyzed traffic accidents and proposed a bicycle and pedestrian system for Monroe County. The FKOHT Master Plan enhances BA's recommendations for a trail along the U.S. 1 corridor. Barton - Aschman's recommendations on bike paths that connect to U.S. 1 will augment the FKOHT and increase the opportunities for alternative transportation.

Section 8.2 details the trail alignment and alternatives consideration for the recommended alignment. The FKOHT analysis utilizes BA's report, with a few exceptions. The final alignment is similar to BA's recommended bike path alignment along U.S. 1 and should continue to receive the support of the Monroe County Board of County Commissioners and citizens.

6.3 MONROE COUNTY PLANNING STUDIES AND DOCUMENTS

6.3.1 Year 2010 Comprehensive Plan[1]

The Monroe County Comprehensive Plan provides goals, objectives and policies to guide the planning and implementation of the FKOHT Master Plan. Specific goals and policies are quoted throughout the document when applicable.

6.3.2 Stormwater Plan

A concurrent stormwater master plan is being conducted. The FKOHT will attempt to include the findings of this plan once it is complete. There are also options in which the stormwater system might be built into the trail.

6.3.3 Monroe County Seven Year Roadway/Bicycle Path Plan[6]

This document was prepared by the Monroe County Public Works Division - Engineering Department in December 1999 and provides information on programmed improvements for bike paths throughout Monroe County until the 2005 – 2006 fiscal year. There are several projects that occur on or connect to U.S. 1 (trail corridor).

- Sugarloaf Boulevard Bike Path (6,000 feet) on Lower Sugarloaf Key;
- Drost Drive Bike Path (2,850 feet) on Cudjoe Key;
- Caribbean Drive Bike Path (6,900 feet) on Summerland Key;
- Barry Avenue Bike Path (3,622 feet) on Little Torch Key;
- State Road 4A Bike Path (4,800 feet) on Little Torch Key;
- Key Deer Boulevard (SR 940) Bike Path (14,256 feet) on Big Pine Key;
- Newfound Boulevard Bike Path (3,485 feet) on Big Pine Key;
- Watson Boulevard Bike Path (24,200 feet) on Big Pine Key;
- Long Beach Road Bike Path (12,672 feet) on Big Pine Key;
- Bimini Drive Bike Path (2,730 feet) on Duck Key;
- Indies Drive North (2,390 feet) on Duck Key;
- South Bahama Drive Bike Path (2,695 feet) on Duck Key;

- Indies Drive South Bike Path (4,335 feet) on Duck Key;
- West Seaview Drive Bike Path (3,845 feet) on Duck Key;
- West Seaview Circle Bike Path on (2,355 feet) on Duck Key;
- East Seaview Drive Bike Path (3,860 feet) on Duck Key;
- Duck Key Drive Bike Path (2,495 feet) on Duck Key;
- U.S. 1 Bike Path (9,800 feet) on Long Key;
- State Road 4A (U.S. 1) Bike Path (500 feet) on Key Largo;
- Burton Drive Bike Path (2,100 feet) on Key Largo; and
- U.S. 1 TP 258 to TP 255 (1,500 feet) on Key Largo.

For more information on these projects, contact the Monroe County Engineering Department.

6.3.4 Turn Lane Study[4]

The Master Plan for Turn Lanes on U.S. 1 is a study conducted for The FDOT – District 6 that addresses safety and operational improvements on U.S 1 in Monroe County. The purpose of the Master Plan is to provide recommendations for short-term and long-term turn lane improvements. The study recommends closing access to numerous informal crossings, which will create a safer trail environment. Some areas are noted in the trail alignment section with additional areas listed in the FDOT Turn Lane Master Plan. Future trail designers should work closely with the Turn Lane Study to coordinate intersection improvements with trail improvements.

6.3.5 State Planning Studies and Documents

The FDEP – Office of Greenways and Trails developed a map of multi-use trail opportunities across the state. [13] The Florida Keys Overseas Heritage Trail is included in this plan and continues to be promoted as an important segment of the overall state system. Other existing and proposed trails are identified that will provide important links to the FKOHT.

6.3.6 FDEP/FDOT Old Keys Bridges Structural Study

The FDOT is funding a Structural Study of the Old Keys Bridges, which is co-managed by staff from FDEP State Lands, FDOT District 6 Bridge Inspection, and FDOT Planning. The study will determine structurally sound uses of the Historic Bridges and further develop the conceptual recommendations of this Master Plan, including the structural feasibility of reusing the Historic Bridges and modifying the new U.S. 1 Bridges, navigational clearances, shared uses, and cost estimates.

6.3.7 FDOT Five-Year Work Program

Table 6.1 lists projects that are scheduled in FDOT's Five Year Work Program. The Planning Team and Monroe County held a meeting to discuss these projects during the Data Collection Phase. Monroe County requested FDOT to construct the segments in the Work Program that have been already designed. The remaining enhancement funding will be administered by FDEP. The Master Plan will work with these enhancement projects, placing an emphasis on creating an identifiable and continuous trail. The FKOHT will connect gaps between these and existing or proposed segments and upgrade FDOT's enhancement projects according to the Master Plan recommendations.

6.3.8 Livable CommuniKeys Program[8]

The Livable CommuniKeys Program is a local planning initiative conducted by Monroe County Planning Department. The program began in October 1999 and will continue for the next three to four years in an effort to identify the needs of the Keys communities. The Planning Department will provide technical assistance to the citizens and property owners. The FKOHT will be a continuing effort during this program and should be addressed at the community level through the Livable CommuniKeys Program initiative. The program will provide a geat opportunity to get feedback on community needs such as additional trailheads and rest stops, and local trail connections and crossings that will provide increased access to the FKOHT. The Planning Department should continue to update the FKOHT Master Plan with community needs pertaining to the trail and which the Board of County Commissioners supports. This program is also an excellent forum for development of the Scenic Highway Initiative Corridor Management Plan (see Section 6.1.5).

Table 6.1 MONROE COUNTY BICYCLE/PEDESTRIAN PROJECTS FDOT FIVE-YEAR WORK PROGRAM					
Project Name	**Mile Marker**	**# Of Miles**	**WP Item #**	**Year**	**Type of Work**
Grassy Key	MM 54.5 to MM 59.5	5	2505681	2001	Separated path
Big Coppitt Key	MM 11 to MM 15	4	2505651	2001	Trailhead
Knight's Key	MM 47		2505671	2001	Separated path
The following projects have not been designed and will be administered by FDEP.					
Saddlebunch Key	*MM 15 to MM 16.5*	*1.5*	*2505721*	*2002*	*Separated path*
Bahia Honda to Little Duck	*MM 36.5 to MM 40.2*	*3.5*	*2505711*	*2003*	*Separated path*
Key Haven to Big Coppitt	*MM 5.2 to MM 9.6*	*4.4*	*2505851*	*2003*	*Separated path*
Tollgate Rd. to Lignumvitae Channel		*4*		*2003*	*Landscaping*
Summerland to Bahia Honda	*MM 25 to MM 37*	*12*	*4056321*	*2004*	*Separated path*
Summerland to Bahia Honda	*MM 25 to MM 37*		*4056321*	*2004*	*Separated path*
Sugarloaf to Summerland	*MM 16.5 to MM 24.5*	*8*	*4056331*	*2004*	*Separated path*
Grassy Key to Long Key	*MM 59.2 to MM 65.2*	*6*	*4056301*	*2004*	*Separated path*
City of Layton to Anne's Beach	*MM 68.4 to MM 73.8*	*5.4*	*4056341*	*2004*	*Separated path*

6.3.9 Regional Habitat Conservation Plan for Big Pine and No Name Keys

There are several threatened and endangered species inhabiting the Big Pine and No Name Keys area, which future development could negatively impact. Under the Endangered Species Act (1973, as amended), an incidental take permit from the U.S. Fish and Wildlife Service (USFWS) is required. A Habitat Conservation Plan is an effort to mitigate and compensate for potential negative effects to endangered species caused by development activities. Agencies involved in this effort include Monroe County, the Florida Department of Community Affairs (FDCA), FDOT, USFWS, and the Florida Fish and Wildlife Conservation Commission (FFWCC). A consultant will work with the agencies to prepare and approve the HCP, which is scheduled to end in 2001. The FKOHT realizes that these areas are ecologically sensitive and will adhere to the recommendations of the HCP regarding the proposed FKOHT alignment.

6.3.10 Florida Keys Carrying Capacity Study[22]

The Florida Keys were designated by the state of Florida as an Area of Critical Concern in 1975. Development, however, has continued and increasingly places stress on the unique ecosystem. The decreasing quality of environmental resources has led to the Florida Keys Carrying Capacity Study, which is designed to address resource problems by identifying thresholds of sustainability for these resources. The study will determine the density of human life and activities that the Keys can sustain without having a negative

impact on the natural resources and also identify sensitive areas for restoration or additional protection. Once the study is completed, it will be utilized by the Monroe County Planning Department to address growth management decisions that impact the natural environment. Numerous agencies are involved in this study including the Department of Community Affairs who is funding the project. The results of this study will be available in December 2001.

6.3.11 Islamorada, Village of Islands Overseas Highway Corridor Study

Islamorada, Village of Islands is currently conducting the "Overseas Highway Corridor Study". This effort will identify the opportunities and constraints in an effort to enhance the U.S. 1 corridor functionally, ecologically, and aesthetically. The project will look at preserving the "Keys character" that the community seeks to preserve, but which has become endangered through inappropriate sanctions. The project will include general recommendations for the 18-mile segment of U.S. 1 through Islamorada, Village of Islands. More specific design recommendations through Case Studies will address such issues as traffic conflicts, bike path alignment, landscape techniques and landscape palette, and other similar concerns. Conceptually, they are looking at placing a trail on both sides of U.S.1 and filling in any existing gaps.

Section 7.0

UNIQUE FLORIDA KEYS ENVIRONMENT

"I doubt that anyone can travel the length of the Florida Keys without having communicated to his mind a sense of the uniqueness of this land of sky and water and scattered mangrove-covered islands. The atmosphere of the keys is strongly and peculiarly their own. This world of the Keys has no counterpart elsewhere in the United States, and indeed few coasts of the Earth are like it."

~Rachel Carson
The Edge of the Sea

The Florida Keys include some of the most beautiful land and water in the world, including many sensitive and endemic flora and fauna. The trail will take users through numerous ecosystems from wetlands to uplands, offering scenic views of the land and water, and interaction with the wildlife and vegetation. Human interaction with nature will be increased, creating a positive experience for all trail users, without a negative impact to these irreplaceable natural resources.

In general, the Florida Keys are topographically flat with elevations of one to two meters above sea level. The land consists of marine limestone. The islands from Key West to Big Pine Key represent an outcrop of the Miami limestone formation, which is made up of oolite, small ovid pellets of calcium carbonate precipitated in a shallow marine environment. The northern Middle Keys' and the Upper Keys' (Big Pine Key to Soldier Key) surface bedrock, called Key Largo Limestone, represents a limestone outcrop formed from consolidated coral reefs. The soils of the upland habitats consist of a thin layer of accumulated organic material on the limestone. The surface varies from solid with some solution holes to uneven loose rock rubble. Most of the vegetation grows in cracks and fissures within the limestone or in the thin organic layer.

Environmental Management Systems did a cursory site visit to assist in the development of the following narrative on the vegetation communities.

7.1 VEGETATION COMMUNITIES[17]

Multiple habitat types are present within and around the project corridor. These habitats range from wetlands such as mangrove forests, salt marsh and buttonwood communities, open water, and open water with seagrass beds to uplands like pinelands and tropical hardwood hammocks.

7.1.1 Mangrove Forests

Mangroves are the dominant trees along U.S. 1. Naturalist author Jeff Ripple[19] describes the mangroves as the "kidneys of the Keys", where waste, sediments, and human refuse, which would otherwise drift over the seagrass beds to the coral reefs and eventually to the open sea, are trapped. Mangroves are considered nursery grounds for many reef fish, as well as for virtually all fish and shellfish valued by commercial and recreational fisherman. They are often used by birds as rookeries. These amazing salt-tolerant trees grow in the water and along the shore. America is home to thirty-five percent of the world's mangrove population with approximately ninety-five percent found in south Florida and the Keys.

Three different species of mangroves are found extensively in the Keys: the red mangrove *(Rhizophora mangle L)*, the black mangrove *(Avicennia germinans)*, and the

white mangrove *(Laguncularia racemosa L.)*. Buttonwood *(Conocarpus erectus)* is considered a transitional species, but still tends to be associated with the mangrove forests. South of the Seven Mile Bridge, the mangrove forests tend to be dwarfed due to the lack of available terrestrial nutrients in the exposed limestone and marl substrates.

State and local regulations have been enacted to protect Florida's mangroves. The Mangrove Protection Rule, Section 403.9321 through 403.93333 Florida Statutes address the removal and cutting of mangroves. Trimming is restricted to a height of six feet. Trimming laws help to relieve stress caused by trimming. To minimize the impact to mangroves, we recommend the use of boardwalks in constrained areas. Information kiosks will help educate users about the ecological importance of mangroves.

7.1.2 Salt Marsh and Buttonwood Communities

Salt marshes also occur in intertidal zones that are at least occasionally inundated with salt water. However, in salt marshes, mangrove species are sparse and various salt-tolerant grasses dominate. This type of vegetation community is rare in the Keys and was not preliminarily observed within the project corridor.

7.1.3 Open Water and Open Water with Seagrass

Seagrass beds are the most common habitat found in the warm shallow waters beyond the mangrove communities. Like mangroves, seagrass beds are also extremely productive ecosystems that contribute to the overall health of the Keys. The grasses grow in extensive beds, providing shelter and a food supply for shrimp, spiny lobsters, crabs, and fish. The grasses depend on sunlight for photosynthesis and can be easily damaged by any changes in water clarity or temperature. Because the destruction of seagrass beds has far reaching affects throughout the entire Keys ecosystem, consideration has been taken in the trail planning.

Six species of seagrass occur in Florida, with turtle grass *(Thalassia testudinum)* being the best known and most widely distributed. Shoal grass *(Halodule wrightii)* and Manatee grass *(Syringodium filiforme)* also exist in the Keys. Seagrasses and open water communities were observed adjacent to U.S. 1 and within the proposed trail corridor.

7.1.4 Pinelands

This historically fire-maintained community type is limited to the Lower Keys, primarily on Big Pine, Little Pine, Sugarloaf Key, Cudjoe Key, and No Name Key. The habitat is dominated by a southern variety of slash pine (*Pinus ellitottii var. densa*). Other species include Key thatch palm (*Thrinax morrisii*), cocoplum (*Chrysobalanus icaco*), strangler fig (*Ficus aurea*), wax myrtle (*Myrica cerifera*), myrsine (*Rapanea punctata*), winged sumac (*Rhus copallina*), cabbage palm (*Sabal palmetto*), locustberry (*Byrsonima lucida*), and sea grape (*Coccoloba uvifera*). Pinelands are home to the endangered Florida Key Deer *(Odocoileus virginianus clavium)*, found mostly on Big Pine Key and No Name Key.

7.1.5 Tropical Hardwood Hammocks

Tropical hardwood hammocks are found on elevated, rarely inundated, and relatively fire free sites. In the Lower and Middle Keys, the hammocks are usually isolated and small in size, surrounded by pinelands at higher elevations and mangroves at lower elevations. In the Middle Keys from Big Pine North and the Upper Keys, the hammocks are larger and more extensive. There, broader transitional areas can be found between the hammock and the mangrove fringe. Species observed in the Upper Keys include gumbo limbo (*Bursera simaruba*), poisonwood (*Metopium toxiferum*), mahogany (*Swietenia mahagoni*), black ironwood (*Krugiodendron ferreum*), Jamaica dogwood (*Piscidia piscipula*), pigeon plum (*Coccoloba diversifolia*), wild tamarind (*Lysiloma latisliqua*), Spanish stopper (*Eugenia foetida*), wild coffee (*Psychotria nervosa*), mulberry (*Ardisia escallonioides*), and some two hundred other trees and shrubs known to inhabit hammocks.

Rare animals found in tropical hardwood hammocks include the white-crowned pigeon (*Columba leucocephala*), Florida tree

snail (*Liguus fasciatus*), Schaus' swallowtail (*Heraclides aristodemus ponceanus*), and the Key Largo wood rat (*Neotoma floridana smallii*).

This type of community was observed adjacent to U.S. 1 and within the proposed trail corridor. Most of the remaining tropical hardwood hammocks found in the Upper Keys are protected in the Key Largo Hammocks State Botanical Site and the Crocodile Lake National Wildlife Refuge. The 2,700-acre Key Largo Hammocks State Botanical Site is the proposed northern terminus of the FKOHT and contains more than eighty-four federally protected species of different plants and animals. This site is proposed because of its high educational and environmental value. Existing facilities can be enhanced without degrading or destroying any hammock, making it an ideal trailhead location.

7.1.6 Listed Floral Species

The presence of plants listed as Endangered or Threatened involves primarily federal agencies. Section 7(a)(2) of the Endangered Species Act requires federal agencies to ensure that any action they authorize, fund, or carry out does not jeopardize the continued existence of any Endangered or Threatened species. There is no effect on the activities of private citizens on their own lands unless such activities involve federal funding or federal permitting (i.e. ACOE dredge and fill permitting and permitting to take listed animals). In such cases, the issuing federal agency must insure that the activity will not jeopardize the continued existence of the listed plants before issuing the funds or permit.

Prior to the Data Collection phase, a background literature search was conducted to determine the legally protected species that have the potential to occur in the trail corridor. Species lists were complied by using a computer database maintained by Environmental Management Systems, which contains species occurrence by county and habitat type. This database was developed by consulting the most current observations and distribution records maintained by the Florida National Areas Inventory (FNAI), and by reviewing current scientific literature. Additional distribution and habitat information was obtained from the Florida Committee of Rare and Endangered Plants and Animals (FCREPA) publications, the United States Fish and Wildlife Service (USFWS), Florida Audubon Society, and through consulting other published reference material. EMS also conducted a cursory site visit in October.

Once a species is listed as Endangered or Threatened, it is subject to protection and management by the USFWS and the Florida Fish and Wildlife Conservation Commission (FFWCC). These agencies exercise direct regulatory control over the taking, which includes harassment, wounding, killing, possession, or sale of these species or their nests, and certain civil and criminal penalties may be imposed for violation of the prohibitions against these actions. If destruction or removal of an Endangered or Threatened Species or its nest or eggs is required, a developer must first secure a permit from the executive director of the FFWCC (pursuant to Rule 39-27.002(3) F.A.C.) and may also need a permit from the USFWS. In addition to specific permits for taking or relocation, a project's general impact upon protected species will be evaluated by state or federal agencies as part of the application procedures for a variety of development permits.

Table 1 in Appendix II, shows the results of the database search for protected (also referred to as listed) wildlife species with the potential to occur within the trail project corridor. During the preliminary field investigation only a few listed birds were observed. Those included the great white heron (*Ardea sp.*), the great blue heron (*Ardea herodias*), the Louisiana heron (*Egretta tricolor*) and an osprey fledgling (*Pandion haliaetus*).

Other non-listed species of birds observed during the preliminary corridor investigation included several gulls (Larus spp.), a great egret (Casmerodius albus), and a kingfisher (Ceryle alycon). Many listed species of birds migrate through the Florida Keys and some of the species annually nest in the Keys. Three such rookery areas have been identified by the FNAI that are within or immediately adjacent to the project corridor

Table 2 in Appendix II, shows the results of the database search for protected plant species with the potential to occur in the project corridor. Several listed species were observed in the field, and the likelihood of occurrence of the remaining listed species is high.

7.2 METEOROLOGICAL

The climate of the Keys is truly unique: a tropical maritime climate with temperatures rarely dropping below the lower fifties. The Bermuda high, a high pressure system originating in the Atlantic Ocean, allows afternoon showers in late spring and summer and decreases the chance of rain from fall to early spring. Without the influence of the Bermuda high, the Keys would be drenched by thunderstorms year round. The Keys differ from the rest of Florida in that the distinction between wet and dry seasons largely disappears. Summer is known for daily afternoon thunderstorms often with downpours and frequent lightening. Average rainfall is forty to fifty inches with approximately seventy-five percent of this falling from May to October.

Other meteorological factors affecting the Keys are hurricanes and tropical storms. Hurricanes and tropical storms beset Florida from June to November, with the peak time being September and October. The Florida Keys has the highest probability of hurricane impact of any coastal area in Florida (Florida Department of Natural Resources, 1974).

All of these factors must be considered when developing outdoor recreational facilities. Trail facilities will need to be high enough to withstand tidal fluctuations. The trail will take users to secluded water areas where shelters will be necessary as safety measures for protection from the elements. Section 8.4, Trail Planning, provides recommendations for trailheads and rest stops along the trail corridor.

7.3 PERMITTING CONCERNS

Numerous permits will need to be obtained in order to implement the trail along the U.S. 1 corridor. Monroe County will have minor involvement with the permitting process due to the location of the proposed trail alignment location in FDOT or DSL right of way. FDEP will be the permit applicant because they have agreed to manage the trail. Section 9.3 provides information on how to implement the permitting process.

Section 8.0

TRAIL PLANNING

"Afoot and light-hearted I take to the open road,
Healthy, free, the world before me,
The long brown path before me leading wherever I chose."

~Walt Whitman

The trail planning section contains information on the cross sections, trail alignment, trailheads and rest stops, and bridges. Alternatives were identified and analyzed using information gathered from previous studies and documents, project goals, citizen involvement, and information gathered during data collection. This section provides analysis and recommendations on the trail alignment, trailhead and rest area locations, and options for connecting the bridges.

8.1 TRAIL CROSS SECTIONS

The trail cross sections and the trail alignment plans within the Master Plan are recommended to accommodate the following user groups:

- Pedestrians - Hiking, walking, jogging
- Bicyclists - On-road and off-road
- Equestrians Connections where feasible
- Skaters - As feasible
- Paddlers - Canoeing and kayaking connections
- Physically Challenged

"Typical" Cross Section
Figure 8.1.1 through 8.1.5 displays the "typical" trail cross section recommended to create a safe and aesthetic trail experience for both the non-vehicular trail users and the U.S. 1 highway vehicular users. There are many variations to each cross section, which will be defined during the design phase of the trail implementation. Additionally, all typical sections will vary at street intersections where sight distance requirements will need to be followed.

A critical minimum dimension of available uplands right-of-way is recommended at 24' as defined in Optimum Trail Cross Section (see Figure 8.1.1). For the purpose of the Master Plan, uplands right-of-way is defined as lands above the jurisdictional wetlands. This is recommended for safety and ecological reasons. The FDOT highway and trail design standards, and the multi-agency ecological requirements will be determining factors for arriving at the most cost effective and aesthetic solution. Since this is planned as a scenic trail, aesthetic judgment should be a priority consideration to guide the final design.

8.1.1 Optimum Trail Cross Section
(on uplands right-of-way)
This cross section represents segments of the trail where there is ample upland right-of-way on the trailside of U.S. 1 to provide the following conditions (see Figure 8.1.1):

- No damage to mangroves or wetlands.
- Potential to construct the full width of two-way trail at 12' wide allowing for unconstrained use by all trail user groups. Where conditions allow, the width should be increased to 14' to accommodate shared users.
- Optimally, a zone of habitat restoration at least 12' wide beyond U.S. 1 clear zone.
- The habitat restoration zone could help provide mitigation of environmental impacts caused by the trail. This concept will require site

specific review wherever it is proposed along the corridor. The SFWMD, however, does not consider areas adjacent to a roadway (and separated from the natural wetland system by a paved trail) as an appropriate mitigation area. Such a design could potentially increase the interaction between wildlife and birds attempting to utilize this area and the adjacent traffic. For additional information, please see the SFWMD Correspondence in Appendix I. Any mitigation needs to be addressed in the design phase.

- Use a combination of native trees with a 7' clear trunk requirement, and low groundcover not to exceed 24" in height, to achieve a maximum view of trail users for increased security.
- Provide two-way trail traffic and trail clear zones beyond the 12' habitat restoration zone, and beyond U.S. 1 clear zone.
- Area exists for storm water drainage or retention, if required between the trail and U.S. 1. The SFWMD should be contacted during the design phase to provide input regarding the surface water management design components.
- Avoid disturbance of existing utilities.

These conditions occur along U.S. 1 and allow for a good aesthetic experience for a two-way shared use trail positioned along a highway. If the 12' or less habitat restoration zone is not possible between the U.S. 1 clear zone and the trail, only small trees (with no shade canopy) and groundcover will be allowed, due to FDOT highway design and safety standards[14].

8.1.2 Trail Boardwalks Cross Section

This condition occurs infrequently along the trail and is a result of the available right-of-way not meeting the overall minimum acceptable dimension of 24' as defined in the "Constrained Trail Cross Section" in Section 8.1.3. The following conditions apply to this cross section:

- A two-way 10' – 12' trail boardwalk will be required to extend into the wetlands to avoid U.S. 1 traffic. A survey will be needed to determine the appropriate length of the boardwalk
- It is typically not desired to split trail traffic and have one way on the U.S. 1 uplands shoulder and one way on the boardwalk. This leads to confusion in trail traffic and requires extra work and cost.
- Thin rows of mangroves are typically growing on the edge of the fill of the U.S. 1 raised grade (which was originally the abandoned Flagler Railroad), and open water.
- The trail boardwalk will need to be constructed outside of the thin row of mangroves.
- Minimum disturbance to the mangroves is proposed. Trimming will typically occur where the trail boardwalk must cross between open water/wetlands and the U.S. 1 uplands shoulder.
- The trail boardwalk must avoid the channels excavated for the original U.S. 1 and Flagler Railroad construction.
- The pier construction for the trail boardwalk must require minimum disturbance of the wetlands.
- No disturbance of U.S. 1 traffic or existing shoulders will be required during trail construction or day-to-day traffic.
- No or minimum disturbance of existing utilities would be required.
- The trail boardwalk will greatly enhance the scenic quality of the Overseas Heritage Trail experience for trail and highway users.
- The environmental impacts are being minimized to the extent that minimum design standards will allow.
- Hurricanes need to be a factor when considering the design of the boardwalks. It is important to elevate the boardwalks as much as feasible and use only structurally sound concrete piers, beams, and decking.

It is not recommended that the trail always be aligned on the U.S. 1 uplands shoulder. The onrush of constant U.S. 1 traffic is overwhelming to most trail users. The trail is recommended to occasionally meander into the wetlands, and open water for both ecological and scenic purposes. The

boardwalks should be considered an option not only in the water, but also inland, instead of the fill and retaining wall. This will be less costly and will have less of an impact on the mangroves, drainage, and animal crossings. These areas of constrained trail conditions are indicated on Figure 8.1.2.

8.1.2.1 Special Issues Concerning Boardwalks

Special issues have to be considered concerning the boardwalks and abandoned bridges that are incorporated into the Florida Overseas Heritage Trail. (Section 8.3 discusses the bridges in detail.) The following narrative addresses these issues specifically.

- **Permitting of boardwalks** – The SFWMD has expressed a concern related to secondary and cumulative impacts associated with the boardwalk design. Additional permitting information is addressed in Section 9.3. Appendix I contains additional information addressing SFWMD concerns.

- **Live Load Distribution on Boardwalks and Bridges** – American Association of State Highway Traffic Officials (AASHTO) recommends 85 pounds per square foot for uniform live load distribution on highway bridges. Since these guidelines were developed for highway bridges, this may result in an "overdesigned" (and uneccesarily costly) project. A uniform live load of 60 pounds per square foot should provide a safe and serviceable nonvehicular structure.

- **Railings** – Boardwalk railings are an important structure and safety component. The vertical posts are usually attached to the boardwalk deck or superstructure and spaced no more than six feet apart. They provide an essential transfer of load or weight from the rail to the superstructure of the boardwalk. The AASHTO guidelines recommend that posts and railings support an outward transverse of 50 pounds per linear foot of rail height for highway bridges (again this would result in "over design"). This load is applicable up to five feet above the surface of the deck and is dependent upon the spacing of the posts. A boardwalk used by multiple non-motorized uses (but not equestrians) should have a railing of at least 54 inches above the deck surface. It is recommended that boardwalks and bridges have a top rail, a middle rail and bottom rail. The middle railing should be 33 to 36 inches from the deck surface for pedestrian and bicycle use. And middle railing should be no wider than 1½ inch so it serves as a handrail. The underside of the bottom railing should be installed no higher than 15 inches from the deck surface. The maximum vertical opening between railings should not exceed 15 inches. The Master Plan details show a closer spacing to help prevent children from falling through the railings and into open water.

  The top railings should also be sloped to prevent trail users from placing objects such as cups on top of the rail. The slight slope will help alleviate objects falling into the water. This is especially important in scenic viewing, fishing, and resting areas where trail users are more likely to stop and place objects on the rails.

Special attention needs to be paid to the boardwalks and bridge approaches. Railings should extend at least fifteen feet from each end of the structure and be flared out to funnel traffic onto the bridge. It is important for approaches to provide a clear sight line.

- **Boardwalk Decking** – Due to the rapid growth and popularity of in-line skating, it is recommended that a smooth, but slightly textured, surface be used versus the standard wood planks at a 45 degree angle. There is a desire to minimize the effects of shading on aquatic vegetation by pursuing a grated surface or using glass prisms in the wood decking. It is felt that this type of surface may help in obtaining the necessary permits for the boardwalks by helping to negate the impact to the environment (see Figure 8.1.2). Grating in the center of the boardwalk would allow for no true "dead" shaded zones beneath the boardwalks, due to the constant rotation of the sun. The plastic grating has been questioned by the ADA because it could present problems for trail users needing a cane.

Glass prisms are another option that might be more satisfactory to ADA. Future trail designers should explore both of these options.

- **Boardwalk Materials** – In gathering data, a wide range of materials were investigated. They fell into four different types: treated lumber, recycled plastic, steel, and advanced composite materials. Additionally, prefabricated bridges became a focus because of their relative low cost and minimal disturbance to the project site. Although pressure treated lumber was the cheapest alternative, it was felt that the harsh environment would increase long-term management needs. The project justifies an additional up-front investment for quality durable materials, in order to reduce overall long-term needs of the trail. Advanced composite materials are lightweight and virtually unaffected by saltwater environments. Therefore, it is our recommendation that advanced composite materials be pursued. Additionally, several decking alternatives are available with advanced composite materials including grating.

- **Boardwalk Costs** - Exact costs are hard to estimate prior to answering such fundamental questions as the selection of the appropriate footings. This would have to be determined by an engineer based in part by the load-bearing abilities of the soils, actual span length and water levels. Following is a chart that conceptually compares costs to benefits:

CONCEPTUAL BOARDWALK ANALYSIS

Boardwalk Spans and Decking

Timber
- Advantages – Relatively inexpensive; can be varied in design; environmentally sustainable.
- Disadvantages – Short life span and higher maintenance cost.

Plastic
- Advantages – Moderate in cost; can be varied in design; long life span; low maintenance.
- Disadvantages – Decking options limited.

Glass Prisms
- Advantages –Environmentally sustainable; aesthetically pleasing.
- Disadvantages – Costly; Fairly new technology; Potential for vandalism.

Steel
- Advantages – Long life span.
- Disadvantages – Can be costly and require additional maintenance for painting; environmentally damaging.

Composite
- Advantages – Long life span; several decking options; low maintenance.
- Disadvantages – Moderate to high in cost.

Boardwalk Piers (Footings)

Timber
- Advantages – Relatively inexpensive; environmentally sustainable.
- Disadvantages – Short life span.

Cement
- Advantages – Long life span; low maintenance.
- Disadvantages – Additional environmental impacts during construction.

Composite
- Advantages – Moderate in cost; withstands salt water; low maintenance; low environmental impact.
- Disadvantages – Fairly new technology

There are several examples of boardwalks used throughout the Keys such as Anne's Beach County Park (MM 73.2) and a more recent "grated" boardwalk in the Lower Keys Historic Seaport District. New technolgy allows the boardwalk to be more environmentally sensitive. Recycled materials are being used more often and have been successful at both Grayton Beach State Recreation Area and Don Pedro Island State Recreation Area. The use of recycled boardwalk materials on a barrier island is especially encouraging because the Keys have intense storms and hurricanes. Due to the sensitive nature of sea grass and shading, a new innovative boardwalk design is proposed for the environmentally constrained areas needing boardwalks. Either plastic grating or glass prisms are proposed. On the plastic grating, the edges will be closely grated fiberglass to allow the sun to penetrate to the seas grass beds below. The center will be a smooth surface that will allow in-line skaters to utilize the boardwalks. Examples need to be provided during the design phase of construction to determine optimum grate opening widths.

For the glass prisms, holes would be cut into the deck and the glass would be mounted flush with the deck. St. John's River Water Management Distirct has been experimenting with glass prisms along the St. John's River. According to SJRWMD, the glass prisms may allow more sunlight than the plastic grating, however, are more costly. The glass prisms would be considerably less expensive than building higher boardwalks.

8.1.3 Constrained Trail Cross Section

Constrained areas occur where the available width falls between the 24' recommended minimum and the 22' constrained absolute minimum. Areas that fall short of the 22' constrained absolute minimum width are recommended to follow the Trail Boardwalk Cross Section discussed previously (see Figure 8.1.2).

Generally, the Constrained Trail Cross Section occurs in the more rural locations of the Keys. Rural conditions usually present opportunities to use the Trail Boardwalk Cross Section, whereas urban conditions usually do not. Urban conditions usually have slower traffic speeds, resulting in different design solutions. Section 8.1.5 and Figure 8.1.5 describe recommendations for urban areas of the trail.

High traffic speeds are associated with the more rural conditions on U.S. 1. Therefore, trail traffic is required to remain as far from the vehicular traffic lanes as possible in order to maintain an acceptable level of safety for trail users, especially seniors, children, and the disabled. Using Planning Team criteria and recommendations in FDOT Bicycle Facilities Planning and Design Handbook, Revised 1999, the recommendations for the Constrained Cross Section follow:

- A minimum of 12' clearance between the outside of the travel lane and the inside edge of the trail is required for a vehicular pull-off/shoulder on U.S. 1. Under extreme constraints, provide only a minimum 10' pull off width.
- The inside trail clear zone of 2' width, and the U.S. 1 4' wide paved shoulder may occur within the 12' minimum clearance from the outside U.S. 1 travel lane.
- The trail is the minimum recommended width of 12' in these constrained conditions. In extreme conditions where there is only room for the minimum 10' pull off width, the 8' wide trail width is recommended. The narrow width of the available right-of-way does not allow for adequate ecological buffering between the trail and the jurisdictional wetlands. A 5' ecological buffer is recommended as the absolute minimum.
- A retaining wall positioned at the edge of the jurisdictional wetland line is required in the most extreme conditions and will be of variable height based on site elevations and existing utilities.
- Approval must be obtained from FDOT if the trail falls within the U.S. 1 clear zone.
- Available land for habitat restoration is extremely limited.
- Avoid disturbance of existing utilities.

The absolute minimum acceptable dimension for this trail cross section is 22' (10' U.S. 1 shoulder clearance + 8' trail width + 1' barrier wall + 3' ecological buffer). Any condition requiring the trail to be less than 10' from the outside travel lane typically recommends the trail to be located beyond the mangroves, as a boardwalk. This is essential due to the probability of large vehicles pulling off of U.S. 1 onto the highway shoulder. Vehicular traffic should not be required to pull off into 2-way trail traffic. The cost of this solution will vary based on site elevations and will need to be compared with the Trail Boardwalk Cross Section, for the optimum solution.

Another potential solution, not requiring a retaining wall could place a boardwalk (materials vary) along the outer edge of the uplands right-of-way, in place of the paved trail at grade, to avoid the cost of fill and retaining walls.

The SFWMD has buffer requirements that should be addressed site specifically during the design phase. Appendix I provides additional information on SFWMD buffer requirements.

8.1.4 Transitional Areas

Transitional areas are existing trails where there is available right of way for the optimum trail, but the trail is substandard for various reasons. Figure 8.1.4 provides graphic details of safety concerns and recommendations for enhancing these segments.

8.1.5 Urban Trail Cross Section

There are some areas of the trail that will be located in the urban core of the Keys' communities. The trail will take on a more urban appearance due to limited right of way (less than 12') and the location of businesses along the trail. Examples of urban trails include the City of Key West, Big Pine, City of Marathon, Tavernier, and Key Largo. If there is adequate room or future improvements that would accommodate a wider trail, it is recommended to increase the width to 12' because these will be high trail traffic areas. If the full 12' width cannot be accommodated, the next widest trail feasible should be constructed for shared use.

Figure 8.1.5 provides additional recommendations for urban areas.

The effective combination of these four typical cross sections and the variations in between will establish a safe and scenic trail experience for the local residents and visitors to the Florida Keys.

(Sections have been modified from the Trail Conceptual Plan prepared for Monroe County by Clean Florida Keys, Inc.)

Trail Cross Sections

Optimal Width Condition

Quality identity signage for parks and trailheads within the wide right of way

Example located at John Pennekamp State Park entrance constructed by Monroe County Public Works Department

Recommendations for an Optimal Trail Cross Section

TRAIL USE

Trail Users - All trail user groups including the disabled.

Width - Design a 12' wide 2-way fully shared use trail. Where possible, construct a wider trail if there is the possibility of substantial use by skaters and other trail users.

Trail Surface - Asphalt and occasionally concrete in urban areas.

Separation From highway - Maximum separation from U.S. 1 (greater than 12' from outside of vehicular travel lane allowing for safe vehicle pull off.

Materials - Use minimal amount of materials to construct retaining walls, railing, and signage.

Grade - Relatively level without severe slopes.

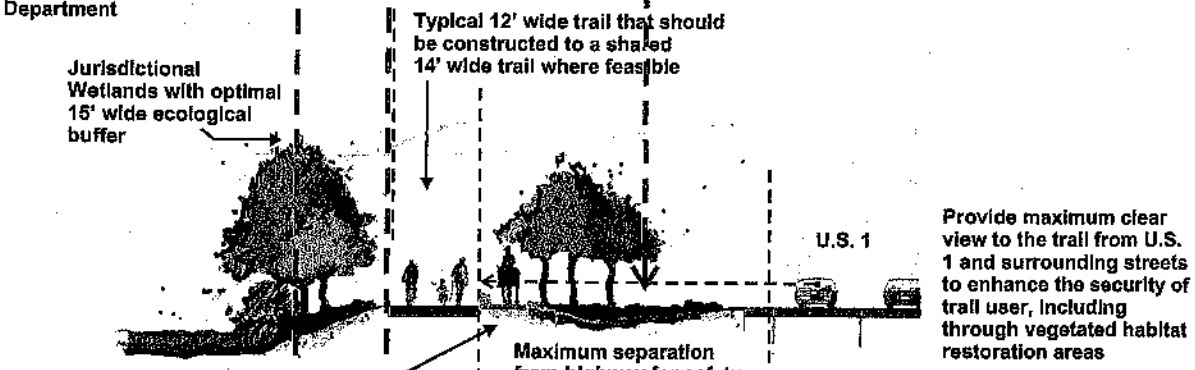
ECOLOGICAL

Uplands - Position trail only in uplands.

Ecological Buffer- Width allows adequate room for buffering between the trail and the jurisdictional wetlands.

Habitat Restoration - Available land for habitat restoration allowing for safe sight lines from highway to the trail.

Stormwater- Provides retention areas for both the Trail and U.S. 1.



Optimal Cross Section

(Sections have been modified from the Trail Conceptual Plan prepared for Monroe County by Clean Florida Keys, Inc.)

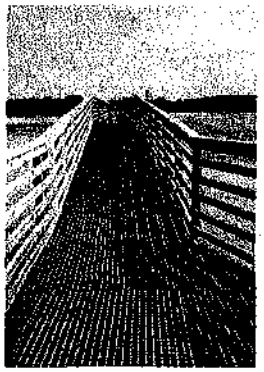
Trail Cross Sections

Trail Boardwalks

Boardwalk Considerations

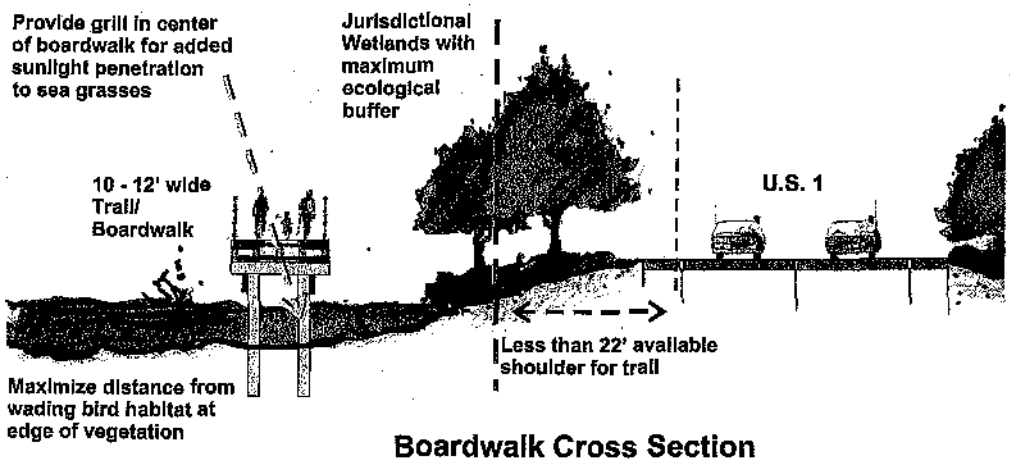
There are occasional conditions where there is not the possibility of safely aligning a shared use 2-way trail on the shoulder of U.S. 1. Where constrained conditions will not allow the trail in the uplands right of way, future trail designers should consider the following items prior to making the decision to use a boardwalk in wetlands areas:

1) Impact to wildlife and habitat, especially turtle grass and migratory birds.
2) Cost of a hurricane and salt water corrosion resistant boardwalk materials
3) Minimizing the length of the boardwalk where feasible, while assuring trail user safety
4) Using the boardwalk as an environmental education feature on the trail
5) The ability to visually police the boardwalk areas from the highway



Example of boardwalk surface that allows sunlight to reach the aquatic sea grasses, yet may be difficult to skate on or ADA compliant. Provide combination of open grill and hard concrete surface to accommodate all trail users.

(Photograph provided by Monroe County Permitting officials)

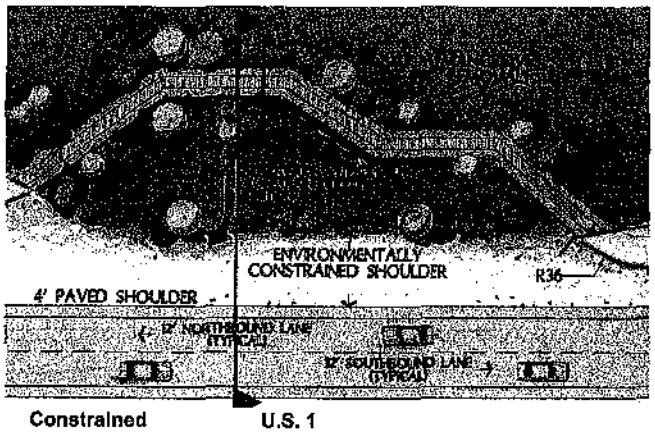


Boardwalk Cross Section

Hurricane Design Consideration

Recent hurricanes and many in the past have inflicted severe damage to some of the boardwalks in the Florida Keys.

It is important to elevate the boardwalk as much as feasible and to use only structurally sound concrete piers, beams and decking in the construction of boardwalks where damage is likely to be realized by severe hurricanes.

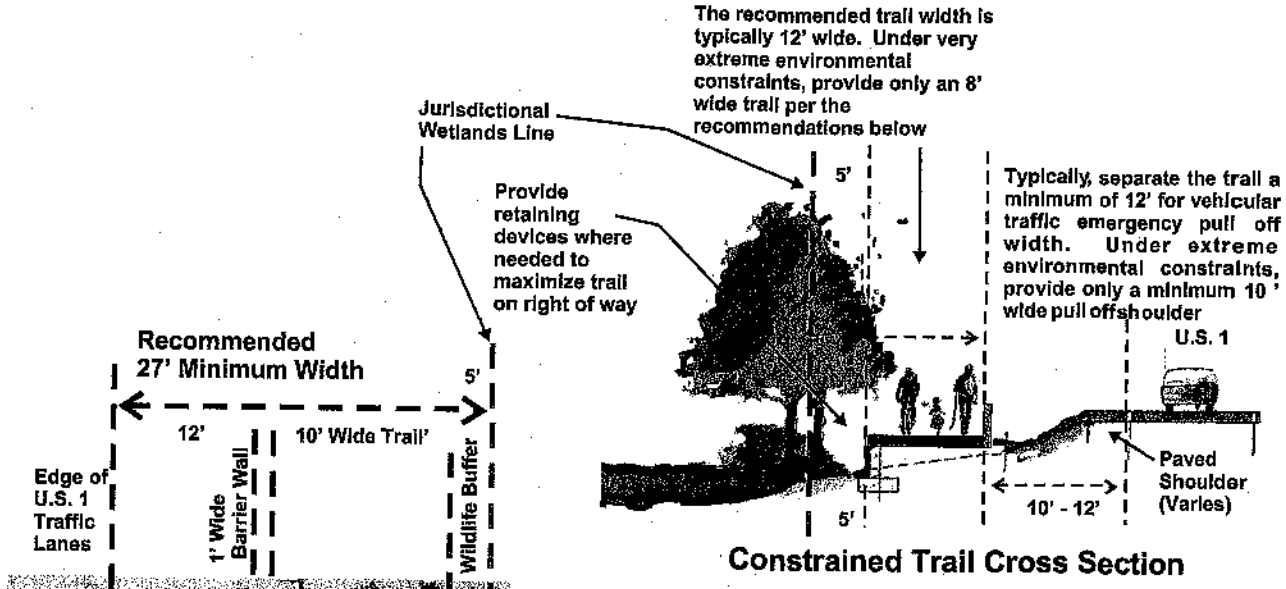


Example of boardwalk designed with minimal impact to the existing Mangroves

(Sections have been modified from the Trail Conceptual Plan prepared for Monroe County by Clean Florida Keys, Inc.)

Trail Cross Sections

Constrained Condition



Constrained Trail Cross Section

Alignment Recommendations for the Constrained Trail Cross Section

This Constrained Cross Section is typically a "Rural" condition and not an "Urban" condition.

Rural conditions usually present opportunities to use the Trail Boardwalk Cross Section where Urban conditions usually do not. Urban conditions usually have slower traffic speeds than the Rural conditions resulting in different design solutions (See the Urban Cross Sections in Figure 8.1.5).

The high traffic speeds associated with the more rural conditions on U.S. 1 in the Florida Keys requires trail traffic to remain as far from the vehicular traffic lanes to maintain an acceptable level of safety for the full range of trail users, including seniors, children, and the disabled. Based on these Planning Team criteria, and the recommendations in **FDOT Bicycle Facilities Planning and Design Handbook, Revised July 1999**, the recommendations follow for the Constrained Cross Section.

1) The two way trail is to be located no closer than 10' from the outside edge of the vehicular traffic lane, per the diagram on this page. A 1' wide allowance should be provided for a barrier wall. In these extreme conditions, the 8' wide trail width is recommended, making the total minimum offset 22' from the outside of the vehicular traffic lane to the Jurisdictional Wetlands limits, including a 3' ecological buffer.

2) The two way trail is to be no less than 8' wide in these rare and extreme conditions as recommended in 1 above. Note that a recommended minimum trail width is typically 10' wide.

3) If there are circumstances that prohibit either of the recommendations 1 and 2 above, then the trail alignment is recommended to follow the recommendations in the Trail Boardwalk Cross Section, Figure 8.1.2.

4) Bicyclists are to be signed to "Yield to Pedestrians" in the constrained conditions where there are potential conflicts between the two trail user groups.

ECOLOGICAL RECOMMENDATIONS

Uplands - Position trail only in uplands.

Ecological Buffer- The narrow width of the available right of way does not allow for adequate ecological buffering between the trail and the jurisdictional wetlands. It is recommended that the absolute minimum buffer be 3' wide from the edge of the trail construction to the Jurisdictional Wetlands Line. The decision to utilize this Constrained Cross Section should be made carefully based on the ecology and wildlife found in each area. The alternative to this cross section is the Trail Boardwalk Section.

Habitat Restoration - The land between the trail and the highway should be planted with low growing native species such as sea daisy and railroad vine which are good stabilizers for erosion and are low maintenance..

USE RECOMMENDATIONS

Trail Users - All trail user groups.

Trail Surface - Asphalt and occasionally concrete in urban areas.

Grade - Grade is usually severe in the constrained conditions and requires some type of retaining wall or reinforced slope to accommodate construction of the trail in the limited and constrained right of way.

Stormwater- Usually no opportunity although a swale should be provided if possible.

Trail Cross Sections

Transitional Areas

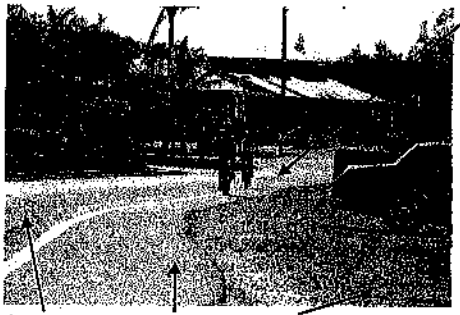
(Areas of the trail corridor where there is available right of way for quality trail but the trail is substandard for various reasons)

Add barriers and defined parking areas where needed to eliminate parking on the trail

Parking on the Trail
Concern:
Safety on the trail
Recommendation:
Provide barriers including trees, boulders, and curbs to completely prohibit any vehicular intrusion onto the trail, trail clear zones, and trail setbacks.

Existing trail area with poorly defined trail edges, vehicular parking, and user safety

Bicycle lane
Concern:
Safety on the trail is compromised by automobile parking poorly designed vehicular parking activities. On street parking is not typically desired on U.S. 1.
Recommendation:
Provide a completely separated 12' wide trail with barriers to protect trail users from automobiles. Park vehicles on the street in accepted traditional patterns of either parallel, 45, or 90 degree depending on individual site conditions. There should be a minimum of 5 - 8' between on street parking and the trail to provide adequate shade tree plantings.



Hazardous conditions for bicycle lane users

Re-sequence to: **Street / On Street Parking / Trail**

Street Crossing
Concern:
Safety at the trail intersection and U.S. 1.
Recommendation:
Improve safety with the addition of crossing and trail identity signage, crosswalk pavement markings, additional barriers including boulders and street trees to protect users. There should be a minimum 2' wide clear zone on either side of the trail where all signage, barriers, boulders, trees are set back from the edge of the trail pavement.

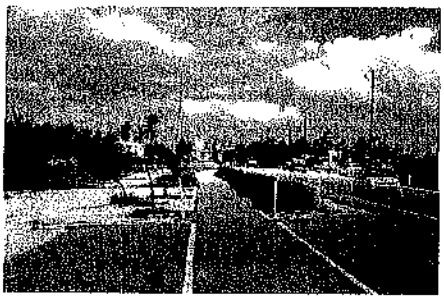
Good use of boulders as barriers

Increase width of trail to 12' where feasible for greater ease of use, and safety

Maintain a 2' distance from obstructions

Typical 2' Wide Clear Zone

Directional Signage
Concern:
Trail ends on U.S. 1 without directional signage resulting in unsafe intersections
Recommendation:
Clearly define trail beginning and end points clearly and provide directional signage indicating mileage to trail destinations.



Good native plantings but inadequate room for vehicles to safely pull off of U.S. 1 in an emergency

Upgrade Existing Trails
Concern:
Some trails provide inadequate separation from U.S. 1, not are not wide enough to accommodate a safe shared use trail, and, do not fully utilize the available right of way.
Recommendation:
Expand trail to 12'shared use width with adequate clearance from highway.

Trail Cross Sections

Urban

(Urbanized areas of the trail corridor where there is unavailable right of way for a 12' width)

A disabled user at an inadequately defined trail crossing. Although the trail user is completely exposed to oncoming motorists and is in the open, there is no trail detailing to provide an enhanced visible presence of the users, such as trail signage, street trees, street lighting standards, etc.

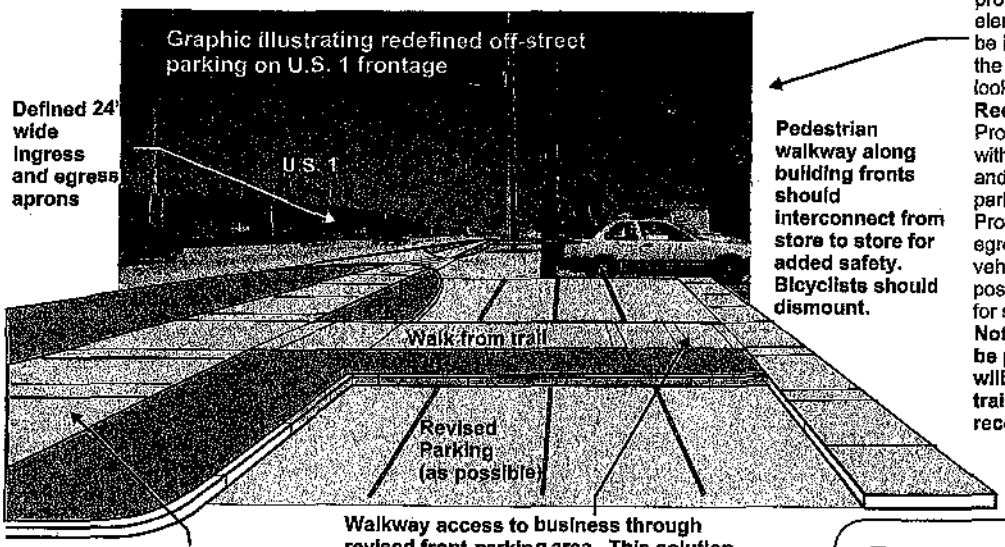
Increase intersection signage and identity

Supplement existing boulders and trees as attractive barriers

Street Crossing
Concern:
Safety at the trail intersection and U.S. 1.
Recommendation:
Improve safety with the addition of crossing and trail identity signage, crosswalk pavement markings, and additional barriers including boulders and street trees to protect users.

U.S. 1 with new defined trail and curbed islands for native street plantings

Provide 2' Clear Zones free of obstructions along edge of urban trail section where feasible



Defined 24' wide ingress and egress aprons

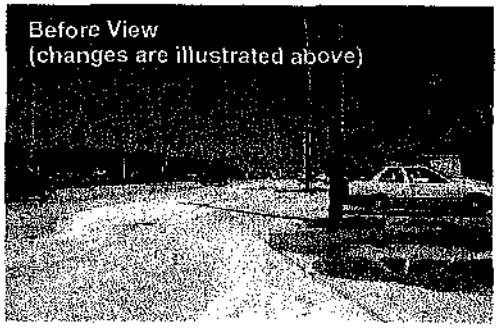
Pedestrian walkway along building fronts should interconnect from store to store for added safety. Bicyclists should dismount.

Increase Parking Definition
Concern:
The existing trail has no distinct edges to provide a visible and identifiable urban element to vehicular users. Trail users will be injured by motorists not seeing them in the sea of asphalt, while motorists are looking for other vehicles.
Recommendation:
Provide distinct curbed planting islands with street trees, barrier curbs (Type F), and parking spaces where vehicles are parked parallel with U.S. 1 and the trail. Provide only 24' wide (2-way) ingress-egress aprons with radii for smaller vehicles. Provide alleyways where possible in the rear of buildings to provide for service vehicles and additional parking.
Note: Right of way determination will be provided in the design phase which will clarify the available R/W for two way trail use. No one way trail traffic is recommended.

Shared use 8' wide urban trail and traditional street detailing including lighting standards, street trees, and site furnishings

Walkway access to business through revised front parking area. This solution is only recommended where land for commercial uses is limited for parking.

TRADITIONAL URBAN DESIGN
Where possible, place buildings along street edge in a traditional manner verses parking in front of building, to create a traditional downtown character, such as in portions of Tavernier and Key West, per local ordinances.



Example of "typical" U.S. 1 condition where parking affects safe trail use

Good ADA ramps for the disabled

Increased crossing detailing including trail signage and pavement markings would further enhance the safety of trail users.

An example of a quality new Urban Trail Section. Additional trail detailing would identify the Florida Keys Overseas Heritage Trail alignment along this segment.

8.1 TRAIL ALIGNMENT

8.2.1 Alternatives Consideration

The trail alignment complies with tasks outlined in the Project Scope of Services, which places special attention on the U.S. 1 corridor and the Historic Bridges. Barton-Aschman's Monroe County Bicycle and Pedestrian Report provided successful analysis and recommendations that were supported by the Monroe County Board of County Commissioners. Generally, the FKOHT alignment is consistent with the BA recommendations and should continue to receive support.

Because the Historic Bridges represent a significant part of the heritage of the Florida Keys[3], they were a major factor determining the trail alignment. The bridges provide a safer trail environment than the shoulders of U.S. 1 bridges with vehicular traffic.[2] The historic bridges in the Upper Keys and Middle Keys are mostly on the Bay side. However, in the Lower Keys, the majority is on the Atlantic side. The location of the trail reflects the location of the Historic Bridges in each sub-area. Alternatives are provided on how to close gaps on non-continuous bridge sections, such as the Seven Mile Bridge and Bahia Honda Bridge (see Section 8.3).

Other factors that determined the trail alignment included safety, the location of existing bike paths, and environmental impacts. In order to create a safe trail experience a separated trail is recommended for the entire trail corridor. The Project Goal on Safety supports this recommendation. On road shoulders are dangerous because of the high volume and speed of vehicular traffic along U.S. 1. Most user groups do not have the skills to utilize on road shoulders safely. The recommended alignment will range from an optimum trail, minimum trail, urban trail, and boardwalks. Figures 8.1.1 – 8.1.5 provide graphic details of these cross sections.

Another factor affecting the trail alignment is the location of existing trails or abandoned roads. Examples of existing trails are segments located in Key West along Roosevelt Boulevard, in Marathon from MM 47 to MM 54, and in Key Largo from MM 96.5 to MM 106.3. The existing trails are substandard due to deficiencies, including:

- Existing facilities are non-continuous;
- Existing facilities are not properly maintained including poor pavement conditions, overgrown vegetation, debris on pavement, and standing water;
- Unsafe intersections and crossings;
- Existing pedestrian signals do not conform with the MUTCD guidelines for design and operations;
- Most of the existing bike paths do not meet FDOT or AASHTO design standards;
- Limited bicycle and pedestrian facility signage;
- Inadequate lighting or non-existent lighting in urban areas;
- Historic bridges not open or designated for pedestrian use;
- Parking and vehicles on existing bike facilities;
- Crosswalks not clearly and consistently identified; and
- Existing trail width will not accommodate shared use. [2]

Abandoned roads include State Road 4A in Grassy Key and Cudjoe Key (Recreational Trail). The abandoned roads are well suited for conversion into trails because the corridor is already established and environmentally degraded. Many people are currently using these road trails and support the enhancement of these sections for additional trail users.

The trail alignment took into consideration environmental impacts to natural resources along the U.S. 1 corridor. The recommended alignment uses the U.S. 1 DOT right-of-way. The U.S. 1 right-of-way is environmentally degraded land, but is still important habitat for migratory birds, fish, and other species. In constrained areas, there is not adequate right-of-way and boardwalks are proposed. The boardwalk concept was proposed in the Conceptual Plan[5]. The boardwalk design is conscious of seagrass shading and is used only when human safety is compromised. Figure 8.1.2 provides graphic details of the boardwalks.

8.2.2 Trail Alignment Narrative Description

The following narrative discusses the trail alignment including crossings, trailheads and rest stops, bridges, destinations, and areas of concern. This narrative is consistent with the Monroe County Bicycle and Pedestrian Plan[2] with a few areas of exception, which are noted below. This narrative is also displayed graphically on Figures 8.2.1 through 8.2.14 and in Table 8.2.1. Section 8.3 provides detailed analyses and recommendations on the bridges. Section 8.4 provides a description of the trailheads and rest stops, including architectural character and recommended improvements to existing facilities.

In this section, a gap is defined as an area where there is no trail.

8.2.2.1 Lower Keys Trail

City of Key West Existing Trail (MM 0 to MM 5.3) -The Lower Keys trail begins in the City of Key West (MM 0), where an existing urban bike path is utilized for approximately 5.3 miles. The City of Key West's Department of Engineering has developed the Key West Bicycle/Pedestrian Strategic Plan, which proposes a citywide system. Included in this plan are routes along U.S. 1 and South Roosevelt Boulevard. The Master Plan proposes the main arterial routes along U.S. 1 and Atlantic Boulevard/ South Roosevelt Boulevard for the official FKOHT alignment in the City of Key West. There is an existing crossing at the intersection of U.S. 1 and Roosevelt Boulevard that will allow pedestrians coming from S. Roosevelt Boulevard to access the existing path on the Bay side of U.S. 1 leading towards Boca Chica or downtown Key West. The existing trail ends at Key Haven Road (MM 5.3). Destinations in this segment include Ft. Zachary Taylor, Higgs Beach Park, Smathers Beach, West Bartello Tower & Museum, Bayview Park (MM 1.5), Key West International Airport, the Key West Botanical Gardens (MM 4.2), and numerous other Key West attractions. Ft. Zachary Taylor, Higgs Beach, and Bayview Park are proposed for trailheads with no improvements to the existing facilities recommended. The Key West Botanical Gardens is also proposed as a trailhead, with proposed improvements including a new shelter, restroom, water fountain, and five parking spaces.

Key Haven Road to Avenue A Gap (MM 5.3 to MM 10) - Beginning at Key Haven Road (MM 5.3), a gap begins (approximately 4.7 miles in length). At the Boca Chica Bridge, there is a crossing to get to the Atlantic side where there is an existing pedestrian path across the Boca Chica Channel. An underpass (MM 6) is proposed to safely take trail users across U.S. 1. This concept was proposed and approved by the Monroe County BOCC in the Conceptual Plan[5]. The underpass concept was not proposed in the BA plan[2], but instead an at-grade crossing at Key Haven Road. An underpass is recommended due to safety concerns. Key Haven Road has been the location of two pedestrian crashes from 1991 to 1995. Deficiencies at this intersection include no bike/pedestrian warning signs on Key Haven Road and inadequate street lighting. The Boca Chica underpass will eliminate interaction between vehicular traffic and trail users and also provide a rest stop. Across the Boca Chica Bridge, the trail continues on the Atlantic side past the Boca Chica Naval Air Station (NAS) and then crosses the Rockland Channel Historic Bridge. At the Boca Chica NAS, there is an opportunity to use the on and off ramps for the trail route. This was proposed in the Conceptual Plan[5] and discussed conceptually with a representative from Boca Chica NAS at previous meetings. Departing the NAS, the trail would rejoin U.S. 1 and continue on the Atlantic side. The gap ends at Avenue A. A rest stop is proposed at the Boca Chica NAS. No facilities exist, however a shelter, restroom, and water fountain are recommended.

Big Coppitt Community Existing Trail (MM 10 to MM 10.7) - At Avenue A (MM 10), a crossing is recommended to access the existing trail on the Bay side. The existing trail is approximately 0.7 miles in length. Wilhelmina Harvey Children's Park is located off U.S. 1 near MM 10. It is recommended that this park be utilized as a trailhead facility. At Boca Chica Road (MM 10.7), there is a proposed U.S. 1 crossing to take trail users back to the Atlantic side. This crossing is necessary due to the

location of the proposed trail and upcoming Historic Bridges on the Atlantic side for the next 18.9 miles. Future trail traffic could justify a continued trail alignment along the Atlantic side of U.S. 1 in Big Coppitt, but in an effort to minimize costs, only improvements to the existing bike path are recommended initially.

Boca Chica Road to Ship's Way Gap (MM 10.7 to MM 29.6) - A gap begins at Boca Chica Road (MM 10.7) on the Atlantic side and continues until Ships Way (MM 29.6). Communities located in this segment include Bay Point, Lower Sugarloaf, Upper Sugarloaf, Cudjoe Key, Summerland Key, Ramrod Key, Middle Torch Key, Little Torch Key, and the beginning of Big Pine. The trail alignment in this section is on the Atlantic side due to the location of several Historic Bridges including Shark Channel Bridge (MM 11.5), Saddlebunch No. 5 Bridge (MM 12.7), Saddlebunch No. 4 Bridge (MM 13), Saddlebunch No.3 Bridge (MM 14.2), Saddlebunch No. 2 Bridge (MM 14.5), Lower Sugarloaf Bridge (MM 15.5), Park Channel Bridge (MM18.6), Bow Channel Bridge (MM 20.1), Kemp Channel Bridge (MM 23.5), Niles Channel Bridge (MM 25.3), and South Pine Channel Bridge (MM 28.5). The Historic Bridges will provide roadway separation and scenic views. Destinations in this segment include Bay Point Park (MM 15), Baby's Coffee (MM 15), Bat Tower Historic Site (16.6), Sugarloaf Fire Station (MM 16.6), Sugarloaf Elementary & Middle School (MM 19.3), and the Sheriff's Substation (MM 20.9). Bike lane connections include Boca Chica Bike Lane (MM 10.7), CR 939 Bike Lane Loop (MM 16.7 to MM 20), Cudjoe Key Recreation Trail (MM 21 to MM 23), Puerto Bello Drive Bike Lane (MM 23), Old S.R. 4A Recreation Trail (MM 23.9 to MM 25), West Shore Bike Lane (MM 24.9), West Indies Drive Bike Lane (MM 27.3), S.R. 4A Future Lane (MM 28.2), and Barry Avenue Bike Lane (MM 28.6).

From MM 11 to MM 15, there is adequate room for the optimum trail cross section (see Section 8.1 and Figure 8.1.1). The Bay Point Park (MM 15) was proposed for a trailhead in the Conceptual Plan[5]. Improvements to this trailhead include adding a shelter and restroom facility. Leaving Bay Point Park, the trail continues on the Atlantic side, crossing the Lower Sugarloaf Bridge and then the Harris Channel Bridge, using the existing U.S. 1 shoulder. An existing crossing, located at South Point Drive (MM 16.5) and a proposed crossing at Sugarloaf Boulevard (MM 16.7), are incorporated into the trail alignment as optional user activated crossings to access the Lower Sugarloaf Community Center on the Bay side. The trail will not continue on the Bay side through Lower Sugarloaf (MM 16.5 to MM 18) as previously recommended in both the BA Plan[2] and the Conceptual Plan[5]. The South Point Drive crossing is a dangerous and unnecessary crossing for such a short distance. There were two crashes in this area, including a fatal crash in 1995[2]. A majority of the neighborhoods (trail trip generators) are located on the Atlantic side, as well as the upcoming Historic Bridges. The trail width through the Lower Sugarloaf Community should be scaled down to the urban width due to right of way constraints (see Section 8.1 and Figure 8.1.5). The trail in this section should be incorporated into the implementation of the Master Plan for Turn Lanes Study[4] Area #4. This study proposes adding a separate turning lane for both northbound and southbound U.S. 1 traffic, enhanced street lighting, and a crosswalk for the bike path at the Sugarloaf Boulevard intersection. Advanced crosswalk signage, a continuous left turn lane, reduced speed signage, and an emergency signal at the Sugarloaf Fire Station are also proposed. These enhancements will help to calm traffic making the area safer for trail users.

The Harris Gap Channel (MM 17.5) and North Harris Channel (MM 17.7) do not have Historic Bridges, therefore, a trail in the bridge shoulder, aligned on the Atlantic side, is temporarily recommended. A new and separated shared use trail bridge is recommended once trail traffic increases. The Park Key Historic Bridge will lead trail users into the Upper Sugarloaf Community. A crossing is proposed at the Crane Boulevard intersection (MM 19.3), which is the location of the Sugarloaf Elementary and Middle School and a proposed FKOHT rest stop. Improvements to this intersection are proposed in the Turn Lane Study[4], Area #5 including adding a crosswalk, increasing turn lane storage length to accommodate buses,

school zone signage, and traffic calming measures. The trail continues on the Atlantic side crossing the Bow Channel Historic Bridge and passing the Sheriff's Substation. A rest stop is proposed at the Sheriff's Substation including a new shelter, restroom, water fountain, and five additional parking spaces.

Optional crossings at Drost Drive (MM 20.9) and Yardarm Road/Cutthroat Drive (MM 22.9) will provide access to the Cudjoe Key Recreation Trail. The FKOHT does not use the Cudjoe Key Recreational Trail as the recommended alignment due to the location of upcoming bridges and trail trip generators on the Atlantic side. However, this trail is highly used by local residents and future enhancements, such as paving the path, should be made when it is financially feasible.

The proposed FKOHT alignment continues on the Atlantic side, crossing the Kemp Channel Historic Bridge (MM 23.5) and enters the Summerland Key Community (MM 24 to MM 25). Optional crossings at MM 24 and West Shore Drive (MM 24.9) will allow trail users to access the Old S.R. 4A Recreation Trail on the Bay side. Again, this trail is not used because of the location of upcoming bridges, it would require U.S. 1 crossings, and the majority of trail trip generators are located on the Atlantic side. The trail will exit the Summerland Key Community by the Niles Channel Historic Bridge (MM 25.3) and will continue on until the beginning of the Big Pine Community where the gap ends at Ships Way (MM 29.6). New bridges in this section include the Torch Ramrod Bridge (MM 27.4), Torch Channel Bridge (MM 28), and the Pine Channel Bridge (MM 29.5). A temporary U.S. 1 trail shoulder is proposed for the new U.S. 1 bridges until a new separated bridge can be constructed.

Big Pine Key Existing Bike Path (MM 29.6 to MM 31.2) - The commercial area of Big Pine Key has an existing bike path that needs to be upgraded per the transitional trail recommendations where feasible (see Section 8.1 and Figure 8.1.4). Any areas that are identified as sensitive habitat for the endangered Key Deer population should be designed using the urban trail cross section (see Figure 8.1.5). Destinations in this segment include Watson Field & Blue Heron Park (MM 30.3), Key Deer Overpasses, and the Lower Keys Chamber of Commerce (MM 30.8). The existing bike path ends at 5th Street (MM 31.2).

Big Pine Key Gap (MM 31.2 to MM 38.5) - A gap beginning at 5th Street will continue through the Big Pine Community and Ohio Key Community (Sunshine Key) to the end of the Lower Keys (MM 38.5). Historic Bridges in this section include Spanish Harbor Bridge (MM 33), Bahia Honda Bridge (MM 35), and the Ohio/Bahia Honda Bridge (MM 38.4). Destinations include a proposed rest stop at the Spanish Harbor Bridge, a proposed trailhead at Bahia Honda West (MM 35), and an existing rest stop at Bahia Honda State Park East (MM 36.4). An underpass is proposed at the west end of the new U.S. 1 Bahia Honda Bridge (MM 35). The existing U.S. 1 Bridge provides adequate width and height for an underpass. The underpass will eliminate interaction between trail users and vehicular traffic. The underpass will bring trail users safely to the Atlantic side for a proposed trailhead at the west end of Bahia Honda Historic Bridge. Section 8.3 and Figure 8.3.2 provides additional analysis and recommendations for the Bahia Honda Bridge. Inside the Bahia Honda State Park, there is an existing underpass that should be utilized to take trail users safely across U.S. 1 to the upcoming bridges and neighborhoods. The final trail alignment within the Bahia Honda State Park is to be determined by the FDEP Bureau of Recreation and Parks. The proposed trail alignment is for informational purposes only. It is desirable to not require trail users to cross U.S. 1 at grade, so the option to utilize the existing Bahia Honda State Park Underpass is the most desirable route. Security could be enhanced with additional fencing and gates as needed. The Lower Keys end after the Ohio/Bahia Honda Historic Bridge at MM 38.5. The gap continues on to Pigeon Key (MM 45), in the Middle Keys.

8.2.2.2 Middle Keys Trail

Continue the Big Pine Gap (MM 38.5 to MM 45) - The Middle Keys trail begins at

MM 38.5 with the gap stemming from the Lower Keys (begins at MM 31.2). The new trail will continue on the Bay side crossing the Ohio/Missouri Historic Bridge (MM 39) and the Missouri/Little Duck Historic Bridge (MM 39.6). At the west end of the Seven Mile Bridge, a rest stop is proposed using the existing parking facilities and a proposed shelter. An underpass could be incorporated to provide trail access to the existing Veteran Memorial Park (MM 40). This could be implemented in the future when funding is available as it is not a high priority crossing. The Seven Mile Historic Bridge is the recommended trail alignment because of the historic, cultural, safety, and scenic opportunities it will provide. See Section 8.3 and Figure 8.3.3 for additional analysis and recommendations on the Seven Mile Bridge. Between the existing bridge segments near Pigeon Key (Segment C and D near Gap 3, see Figure 8.3.3), there is an opportunity to incorporate an interpretive railroad display. This is detailed in Section 8.3 and Figure 8.3.3. The Historic Pigeon Key Foundation could collaborate on this display. The gap ends at Pigeon Key (MM 45).

Seven Mile Bridge Existing Trail (MM 45 to MM 47) - The Seven Mile Bridge existing trail is open to the public and highly used by local residents. Fisherman, rollerbladers, runners, walkers, and cyclists can be found at the bridge day and night. Pigeon Key (MM 45), which is located at the west end of the existing trail bridge, uses the bridge for vehicular access to the island. The trail width needs to be considerate of this and accommodate vehicular traffic up to the entrance of Pigeon Key. After this point, the trail width can decrease to a more pedestrian friendly width. Pigeon Key is managed by a private foundation and trail access will be determined by the foundation. For master planning purposes, a rest stop is proposed at Pigeon Key with a new shelter, restroom, and water fountain. No vehicular traffic related to the FKOHT will be allowed access on the Seven Mile Bridge or to Pigeon Key.

The existing trail on the Seven Mile Bridge ends at Knight's Key, MM 47. There are conceptual plans for a trailhead at this location. Section 8.4.1 provides a graphic detail and narrative on the proposed facilities for this site.

City of Marathon & City of Key Colony Beach Existing Trail (MM 47 to MM 54.1) - The City of Marathon trail leaves Knight's Key on the Bay side on an existing path. The existing path is an example of an urban path, which is limited by available right of way and unsafe due to numerous vehicular crossings. Figure 8.1.5 provides a graphic analysis on the urban cross section and recommendations for improving this segment. Vehicular crossings were a concern raised by many citizens at the Public Workshops held in December 1999. Destinations in this section include the Marathon Community Park (MM 49), Marathon Government & Civic Center (MM 48), Jesse Hobbs Memorial Park (MM 49.7), Marathon Airport Rest Stops (MM 51), and numerous Marathon businesses, schools, and churches. Connections can be made from U.S. 1 to other destinations by using the Sombrero Beach Road Bike Lane (MM 50), Aviation Boulevard Bike Path (MM 50.8), 109th Street Bike Lane (MM 52.5), Key Colony Causeway Bike Lane (MM 53.5), and Coco Plum Drive Bike Lane (MM 54). The Marathon Community Park (MM 49), Marathon Government & Civic Center (MM 48), Jesse Hobbs Memorial Park (MM 49.7), Tropical Crane Point Hammock (MM 50.5), and Marathon Airport Rest Stops (MM 51-52.2) are proposed for trailheads and rest stops. Existing facilities are sufficient at this time. Vaca Key Cut Bridge (MM 52.9) is an existing U.S. 1 bridge with wide shoulders to accommodate a temporary trail until a separate bridge can be constructed. The existing path ends just east of Coco Plum Lane (MM 54).

Both the City of Marathon and the City of Key Colony Beach are incorporated. Monroe County, FDEP, and any other future agencies should make every effort to work with any plans both municipalities develop in the future. At the time of the FKOHT Master Plan no plans existed.

Fat Deer Key to Long Key Bridge Gap (MM 54.1 to 63.2) - The gap begins just east of Coco Plum Lane (MM 54.1) and continues for 9 miles until the west end of the Long Key Bridge (MM 63.2). The gap begins on

the Bay side with an optional crossing at Curry Hammock State Park (MM 56.1). Curry Hammock State Park is a proposed trailhead with no additional facilities proposed. The Grassy Key Community (MM 57 to MM 60) will be able to utilize the abandoned S.R. 4A located along the Bay side. Towards the west end of Grassy Key, there are some encroachment issues between local businesses and the abandoned road. FDOT has included Fat Key Deer to Grassy Key (MM 54.5 to MM 58.7) and Grassy Key to Long Key (MM 59.2 to MM 65.2) in their five-year work program. There has also been some concern from FFWCC about an endangered grass, the garber spurge (Chamaesyce garberi), which was found on the abandoned roadbed. The FDOT enhancement project at Fat Key Deer is in the design stage and has addressed the impacts to the endangered garber spurge. The trail width was reduced to 8' instead of the typical 12' to accommodate both trail users and the endangered spurge.

Crossings to the Atlantic side are proposed at both MM 59.2 and by a suspended bridge underpass at Tom's Harbor Channel Historic Bridge (MM 60.7). Both of these crossings are included due to the limited height available underneath Tom's Harbor Channel Historic Bridge. The suspended bridge underpass crossing might not be available during high tide and therefore, an optional U.S. 1 crossing is proposed. U.S. 1 crossings are more dangerous and increase the potential for accidents between trail traffic and the incessant vehicular traffic.

Long Key Existing Trail (MM 63.2 to MM 68.5) - The Long Key Historic Bridge is an open fishing pier that is highly used by fishermen, cyclists, and pedestrians. After exiting the bridge, the existing bike path continues up the Atlantic side passing the Long Key State Park (MM 67), the City of Layton (MM 68), and the Layton Nature Trail (MM 68.1). An optional crossing is proposed at the entrance of the Layton Nature Trail. The existing trail ends at South Layton Drive (MM 68.5). There is a proposed U.S. 1 crossing to the Bay side at this intersection.

City of Layton Gap (MM 68.5 to MM 73) - The gap begins on the Bay side in a constrained available right of way area. The proposed trail will pass the KOA Campground (MM 70), the Channel Five Historic Bridge (MM 71), a proposed Channel Five rest stop, and the Channel Two Historic Bridge & Pier (MM 72.7). The rest stop proposed for the east side of the Channel Two Bridge marks the end of the Middle Keys Trail.

8.2.2.3 Upper Keys Trail

Anne's Beach Gap (MM 73 to MM 73.8) - The gap from the Middle Keys continues on the Bay side from the Historic Channel Two Bridge past Anne's Beach (MM 73.2) and ends at Tollgate Boulevard (MM 73.8).

Islamorada, Village of Islands Existing Trail (MM 73.8 to MM 83.7) - The existing trail, located on the Bay side, passes through the communities of Lower Matecumbe and Islamorada, Village of Islands. Destinations in this section include Lignumvitae State Botanical Site (MM 77.6), Indian Key National Historic Site (MM 77.6), Triangle of History/ Lignumvitae Roadside Recreation Area (MM 78.5), the Islamorada Public Library, Park and Hurricane Monument (MM 82), and Islamorada Chamber of Commerce (MM 82.5). Bridges include the U.S. 1 Lignumvitae Channel Bridge (MM 77.6), U.S. 1 Indian Key Channel Bridge (MM 78), Tea Table Key Channel Bridge (MM 79), and Tea Table Relief Bridge (MM 79.7). There is not an official bike path on the bridges, however, the existing path leads to and continues directly after the bridges in this section. The existing trail ends at Whale Harbor Channel Bridge (MM 83.8). There is quality landscaping in this section, which was implemented by Islamorada, Village of Islands.

Windley Key and Plantation Key Gap (MM 83.7 to MM 88.8) (Islamorada, Village of Islands) - There is a gap from the Whale Harbor Channel (MM 83.8) to the Plantation Government Center (MM 88.8). The proposed trail in this section is located on the Bay side. An optional crossing to the Old 4A Bike Lane (MM 86.6) is proposed. Destinations in this segment include Windley Key State Geological Park (MM 84.5), the Plantation Government Center (MM 88.8), and the New Village of Islamorada Park (MM 87). Bridges include the U.S. 1 Whale Harbor Channel Bridge (MM 83.8) and the

U.S. 1 Snake Creek Drawbridge (MM 85.8). Local connections include Venetian Boulevard Bike Lane (MM 86) and the Old S.R. 4A Bike Lane (MM 86.6).

Plantation Government Center to Harbor View Existing Trail (MM 88.8 to MM 92.1) (Islamorada, Village of Islands) - The existing trail begins at the Plantation Government Center on the Bay side and continues until it reaches an underpass at Tavernier Creek Bridge (MM 90.9). Here the trail exists on both sides of U.S. 1 to accommodate trail traffic to both Mariner's Hospital (MM 91.8) and Settler's Park Trailhead (MM 92). The corner location of the Settler's Park Trailhead is too dangerous for a crossing; therefore the Ocean Blvd. crossing (MM 91.6) is to be utilized. An optional crossing for Coral Shores High School needs to upgrade to a user activated signal that is functional all day not just during school hours. This existing trail is limited by available right of way and will fall under the Urban Cross Section category (see Figure 8.1.5). Destinations in this segment include Plantation Elementary School (MM 89.6), Coral Shores High School (MM 89.7), Mariner's Hospital (MM 91.8), and Settler's Park (MM 92). The U.S. 1 Tavernier Creek Bridge (MM 90.9) accommodates trail traffic with an existing pedestrian path. There is adequate room to put an underpass at this bridge.

Harbor View to Burton Street Gap (MM 92.1 to MM 92.6) - This small gap located on the Atlantic side totals .5 miles. There is only adequate right of way to accommodate an urban trail (see Figure 8.1.5).

Tavernier & Key Largo Existing Trail (MM 92.6 to MM 106.3) - From Burton Street (MM 92.6) to Abaco Road (MM 106.3) there is an existing trail on the Atlantic side. Crossings occur at MM 96.4 (to the U.S. 1 median) and Ocean Bay Drive (MM 99.5) back to the Atlantic side. Destinations in this segment include the Historic Tavernier Town Center (MM 93), Harry Harris Park (MM 94), Key Largo Community Park (MM 99.5), U.S. Post Office (MM 99.7), Friendship Park (MM 100.9), Key Largo Library (MM 101.2), U.S. Post Office (MM 102.4), John Pennekamp State Park (MM 105.1), Key Largo Chamber of Commerce and Welcome Center (MM 103.3), and the Key Largo Elementary and Middle School (MM 104.8). The U.S. 1 Key Largo Cut Bridge accommodates trail traffic with an existing pedestrian path. Connections include the Burton Bike Lane (MM 92.6) and Marina Drive/Laguna Drive Route (MM 99.2 – MM 99.7).

Upper Key Largo Gap (MM 106.3 to MM 106.5) - A small gap begins at Abaco Road and continues to the project ending point at the Key Largo Hammocks State Botanical Site (MM 106.5). The Key Largo Hammocks State Botanical Site is an important destination for both locals and visitors and would be a fascinating site for a scenic trailhead.

8.2.2.4 Encroachments

An encroachment is the unauthorized use of property whose title does not vest in the name of the encroaching party. Encroachments may or may not be known to the legitimate owner of the property. Encroachments upon publicly and privately held rights-of-way are common. Encroachments specific to rights-of-way in public ownership can be in many different forms including, but not limited to, the storage of vehicles, the display of advertisements, the erection of structures and fences, and even the distribution of merchandise or goods. Simply making an encroachment onto a publicly held right-of-way does not give any additional rights to the entity making the unauthorized use. Common law in Florida has consistently supported the concept that adverse possession does not lie against the state (See Pearce v Cone, 147 Fla. 165 So 2d 360 (1941)). F.S. Chapter 337.406 makes it unlawful to make any use of a right-of-way of any transportation facility, including appendages thereto, outside of an incorporated municipality in any manner that interferes with the safe and efficient movement of people and property from place to place on the transportation facility.

There are provisions that identify authorized uses on publicly held rights-of-way. One allowable use is for appropriately permitted persons holding valid peddlers' licenses to make sales. Another allowable use identified in F.S. Chapter 337.25, provides

provisions for allowing DOT to lease properties to private individuals and businesses. This Chapter also allows for use of rights-of-way for art festivals, parades, fairs, or other special events if permitted by the appropriate local governmental entity. Additionally, authority is given to law enforcement agencies to enforce Section 337 as well as to assign punishment.

It is very important to note that any and all encroachments that may affect portions of the proposed alignment need to be thoroughly researched through such means as title searches, appraisal maps, and surveys. If there are any existing agreements or leases on areas needing the right of way for the trail, these should be allowed to expire in order to accommodate the trail.

8.2.2.5 Habitat Restoration

Incorporated along the trail route are zones of habitat restoration. These zones will increase habitat and sometimes even food sources for animals using the U.S. 1 corridor. These zones will also provide much needed shade for trail users. The zones will be planted with native species, unique to each sub county area. Removal of exotic vegetation will be accomplished when feasible in a manner to minimize adverse impacts on existing recreation and when re-vegetation can be accomplished.

Each key has a slightly different character and ecosystem. Care should be given to replicate those uniform species and growth patterns in the re-vegetation and habitat restoration in those areas. Monroe County Biologists supplied the following list of native plant species for use in the zones of habitat restoration.

Lower Keys and Middle Keys

CANOPY & UNDERSTORY	
Acacia macracantha	Long-spined acacia
Acacia pinetorum	Pineland acacia
Angadenia berterii	Pineland allamanda
Ardisia escalloniodes	
Ateramnus lucidus	Crabwood
Avicennia germinans	Black mangrove
Bourreria ovata	Strongbark
Bumelia salicifolia	Willow bustic
Bursera simaruba	Gumbo limbo*

Canopy and Understory Continued	
Casasia clusiifolia	Apple, 7 Year*
Citharexylum fruticosum	Fiddlewood
Chrysophyllum olivifolia	Satinleaf*
Clusia rosea	Pitch apple*
Coccoloba diversifolia	Pigeon plum*
Coccoloba uvifera	Seagrape
Coccothrinax argentata	Silver Palm*
Conocarpus erectus	Buttonwood
Conocarpus erectus var. sericeus	Silver buttonwood
Cordia sebestena	Geiger tree*
Crossopetalum rhacoma	Rhacoma
Eugenia axillaries	White stopper
Exostema caribaeum	Princewood
Exothea paniculata	Inkwood
Guaiacum sanctum	Lignumvitae
Guapira discolor	Blolly
Guettarda elliptica	Everglades velvetseed
Guettarda scabra	Rough velvetseed
Gyminda latifolia	False boxwood
Hypelate trifoliate	White ironwood
Jacquina keynsis	Joewood
Krugiodendron ferreum	Black ironwood*
Lysoloma latisilquum	Wild tamarind
Manilkara bahamensis	Wild Dilly
Myrica cerifera	Wax myrtle
Nectandra coriacea	Lancewood
Piscidia piscipula	Jamaican Dogwood
Pseudophoenix sargentii	Buccaneer Palm
Pithecellobium guadalupense	Blackbead
Randia aculeata	Randia or White indigoberry
Reynosia septentrionalis	Red ironwood or Darling plum
Roystonea elata	FL Royal Palm
Sapindus saponaria	Soapberry
Sabal Palmetto	Sabal Palm
Simarouba glauca	Paradise tree
Swieteria mahogany	Mahogany
Thrinax morrisii	Keys Thatch Palm
Thrinax radiata	Florida Thatch Palm
Zanthoxylum fagara	Wild lime

SHRUBS	
Acacia farnesiana	Sweet acacia
Baccharis angustifolia	False willow
Baccharis halimifolia	Saltbush
Borrichea arborescens	Borrichea frutescens
Bumelia celastrina	Saffron plum
Byrsonima lucida	Locustberry*
Capparis cynophallophora	Jamaica caper*
Beautyberry	Callicarpa americana
Cassia chapmanii	Bahama senna

Shrubs Continued	
Chrysobalanus icaco	Coco Plum
Columbrina elliptica	Soldierwood
Cordia globosa	Geiger bush
Crossopetalum ilicifolium	Quailberry
Dodonaea viscose	Varnish leaf
Duranta repens	Golden dewdrop*
Erithalis fruitcosa	Blacktorch
Ernodia littoralis var. angusta	Golden beach creeper
Eugenia confusa	Redberry stopper
Eugenia foetida	Spanish stopper
Eugenia rhombea	Red stopper
Forestiera segregata	Florida olive privet
Gossypium hirsutum	Wild cotton*
Hamelia patens	Firebush*
Lantana involucrata	Wild lantana
Lasciacis divaricata	Wild bamboo
Mallotonia gnaphalodes	Sea lavender
Psidium longipes	Long-stalk stopper
Pshychotria ligustrifolia	Wild coffee
Pshychotria nervosa	Wild coffee
Scaevloa plumieri	Inkberry
Schaefferia frutescens	Florida boxwood
Sephora tomentosa	Necklace pod
Stachytarpheta jamaicensis	Blue porter weed
Suriana maritima	Bay cedar*

Upper Keys

CANOPY & UNDERSTORY VEGETATION	
Scientific Name	**Common Name**
Amyris elemifera	Torchwood
Ardisia escallonioides	Marlberry
Ateramnus lucidous	Crabwood
Bourreria ovata	Strongbark
Bumelia salicifolia	Willow bustic
Bursera simaruba	Gumbo Limbo
Calyptranthes pallens	Pale Lidflower or Spicewood
Canella winterana	Cinnamon bark
Capparis cynophallophora	Jamaica caper
Chrysophyllum olivifolia	Satinleaf*
Citharexylum fruticosum	Fiddlewood
Coccoloba diversifolia	Pigeon plum
Coccoloba uvifera	Seagrape
Colubrina arborescens	Coffee colubrine
Conocarpus erectus	Green buttonwood
Conocarpus erectus var. sericeus	Silver buttonwood
Cordia sebestena	Geiger tree*
Crossopetalum rhacoma	Rhacoma
Dodonea viscose	Vanishleaf
Drypetes diversifolia	Milkbark
Drypetes lateriflora	Guiana plum
Erythrina herbacea	Coral bean

Canopy and Understory Continued	
Eugenia axillaries	White stopper
Exostema caribaeum	Princewood
Exothea paniculata	Inkwood
Guaiacum sanctum	Lignumvitae
Guapira discolor	Blolly
Guettarda elliptica	Everglades velvetseed
Guettarda scabra	Rough velvetseed
Gyminda latifolia	False boxwood
Hypelate trifoliate	White ironwood
Jacquina keynsis	Joewood
Krugiodendron ferreum	Black ironwood
Lysoloma latisilquum	Wild tamarind
Mastichondendron foetidissimum	Mastic
Myricanthes simpsonii	Simpson's stopper
Nectandra coriacea	Lancewood
Piscidia piscipula	Jamaican Dogwood
Pithecellobium guadalupense	Blackbead
Pithecellobium unguiscati	Cat's claw
Randia aculeata	Randia or White indigoberry
Reynosia septentrionalis	Red ironwood or Darling plum
Sapindus saponaria	Soapberry
Schaefferia frutescens	Florida boxwood
Schoepfia chrysophyfloides	Graytwig
Simarouba glauca	Paradise tree
Swieteria mahogany	Mahogany
Zanthoxylum fagara	Wild lime

SHRUBS	
Scientific Name	**Common Name**
Callicarpa americana	Beautyberry
Stachytarpheta jamaicensis	Blue porter weed
Chrysobalanus icaco	CocoPlum
Hamelia patens	Firebush
Trema micranthum	Florida trema
Cordia globosa	Geiger bush
Scaevloa plumieri	Inkberry
Sephora tomentosa	Necklace pod
Lasciacis divaricata	Wild bamboo
Pshychotria ligustrifolia	Wild coffee
Pshychotria nervosa	Wild coffee

The Big Pine Key area should provide habitat restoration that is sensitive to the endangered Key Deer. The National Key Deer Refuge should be involved with all habitat restoration in any Key Deer habitat areas. Special guidelines for these areas include, but are not limited to:

- Avoid planting shrubs or low understory vegetation, which could obscure a Key Deer from traffic.
- Avoid plants that are appetizing to the deer and could lure them to the roadside.
- Canopy trees could be chosen which are too tall to enable grazing on lower limbs.
- Golden beach creeper is a low ground cover, which does not appeal to the deer.

8.2.3 Trail Corridor Recommendations Table

The trail corridor is detailed in Table 8.2.1. This table includes recommendations on the trail alignment, crossings, trailheads and rest stops, and bridges. The recommended trail alignment corresponds with the Barton-Aschman Plan[2], with the exception of a few areas. The areas of exception are detailed in the trail alignment narrative, including the analysis for making changes. The most influential factor in the areas of exception are the Historic Bridges, including underpasses, which were not incorporated into the BA plan. The Historic Bridges reduce interaction between vehicular traffic and trail users by providing a separated path. Underpasses eliminate dangerous crossings on U.S. 1. Section 8.3 provides additional information on the bridges and underpasses.

A legend is included that explains many of the symbols used in the columns. Important notes are also included in this legend.

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic	Bay Side	Bridge #	Trail Items: Trail Alignment, Crossings, Trailheads & Rest Stops, and Bridges	MM Approx. Mi. Marker	Trail: Approx Miles Exist	Approx Miles New	Item Status	Posit to US1	Rec. Width	Crossing U	Crossing C	Trailheads & Rest Stops: TH/RS	Basic Trailhead Facilities: Shelt	Restr.	Water	Parkg
			LOWER KEYS TRAIL	**0 - 38.5**												
			City of Key West													
			BEGIN Trail	0	**5.3**		Exist	Atl								
			Ft. Zachary Taylor State Park	0			Exist	Atl				TH	Exist	Exist	Exist	Exist
			***Higgs Beach Park (access AIA)**	1.0*			Exist	Atl				TH	Exist	Exist	Exist	Exist
			***Smather's Beach (access AIA)**	1.5*			Exist	Atl				TH	Exist	Exist	Exist	Exist
			Bayview Park	1.5			Exist	Bay				TH	Exist	Exist	Exist	Exist
		0	***Salt Run Bridge***	*2.3*			*US 1*	*Bay*								
C			Roosevelt Boulevard (South to North)	2.5			Exist	to Bay		0	1	**Existing Crossing (S to N)**				
		1	***Cow Key Bridge***	*4.1*			*US 1*	*Bay*	*8'*							
			*College Road Bike Path	4.2*			Exist	Bay								
			***Key West Botanical Gardens**	4.2*			New	Bay				TH	1	1	1	5
			*Key Haven Road Bike Lane	5.3*			Exist	Bay								
			END Trail (Key Haven Road)	5.3	see begin		Exist	Bay	12'							
			BEGIN Gap (Key Haven Road)	5.3		**4.7**	New	Bay	12'							
			Rest Stop (W of Underpass)	5.8			New	Bay				RS	1	NA	NA	NA
U			**Underpass (Boca Chica)**	6			New	to Atl	12'	1	0	**Proposed Trail Underpass**				
		2	***Boca Chica Bridge***	*6*			*US 1*	*Atl*	*12'*							
			Boca Chica NAS Community													
			Rest Stop (Boca Chica NAS)	7.8			New	Atl				RS	1	1	1	10
		3	***Rockland Channel Bridge***	*9.5*			*Hist*	*Atl*	*22'*							
C			**END Gap (Avenue A)**	10	see begin		New	to Bay	12'	0	1	**Proposed Trail Crossing**				
			BEGIN Trail (Avenue A)	10	**0.7**		Exist	Bay	12'							
			Big Coppitt Community													
			***Wilhelmina Harvey Children's Park**	10*			Exist	Bay				TH	1	1	1	Exist
			END Trail (Boca Chica Road)	10.7	see begin		Exist	Bay	12'							
C			**BEGIN Gap (Boca Chica Road)**	10.7		**18.9**	New	to Atl	12'	0	1	**Proposed Trail Crossing**				
			*Boca Chica Road Bike Lane	10.7*			Exist	Atl								
		4	***Shark Channel Bridge***	*11.5*			*Hist*	*Atl*	*22'*							
		5	***Saddlebunch No. 5 Bridge***	*12.7*			*Hist*	*Atl*	*22'*							
		6	***Saddlebunch No. 4 Bridge***	*13*			*Hist*	*Atl*	*22'*							
		7	***Saddlebunch No. 3 Bridge***	*14.2*			*Hist*	*Atl*	*22'*							
		8	***Saddlebunch No. 2 Bridge***	*14.5*			*Hist*	*Atl*	*22'*							
			Bay Point Community													
			Bay Point Park	15			Exist	Atl				TH	1	1	Exist	Exist
			Baby's Coffee	15			Exist	Atl								
		9	***Lower Sugarloaf Bridge***	*15.5*			*Hist*	*Atl*	*22'*							
		10	***Harris Channel Bridge***	*16.5*			*US 1*	*Atl*	*12'*							
C			***South Point Drive**	16.5*			Exist	Bay	12'	0	1	**Existing Community Crossing**				
			Lower Sugarloaf Community													
			***Bat Tower Historic Site (Proposed TH)**	16.6*			New	Bay				TH	1	1	1	0

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic	Bay Side	Bridge #	Trail Items:	MM	Trail							Trailheads & Rest Stops				
			Trail Alignment, Crossings, Trailheads & Rest Stops, and Bridges	Approx. Mi. Marker	Approx Miles Exist	Approx Miles New	Item Status	Posit to US1	Rec. Width	Crossing U	Crossing C	TH RS	Basic Trailhead Facilities Shelt	Restr.	Water	Parkg
			Sugarloaf Fire Station Rest Stop	16.6			New	Bay				RS	1	0	1	0
C			**Community Crossing (Sugarloaf Blvd)**	16.7			New	to Bay	12'	0	1	**Proposed Comm. Crossing**				
		11	***Harris Gap Channel Bridge***	*17.5*			*US 1*	*Atl*	*12'*							
		12	***North Harris Channel Bridge***	*17.7*			*US 1*	*Atl*	*12'*							
		13	***Park Channel Bridge***	*18.6*			*Hist*	*Atl*	*22'*							
			Upper Sugarloaf Community													
C			**School Crossing (Crane Blvd Bike Path)**	19.3			New	to Bay	12'	0	1	**Proposed School Crossing**				
			Sugarloaf Elementary & Middle School	19.3			New	Bay				TH	1	1	1	10
			*CR 939 Bike Lane Loop	16.7-20*			New	Atl								
		14	***Bow Channel Bridge***	*20.1*			*Hist*	*Atl*	*22'*							
			Sheriff's Substation	20.9			New	Atl				RS	1	1	1	5
C			**Crossing (Drost Drive)**	20.9			New	to Bay	12'	0	1	**Optional Access Crossing**				
			Cudjoe Key Recreation Trail	21-23			Exist	Bay	12'							
			Cudjoe Key Community													
C			**Crossing (Yardarm Rd./Cutthroat Dr.)**	22.9			New	varies	12'	0	1	**Optional Access Crossing**				
			*Puerto Bello Drive Bike Lane	23*			New	Atl								
		15	***Kemp Channel Bridge***	*23.5*			*Hist*	*Atl*	*12'*							
			Summerland Key Community													
C			**Crossing**	24			New	to Bay	12'	0	1	**Optional Access Crossing**				
			Old S.R. 4A - Recreation Trail	23.9-25			Exist	Bay	12'							
C			**Crossing (West Shore Drive)**	24.9			New	to Bay	12'	0	1	**Optional Access Crossing**				
			*West Shore Drive Bike Lane	24.9*			Exist	Atl								
		16	***Niles Channel Bridge***	*25.3*			*Hist*	*Atl*	*22'*							
			Ramrod Key Community													
			*West Indies Drive Bike Lane	27.3*			Exist	Atl								
		17	***Torch Ramrod Bridge***	*27.4*			*US 1*	*Atl*	*12'*							
			Middle Torch Key Community													
		18	***Torch Channel Bridge***	*28*			*US 1*	*Atl*	*12'*							
			Little Torch Community													
			*S.R. 4A Future Lane	28.2*			New	Atl								
			*Barry Avenue Bike Lane	28.6*			New	Atl								
		19	***South Pine Channel Bridge***	*28.5*			*Hist*	*Atl*	*22'*							
		20	***Pine Channel Bridge***	*29.5*			*US 1*	*Atl*	*12'*							
			Big Pine Community													
C			**END Gap (Ships Way)**	29.6	see begin		New	to Bay	12'	0	1	**Proposed Trail Crossing**				
			BEGIN Trail (Big Pine Bike Path)	29.6	**1.6**		Exist	Bay	12'							
			***Watson Field & Blue Heron Park**	30.3*			Exist	Bay				TH	Exist	Exist	Exist	NA
			Key Deer Refuge Overpasses	varies			New	Bay	12'							
			Lower Keys Chamber of Commerce	30.8			New	Bay				RS	1	1	1	NA
			END Trail (5th Street)	31.2	see begin		Exist	Bay	12'							
			BEGIN Gap (5th Street)	31.2		**13.8**	New	Bay	12'							

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic	Bay Side	Bridge #	Trail Items: Trail Alignment, Crossings, Trailheads & Rest Stops, and Bridges	MM Approx. Mi. Marker	Trail: Approx Miles Exist	Approx Miles New	Item Status	Posit to US1	Rec. Width	Crossing U	Crossing C	Trailheads & Rest Stops: TH / RS	Basic Trailhead Facilities: Shelt	Restr.	Water	Parkg
		21	***Spanish Harbor Bridge***	*33*			*Hist*	*Bay*	*12'*							
			Spanish Harbor Fishing Pier	33.6			Exist	Bay				RS	1	0	0	NA
U			**Underpass (Bahia Honda Channel)**	35			New	to Atl	Co-use	1	0	**Proposed Trail Underpass**				
			Bahia Honda State Park West	35			New	Atl				RS	1	0	0	10
		22	***Bahia Honda Bridge***	*35*			*Hist*	*Atl*	*varies*							
			Bahia Honda State Park East	36.4-36.8			Exist	Bay	Co-use			TH	Exist	Exist	Exist	Exist
			Bahia Honda State Park (Exist Drive)	36.4-36.8			Exist	Bay	Co-use			(Secure safe trail alignment				
			Bahia Honda State Park (Exit to East)	36.9			New	Bay	12'			carefully using Park facilities)				
		23	***Ohio/ Bahia Honda Bridge***	*36.4*			*Hist*	*Bay*	*22'*							

LEGEND:

- **C** Trail crossing U.S. 1 at grade requiring signalization and/or minimal upgrade
- **U** Trail underpass beneath bridge
- **RS** Rest Stop with facilities denoted in columns
- **TH** Trailhead with facilities denoted in columns
- Existing trail
- Proposed trail

NOTES:

*** Points of attraction that are not on U.S. 1. Safe crossings may need to be provided in the future.**

See Monroe County Bicycle and Pedestrian Plan[2] for all local bike path and lane information

Calculations include bridges; See Table 8.3 for bridge breakdowns

Abbreviations: NA = Not Applicable; Exist = Existing; TH = Trailhead; RS = Rest Stop; Atl = Atlantic side; C = Crossing; U = Underpass; Bay = Florida Bay

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic	Bay Side	Bridge #	Trail Items: Trail Alignment, Crossings, Trailheads & Rest Stops, and Bridges	MM Approx. Mi. Marker	Trail: Approx Miles Exist	Approx Miles New	Item Status	Posit to US1	Rec. Width	Crossing U	Crossing C	Trailheads & Rest Stops: TH/RS	Basic Trailhead Facilities: Shelt	Restr.	Water	Parkg
			MIDDLE KEYS TRAIL	**38.5 - 73**												
			Ohio Key Community (Sunshine Key)													
		24	*Ohio/ Missouri Bridge*	*39*			*Hist*	*Bay*	*22'*							
		25	*Missouri/ Little Duck Bridge*	*39.6*			*Hist*	*Bay*	*22'*							
			7 Mile Bridge (West Rest Stop)	40			New	Bay				RS	1	0	0	Exist
U			**Underpass to Veteran Memorial Park**	40			New	to Atl	12'	1	0	**Optional Access Underpass**				
			Veteran Memorial Park	40			Exist	Atl	Co-use			TH	Exist	Exist	Exist	Exist
		26	*Seven Mile Bridge (New Trail)*	*40 - 45*			*Hist*	*Bay*	*varies*							
			Pigeon Key RR Interpretive	44.9			New	Bay	25'							
			END Gap (Pigeon Key)	45	see begin		New	Bay	22'							
			BEGIN Trail (Pigeon Key)	45	**2.0**		Exist	Bay	22'							
			Pigeon Key Historic Site	45												
			Pigeon Key Rest Stop	45			New	Bay				RS	1	1	1	NA
		26	*Seven Mile Bridge (Exist Trail)*	*45 - 47*			*Hist*	*Bay*	*22'*							
			Knights Key/7 Mile Trailhead	47			Exist	Bay	Co-use			TH	1	1	1	40
			END Trail (Knight's Key)	47	see begin		Exist	Bay	22'							
			BEGIN Trail (Marathon Bike Path)	47	**7.1**		Exist	Bay	12'							
			City of Marathon													
			Marathon Community Park	49			Exist	Atl		0	1	TH	Exist	Exist	Exist	Exist
			Government & Civic Center	48-49			Exist	Bay				RS	Exist	Exist	Exist	Exist
			Jesse Hobbs Memorial Park	49.7			Exist	Bay				RS	Exist	Exist	Exist	Exist
			*Sombrero Beach Road Bike Lane	50*			Exist	Atl								
			Tropical Crane Point Hammock	50.5			Exist	Bay				TH	Exist	Exist	Exist	Exist
			*Aviation Boulevard Bike Path	50.8*			Exist	Bay								
			Fl. Keys Airport @ Marathon	51-52.2			Exist	Bay				TH	Exist	Exist	Exist	Exist
			*109th Street Bike Lane	52.5*			Exist	Bay								
		27	*Vaca Key Cut Bridge*	*52.9*			*US 1*	*Bay*	*12'*							
			City of Key Colony Beach													
			*Key Colony Causeway Bike Lane	53.5*			Exist	Atl								
			*Coco Plum Drive Bike Lane	54*			Exist	Atl								
			END Trail (.1 miles East of Coco Plum)	54.1	see begin		Exist	Bay	12'							
			BEGIN Gap (Fat Deer Key)	54.1		**9.1**	New	Bay	12'							
C			**Crossing at Curry Hammock State Park**	56.1			New	to Atl		0	1	**Optional Access Crossing**				
			Curry Hammock State Park	56.1			Exist	Atl				TH	Exist	Exist	Exist	Exist
			Grassy Key Community													
			Dolphin Research Center	59.2			Exist	Bay				TH	Exist	Exist	Exist	Exist
C			**Crossing (Alt to Tom's Har. Chanl. Br.)**	59.2			New	to Atl	12'	0	1	**Proposed Trail Crossing**				
U			**Underpass (Tom's Har. Channel Bridge)**	60.7			New	to Atl	12'	1	0	**unavailable during high tide**				
		28	*Tom's Harbor Channel Bridge*	*60.7*			*Hist*	*Atl*	*12'*							
			Duck Key Community													
		29	*Duck Key Viaduct (Spur)*	*61.3*												

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic Side	Bay Side	Bridge #	Trail Items: Trail Alignment, Crossings, Trailheads & Rest Stops, and Bridges	MM Approx. Mi. Marker	Trail: Approx Miles Exist	Approx Miles New	Item Status	Posit to US1	Rec. Width	Crossing U	Crossing C	Trailheads & Rest Stops: TH/RS	Basic Trailhead Facilities: Shelt	Restr.	Water	Parkg
		30	*Tom's Harbor Cut Bridge*	*61.5*			*Hist*	*Atl*	*12'*							
			Walkers Island	62.3			Exist	Atl								
			END Gap (Long Key Bridge)	63.2	see begin		New	Atl	22'							
			BEGIN Trail (Long Key Bike Path)	63.2	5.3		Exist	Atl	12'							
		31	*Long Key Bridge/ Fishing Pier*	*63.2*			*Hist*	*Atl*	*12'*							
			Long Key State Recreation Area	67.5			Exist	Atl				TH	Exist	Exist	Exist	Exist
			City of Layton													
C			**Layton Nature Trail**	68.1			Exist	to Bay		0	1	RS	Exist	0	0	0
			Layton City Center Area	68.3			Exist	Atl				RS	1	1	1	0
C			**END Trail (South Layton Drive)**	68.5	see begin		New	to Bay	12'	0	1	**Proposed Trail Crossing**				
			BEGIN Gap	68.5		5.3	New	Bay								
			KOA Campground/Fiesta Key	70			Exist	Bay								
		32	*Channel Five Bridge*	*71*			*Hist*	*Bay*	*12'*							
			Channel Five Rest Stop East	71.9			New	Bay				RS	1	0	0	10
		33	*Channel Two Bridge & Pier*	*72.7*			*Hist*	*Bay*	*12'*							
			Channel Two Rest Stop East	73			New	Bay				RS	1	0	0	10

LEGEND:

- C — **Trail crossing U.S. 1 at grade requiring signalization and/or minimal upgrade**
- U — **Trail underpass beneath bridge**
- RS — **Rest Stop with facilities denoted in columns**
- TH — **Trailhead with facilities denoted in columns**
- **Existing trail**
- **Proposed trail**

NOTES:

* **Points of attraction that are not on U.S. 1. Safe crossings may need to be provided in the future.**

See Monroe County Bicycle and Pedestrian Plan[2] for all local bike path and lane information

Calculations include bridges; See Table 8.3 for bridge breakdowns

Abbreviations: NA = Not Applicable; Exist = Existing; TH = Trailhead; RS = Rest Stop; Atl = Atlantic side; C = Crossing; U = Underpass; Bay = Florida Bay

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic	Bay Side	Bridge #	Trail Items: Trail Alignment, Crossings, Trailheads & Rest Stops, and Bridges	MM Approx. Mi. Marker	Trail: Approx Miles Exist	Approx Miles New	Item Status	Posit to US1	Rec. Width	Crossing U	Crossing C	Trailheads & Rest Stops: TH/RS	Basic Trailhead Facilities: Shelt	Restr.	Water	Parkg
			UPPER KEYS TRAIL	**73 - 106.6**												
C			**Anne's Beach County Park**	73.2			Exist	to Atl		0	1	RS	Exist	Exist	0	Exist
			END Gap (Tollgate Boulevard)	73.8	see begin		New	Atl	12'							
			BEGIN Trail	73.8	**9.9**		Exist	Atl	12'							
			Lower Matecumbe Community													
			***Lignumvitae State Botanical Site**	77.6*			Exist	Bay					(State Park Boat Tours)			
			***Indian Key State Historic Site**	77.6*			Exist	Atl					(State Park Boat Tours)			
		34	***Lignumvitae Channel Bridge***	*77.6*			*US 1*	*Bay*	*12'*							
			*Causeway Bike Path	77.8*			Exist	Bay	*12'*							
		35	***Indian Key Channel Bridge***	*78*			*US 1*	*Bay*	*12'*							
			Triangle of History/ Roadside Rec. Area	78.5			Exist	Bay				RS	1	0	0	Exist
		36	***Tea Table Key Channel Bridge***	*79*			*US 1*	*Bay*	*12'*							
		37	***Tea Table Relief Bridge***	*79.7*			*US 1*	*Bay*	*12'*							
			Islamorada, Village of Islands													
			Library, Park, Hurricane Monument	82			Exist	Bay				TH	Exist	Exist	Exist	Exist
			Chamber of Commerce	82.5			Exist	Bay				RS	Exist	Exist	Exist	Exist
			Island Christian School	83.5			Exist	Bay								
			END Trail (At Bridge)	83.7	see begin		Exist	Bay	urban							
			BEGIN Gap (Calculate to W Bridge)	83.7		**5.1**	Exist	Bay	12'							
		38	***Whale Harbor Channel Bridge***	*83.8*			*US 1*	*Bay*	*12'*							
			Windley Key State Geological Park	84.5			Exist	Bay				TH	Exist	Exist	Exist	Exist
		39	***Snake Creek Drawbridge***	*85.8*			*US 1*	*Bay*	*12'*							
			Venetian Boulevard Bike Lane	86			Exist	Bay								
C			**Crossing (to Old 4A Bike Lane)**	86.6			New	to Atl		0	1	**Optional Access Crossing**				
			END Gap (Plantation Government Center)	88.8	see begin		New	Bay	12'							
			BEGIN Trail (Urban Bike Path)	88.8	**3.3**		Exist	Bay	urban							
			City of Plantation													
			Plantation Government Center	88.8			Exist	Bay				RS	Exist	Exist	Exist	Exist
			Plantation Elementary School	89.6			Exist	Bay				RS	1	0	1	0
C			**Crossing (Coral Shores H.S.)**	89.7			Exist	to Atl		0	1	**Optional Access Crossing**				
			Existing Trail on both sides of U.S. 1	90.9-92			Exist	Both					**See Narrative**			
U			**Underpass at Tavernier Creek Bridge**	90.9			New	to Atl		1	0	**Proposed Underpass**				
		40	***Tavernier Creek Bridge***	*90.9*			*US 1*	*Bay*	*14'*							
C			**Crossing (Ocean Blvd.)**	91.6			Exist		urban	0	1	**Existing Crossing**				
			Mariner's Hospital	91.8			Exist	Bay								
			***Settler's Park**	92*			Exist	Bay				TH	Exist	Exist	Exist	Exist
			END Trail (Harbor View)	92.1	see begin		Exist	Bay	urban							
			BEGIN Gap (Harbor View)	92.1		**0.5**	New	Atl	urban							
			END Gap (Burton Street)	92.6	see begin		New	Atl	12'							
			BEGIN Trail (Burton Street)	92.6	**13.7**		Exist	Atl	urban							
			*Burton Bike Lane	92.6*			Exist	Atl								

Trail Corridor Recommendations

(See symbol legend at end of table)

Atlantic	Bay Side	Bridge #	Trail Items:	MM	Trail							Trailheads & Rest Stops				
			Trail Alignment, Crossings,	Approx.	Approx Miles		Item	Posit	Rec.	Crossing		TH	Basic Trailhead Facilities			
			Trailheads & Rest Stops, and Bridges	Mi. Marker	Exist	New	Status	to US1	Width	U	C	RS	Shelt	Restr.	Water	Parkg
			Tavernier Community													
			Historic Tavernier Town Center	93			Exist	Atl				RS	1	0	1	0
			***Harry Harris Park**	94*			Exist	Atl				TH	Exist	Exist	Exist	Exist
	C		**Crossing (U.S. 1 to Median)**	96.4			Exist	median	12'	0	1	**Existing Crossing to Median**				
			Existing Trail in the median	96.4-99.5			Exist	median								
	C		**Crossing (Ocean Bay Drive)**	99.5			Exist	to Atl	12'	0	1	**Existing Crossing back to Atl**				
			*Marina Dr & Laguna Dr Route	99.2-99.7*			New	Atl				**(New Trail to Park/Trailhead)**				
			***Key Largo Community Park**	99.5*			Exist	Atl				TH	Exist	Exist	Exist	Exist
			U.S. Post Office	99.7			Exist	Atl								
			Friendship Park	100.9			Exist	Atl				TH	Exist	Exist	Exist	Exist
			Key Largo Library	101.2			Exist	Atl								
	C		**U.S. Post Office**	102.4			Exist	Bay		0	1	**Optional Access Crossing**				
	C		**K. Largo Ch. of Comm./Welcome Cent.**	103.3			Exist	Bay		0	1	RS	1	Exist	1	Exist
		41	***Key Largo Cut Bridge***	*103.6*			*US 1*	*Atl*	*12'*							
			Key Largo Elementay & Middle School	104.8			Exist	Atl								
			John Pennekamp State Park Land Base	105.1			Exist	Atl				TH	Exist	Exist	Exist	Exist
			END Trail (Abaco Road)	106.3	see begin		Exist	Atl	12'							
			BEGIN Gap (Abaco Road)	106.3		0.2	New	Atl	12'							
			Leave US 1 at SR 905/ New Trail	106.3			New	Atl				**(New Trail to Park/Trailhead)**				
			END Gap (At State Park Entrance)	106.5	see begin		New	Atl	12'							
			Key Largo Hammocks St. Botanical Site	106.5			Exist	Atl				TH	1	Exist	1	5

LEGEND:

- **C** Trail crossing U.S. 1 at grade requiring signalization and/or minimal upgrade
- **U** Trail underpass beneath bridge
- **RS** Rest Stop with facilities denoted in columns
- **TH** Trailhead with facilities denoted in columns
- Existing trail
- Proposed trail

NOTES:

*** Points of attraction that are not on U.S. 1. Safe crossings may need to be provided in the future.**

See Monroe County Bicycle and Pedestrian Plan[2] for all local bike path and lane information

Calculations include bridges; See Table 8.3 for bridge breakdowns

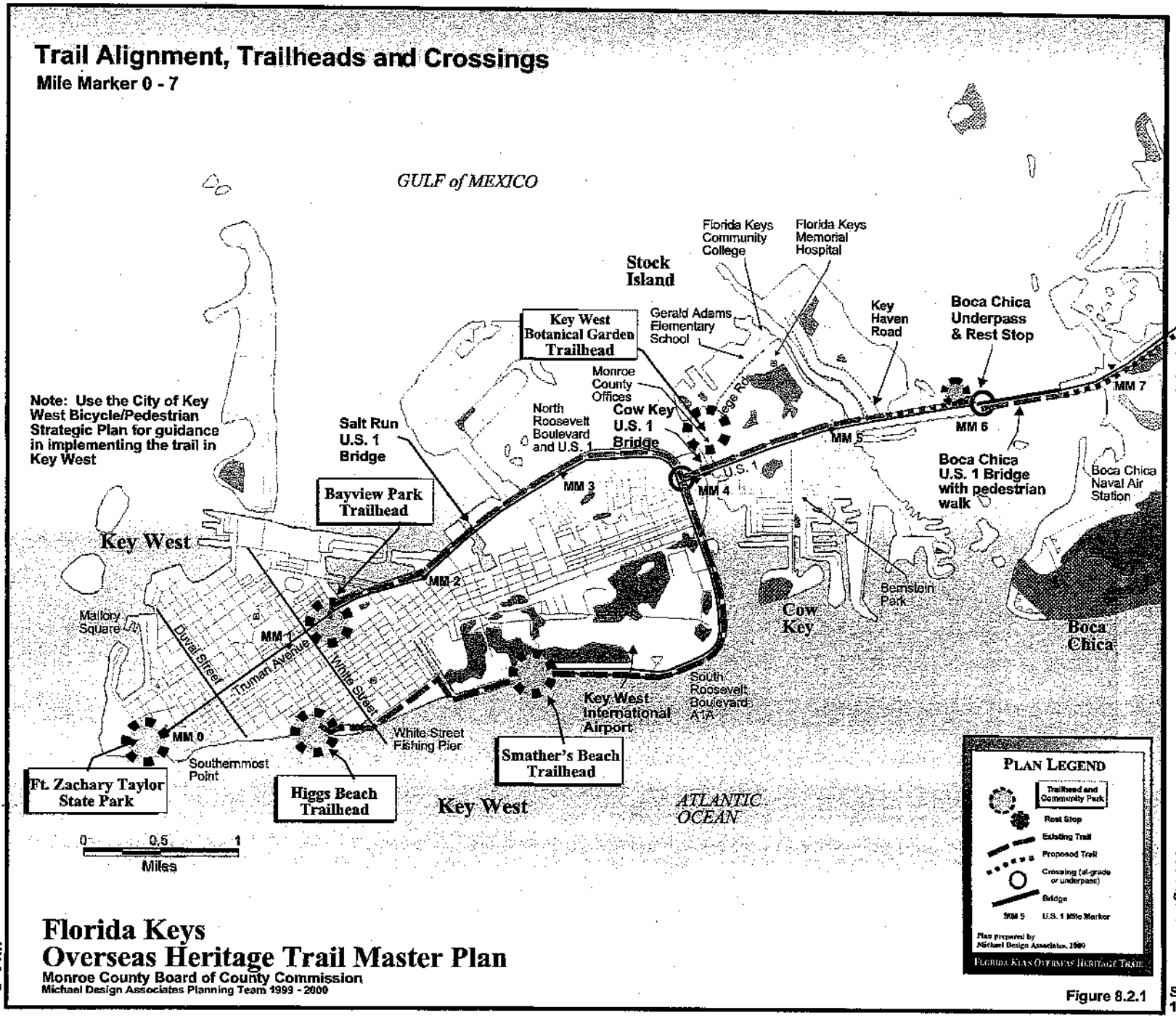
Abbreviations: NA = Not Applicable; Exist = Existing; TH = Trailhead; RS = Rest Stop; Atl = Atlantic side; C = Crossing; U = Underpass; Bay = Florida Bay

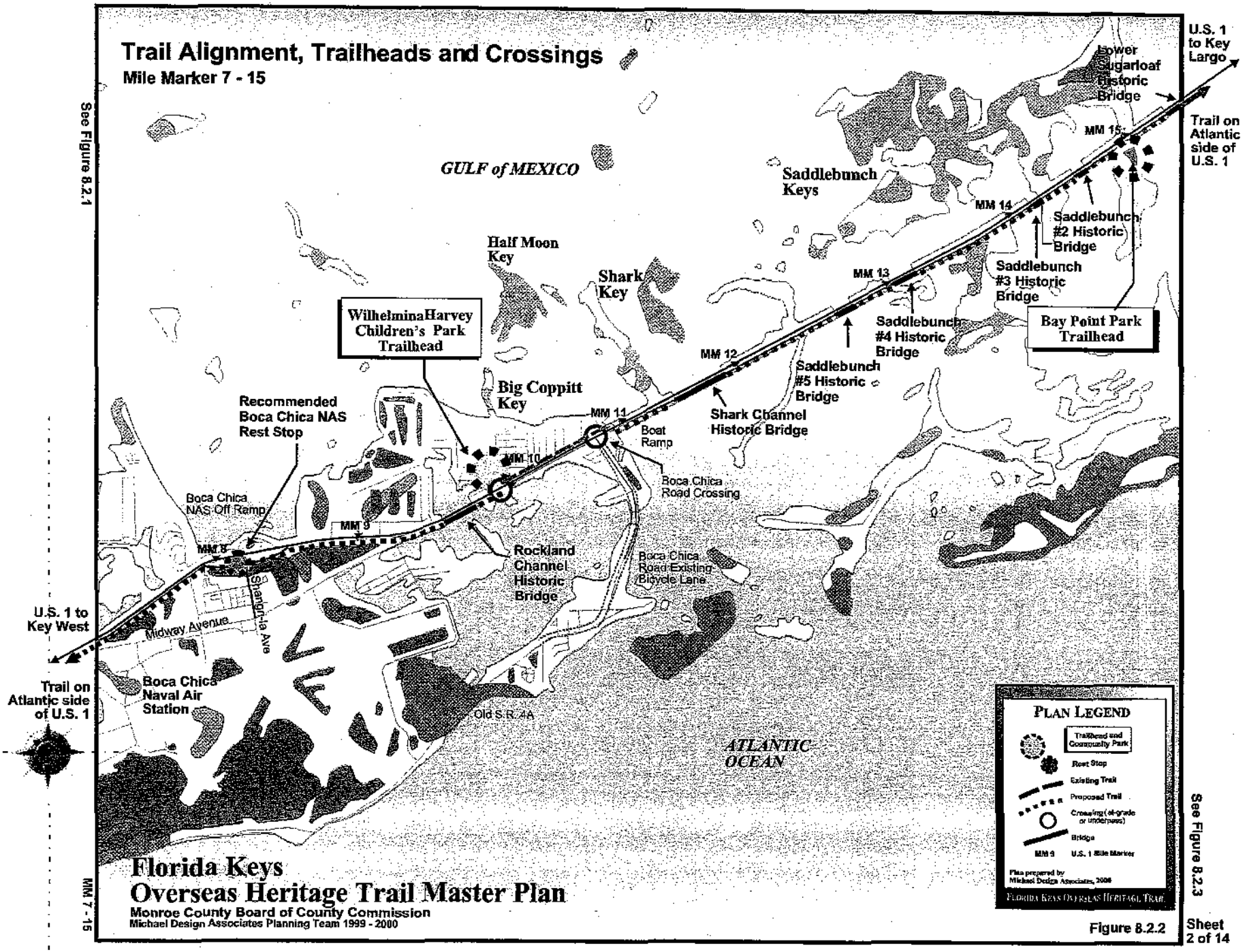
8.2.4 Trail Alignment, Trailheads and Crossings Figures

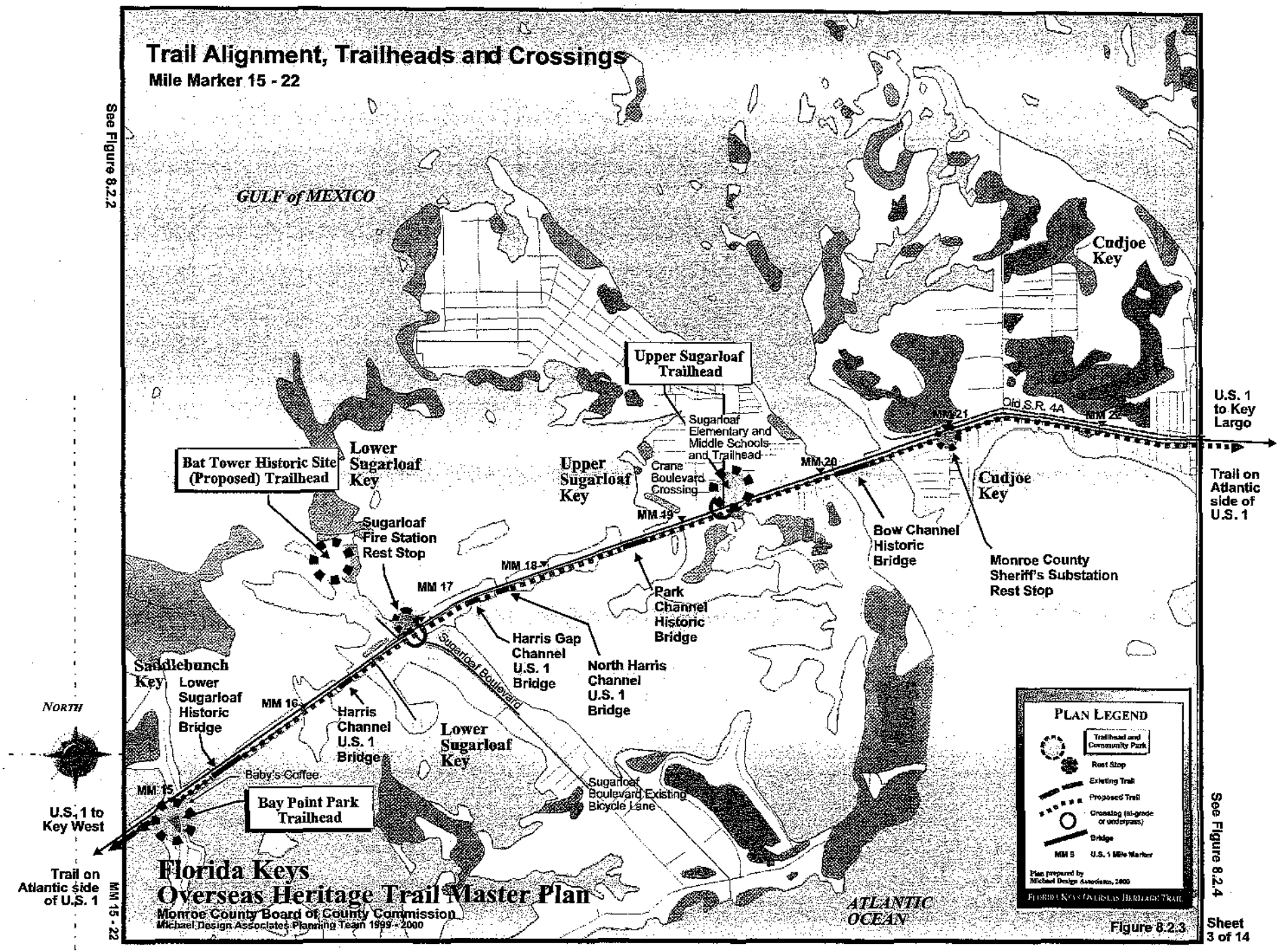
This section provides a graphic depiction of the trail alignment, trailheads, and crossings. The figures provide the location of the existing and proposed trial along U.S. 1; trailheads, rest stops, and destinations; crossings; connecting bike paths; and bridges. A narrative description is also included throughout Section 8.0 on these various elements.

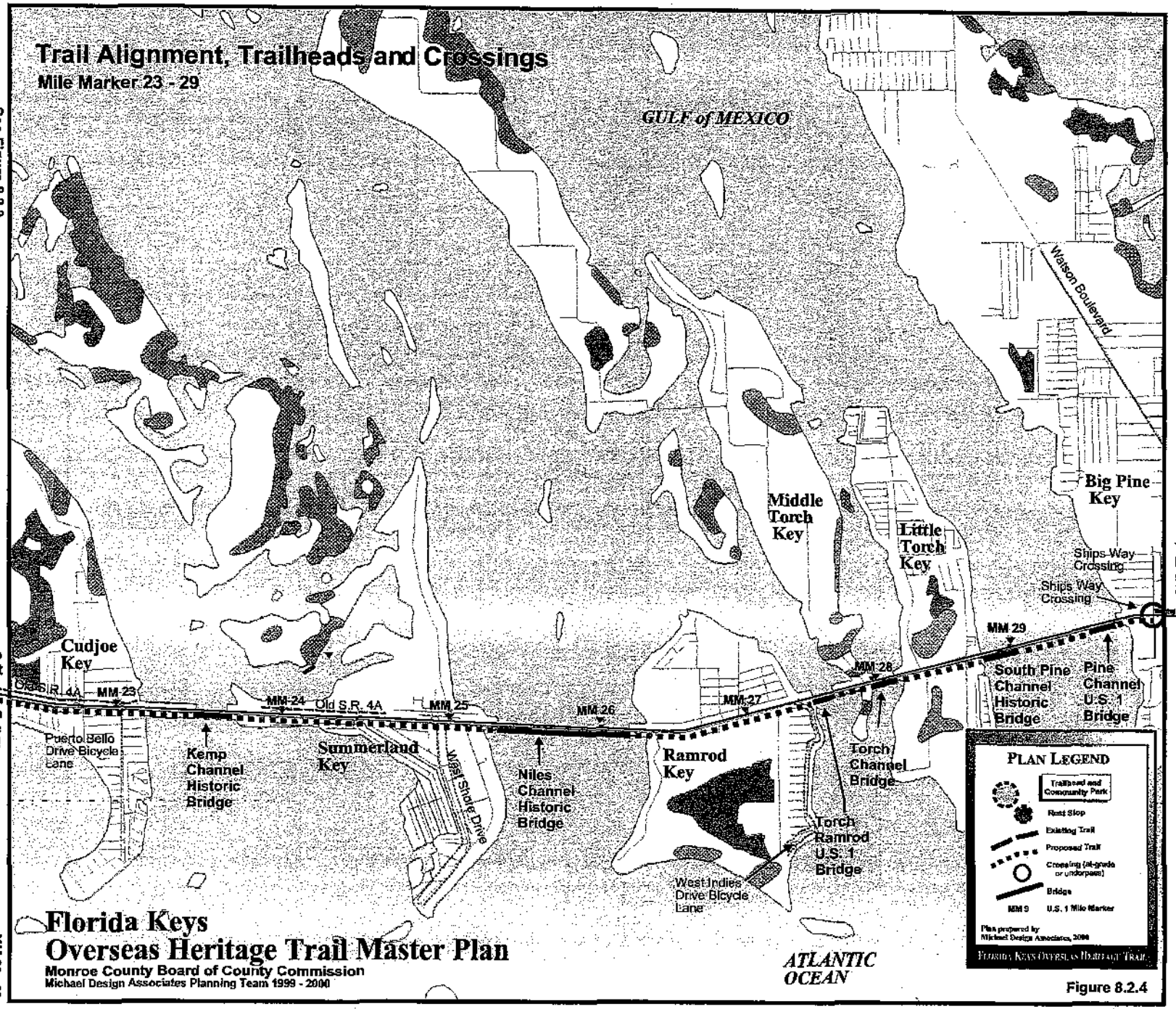
The figures were separated into fourteen sheets and correspond to the sheets used in the Monroe County Bicycle and Pedestrian Plan[5]. Information for the figures were obtained from Monroe County GIS Department, Tiger files, and the Barton-Aschman plan.

The legend explains many of the symbols used on the maps. Important notes are also included on the individual maps


Trail Alignment, Trailheads and Crossings
Mile Marker 0 - 7
GULF of MEXICO
Florida Keys Community College
Florida Keys Memorial Hospital
Stock Island
Key West Botanical Garden Trailhead
Gerald Adams Elementary School
Key Haven Road
Boca Chica Underpass & Rest Stop
U.S. 1 to Key Largo
Trail on Atlantic side of U.S. 1
Monroe County Offices
North Roosevelt Boulevard and U.S. 1
Cow Key U.S. 1 Bridge
Salt Run U.S. 1 Bridge
Note: Use the City of Key West Bicycle/Pedestrian Strategic Plan for guidance in implementing the trail in Key West
MM 7
MM 6
MM 5
MM 4
MM 3
MM 2
MM 1
MM 0
U.S. 1
Boca Chica U.S. 1 Bridge with pedestrian walk
Boca Chica Naval Air Station
Bayview Park Trailhead
Key West
Mallory Square
Duval Street
Truman Avenue
White Street
Bernstein Park
Cow Key
Boca Chica
South Roosevelt Boulevard A1A
Key West International Airport
White Street Fishing Pier
Smather's Beach Trailhead
Southernmost Point
Ft. Zachary Taylor State Park
Higgs Beach Trailhead
Key West
ATLANTIC OCEAN
0 0.5 1
Miles
NORTH
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 5 U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
MM 0 - 7
See Figure 8.2.2
Figure 8.2.1
Sheet 1 of 14


Trail Alignment, Trailheads and Crossings
Mile Marker 7 - 15
See Figure 8.2.1
GULF of MEXICO
Saddlebunch Keys
Lower Sugarloaf Historic Bridge
U.S. 1 to Key Largo
Trail on Atlantic side of U.S. 1
MM 15
MM 14
Saddlebunch #2 Historic Bridge
Saddlebunch #3 Historic Bridge
Half Moon Key
Shark Key
MM 13
Saddlebunch #4 Historic Bridge
Bay Point Park Trailhead
WilhelminaHarvey Children's Park Trailhead
MM 12
Saddlebunch #5 Historic Bridge
Big Coppitt Key
Recommended Boca Chica NAS Rest Stop
MM 11
Boat Ramp
Shark Channel Historic Bridge
MM 10
Boca Chica Road Crossing
Boca Chica NAS Off Ramp
MM 9
MM 8
Rockland Channel Historic Bridge
Boca Chica Road Existing Bicycle Lane
U.S. 1 to Key West
Midway Avenue
Shangri-la Ave
Trail on Atlantic side of U.S. 1
Boca Chica Naval Air Station
Old S.R. 4A
ATLANTIC OCEAN
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9 U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
See Figure 8.2.3
MM 7 - 15
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
Figure 8.2.2
Sheet 2 of 14


Trail Alignment, Trailheads and Crossings
Mile Marker 15 - 22
See Figure 8.2.2
GULF of MEXICO
Cudjoe Key
Upper Sugarloaf Trailhead
Sugarloaf Elementary and Middle Schools and Trailhead
Old S.R. 4A
MM 21
MM 20
U.S. 1 to Key Largo
Trail on Atlantic side of U.S. 1
Bat Tower Historic Site (Proposed) Trailhead
Lower Sugarloaf Key
Upper Sugarloaf Key
Crane Boulevard Crossing
MM 19
Sugarloaf Fire Station Rest Stop
MM 18
MM 17
Bow Channel Historic Bridge
Monroe County Sheriff's Substation Rest Stop
Park Channel Historic Bridge
Harris Gap Channel U.S. 1 Bridge
North Harris Channel U.S. 1 Bridge
Sugarloaf Boulevard
Saddlebunch Key
Lower Sugarloaf Historic Bridge
MM 16
Harris Channel U.S. 1 Bridge
Lower Sugarloaf Key
NORTH
Baby's Coffee
MM 15
Bay Point Park Trailhead
Sugarloaf Boulevard Existing Bicycle Lane
U.S. 1 to Key West
Trail on Atlantic side of U.S. 1
MM 15 - 22
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 5 U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
See Figure 8.2.4
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
ATLANTIC OCEAN
Figure 8.2.3
Sheet 3 of 14

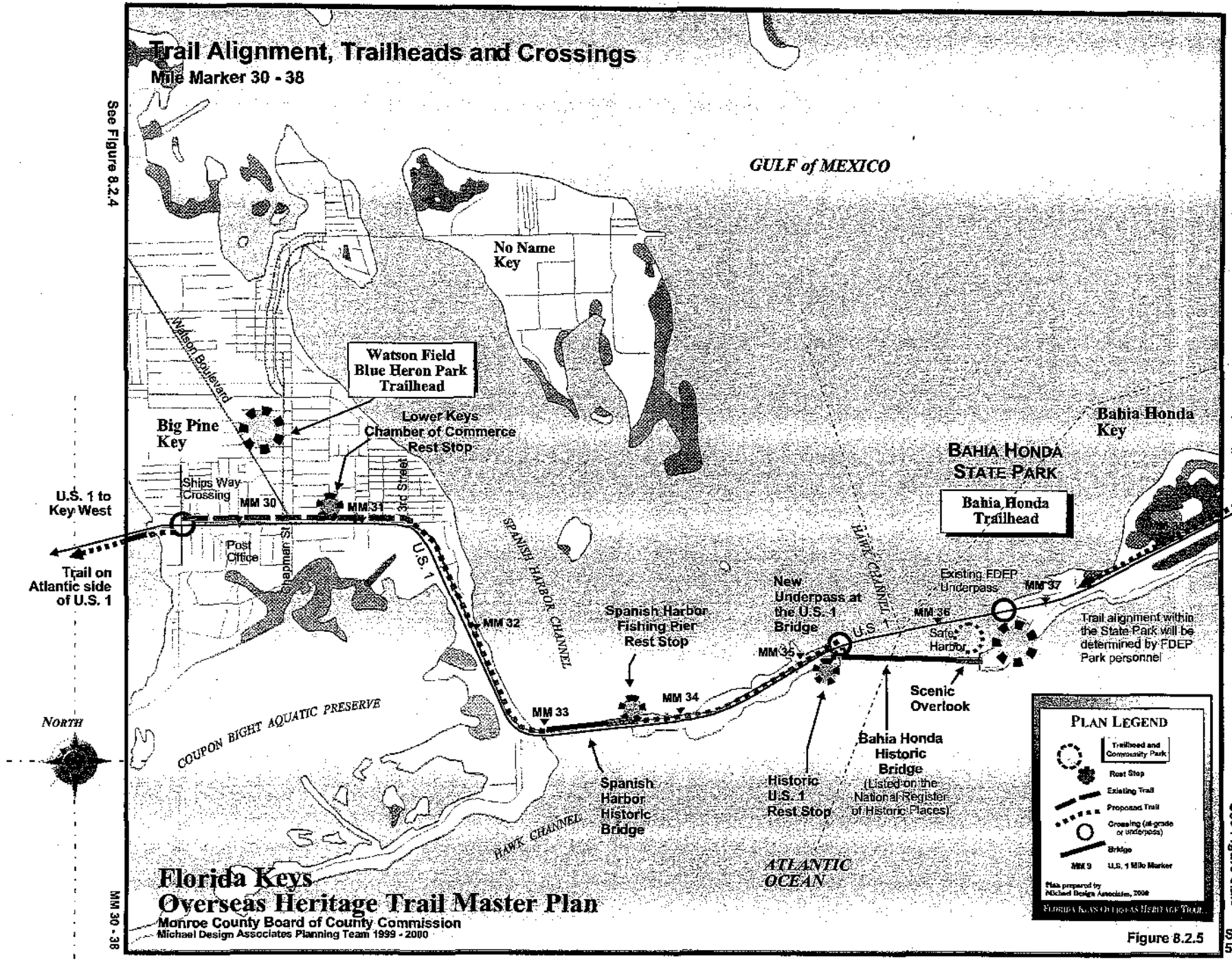


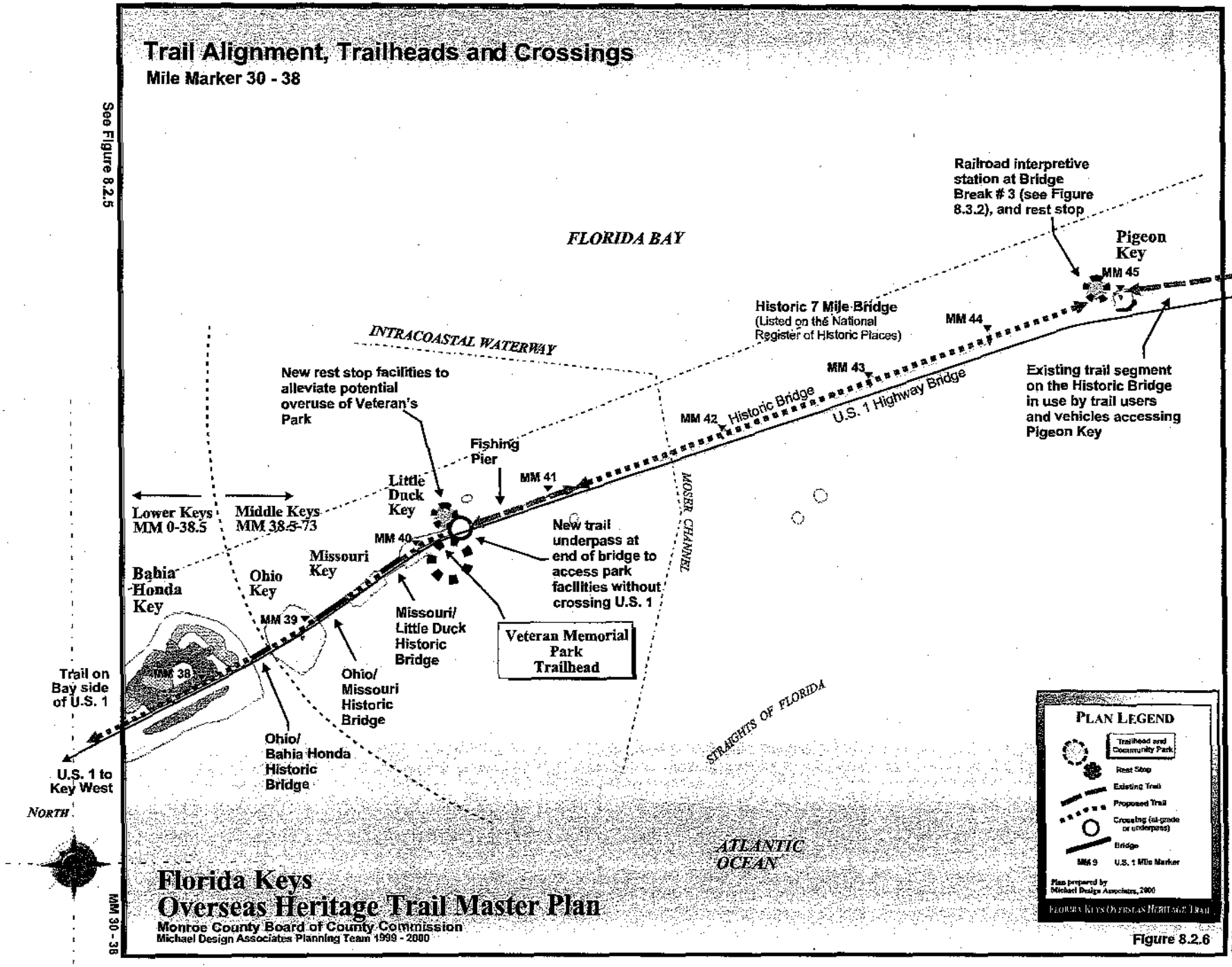
See Figure 8.2.3

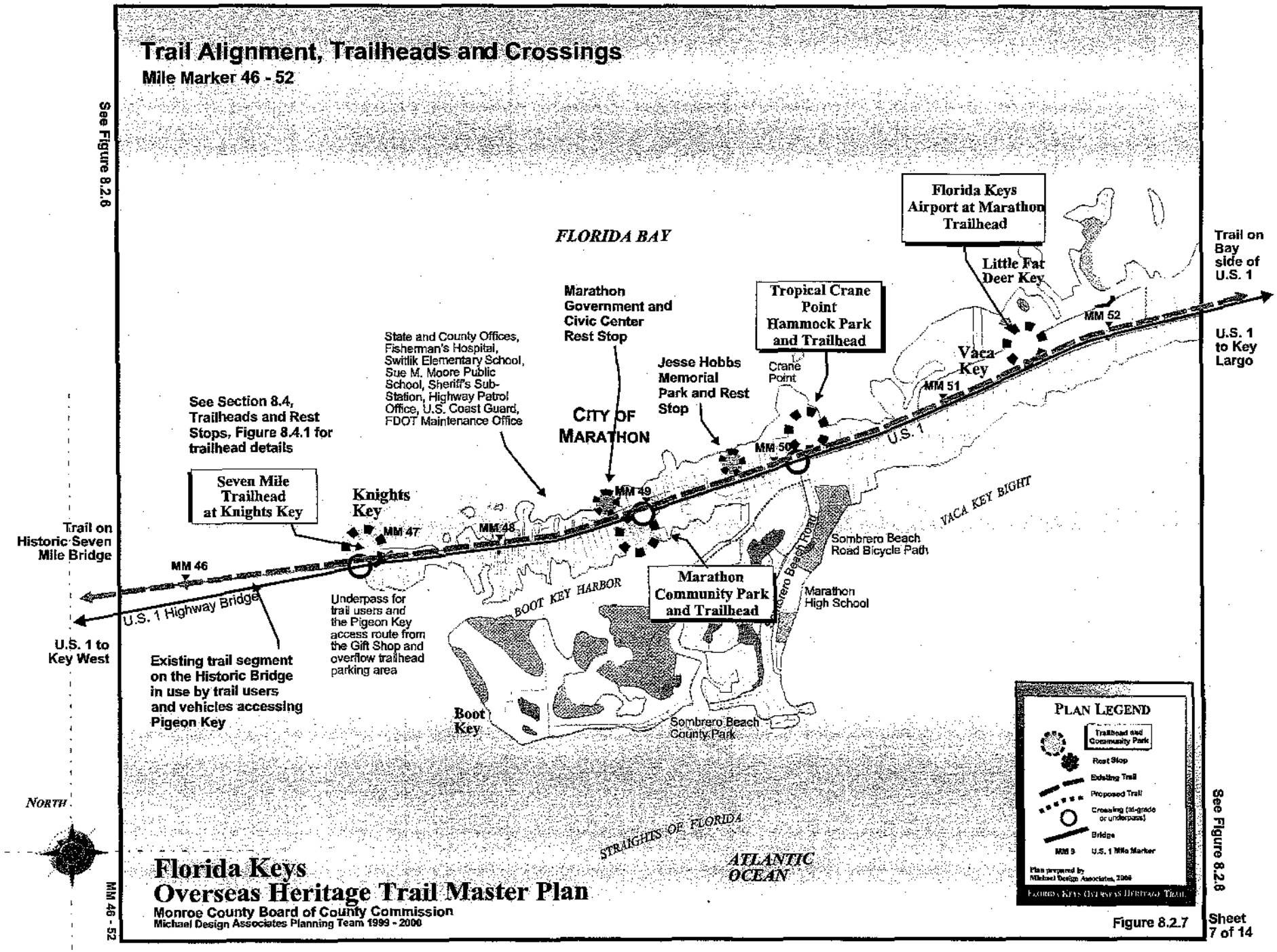
MM 23 - 29

See Figure 8.2.5

Figure 8.2.4


Trail Alignment, Trailheads and Crossings
Mile Marker 30 - 38
See Figure 8.2.4
GULF of MEXICO
No Name Key
Watson Field Blue Heron Park Trailhead
Lower Keys Chamber of Commerce Rest Stop
Big Pine Key
Watson Boulevard
Ships Way Crossing
MM 30
MM 31
3rd Street
Chapman St.
Post Office
U.S. 1
U.S. 1 to Key West
Trail on Atlantic side of U.S. 1
SPANISH HARBOR CHANNEL
MM 32
Spanish Harbor Fishing Pier Rest Stop
MM 33
MM 34
COUPON BIGHT AQUATIC PRESERVE
HAWK CHANNEL
Spanish Harbor Historic Bridge
NORTH
MM 30 - 38
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
New Underpass at the U.S. 1 Bridge
MM 35
Historic U.S. 1 Rest Stop
Bahia Honda Historic Bridge
(Listed on the National Register of Historic Places)
ATLANTIC OCEAN
Existing FDEP Underpass
MM 36
MM 37
Safe Harbor
Scenic Overlook
BAHIA HONDA STATE PARK
Bahia Honda Trailhead
Bahia Honda Key
Trail alignment within the State Park will be determined by FDEP Park personnel
Trail on Bay side of U.S. 1
U.S. 1 to Key Largo
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9 U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
See Figure 8.2.6
Figure 8.2.5
Sheet 5 of 14


Trail Alignment, Trailheads and Crossings
Mile Marker 30 - 38
See Figure 8.2.5
FLORIDA BAY
Railroad interpretive station at Bridge Break # 3 (see Figure 8.3.2), and rest stop
Pigeon Key
MM 45
Trail on Bay side of U.S. 1
U.S. 1 to Key Largo
Historic 7 Mile Bridge
(Listed on the National Register of Historic Places)
MM 44
INTRACOASTAL WATERWAY
MM 43
New rest stop facilities to alleviate potential overuse of Veteran's Park
Existing trail segment on the Historic Bridge in use by trail users and vehicles accessing Pigeon Key
MM 42
Historic Bridge
U.S. 1 Highway Bridge
Fishing Pier
MM 41
Little Duck Key
MOSER CHANNEL
Lower Keys MM 0-38.5
Middle Keys MM 38.5-73
MM 40
New trail underpass at end of bridge to access park facilities without crossing U.S. 1
Missouri Key
Bahia Honda Key
Ohio Key
MM 39
Missouri/ Little Duck Historic Bridge
Veteran Memorial Park Trailhead
Trail on Bay side of U.S. 1
MM 38
Ohio/ Missouri Historic Bridge
Ohio/ Bahia Honda Historic Bridge
STRAIGHTS OF FLORIDA
U.S. 1 to Key West
NORTH
ATLANTIC OCEAN
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9
U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
See Figure 8.2.7
MM 30 - 38
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
Figure 8.2.6
Sheet 6 of 14


Trail Alignment, Trailheads and Crossings
Mile Marker 46 - 52
See Figure 8.2.6
FLORIDA BAY
Florida Keys Airport at Marathon Trailhead
Little Fat Deer Key
Trail on Bay side of U.S. 1
U.S. 1 to Key Largo
MM 52
Marathon Government and Civic Center Rest Stop
Tropical Crane Point Hammock Park and Trailhead
Crane Point
Vaca Key
MM 51
State and County Offices, Fisherman's Hospital, Switlik Elementary School, Sue M. Moore Public School, Sheriff's Sub-Station, Highway Patrol Office, U.S. Coast Guard, FDOT Maintenance Office
Jesse Hobbs Memorial Park and Rest Stop
See Section 8.4, Trailheads and Rest Stops, Figure 8.4.1 for trailhead details
CITY OF MARATHON
MM 50
U.S. 1
Seven Mile Trailhead at Knights Key
Knights Key
MM 49
MM 47
MM 48
VACA KEY BIGHT
Trail on Historic Seven Mile Bridge
MM 46
Sombrero Beach Road Bicycle Path
Sombrero Beach Road
U.S. 1 Highway Bridge
BOOT KEY HARBOR
Marathon Community Park and Trailhead
Marathon High School
U.S. 1 to Key West
Underpass for trail users and the Pigeon Key access route from the Gift Shop and overflow trailhead parking area
Existing trail segment on the Historic Bridge in use by trail users and vehicles accessing Pigeon Key
Boot Key
Sombrero Beach County Park
NORTH
STRAIGHTS OF FLORIDA
ATLANTIC OCEAN
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9 U.S. 1 Mile Marker
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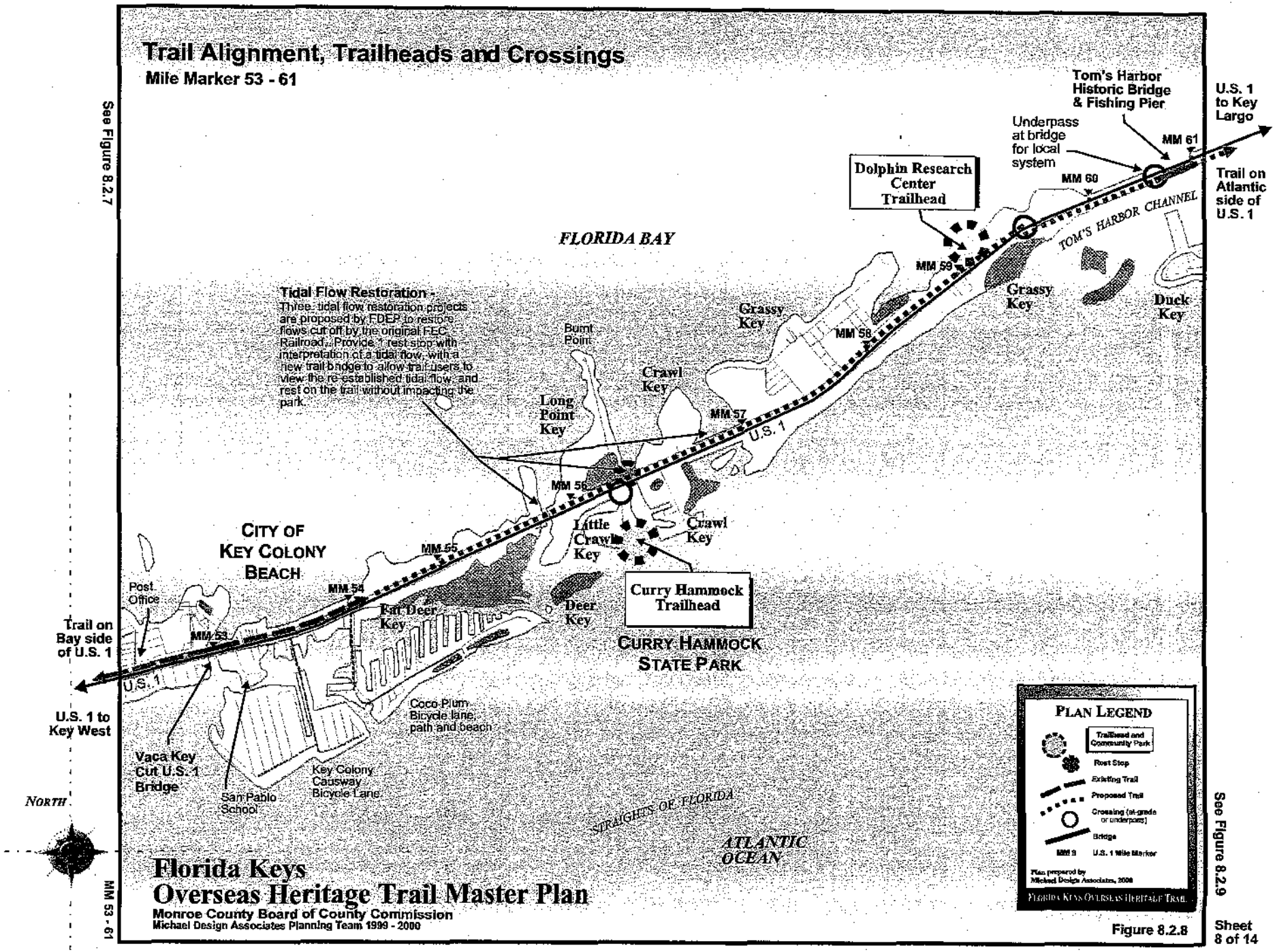
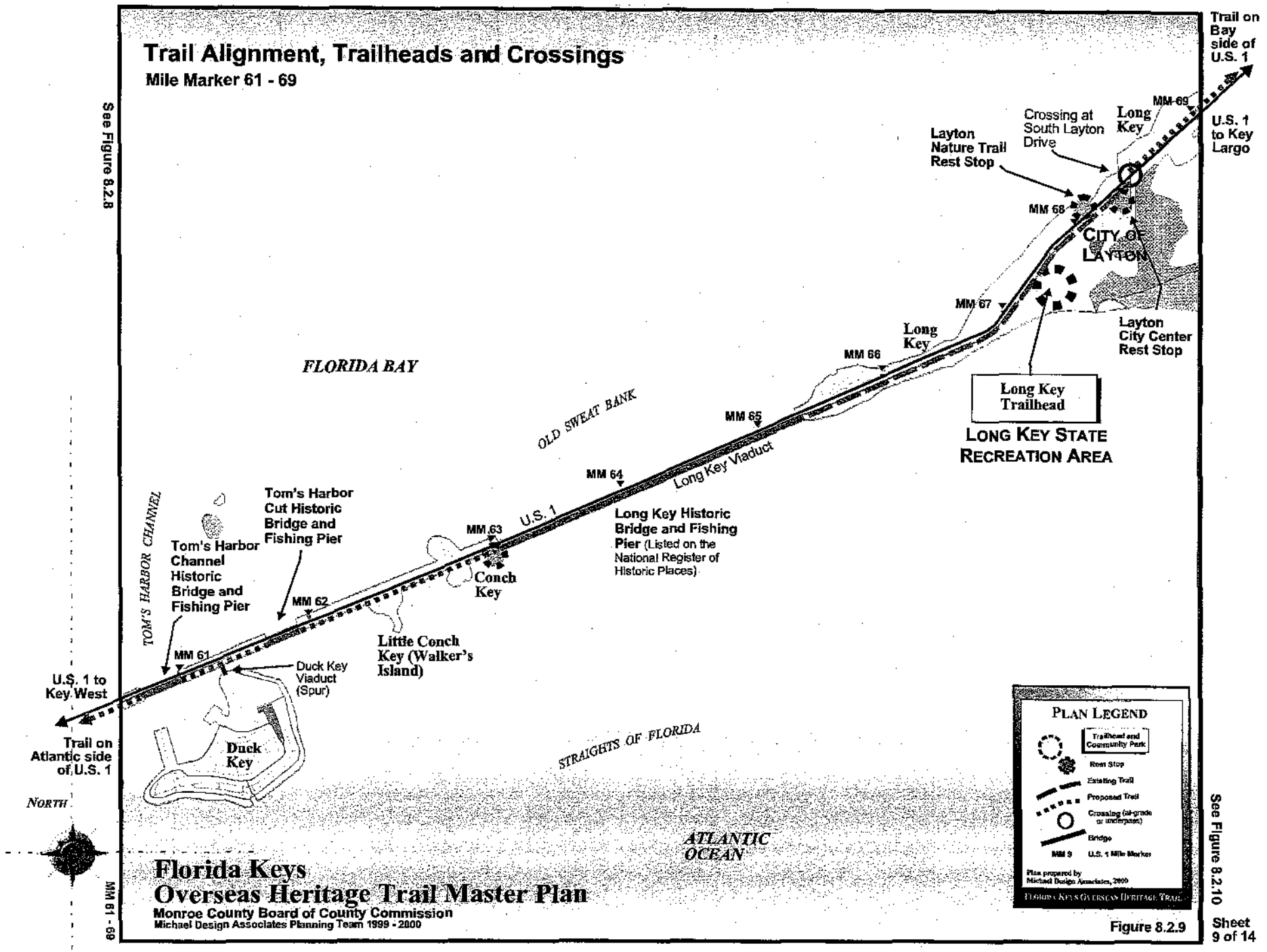
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
See Figure 8.2.8
MM 46 - 52
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
Figure 8.2.7
Sheet 7 of 14


Trail Alignment, Trailheads and Crossings
Mile Marker 53 - 61
See Figure 8.2.7
Tom's Harbor Historic Bridge & Fishing Pier
U.S. 1 to Key Largo
Underpass at bridge for local system
MM 61
MM 60
Trail on Atlantic side of U.S. 1
Dolphin Research Center Trailhead
TOM'S HARBOR CHANNEL
FLORIDA BAY
MM 59
Grassy Key
Duck Key
Tidal Flow Restoration -
Three tidal flow restoration projects are proposed by FDEP to restore flows cut off by the original FEC Railroad. Provide 1 rest stop with interpretation of a tidal flow, with a new trail bridge to allow trail users to view the re-established tidal flow, and rest on the trail without impacting the park.
Burnt Point
Grassy Key
MM 58
Crawl Key
Long Point Key
MM 57
U.S. 1
MM 56
Little Crawl Key
Crawl Key
CITY OF KEY COLONY BEACH
MM 55
Post Office
MM 54
Fat Deer Key
Deer Key
Curry Hammock Trailhead
CURRY HAMMOCK STATE PARK
Trail on Bay side of U.S. 1
MM 53
U.S. 1
U.S. 1 to Key West
Coco Plum Bicycle lane, path and beach
Vaca Key Cut U.S. 1 Bridge
San Pablo School
Key Colony Causeway Bicycle Lane
NORTH
STRAIGHTS OF FLORIDA
ATLANTIC OCEAN
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 0 U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
See Figure 8.2.9
MM 53 - 61
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
Figure 8.2.8
Sheet 8 of 14



Florida Keys Overseas Heritage Trail Master Plan

Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000

Figure 8.2.9

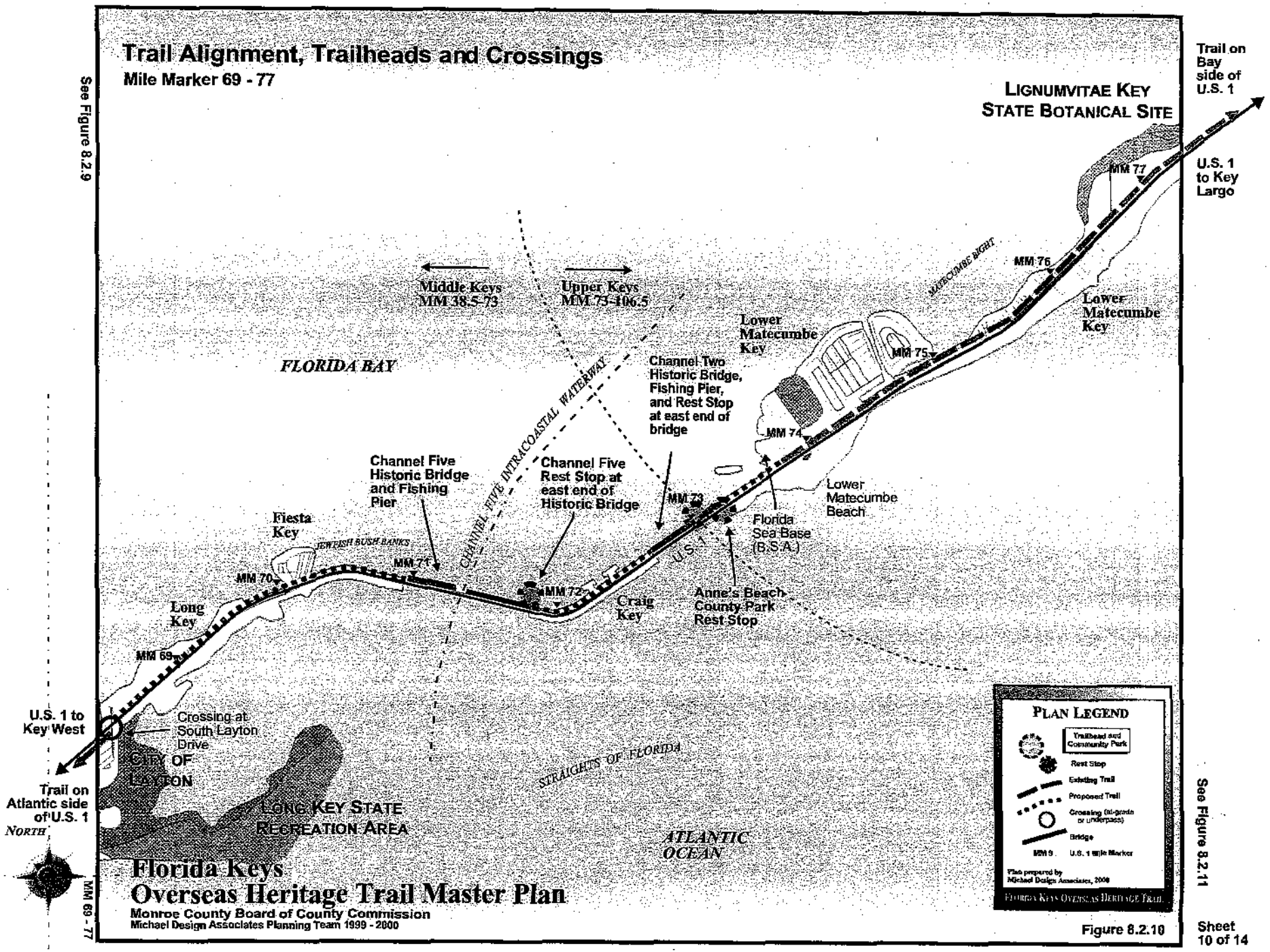

Trail Alignment, Trailheads and Crossings
Mile Marker 69 - 77
See Figure 8.2.9
Trail on Bay side of U.S. 1
LIGNUMVITAE KEY STATE BOTANICAL SITE
U.S. 1 to Key Largo
MM 77
MM 76
MM 75
MM 74
MM 73
MM 72
MM 71
MM 70
MM 69
Middle Keys MM 38.5-73
Upper Keys MM 73-106.5
FLORIDA BAY
MATECUMBE BIGHT
Lower Matecumbe Key
Lower Matecumbe Key
Channel Two Historic Bridge, Fishing Pier, and Rest Stop at east end of bridge
CHANNEL FIVE INTRACOASTAL WATERWAY
Channel Five Historic Bridge and Fishing Pier
Channel Five Rest Stop at east end of Historic Bridge
Fiesta Key
JEWFISH BUSH BANKS
Long Key
Craig Key
Lower Matecumbe Beach
Florida Sea Base (B.S.A.)
Anne's Beach County Park Rest Stop
U.S. 1 to Key West
Crossing at South Layton Drive
CITY OF LAYTON
LONG KEY STATE RECREATION AREA
STRAIGHTS OF FLORIDA
ATLANTIC OCEAN
Trail on Atlantic side of U.S. 1
NORTH
MM 69 - 77
See Figure 8.2.11
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9 U.S. 1 mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
Florida Keys Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
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Figure 8.2.10
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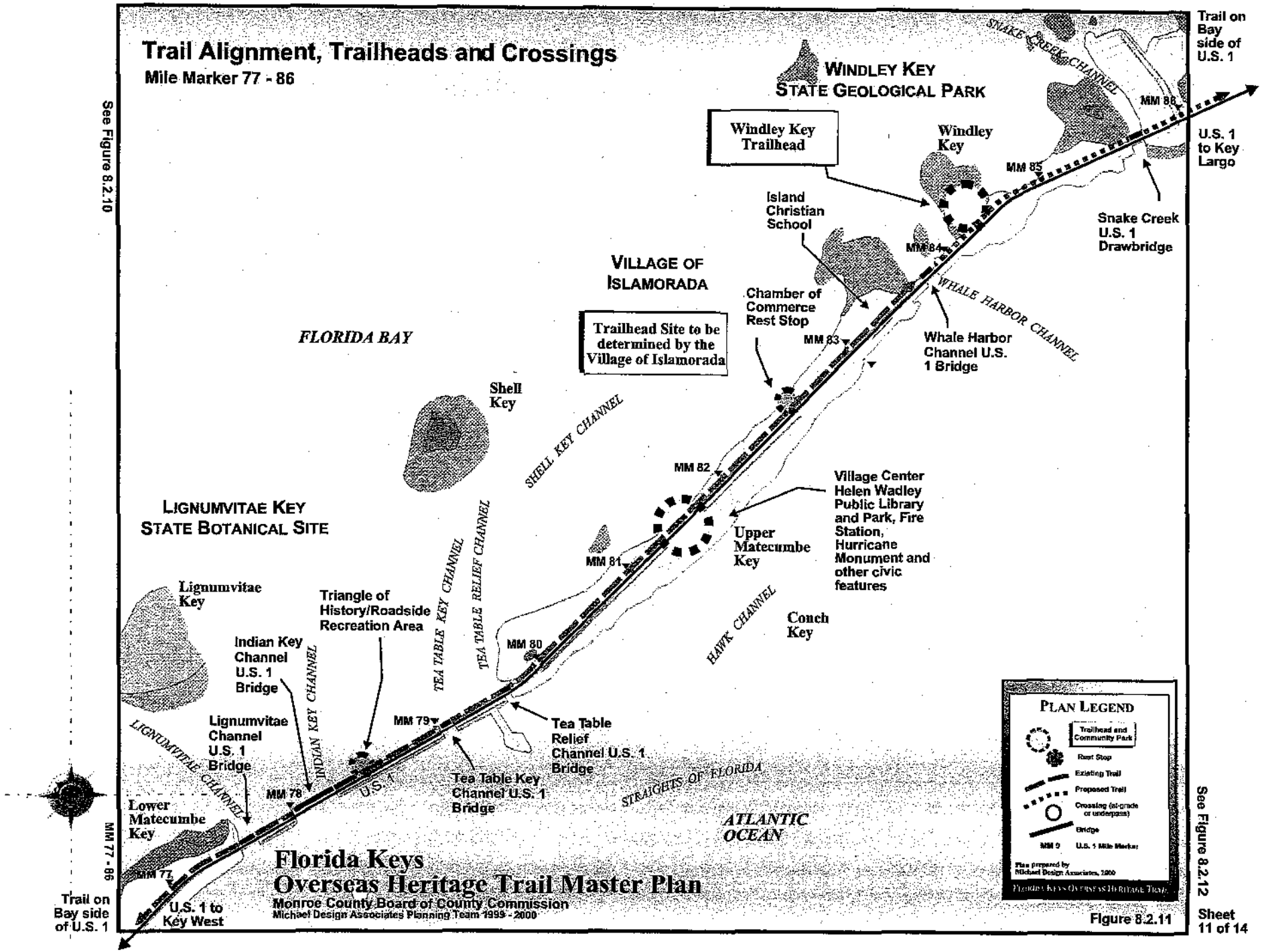
Trail Alignment, Trailheads and Crossings
Mile Marker 77 - 86
See Figure 8.2.10
Trail on Bay side of U.S. 1
U.S. 1 to Key West
MM 77 - 86
WINDLEY KEY STATE GEOLOGICAL PARK
SNAKE CREEK CHANNEL
Trail on Bay side of U.S. 1
MM 86
U.S. 1 to Key Largo
Windley Key Trailhead
Windley Key
MM 85
Island Christian School
Snake Creek U.S. 1 Drawbridge
MM 84
VILLAGE OF ISLAMORADA
Chamber of Commerce Rest Stop
WHALE HARBOR CHANNEL
Trailhead Site to be determined by the Village of Islamorada
MM 83
Whale Harbor Channel U.S. 1 Bridge
FLORIDA BAY
Shell Key
SHELL KEY CHANNEL
MM 82
LIGNUMVITAE KEY STATE BOTANICAL SITE
Village Center Helen Wadley Public Library and Park, Fire Station, Hurricane Monument and other civic features
Upper Matecumbe Key
MM 81
TEA TABLE KEY CHANNEL
TEA TABLE RELIEF CHANNEL
Lignumvitae Key
Triangle of History/Roadside Recreation Area
Indian Key Channel U.S. 1 Bridge
INDIAN KEY CHANNEL
MM 80
HAWK CHANNEL
Conch Key
Lignumvitae Channel U.S. 1 Bridge
LIGNUMVITAE CHANNEL
MM 79
Tea Table Relief Channel U.S. 1 Bridge
U.S. 1
Tea Table Key Channel U.S. 1 Bridge
STRAIGHTS OF FLORIDA
MM 78
Lower Matecumbe Key
ATLANTIC OCEAN
MM 77
Florida Keys Overseas Heritage Trail Master Plan
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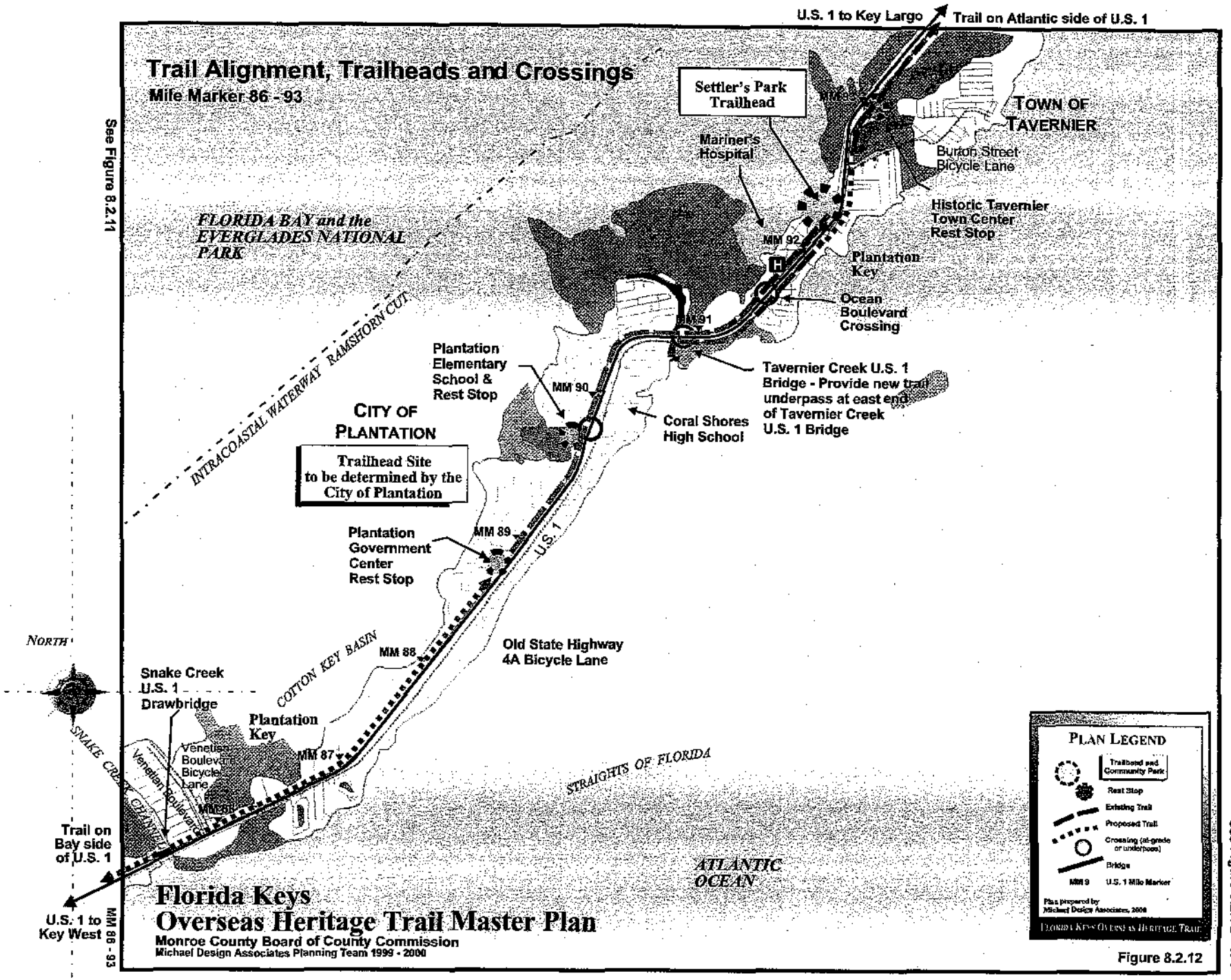
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9 U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
Florida Keys Overseas Heritage Trail
See Figure 8.2.12
Figure 8.2.11
Sheet 11 of 14


Trail Alignment, Trailheads and Crossings
Mile Marker 86 - 93
U.S. 1 to Key Largo
Trail on Atlantic side of U.S. 1
See Figure 8.2.11
Settler's Park Trailhead
TOWN OF TAVERNIER
Mariner's Hospital
Burton Street Bicycle Lane
Historic Tavernier Town Center Rest Stop
FLORIDA BAY and the EVERGLADES NATIONAL PARK
MM 92
Plantation Key
Ocean Boulevard Crossing
MM 91
INTRACOASTAL WATERWAY RAMSHORN CUT
Plantation Elementary School & Rest Stop
Tavernier Creek U.S. 1 Bridge - Provide new trail underpass at east end of Tavernier Creek U.S. 1 Bridge
MM 90
CITY OF PLANTATION
Coral Shores High School
Trailhead Site to be determined by the City of Plantation
Plantation Government Center Rest Stop
MM 89
U.S. 1
NORTH
COTTON KEY BASIN
MM 88
Old State Highway 4A Bicycle Lane
Snake Creek U.S. 1 Drawbridge
Plantation Key
Venetian Boulevard Bicycle Lane
MM 87
SNAKE CREEK CHANNEL
Venetian Boulevard
MM 86
STRAIGHTS OF FLORIDA
Trail on Bay side of U.S. 1
ATLANTIC OCEAN
U.S. 1 to Key West
MM 86 - 93
Florida Keys
Overseas Heritage Trail Master Plan
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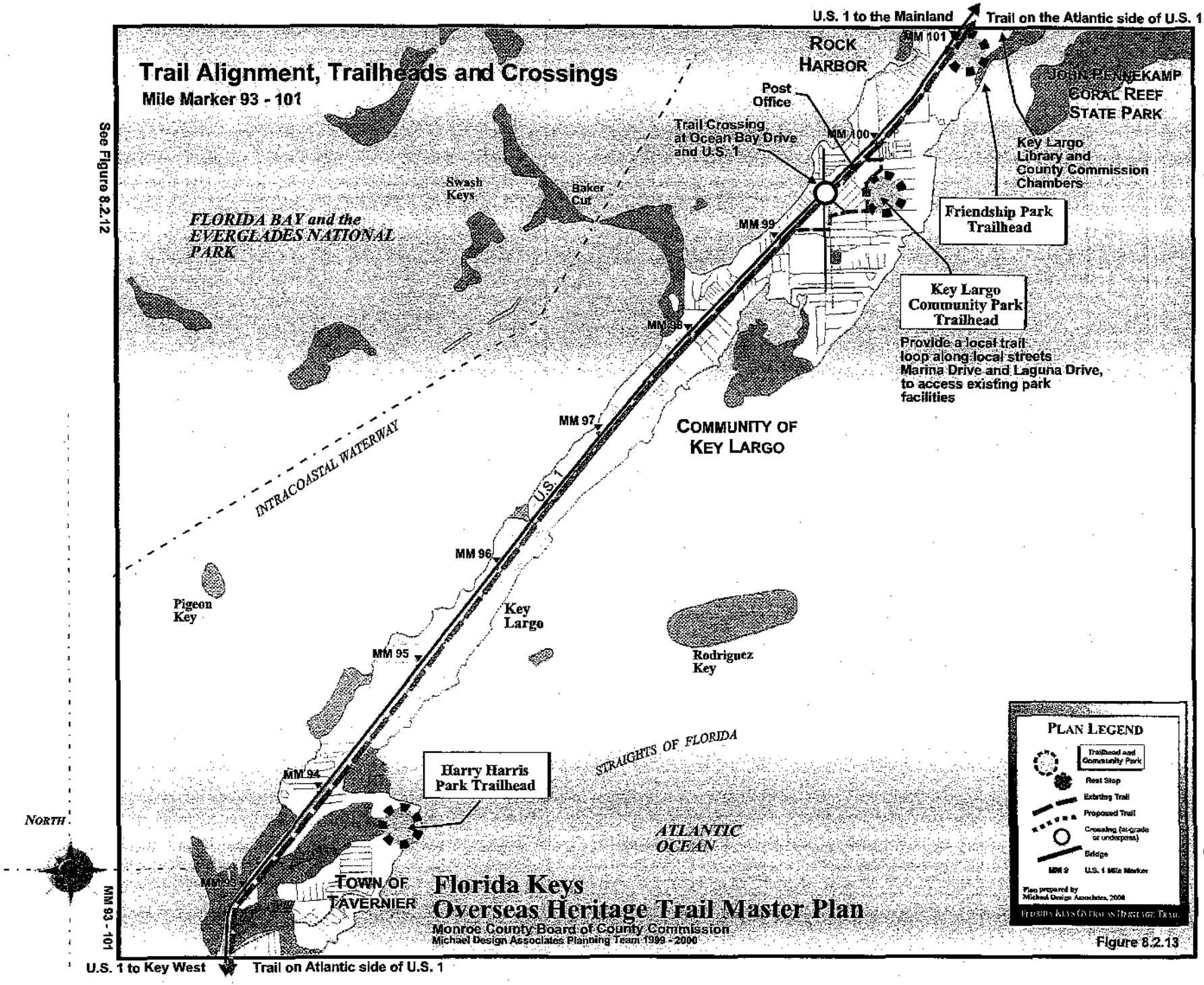
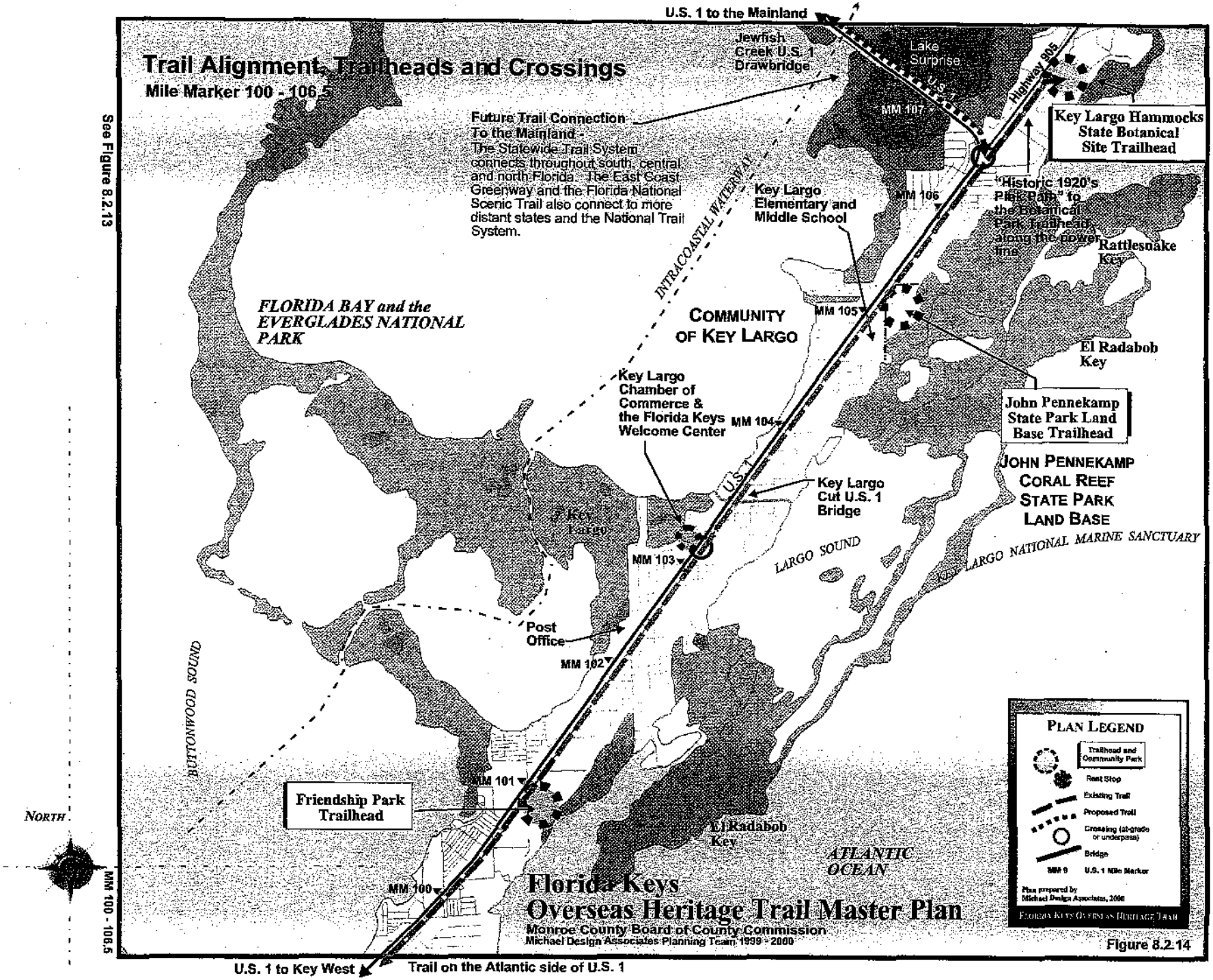
Michael Design Associates Planning Team 1999 - 2000
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9
U.S. 1 Mile Marker
Plan prepared by Michael Design Associates, 2000
FLORIDA KEYS OVERSEAS HERITAGE TRAIL
See Figure 8.2.13

Figure 8.2.12


U.S. 1 to the Mainland
Trail on the Atlantic side of U.S. 1
Trail Alignment, Trailheads and Crossings
Mile Marker 93 - 101
See Figure 8.2.12
ROCK HARBOR
MM 101
Post Office
Trail Crossing at Ocean Bay Drive and U.S. 1
MM 100
JOHN PENNEKAMP CORAL REEF STATE PARK
Key Largo Library and County Commission Chambers
Swash Keys
Baker Cut
FLORIDA BAY and the EVERGLADES NATIONAL PARK
MM 99
Friendship Park Trailhead
Key Largo Community Park Trailhead
MM 98
Provide a local trail loop along local streets Marina Drive and Laguna Drive, to access existing park facilities
MM 97
COMMUNITY OF KEY LARGO
INTRACOASTAL WATERWAY
U.S. 1
MM 96
Pigeon Key
Key Largo
MM 95
Rodriguez Key
STRAIGHTS OF FLORIDA
MM 94
Harry Harris Park Trailhead
ATLANTIC OCEAN
NORTH
MM 93
TOWN OF TAVERNIER
Florida Keys
Overseas Heritage Trail Master Plan
Monroe County Board of County Commission
Michael Design Associates Planning Team 1999 - 2000
PLAN LEGEND
Trailhead and Community Park
Rest Stop
Existing Trail
Proposed Trail
Crossing (at-grade or underpass)
Bridge
MM 9 U.S. 1 Mile Marker
Figure 8.2.13
See Figure 8.2.14
Sheet 13 of 14
MM 93 - 101
U.S. 1 to Key West
Trail on Atlantic side of U.S. 1



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8.3 THE FLORIDA KEYS BRIDGES

This section describes the use of the Old Keys Bridges (Historic Bridges) and the newer U.S. 1 highway bridges for the purpose of providing connection opportunities for the Florida Keys Overseas Heritage Trail.

For an additional perspective on how the bridges fit into the overall trail, all of the U.S. 1 highway bridges and the Historic Bridges occurring within Mile Marker 0 to MM 106.5 are described in relationship to the communities, trailheads, and rest stops, in the Trail Alignment Recommendations Table (see Table 8.2.1).

The trail alignment will use one of the following three bridging options for crossing the existing Keys waterways:

- Historic Bridges (old railroad bridges)
- New trail bridges
- U.S. 1 highway bridges

The "Monroe County Bicycle and Pedestrian Plan[2]" described a trail *"system"* for the entire County that included both the trails in the U.S. 1 corridor, the interconnecting County trails, and other local trails. This Master Plan describes only the primary trail alignment along U.S. 1 known as the Florida Keys Overseas Heritage Trail. This trail is the primary spine of the Monroe County Trail System and often is intersected by other local interconnecting bicycle lanes bicycle paths, and pedestrian ways. The trail *system* often recommends bicycle and pedestrian facilities on both sides of the existing U.S. 1 highway bridges, but that plan does not address the use of the Historic Bridges, whereas this Master Plan views the bridges as significant safe connections for the trail.

Crossings of U.S. 1 are considered extremely hazardous and are recommended only when absolutely necessary. Where possible, underpass crossings have been planned at the last or beginning span of the existing new U.S. 1 highway bridges, where vertical clearance is sufficient for safe passage.

Bridge Tables and Figures Listing

The following tables have been compiled to convey the master planning data collection, analysis and recommendations. All 23 Historic Bridges and the 18 newer U.S. 1 Bridges that are being used for the Trail project are included between MM 0 to MM 106.5.

8.3.1 Bridge Findings

The analysis of the previous studies concerning the Keys bridges included the Monroe County Bicycle and Pedestrian Plan[2] and the Old Keys Bridges Task Force Report[3]. The planning team has been able to present valuable information concerning the Keys bridges by combining relevant information of these previous studies with more recent investigations. The following table of "Findings" illustrates important information on the current status of the bridges.

Table 8.3.1
Master Plan Findings for Keys Bridges

In the project area (between MM 0 and MM 106.5), the following general information and recommendations were derived from the data collection, analysis, and planning:

Historic Bridges

- All 23 Historic Bridges are recommended for trail use.
- 16 Historic Bridges exist *with* the 22' wide 1940's era U.S. 1 highway still attached to the top of the bridge structure. Some of the Historic Bridges are only partially topped with the 1940's era U.S. 1 highway.
- 7 Historic Bridges exist entirely *without* the 22' wide 1940's era U.S.1 highway attached on top.
- 8 Historic Bridges are currently in use as 12' wide improved fishing piers, either fully or part of the entire Historic Bridge. Improved bridges were rehabilitated in the 1980's by FDOT.
- 8 Historic Bridges are currently in active public use (pedestrian and fishing), but are unimproved and all are 22' wide. Unimproved bridges did not receive any of the rehabilitation efforts by FDOT in the 1980's.
- 7 entire Historic Bridges are currently unused by the public.
- 7 Historic Bridges require the bridging of navigational channels including four low-level (7' to 16') and three high-level (40' to 65'). Some of these Historic Bridges have more than one break.

New U.S. 1 Highway Bridges

All new U.S. 1 Bridges are recommended to accommodate on-road cyclist users in the paved traffic shoulders per state standards. However, none of these bridges are recommended to permanently have the *trail* in the vehicular traffic shoulder, but are sometimes recommended to have *temporary trail use* in those shoulders. This temporary use of the selected shoulders for the trail would exist until the eventual bridge modifications for highway use.

- 18 new U.S. 1 highway bridges are involved in the Florida Keys Overseas Heritage Trail project.
- 10 new U.S. 1 highway bridges have an existing trail accommodating either pedestrians or bicycles, or both.
- 13 additional new trail bridges paralleling U.S. 1 are proposed (see Alternative 4).
- 2 cantilevered trail bridges are proposed where the existing shoulder is too narrow to accommodate the trail and a separate trail bridge is not feasible due to the length of the span and associated costs. These cantilevered trail bridges are considered temporary and will serve until the existing concrete highway bridge is expanded and a more permanent and feasible trail bridge can be constructed.

Overall Considerations

- A total of 43.9% of both the Historic Bridges and new U.S. 1 highway bridges are currently modified for trail use, including improved fishing piers.*
- A total of 19.5% of all bridges are in active public use, but are unimproved.*

63.4% percent of all bridges are currently in use as trails or fishing piers, including unimproved bridges currently in active public use. *

* Based on information obtained from the "Old Keys Bridges Task Force Report."

8.3.2 Historic Keys Bridges

Three Historic Bridges are listed on the National Register of Historic Places, including the Bahia Honda Bridge (# 22), the Seven Mile Bridge (# 26), and the Long Key Bridge (# 31). Monroe County, the Florida Keys Historic Society, the Florida Departments of State and Environmental Protection, and the National Park Service are considering all of the other twenty Historic Bridges for addition to the National Register as a coordinated effort with this Master Plan.

8.3.2.1 Historic Bridge Identity

Many Keys' residents have indicated in public involvement meetings that they enjoy and identify with the character of the Historic Bridges. The Historic Bridges and the newer U.S. 1 highway bridges are the most identifiable elements of the Trail in the Florida Keys.

The human habitation of the Keys was initially achieved by watercraft by the Native Americans, the Spanish and other European settlers. Later in 1912, the Florida East Coast Railroad established the original transportation linkage physically connecting the United States mainland with Key West. In the 1930's and 1940's, U.S. 1 was constructed on top of the railroad bridges including both the concrete and steel spans. Usually the old U.S. 1 highway was cantilevered off of the existing 12' wide railroad bridge to achieve the widest span possible (24' outside of guard rail dimension and 22' inside of guard rail dimension). Later, the new U.S. 1 highway bridges were constructed beside the Historic Bridges or even occasionally in the exact location as the Historic Bridge once the Historic Bridge was demolished. It has often been stated that the Historic Bridges were so difficult and expensive to demolish that it was determined more feasible to construct the new bridges beside the Historic Bridges.

As one travels throughout the Florida Keys, the Historic Bridges are a visible reminder of the evolution of the bridging of the Keys for transportation purposes. The Historic Bridges have evolved from the original railroad use, to the old U.S. 1 highway use, and now to recreational and alternative transportation.

8.3.2.2 Historic Bridge Modification Approach

In the 1980's, some of the bridges that were originally modified to accommodate the old U.S. 1 were again modified into fishing piers. In constructing old U.S. 1, a 24' wide concrete deck and guardrails were added to the original railroad structure that was usually 12' wide. The steel span of the Bahia Honda Bridge was an exception to the 12' width and was approximately 14' wide to accommodate the trains traversing within the structure (see Figure 8.3.2). To construct the fishing piers, the 22' wide old U.S. 1 deck was narrowed back to the original 12' width of the railroad and heavier concrete handrails were added.

This return to the original 12' width of the railroad on the fishing piers provides the user of the piers with increased proximity to the water accentuating the term "Overseas". The 12' width of the railroad bridge is more human scale than the 24' width of the old U.S. 1 highway modifications. The fishing piers are more reflective of the historic identity (and width) of the railroad era. The Historic Bridges have a unique and historic architectural character. It is important to preserve at least two bridges as examples of the era when they served as the highway linking the Keys to the mainland and the remarkable ingenuity of using the old railroad tracks as railing.

The Spanish Harbor Historic Bridge (# 21) has had the Old U.S 1 bridge removed and a portion of it has not been modified to the Fishing Pier with the heavy concrete handrails. The character of the original historic railroad is even more perceivable without the fishing pier handrail modifications.

> *Where feasible, this Master Plan is recommending that the Historic Bridges have the Old U.S. 1 highway bridge modifications of the 1930's and 1940's removed, exposing the original 12' width of the original Overseas Railroad. This 12' width provides the trail user with a more dramatic experience while usually providing adequate width for all recreational users. The 12' width will also further stabilize the bridge structure. It is important to preserve*

two examples of the 1940's highway bridges. One example could be the existing 1940's highway bridge from Knight's Key to Pigeon Key.

This approach also eliminates substantial shading of the aquatic vegetation by the existing 24' wide U.S. 1 highway deck. An additional 12 feet of width should be removed from various bridges, which will provide sunlight re-exposure to approximately 7.1 acres* of aquatic vegetation in these areas. * *[Figure does not include the acreage beneath 7 historic bridges that are not 24' wide for their entire length]*

While the overall approach to the Historic Bridge modifications for trail use is recommended to return the bridge width to the 1912 railroad era, there are locations where the 1930's and 1940's era 24' wide highway decking is proposed to remain. The full 24' width, as maintained in certain locations, will accommodate greater shared use recreational opportunities including both fishing and trail use. These locations will not achieve either the environmental benefits or aesthetic "Overseas" benefit of the reduction to the original 12' width. Some citizens have expressed an interest in preserving at least two examples of the 1940's highway structure and this should be considered.

Another option would be to include fishing piers or catwalks in areas that are popular for fishing uses. This would allow for the bridge width to be reduced to the original railroad width of 12' and still accommodate all user groups safely. Fishing piers have been used on other bridges, including the Gandy Bridge, part of the Friendship Trail, in Tampa, Florida. The fishing piers are wooden structures hanging lower than the actual bridge structure, so fishermen are at a different level than other trail recreational users. This eliminates the potential for user group conflicts.

Currently, fishing rods, bait boxes, tents, shopping carts, and other equipment are a hazard to cyclists on the 12' Historic Bridges. Fishing piers accommodate all user groups in a safe environment. The Gandy Bridge fishing pier is a model for the FKOHT, if this option is viable.

The Historic Bridges will need to be analyzed in the Structural Study as to whether they can accommodate fishing piers. With the reduction in width, and therefore excess weight, this should not be a problem.

8.3.2.3 Historic Bridge Information Table

The Historic Bridges have unique physical and use characteristics requiring special planning and design considerations. The following table presents information and recommendations that are common to all Historic Bridges.

Table 8.3.2

Historic Bridge Information
(Applicable to all Historic Keys Bridges)

1. **General Historic Bridge Widths –**
   - Concrete Spandrel width - 12' wide
   - Concrete Pier and Steel Beam width - 12' wide
   - Old U.S. 1 Concrete Deck width - 24' wide
2. **Navigational Requirements -**
   Adhere to all U.S. Coast Guard navigational and regulatory requirements on all new and existing design, construction, and management. Refer to Table 8.3.3, Compiled Bridge Data, for the general navigational clearances for each bridge with modifications. Always verify the latest requirements for each bridge with the U.S. Coast Guard prior to designing and constructing modifications to the bridges.
3. **Historic Structures –**
   Care should always be taken to maintain the historic structures, both concrete and steel, in the optimum condition and to utilize the Secretary of the Interior's Standards for Rehabilitation, by the U.S. Department of the Interior, National Park Service.
   - **Bridging the Non-Navigational Gaps –**
     Connect the non-navigational breaks with replicated detailing to match the contiguous historic bridge.
   - **Old U.S. 1 Highway Decking Use –**
     When using the 1940's era 22' wide highway, care should be taken to repair the supporting steel structural bracing and in the repair of the concrete highway decking.
   - **Spandrel Bridge Use -**
     Refer to Figure 8.3.1 for the new trail bridge and handrail character.
4. **Disabled Trail Users –**
   Accommodate the disabled and all multiuse trail user groups on the new Trail bridges where feasible, and provide 5% slopes with periodic level rest areas on these new bridges. Adhere to the American With Disabilities Act when feasible.
5. **Increased Use Potential –**
   The connection of currently unused bridge segments will increase opportunities for all trail user groups, fishermen, nature observers, and others.

Twenty-three historic bridges from the 1912 era Florida East Coast Railroad still exist, and most are intact. Please refer to the "Old Keys Bridges Task Force Report" to reference these bridges further.

The Pigeon Key Foundation is another valuable source on the Historic Bridges design and construction process. Pigeon Key is located on the Seven Mile Bridge at MM 45 and was once the FEC Railroad work camp. The Pigeon Key Historical Museum is located on this Key, which is defined in Figure 8.3.3.

8.3.3 Bridge Users

All of the trail users will be fully accommodated on the various bridges proposed for trail use. Existing recreational fishing uses will also be accommodated and even increased on most of the bridges. Occasionally at popular fishing locations users, the 24' width of the old U.S. 1 highway bridges will be retained to better accommodate the combination of the trail and fishing users on the same bridge. This Master Plan recommends that all of the existing fishing piers be shared for the trail connections and other recreational activities. Any potential loss of recreational fishing use on the fishing piers associated with the shared use will be offset by the opening of many miles of new bridges to both fishing and trail users. Additionally, fishing piers are an option if separating these user groups is favorable.

The final design phase of the bridges will determine the final use potential of each bridge. There may be an exception requested to the standards represented within the Americans With Disabilities Act on the higher level trail bridges over the navigational channels at the Niles Channel Historic Bridge, the Seven Mile Historic Bridge (at the Moser Channel), and at the Channel Five Historic Bridge. The final bridge design may determine that the slopes required for the 5 percent grade, coupled with the periodic level rest areas may not be feasible on the highest trail bridges over the channels. It is recommended though that every attempt be made by future trail and bridge designers to accommodate all trail and fishing users on every bridge, including the disabled.

8.3.4 New U.S. 1 Highway Bridges

The "new" U.S. 1 highway bridges were constructed beginning in the 1960's through the 1980's to replace the 1930's and 1940's era U.S. 1 highway that was built upon the abandoned railroad bridges. These bridges have a more contemporary and non-traditional character that is reflected in the high-speed concrete deck with shoulders, and the solid concrete barrier walls, which sometimes obstruct the views to the ocean. These bridges are functional and safe for vehicular traffic, and also accommodate on-road bicycling per state law. Although the new bridges informally accommodate on-road cycling, they are not designed for shared trail traffic, which is usually a mix of slower traveling and varying ages of trail users. Often the U.S. 1 bridges cross wide expanses of water where the safety of vehicular users is paramount. This Master Plan does not recommend any shared use trail traffic on the new U.S. 1 highway bridges, except in temporary situations as noted in the bridge recommendations. If the FDEP Structural Engineering Study recommends that either the Bahia Honda or the Seven Mile Bridge are beyond repair, then alternative designs should be studied using the existing concrete piers and replicated beams of a historically accurate nature.

8.3.5 Compiled Bridge Data Table

The following table presents compiled bridge data for the Upper, Middle, and Lower Keys. The data was compiled from the planning team's own field investigations and from the following documents.

- "Old Keys Bridges Task Force Report to the Governor" (February 1998)
- "Monroe County Bicycle and Pedestrian Plan" (October 1997)
- U.S. Coast Guard "Bridges Over the Navigable Waters of the United States - Atlantic Coast" (May 1984)

All bridge numbers correspond with the Monroe County Bicycle and Pedestrian Plan's numbering system for the various bridge crossings of the waterways. Where the Historic Bridges still exist, the bridge numbers are used for the Historic Bridges verses the new U.S. 1 highway bridges. All measurements on the table are approximate and should be verified by field survey prior to the future design phases of the trail project. Where measurements are not derived from the previous studies, the planning team used REDI maps provided by Monroe County for scaled measurements.

Compiled Bridge Data

Lower Keys Bridges

Bridge #	Bridge Name Bold = Historic Bridge Not Bold = New U.S. 1	US 1 Mile Marker	Bridge Span (ft.) US 1 A	US 1 B	Hist A	Hist B	Existing Bridge Type	Navig. Breaks Channel Horiz Ln	Vert. Height	Trail Bridge Surface Position to US 1	Existing Width	Existing Trail	Unimpv. Use
0	Salt Run Bridge	2.3		360			New US 1			Bay	8'	360	
1	Cow Key Bridge (Existing Trail)	4.1		359			New US 1			Bay	varies	359	
2	Boca Chica Bridge (Exist Trail)	6	2645				New US 1			Atlantic	5'	2645	
3	**Rockland Channel Bridge**	**9.5**			**1289**		**Spandral**			**Atlantic**	**22' ***		
4	**Shark Channel Bridge**	**11.6**			**2070**		**Spandral**			**Atlantic**	**22' ***		
5	**Saddlebunch No. 5 Bridge**	**12.7**			**878**		**Spandral**			**Atlantic**	**22' ***		
6	**Saddlebunch No. 4 Bridge**	**13**			**878**		**Spandral**			**Atlantic**	**22' ***		
7	**Saddlebunch No. 3 Bridge**	**14.2**			**738**		**Spandral**			**Atlantic**	**22' ***		
8	**Saddlebunch No. 2 Bridge**	**14.5**			**632**		**Spandral**			**Atlantic**	**22' ***		
9	**Lower Sugarloaf Bridge**	**15.6**			**1288**		**Spandral**			**Atlantic**	**22' ***		**1288**
10	Harris Channel Bridge	16.5	438				New US 1			NA	(10' S)		
11	Harris Gap Channel Bridge	17.5	111				New US 1			NA	(10' S)		
12	North Harris Channel Bridge	17.7	433				New US 1			NA	(10' S)		
13	**Park Channel Bridge**	**18.6**			**820**		**Spandral**			**Atlantic**	**22' ***		**820**
14	**Bow Channel Bridge**	**20.1**			**1490**		**Spandral**			**Atlantic**	**22' ***		**1490**
15	**Kemp Channel Bridge**	**23.5**				**1120**	**Spandral**			**Atlantic**	**12'**		
	Segment A										12'		
	Break 1 (Non-Navig)							*24'*					
	Segment B										12'		
	Break 2 (Navig)							***89'***	***15'***				
	Segment C										12'		
	Break 3 (Navig)							***24'***	***7'***				
	Fishing Pier										12'	410	
16	**Niles Channel Bridge**	**25.3**				**4557**	**Spandral**			**Atlantic**	**22' ***		**4464**
	Segment A										22' *		
	Break 1 (Navig)							***93'***	***40'***				
	Segment B										22' *		
17	Torch Ramrod Bridge	27.4	655				New US 1			NA	(10' S)		
18	Torch Channel Bridge	28	818				New US 1			NA	(10' S)		
19	**South Pine Channel Bridge**	**28.5**				**930**	**Spandral**			**Atlantic**	**22' ***		**841**
	Segment A										22' *		
	Break 1 (Navig)							***89'***	***15'***				
	Segment B										22' *		
20	Pine Channel Bridge	29.5	744				New US 1			NA	(10' S)		
21	**Spanish Harbor Bridge**	**33**				**3483**	**Spandral**			**Bay**	**12'**		
	Segment A												
	Break 1 (Navig)							***34'***	***10'***				
	Segment B												
	Break 2 (Navig)							***82'***	***16'***				
	Fishing Pier											180	
22	**Bahia Honda Bridge [N.R.]**	**35**				**6734**	**Pier/Steel**			**Atlantic**	**22' ***		
	Break 1							*90'*	*20'*				
	Segment A										22' *		
	Break 2 (Park Navig)							***90'***	***40'***				
	Segment B (Prk Ovrlk)										22' *	600	
23	**Ohio/ Bahia Honda Bridge**	**38.4**			**1107**		**Spandral**			**Bay**	**22' ***		**1107**
	LOWER KEYS SUBTOTALS		**5844**	**359**	**11190**	**16824**						**4554**	**10010**

(Please see next page for abbreviations and other clarifications)

Compiled Bridge Data

Middle Keys Bridges

Bridge #	Bridge Name Bold = Historic Bridge Not Bold = New U.S. 1	US 1 Mile Marker	Bridge Span (ft.) US 1 A	US 1 B	Hist A	Hist B	Existing Bridge Type	Navig. Breaks Channel Horiz Ln	Vert. Height	Trail Bridge Surface Position to US 1	Existing Width	Existing Trail	Unimpv. Use
24	**Ohio/ Missouri Bridge**	**39**			**1476**		**Spandral**			**Bay**	**22' ***		**1476**
25	**Missouri/ Little Duck Bridge**	**39.6**			**902**		**Spandral**			**Bay**	**22' ***		**902**
26	**Seven Mile Bridge [N.R.]**	**40 - 47**				**36960**	**Combin**			**Bay**			
	Fishing Pier (Segment A)						Spandral				12'	6000	
	Break 1 (Non-Navig)							*1 Arch*					
	Segment B						Combin				22' *		
	Break 2 (Navig)							***90'***	***65'***				
	Segment C						Pier/Steel				22' *		
	Break 3 (Non-Navig)							*1 Beam*					
	Segment D (Existing Trail)						Pier/Steel				22' *	**11616**	
27	Vaca Key Cut Bridge	52.9		449			New US 1			Bay	8'	449	
28	**Tom's Harbor Chnl Bridge**	**60.7**			**1619**		**Spandral**			**Atlantic**	**12'**	**1519**	
	Fishing Pier (Entire)												
29	**Tom's Harbor Cut Bridge**	**61.5**			**1333**		**Spandral**			**Atlantic**	**12'**	**1333**	
	Fishing Pier (Entire)												
30	Duck Key Viaduct (Spur)	61.3											
31	**Long Key Bridge [N.R.]**	**63.2**			**12135**		**Spandral**			**Atlantic**	**12'**	**12135**	
	Fishing Pier (Entire)												
32	**Channel Five Bridge**	**71**				**4924**	**Spandral**			**Bay**			**0**
	Fishing Pier (Seg A)										12'	2200	
	Break 1 (Navig)							***94'***	***65'***				
	Segment B										12'		
	Break 2 (Non-Navig)							*1 Arch*					
33	**Channel Two Bridge**	**72.7**			**1882**		**Spandral**			**Bay**	**12'**	**1882**	
	Fishing Pier (Entire)												
	MIDDLE KEYS SUBTOTALS		**0**	**449**	**19247**	**41884**						**36134**	**2378**

NOTES:

1) Historic Keys Bridge data was collected from the "Old Keys Bridges Task Force Report" document (February 1998).
2) U.S. 1 Highway Bridge data and bridge numbers are from the "Monroe County Bicycle and Pedestrian Plan" (October 1997).
3) Navigational information obtained from the "Bridges Over the Navigable Waters of the U.S.", US Coast Guard (May 1984).
4) **Abbreviations:** Ex/Exist=Existing; [N.R.]=National Register of Historic Places; Navig=Navigation; S=Shoulder; Combin=Combination
5) Underlined Numbers = Approximated by MDA from Monroe County TRW REDI Property Data Maps and other sources
6) (8' S) = Existing U.S. 1 Highway shoulder from Table 4 "Monroe County Bicycle and Pedestrian Plan"

* 22' measurement is the approximate width of the bridge minus the 1' guardrail on each side.

Compiled Bridge Data

Upper Keys Bridges

Bridge #	Bridge Name Bold = Historic Bridge Not Bold = New U.S. 1	US 1 Mile Marker	Bridge Span (ft.) US 1 A	US 1 B	Hist A	Hist B	Existing Bridge Type	Navig. Breaks Channel Horiz Ln	Vert. Height	Trail Bridge Surface Position to US 1	Existing Width	Existing Trail	Unimpv. Use
34	Lignumvitae Channel Bridge	77.6	919				New US 1			Atlantic	(10' S)	919	
35	Indian Key Channel Bridge	78	2043				New US 1			Atlantic	(6' S)	2043	
36	Tea Table Key Channel Bridge	79	739				New US 1			Atlantic	(10' S)	739	
37	Tea Table Relief Bridge	79.7	226				New US 1			Atlantic	(10' S)	226	
38	Whale Harbor Channel Bridge	83.8	665				New US 1			NA	(8' S)		
39	Snake Creek Drawbridge	85.8	1452				New US 1			NA	(8' S)		
40	Tavernier Creek Bridge (Ex Trail)	90.9		322			New US 1			Atlantic	6'	322	
41	Key Largo Cut Bridge (Ex Trail)	103.6		120			New US 1			Atlantic	6'	120	
	UPPER KEYS SUBTOTALS		**6044**	**442**	**0**	**0**						**4369**	**0**

NOTES:

1) Historic Keys Bridge data was collected from the "Old Keys Bridges Task Force Report" document (February 1998).
2) U.S. 1 Highway Bridge data and bridge numbers are from the "Monroe County Bicycle and Pedestrian Plan" (October 1997).
3) Navigational information obtained from the "Bridges Over the Navigable Waters of the U.S.", US Coast Guard (May 1984).
4) **Abbreviations:** Ex/Exist=Existing; [N.R.]=National Register of Historic Places; Navig=Navigation; S=Shoulder; Combin=Combination
5) Underlined Numbers = Approximated by MDA from Monroe County TRW REDI Property Data Maps and other sources
6) (8' S) = Existing U.S. 1 Highway shoulder from Table 4 "Monroe County Bicycle and Pedestrian Plan"

* 22' measurement is the approximate width of the bridge minus the 1' guardrail on each side.

8.3.6 Bridge Alternatives

For this Master Plan, it is assumed that the trail will use all existing Historic Bridges. Repair and maintenance of those bridges is recommended to bring them up to adequate condition for trail and fishing use.

The current Structural Engineering Study by FDEP will provide the determination on the structural stability of each bridge for trail and fishing use. Since the Historic Bridges were originally designed for railroad use and later adapted for U.S. 1 vehicular use, for this Master Plan it is assumed that they are in adequate structural condition to permit full trail and fishing use.

There are two bridges on the Historic Register that are not already repaired, the Bahia Honda and the Seven Mile Bridge. It is assumed that these Historic Bridges will be repaired to maintain the bridges in an adequate condition for the new trail and fishing use. The Bahia Honda Historic Bridge already has two spans recently repaired/restored and in use as a scenic overlook on the eastern end of the bridge. The Seven Mile Bridge currently has a 2.2-mile segment of the Historic Bridge in use for both vehicular and trail traffic on the eastern end of the bridge connecting Pigeon Key to Knights Key. These two examples provide precedent for the remainder of the Historic Bridges on the National Register to be repaired and placed in use for trail and fishing activities.

Where the Historic Bridges have been completely removed and only the newer U.S. 1 highway bridges remain, two alternative use options have been explored to accommodate the interconnected Trail across those water bodies (see Table 8.3.1). Alternative 3 provides for a new 12' wide trail bridge cantilevered off of one side of the current highway bridge. Alternative 4 provides for a new and separated 12' wide trail bridge positioned beside the current highway bridge. Both alternative solutions have been utilized regularly throughout the United States and other countries. Generally, Alternative 4 (a new trail bridge) is desirable and recommended on the shorter spans and Alternative 3 (the cantilevered bridge) is recommended on the longer spans. The guiding factors in the selection of Alternative 3 or 4 for each individual location are cost, aesthetics, and safety.

There are three higher level navigational clearance requirements for the Intracoastal Waterway including:

- # 16 Niles Channel Historic Bridge (40' height)
- # 26 Seven Mile Historic Bridge (65' height)
- # 32 Channel Five Historic Bridge (65' height)

Each of these Historic Bridges may require different solutions to span the breaks, which are detailed further in the Bridge Alternatives and Recommendations section later in this chapter.

The Historic Bahia Honda Bridge currently has a navigational safe harbor access at the eastern end of the bridge prior to the scenic overlook. Sailboats and other water craft access the safe harbor at this location (see Figure 8.3.2) It is recommended to maintain this navigational entrance into the park to a maximum height while spanning and connecting the existing bridge break for trail and fishing use.

Where there are no existing Historic Bridges remaining, it is generally recommended that new trail bridges be added on the shorter bridge spans. An example of this is the Torch Ramrod Bridge where the length is approximately 655' and there are existing railroad concrete bulkheads that would make the implementation of a new trail bridge feasible. Prior to a new trail bridge being added the recommendation is a temporary barrier wall to separate the existing highway paved shoulder for trail use (see Table 8.3.4 Bridge Connection Alternatives).

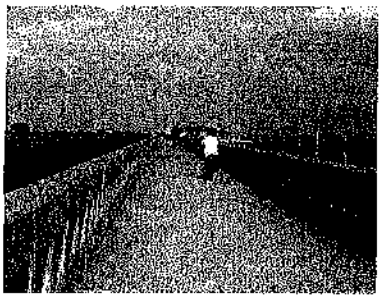
On the longer bridge spans, it is generally recommended that cantilevered trail bridges be temporarily added to the existing bridge structures until that existing U.S. 1 Bridge is upgraded. When the bridge is upgraded, an additional width for the bridge should be added. An example of this is the Boca Chica Bridge.

The Master Plan Project Goal on Safety (see Section 4.0) reflects the desire of the public to separate the Trail from U.S. 1 vehicular traffic. It is not recommended that a trail be permanently placed within the bridge paved shoulder. Single or two-way trail traffic should always be a minimum of 12' from the outside traffic lane to help assure user safety and minimum comfort. U.S. 1 traffic is generally too intense for user comfort and safety to have the trail any closer to the highway. Barrier walls, either permanent or temporary are often considered traffic hazards, since a vehicle could impact that wall and could potentially rebound into oncoming traffic.

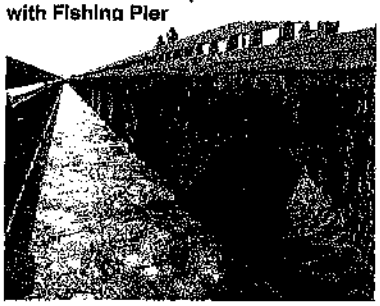
Table 8.3.4 Bridge Connection Alternatives

The following table lists the 5 bridge alternatives considered in the Master Plan for both the Historic Bridges and the new U.S. 1 highway bridges. These alternatives are integral to the planning team's research into existing conditions, a safe and connected trail alignment, historical character, long-term cost and management requirements. These alternatives are used in the recommendations for each bridge in the Bridge Alternatives and Recommendations following the table.

Table 8.3.4
Bridge Connection Alternatives (1 - 5)
Historic and New Bridges



12' Wide Historic Spandrel with Fishing Pier



Long Key Historic Bridge Conversion to Fishing Pier

1 Bridge Connection Alternative 1
(Existing 12' wide historic Spandrel)

Cut the 22' wide old U.S. 1 highway bridge down to 12' width, the original FEC Railroad arched Spandrel width, for the shared use trail bridge. Connect the trail across all of the existing breaks and replicate the missing historic arched Spandrels. Where necessary, provide a new elevated 12' wide trail bridge spanning navigational channels.

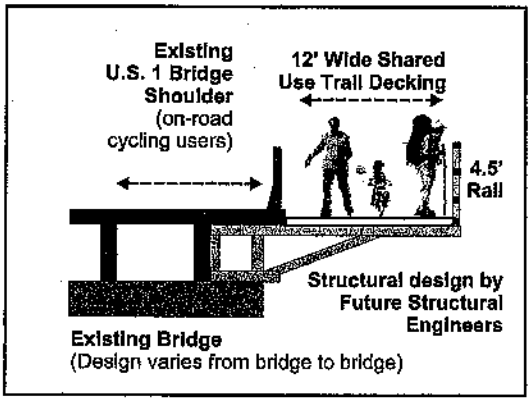
FISHING CATWALKS:
The fishing use of the bridges cut down to the historical 12' width is recommended to be accommodated with fishing "catwalks" similar to the Gandy Bridge in Pinellas County. The design phase will determine the specific design of the catwalks relative to the historical bridge structural design.

HISTORICAL PERIOD SELECTION:
The Department of State has recommended that a specific "historic period" be selected for bridge preservation. The 12' width of the original Florida East Coast Railroad bridges (except Bahia Honda) has been selected as the preferred width for all or most bridge modifications, and new bridges. The 12' width is also the preferred width for the trail throughout the Florida Keys, except near urban areas where the "Optimal" (see Section 8.1 "Optimal Width" cross section) width will allow for greater user comfort. The 12' width is recommended to occur on most existing Historic Bridges where the 24' wide old U.S. 1 highway decking was added. The reduction of these 24' wide bridges to the 12' width has already been ccomplished on all of the Fishing Pier conversions, as seen in the photograph to the left. This width reduction will provide environmental benefits including a reduction in the shading of sea grasses. The width reduction could potentially be used for mitigation of the boardwalks.

22' Wide Old U.S. 1 Bridge Deck

2 Bridge Connection Alternative 2
(Existing historic Spandrel with old U.S. 1 as the Trail bridge)

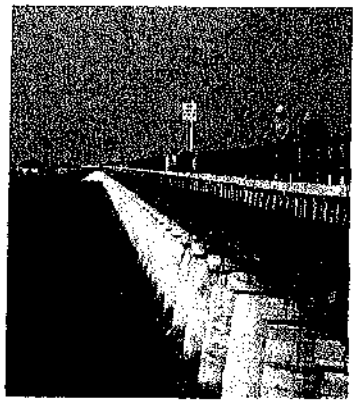
Use the existing 22' wide old U.S. 1 highway bridge as the shared use trail bridge deck, without reducing the width. Where necessary, provide a new elevated 12' wide trail bridge spanning the navigational channels. In all areas beneath the new elevated bridges over the channels, apply Connection Alternative 1 and maintain a concrete decking over the historic Spandrels at 12' wide for fishing recreation.



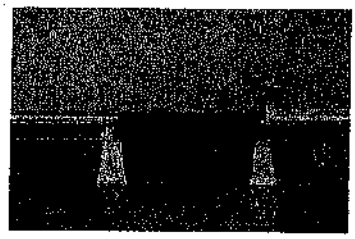
3 Bridge Connection Alternative 3
(New cantilevered 12' trail on the new U.S. 1 highway bridge)

Provide a temporary cantilevered trail bridge on the trail side of U.S. 1, until the new U.S. 1 highway bridge is upgraded, at which time both the highway and trail bridge would be upgraded as two separate new bridges. Following the construction of the new bridges, the cantilevered bridge would be re-used elsewhere.

Note: If the final bridge design includes additional structures, the additional areas over the water will be considered an impact that must be addressed during the permitting process.



Fishermen on the Seven Mile Bridge

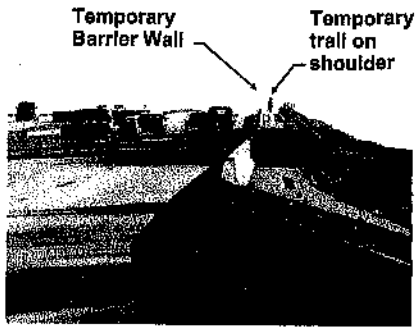


Seven Mile Bridge Gap

4 Bridge Connection Alternative 4

(New separated trail bridge)

Provide a new and separated shared use trail bridge aligned parallel with the new U.S. 1 highway bridge, but positioned the maximum distance away from U.S. 1. Maintain the historic character present in the Historic Bridges in all new bridge design. The photographs are provided to illustrate the concrete pier and steel beam structure present on the Seven Mile Bridge. The new beams should replicate the historic beams although the materials may vary. Accommodations should be made for maximum heights for water craft traffic.



U.S. 17 Temporary Trail Bridge
Clay County, Florida

5 Bridge Connection Alternative 5

(Temporary use of the existing U.S. 1 highway bridge shoulders)

Use the existing U.S. 1 highway bridge shoulders to accommodate an 8' wide, 2-way bicycle trail. Use of "temporary" barrier walls to separate the trail from vehicular traffic until the current U.S. 1 highway bridge is upgraded, at which time both the highway and trail bridge would be upgraded as two separate new bridges. The temporary barrier walls could then be re-used elsewhere.

Note: If the final bridge design includes additional structures, the additional areas over the water will be considered an impact that must be addressed during the permitting process.

8.3.6.1 Bridge Alternatives and Recommendations

The following alternatives and recommendations are provided to accommodate trail use on all of the Keys Bridges including both the Historic Bridges and the Old U.S. 1 highway bridges. The alternatives and recommendations are describing the optimum solutions at this date and are not inclusive of the recently initiated FDEP/FDOT Structural Bridge Study of the Historic Bridges. The findings in the FDEP study will add greater insight into the structural stability of the historic piers, spandrels and the steel beams. This study will allow for more detailed recommendations on the potential to repair the historic structures as has already been accomplished on some bridges. The recommendations are based on the optimum build-out condition and are reflective of the project goals concerning a safe trail separated from U.S. 1 and the full use of the Historic Bridges.

It is assumed that as per previous studies, a cantilevered bridge (attached to a concrete bridge structure) is comparable in expense as a new lightweight trail bridge, and is an impermanent steel structure requiring much maintenance in saltwater environments. It is assumed that a new separated trail bridge would be constructed of traditionally designed concrete that could withstand the corrosive saltwater conditions and could withstand major hurricanes.

It is also assumed that the bridges including both the Historic Bridges and the new trail bridges would generally reflect the railroad era 12' wide character verses the 1940's era U.S. 1 highway bridge detailing, thus evoking a greater sense of an "Overseas Heritage" trail. ***It is assumed that the demolition of any Historic Bridge is not an acceptable alternative and that the repair or replication of the Historic Bridges is the desired recommendation*** (based on the Project Goals resulting from public involvement). At least two bridges representing the conversion to a highway should be preserved to highlight the resilience of the community to rebuild after the devastation of the 1935 hurricane and the depression. This should include the preservation of the railings made of the old railroad rails (as seen on the Historic Seven Mile Bridge).

To use this section, the bridge numbers correspond to the "Monroe County Bicycle & Pedestrian Plan" compilation of bridges in Table 4, beginning at Mile Marker 0, Key West and proceeding north to Key Largo, MM 106.5. The alternatives and recommendations are sectioned into the Lower, Middle, and Upper Keys. The recommendations reflect only the alternatives listed in Table 8.3.4, Bridge Connection Alternatives.

LOWER KEYS BRIDGES

Bridge Number — ***Bridge Name, Alternatives and Recommendation for Trail Use***

 # 0 Salt Run U.S. 1 Highway Bridge

A functional bicycle path exists Bayside of U.S. 1 and is a part of the Key West trail system

Bridge Recommendation:

No functional changes are recommended

[Note: this bridge was not listed in the Monroe County Bicycle and Pedestrian Plan]

 # 1 Cow Key U.S. 1 Highway Bridge

A functional bicycle path exists Bayside of U.S. 1 and is a part of the Key West trail system

Bridge Recommendation:

No functional changes are recommended

 # 2 Boca Chica U.S. 1 Highway Bridge

A pedestrian walkway exists on the Atlantic side of the U.S. 1 Bridge but there is no functional bicycle path

Bridge Alternatives:

- Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)

Bridge Recommendation:

- Alternative 3 (cantilevered trail bridge) - provide a cantilevered 8' wide 2-way bicycle path adjacent to the existing pedestrian walkway on the Atlantic side at approximately 8 feet in width (bicycle path portion), provided that the bridge can structurally handle the load.

- The cantilevered bicycle facility should be provided prior to trail traffic becoming too intensive on the existing pedestrian walkway to be safely accommodated.
- It is not recommended that the existing highway shoulder be used as a temporary route for multiuse trail traffic due to the length of the bridge and dangerous traffic conditions.
- Until the cantilevered bicycle trail is added, bicyclists are recommended to dismount and walk the existing 5' wide pedestrian walkway, and yield to all pedestrians and the disabled.
- This cantilevered facility is recommended to function in conjunction with the proposed trail underpass at the south end of the bridge.

 # 3 ROCKLAND CHANNEL HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 4 SHARK CHANNEL HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 5 SADDLEBUNCH NO. 5 HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 6 SADDLEBUNCH NO. 4 HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 7 SADDLEBUNCH NO. 3 HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 8 SADDLEBUNCH NO. 2 HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 9 LOWER SUGARLOAF HISTORIC BRIDGE
Bridge Alternatives:
- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:
- Alternative 1 (Historic Bridge 12' wide)

 # 10 Harris Channel U.S. 1 Highway Bridge
Bridge Alternatives:
- Alternative 3 (cantilevered trail bridge), and Alternative 4 (new separated trail bridge)

Bridge Recommendation:
- Alternative 4 (new separated trail bridge) with a temporary bridge shoulder trail as an interim connection solution

 # 11 Harris Gap Channel U.S. 1 Highway Bridge
Bridge Alternatives:
- Alternative 3 (cantilevered trail bridge), and Alternative 4 (new separated trail bridge)

Bridge Recommendation:
- Alternative 4 (new separated trail bridge) with a temporary bridge shoulder trail as an interim connection solution

 # 12 North Harris Channel U.S. 1 Highway Bridge

Bridge Alternatives:

- Alternative 3 (cantilevered trail bridge), and Alternative 4 (new separated trail bridge)

Bridge Recommendation:

- Alternative 4 (new separated trail bridge) with a temporary bridge shoulder trail as an interim connection solution

 # 13 PARK CHANNEL HISTORIC BRIDGE

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide)

 # 14 BOW CHANNEL HISTORIC BRIDGE

(Heavy fishing use)

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 2 (Historic Bridge 22' wide) to accommodate heavy fishing use.

 # 15 KEMP CHANNEL HISTORIC BRIDGE

(Unconnected)

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide) with connections of the existing breaks above the low navigational heights

 # 16 NILES CHANNEL HISTORIC BRIDGE

(Unconnected)

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide) with a connection of the existing break above the high 40' navigational height

 # 17 Torch Ramrod U.S. 1 Highway Bridge

Bridge Alternatives:

- Alternative 3 (cantilevered trail bridge), and Alternative 4 (new separated trail bridge)

Bridge Recommendation:

- Alternative 4 (new separated trail bridge) using existing railroad bulkheads with a temporary bridge shoulder trail as an interim connection solution

 # 18 Torch Channel U.S. 1 Highway Bridge

Bridge Alternatives:

- Alternative 3 (cantilevered trail bridge), and Alternative 4 (new separated trail bridge)

Bridge Recommendation:

- Alternative 4 (new separated trail bridge) using existing railroad bulkheads with a temporary bridge shoulder trail as an interim connection solution

 # 19 SOUTH PINE CHANNEL HISTORIC BRIDGE

(Unconnected)

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide) with connections of the existing breaks above the low navigational heights

 # 20 Pine Channel U.S. 1 Highway Bridge

Bridge Alternatives:

- Alternative 3 (cantilevered trail bridge), and Alternative 4 (new separated trail bridge)

Bridge Recommendation:

- Alternative 4 (new separated trail bridge) using existing railroad bulkheads with a temporary bridge shoulder trail as an interim connection solution

 # 21 SPANISH HARBOR HISTORIC BRIDGE

(Unconnected)

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide), Alternative 2 (Historic Bridge 22' wide) or Alternative 3 (Cantilevered 12' trail on new U.S. 1 highway bridge)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide) with connections of the existing breaks above the low navigational heights
- Alternative 3 Cantilevered Bridge

Two recommendations are made because there is an opportunity to create a more sustainable trail. The Spanish Harbor Bridge is used by waterfowl as a resting area. It is recommended that FDEP work with the Audubon Society to either create a resting area if the old spandrel bridge is used or to cantilever the trail off the new U.S. 1 bridge.

 # 22 BAHIA HONDA HISTORIC BRIDGE

(Unconnected)

(LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES)

Bridge Alternatives: (see Figure 8.3.2, Bridge Analysis)

- There are no alternatives presented due to the following reasons:

The Bahia Honda Historic Bridge is on the National Register and it is observed that the historic railroad bridge structure can probably be repaired as was previously accomplished by the State of Florida in Segment B. Segment B is the recently replicated old U.S. 1 and Scenic Overlook atop the historic railroad steel bridge spans.

The potential alternatives of either a cantilevered trail on the current U.S. 1 highway bridge, or the expansion of that same highway bridge with an additional concrete 12' wide trail lane, does not address the existing historic bridge alignment or potential use of that bridge structure (piers and span).

Additionally, the potential demolition expenses and environmental impact are a factor not quantified in this Master Plan but should be ultimately weighed in the final recommendation. It is expected that the current FDEP/FDOT Structural Bridge Study will address those issues specific to this bridge. If it is determined in this subsequent structural analysis that the existing steel structure is not repairable, then there are several other spanning options available on the existing Historic Bridge alignment, probably using the historic concrete piers. A fall back alternative could be the use of new steel or concrete spans, or a solution replicating the original historic steel spans sized for trail use, or other alternatives to be addressed in future bridge development phases.

Bridge Recommendation (Conceptual):

- See Figure 8.3.2 for specific recommendations on both bridge breaks.
- This is the last remaining steel span structure of its type in the Florida Keys from the original railroad era. The repair, or even replication, of the existing steel spans is desired to maintain the integrity of the historic bridge, which is listed on the National Register of Historic Places.

MIDDLE KEYS BRIDGES

Bridge Number ***Bridge Name, Alternatives and Recommendation for Trail Use***

 # 23 OHIO/ BAHIA HONDA HISTORIC BRIDGE

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide)

 # 24 OHIO/ MISSOURI HISTORIC BRIDGE

(Heavy fishing use)

Bridge Alternatives:

- Alternatives 1 (Historic Bridge 12' wide) and 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 2 (Historic Bridge 22' wide) to maintain heavy fishing use

 # 25 MISSOURI/ LITTLE DUCK HISTORIC BRIDGE

Bridge Alternatives:

- Alternative 1 (Historic Bridge 12' wide) and Alternative 2 (Historic Bridge 22' wide)

Bridge Recommendation:

- Alternative 1 (Historic Bridge 12' wide)

 # 26 SEVEN MILE HISTORIC BRIDGE

(Unconnected)

(LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES)

Bridge Alternatives:

- There are no alternatives presented due to the following reasons:

The Seven Mile Bridge is on the National Register and it is assumed that the entire historic railroad bridge structure can be repaired, as in Segment C, the Knights Key Viaduct, which is now used as a trial bridge (See Figure 8.3.3, Bridge Analysis) with vehicular traffic servicing Pigeon Key. The alternatives of either a cantilevered trail on the U.S. 1 highway bridge, or the potential demolition of the historic bridge, are not considered due to their costs, highway safety considerations, environmental impact, and the general undesirability of the alternatives relative to the preservation of the historic bridge. A cantilevered trail bridge on the Seven Mile Bridge would have to span both sides in order to maintain the structural balance of the existing U.S. 1 highway bridge. This bridge deserves the continued analysis as will be provided in the Structural Engineering Study by FDEP.

Bridge Recommendation:

- See Figure 8.3.3 for specific recommendations on all three bridge breaks.
- Through the active public involvement process and research by the planning team, a potential alternative at Break 2 to the high level trail bridge solution is under consideration. The potential lower cost solution is now in use at the Milton Whiting Field in Pensacola, where a shared use trail crosses the airfield. Motion sensors are activated when a trail user wishes to cross the airfield. The motion sensors are able to sense any oncoming airplanes and activate warning devices that prohibit trail users from accessing the field. A similar concept could be developed at this and other navigational channels where sensors could detect oncoming watercraft traffic. If no traffic were present, a lightweight trail bridge or gondola/ferry could span the navigational channel to provide the needed trail connection. This could be operational during non-prime hours where watercraft traffic is light.

 # 27 Vaca Key Cut U.S. 1 Highway Bridge

(A functional bicycle trail exists Bayside of U.S. 1 and is integral to the cities of Marathon and Key Colony bicycle and pedestrian system and the Florida Keys Overseas Heritage Trail)

Bridge Recommendation:

- No functional changes are recommended

 # 28 TOM'S HARBOR CHANNEL HISTORIC BRIDGE

Bridge Alternatives:

- Bridges have been improved as fishing piers

Bridge Recommendation:

- No functional changes are recommended

 # 29 TOM'S HARBOR CUT HISTORIC BRIDGE

Bridge Alternatives:

- Bridges have been improved as fishing piers

Bridge Recommendation:

- No functional changes are recommended

 # 30 Duck Key Viaduct U.S. 1 Highway Bridge

This bridge is the local access bridge to Duck Key and is not included in the Overseas Heritage Trail

 # 31 LONG KEY HISTORIC BRIDGE

(Listed on the National Register of Historic Places)

Bridge Alternatives:

- Bridge has been improved as a fishing pier

Bridge Recommendation:

- No functional changes are recommended

 # 32 CHANNEL FIVE HISTORIC BRIDGE

(Unconnected)

- **Bridge Alternatives:**
  Alternative 1 (Historic Bridge 12' wide)
- **Bridge Recommendation:**
  Alternative 1 (Historic Bridge 12' wide)
- This is a high-level (65' high) navigational channel clearance requirement. As with both the Seven Mile Historic Bridge and Niles Channel Historic Bridge, this bridge requires an innovative connection solution at the channel. Through the active public involvement process and research by the planning team, a potential alternative at Break 2 to the high level trail bridge solution is under consideration. The potential lower cost solution is now in use at the Milton Whiting Field in Pensacola, where a shared use trail crosses the airfield. Motion sensors are activated when a trail user wishes to cross the airfield. The motion sensors are able to sense any oncoming airplanes and activate warning devices that prohibit trail users from accessing the field. A similar concept could be developed at this and other navigational channels where sensors could detect oncoming watercraft traffic. If no traffic were present, a lightweight trail bridge or gondola/ferry could span the navigational channel to provide the needed trail connection. This could be operational during non-prime hours where watercraft traffic is light.

 # 33 CHANNEL TWO HISTORIC BRIDGE

- **Bridge Alternatives:**
  Bridge has been improved as a fishing pier
- **Bridge Recommendation:**
  No functional changes are recommended

UPPER KEYS BRIDGES

Bridge Number ***Bridge Name, Alternatives and Recommendation for Trail Use***

 # 34 Lignumvitae Channel U.S. 1 Highway Bridge

- **Bridge Alternatives:**
  Alternative 5 (temporary shoulder trail) exists, consider Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)
- **Bridge Recommendation:**
  Alternative 5 (temporary shoulder trail), evolving to Alternative 4 (new separated trail bridge)
- The U.S. 1 highway bridge shoulders are currently unsigned and are being used as a two-way bicycle trail, without the benefits of barrier wall protection (as shown in Alternative 5) between the vehicular traffic and the trail traffic.[1]
- Immediately upgrade existing conditions to meet Alternative 5 safety standards for trail users

 # 35 Indian Key Channel U.S. 1 Highway Bridge

- **Bridge Alternatives:**
  Alternative 5 (temporary shoulder trail) is existing, consider Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)
- **Bridge Recommendation:**
  Alternative 5 (temporary shoulder trail), evolving to Alternative 4 (new separated trail bridge)
- The U.S. 1 highway bridge shoulders are currently unsigned and are being used as a two-way bicycle trail, without the benefits of barrier wall protection (as shown in Alternative 5) between the vehicular traffic and the trail traffic.[1]
- Immediately upgrade existing conditions to meet Alternative 5 safety standards for trail users

 # 36 Tea Table Key Channel U.S. 1 Highway Bridge

- **Bridge Alternatives:**
  Alternative 5 (temporary shoulder trail) is existing, consider

Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)
- **Bridge Recommendation:** Alternative 5 (temporary shoulder trail), evolving to Alternative 4 (new separated trail bridge)
- The U.S. 1 highway bridge shoulders are currently unsigned and are being used as a two-way bicycle trail, without the benefits of barrier wall protection (as shown in Alternative 5) between the vehicular traffic and the trail traffic.1
- Immediately upgrade existing conditions to meet Alternative 5 safety standards for trail users

 # 37 Tea Table Relief Channel U.S. 1 Highway Bridge
- **Bridge Alternatives:** Alternative 5 (temporary shoulder trail) is existing, consider Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)
- **Bridge Recommendation:** Alternative 5 (temporary shoulder trail), evolving to 4 (new separated trail bridge)
- The U.S. 1 highway bridge shoulders are currently unsigned and are being used as a two-way bicycle trail, without the benefits of barrier wall protection (as shown in Alternative 5) between the vehicular traffic and the trail traffic.1
- Immediately upgrade existing conditions to meet Alternative 5 safety standards for trail users

 # 38 Whale Harbor Channel U.S. 1 Highway Bridge
(No trail currently exists.)
- **Bridge Alternatives:** Alternatives 3 (cantilevered trail bridge), 4 (new separated trail bridge), and 5 (temporary shoulder trail)
- **Bridge Recommendation:** Alternative 5 (temporary shoulder trail), evolving to Alternative 4 (new separated trail bridge)

 # 39 Snake Creek U.S. 1 Highway Drawbridge
(No trail currently exists.)
- **Bridge Alternatives:** Alternative 3 (cantilevered trail bridge)
- **Bridge Recommendation:** Alternative 3 (cantilevered trail bridge)
- Verify feasibility of attaching cantilevered trail to draw bridge and how that affects the balance of the drawbridge.
- The spans leading to the navigational channel are recommended as Alternative 4 (new separated trail bridge) due to the length of the bridge leading to the drawbridge.

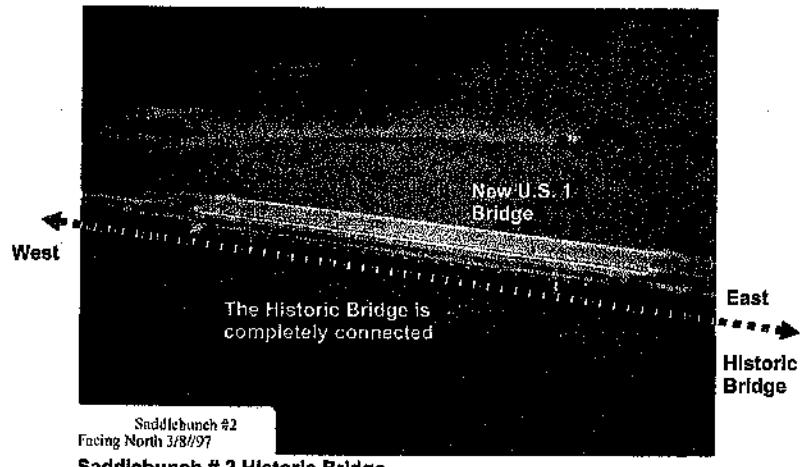
 # 40 Tavernier Creek U.S. 1 Highway Bridge
(A 6' wide pedestrian path exists on the Atlantic side of U.S. 1)
- **Bridge Alternatives:** Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)
- **Bridge Recommendation:** Alternative 4 (new separated trail bridge)
- The 6' wide highway shoulder is too narrow for Alternative 5 as an interim solution

 # 41 Key Largo Cut U.S. 1 Highway Bridge
(A 6' wide pedestrian path exists on the Atlantic side of U.S. 1)
- **Bridge Alternatives:** Alternatives 3 (cantilevered trail bridge) and 4 (new separated trail bridge)
- **Bridge Recommendation:** Alternative 4 (new separated trail bridge)
- The 6' wide highway shoulder is too narrow for Alternative 5

Spandrel Bridge Recommendations

Connected Bridges

Many bridges in the Lower Keys are already connected and ready for trail use, and many are already being used for fishing



Saddlebunch # 2 Historic Bridge
(Photograph from Old Keys Bridges Report)

Saddlebunch # 2 Historic Bridge

Bridge # 8

Note: This is an example of a bridge that is completely connected and it is typically recommended in these instances that the old U.S. 1 concrete deck be reduced to the 12' wide.

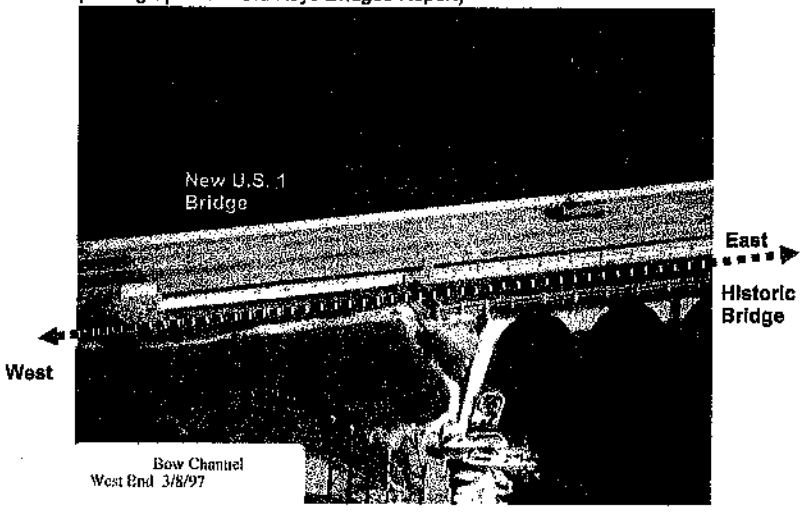
Recommendations:

1) Remove the outer edge of the 1940's era Old U.S. 1 structure to equal the 12' width of the historic arched 1910 railroad era arched Spandrel. This has already been accomplished on many bridges that were converted into fishing piers in the 1980's.

2) The new trail bridge is recommended to be 12' wide from end to end with traditional style handrails and is to accommodate trail use.

3) Provide 12' wide end connections to the main trail. The bridge is to be accessible to the disabled.

Bow Channel Historic Bridge
(Photograph from Old Keys Bridges Report)



Bow Channel Historic Bridge Break

Bridge # 14

Note: This is an example of a bridge where the historic arched Spandrel restoration would not hinder local water craft traffic. It is recommended in these instances that the historic Spandrel be reconstructed to the historic standard.

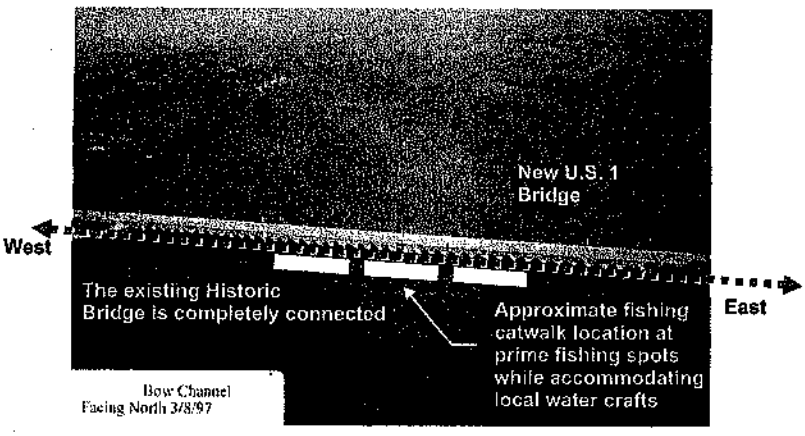
Recommendations:

1) Remove the outer edge of the 1940's era Old U.S. 1 structure to equal the 12' width of the historic arched 1910 railroad era arched Spandrel. This has already been accomplished on many bridges that were converted into fishing piers in the 1980's.

2) The new trail bridge is recommended to be 12' wide from end to end with traditional styled handrails and is to accommodate trail use.

3) Provide 12' wide end connections to the main trail. The bridge is to be entirely accessible to the disabled.

4) Provide new **fishing pier "catwalks"** as have been actively in use on the Gandy Bridge since the 1950's, in Pinellas County, Florida. The fishing catwalks would be provided only at locations where fishing is most desirable and not typically along the entire bridge. The fishing catwalk cross section is approximately an 8' wide deck extended from the concrete bridge by cantilevered supports , with handrails and integral fishing pole mounts, and is typically at a lower and closer elevation to the water than the surface of the historic bridge, thus allowing for better fishing, without hindering water craft use. This fishing catwalk would be typically provided on the side opposite of the U.S. 1 bridge. Adequate public involvement by the fishing and water craft users should be provided during the design phase of the bridge modification process.



Increased Fishing

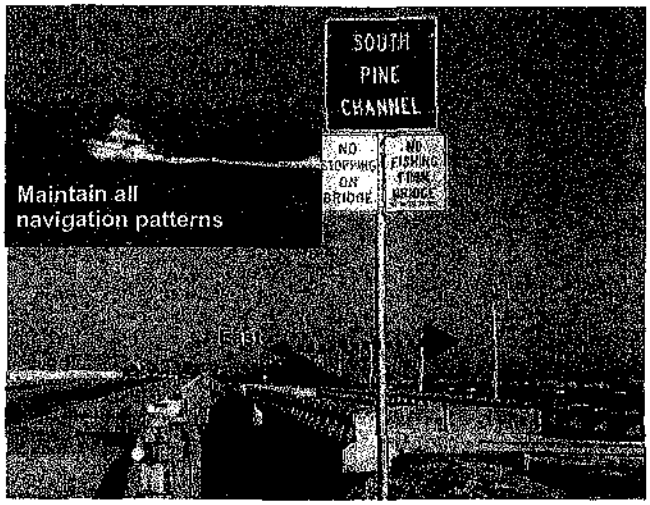
Pier fishing recreation will be increased by additional connections of the breaks in the Historic Bridges and the periodic placement of proven fishing catwalks. More Keys residents and visitors will be able to access prime fishing spots.

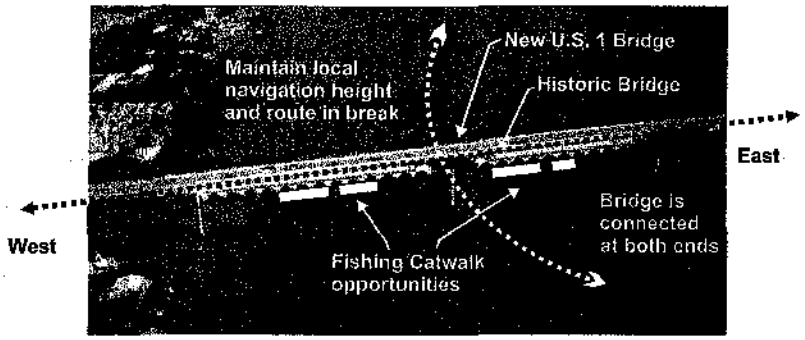
Currently, the fishing piers built in the 1980's utilize the arched Spandrel Historic Bridges. This Master Plan recommends using those 12' wide fishing piers for both fishing and trail use, while providing increased fishing opportunities by reconnecting additional Historic Bridges. Additionally and in areas of proven fishing activity, provide new **fishing pier "catwalks,"** as have been actively in use on the Gandy Bridge since the 1950's, in Pinellas County, Florida, to accommodate the majority of fishing users. The fishing catwalks would be provided only at locations where fishing is most desirable and not typically along an entire bridge. The fishing catwalk cross section is approximately an 8' wide deck of a grated material allowing light to penetrate the ocean below, extended from the concrete bridge by cantilevered supports, with handrails and integral fishing pole mounts. The fishing catwalk is typically at a lower and closer elevation to the water than the surface of the historic bridge thus allowing for better fishing, without hindering water craft use. This fishing catwalk would be typically provided on the side opposite of the U.S. 1 bridge. Adequate public involvement by the trail, fishing and water craft users should be provided during the design phase of the bridge modification process.

Spandrel Bridge Recommendations

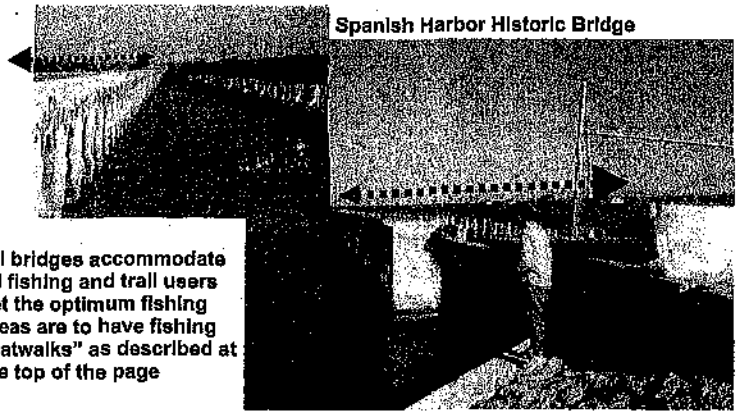
Local Navigation and Break Reconstruction

Increased Fishing





South Pine Historic Bridge



All bridges accommodate all fishing and trail users yet the optimum fishing areas are to have fishing "catwalks" as described at the top of the page

Spanish Harbor Bridge

Local Navigation

South Pine Historic Bridge Break
Bridge #19

General Note
Regarding Local Navigation:

This is an example of a bridge where the historic arched Spandrel restoration would hinder local watercraft traffic. It is not recommended in these instances that the historic Spandrel be reconstructed to historic standards.

Recommendations:
1) Reconnect the Historic Bridge for shared use trail traffic and fishing by raising the height of the bridge at the break so that the trail bridge structure will not hinder any navigational boat traffic. Provide adequate public involvement in the design phase of the alterations so that local navigational patterns are fully addressed.
2) Remove the outer edge of the 1930 and 1940's era Old U.S. 1 structure to an equal 12' width of the historic arched 1910 railroad era arched Spandrel. This has already been accomplished on many bridges that were converted into fishing piers in the 1980's.
3) The new trail bridge is recommended to be 12' wide from end to end with traditional styled handrails and is to accommodate fishing and trail use.
4) Provide 12' wide end connections to the main trail.
5) The bridge is to be entirely accessible to the disabled.
4) Provide new **fishing pier "catwalks"** as described at the top of this page

THE BAHIA HONDA BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

Bahia Honda Bridge Analysis

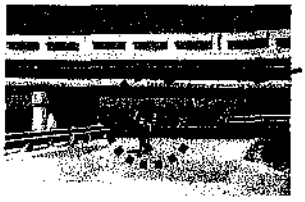
Bridge # 22

Bridge Break
Bridge Segments

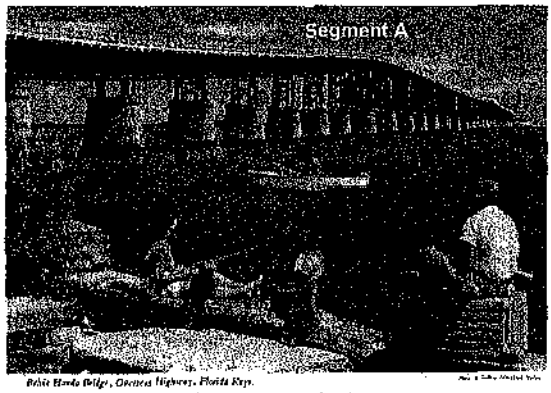
Trail Alignment in the State Park

The final trail alignment within Bahia Honda State Park is to be determined by the FDEP Bureau of Recreation and Parks. The alignment presented in this diagram is for informational purposes only.

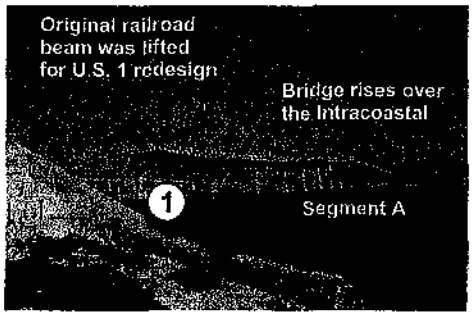
It is desirable to not require trail users to cross U.S. 1 at highway grade. The existing underpass illustrated in the photograph below is seen as a potential safe route. This existing underpass could be reached from the park entrance along the southern and northern edges of the U.S. 1 right of way, and along the existing FDEP paved drive north of U.S. 1 if the FDEP deems this feasible. This potential approach causes no adverse impact to the environment and is a "multiple use" of existing public facilities.



Existing U.S. 1 Underpass



1950's era postcard view of Bahia Honda Bridge with old U.S. 1 intact



Current abandoned Bahia Honda Bridge looking northwest after beam removal

BAHIA HONDA STATE PARK
(Jurisdiction of FDEP)

Trail to Marathon on the Bay side via 3 Historic Bridges and the Seven Mile Bridge

Existing Park Drive

Park Gate

Existing U.S. 1 Underpass

MM 36

Park Restrooms & Concessions

Bridge Approach

FLORIDA BAY

U.S. 1 Low Level Bridge

Protected Mooring Area

B

Old U.S. 1 Interpretive Overlook

2

Break for State Park Boat Access

ATLANTIC OCEAN STRAIGHTS OF FLORIDA

A

Historic Railroad Bridge

INTRACOASTAL WATERWAY (LOW LEVEL)

HAWK CHANNEL

Segment A

NORTH

Usable U.S. 1 Underpass

1

Abandoned Roadside Park

Recommend the Preservation of the 1940's era Historic Keystone Restroom

To Big Pine Key and Key West

MM 35

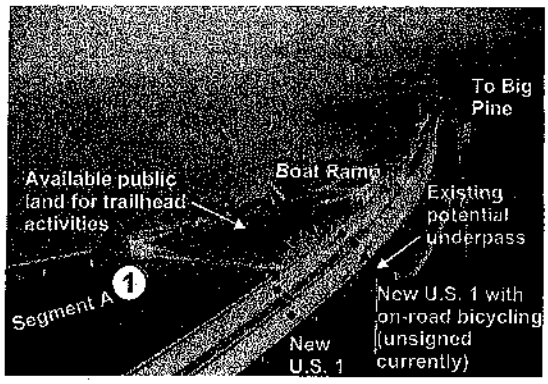
Location Map

THE BAHIA HONDA BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

Bahia Honda Bridge Analysis

Bridge # 22

(Continued)



Aerial looking west to Break 1 (non-navigational)

① Break 1

(At the southwest end of the bridge)

Length - One bridge span

Current Use - Non-Navigational opening in the bridge between the bulkheads and the first pier

Segment A

(Break 1 to Break 2)

Length - Approximately 4,650

Bridge Type -

Original Flagler Viaduct with concrete piers and spans; The 1940's era highway with an asphalt and concrete guard rails is positioned on top of the historic railroad steel spans

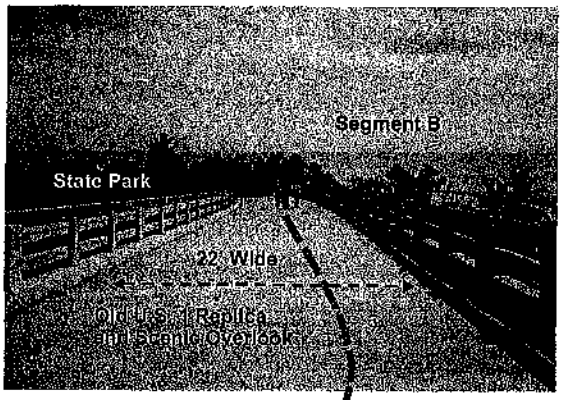
Condition -

The steel spans are rusting and in need of repair as was recently provided on Segment B; The 1940's era highway is in a serious state of decay and portions are partially falling into the bay; The weight of the concrete highway structure is damaging to the steel structure

Current Use - Not in use

Maintenance - Not maintained

Jurisdiction - FDEP



Replicated Old U.S. 1 Display

② Break 2

(Immediately west of the Overlook)

Length - 1 Bridge span (approximately 60 linear feet)

Current Use -

Navigational access to the Park mooring area; Access control to Segment B

Segment B

(The U.S. 1 Interpretive Overlook)

Length - Approximately 600'

Bridge Type -

Original 1912 era Flagler Viaduct with concrete piers; The original steel spans (repaired and maintained), and the replicated 1940's era highway (see photo to left)

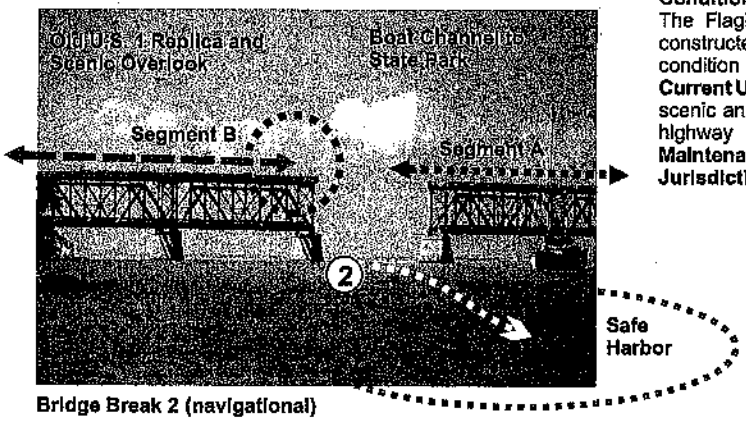
Condition -

The Flagler Viaduct is fully restored and the recently constructed U.S. 1 interpretive overlook is in excellent condition

Current Use - Non-vehicular park trail traffic as a scenic and interpretive overlook of the 1940's era U.S. 1 highway

Maintenance - FDEP Bahia Honda State Park

Jurisdiction - FDEP Bahia Honda State Park



Bridge Break 2 (navigational)

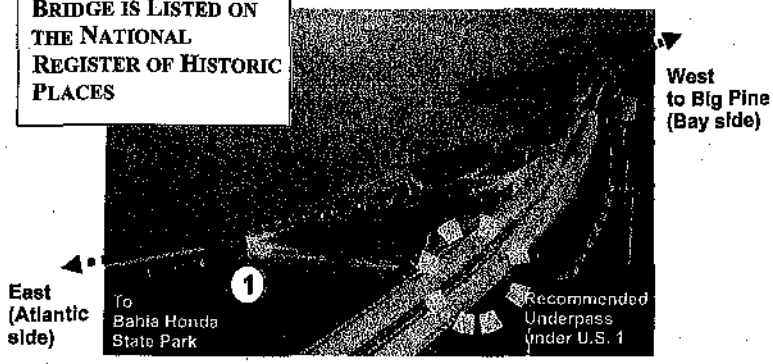
THE BAHIA HONDA BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

Bahia Honda Bridge Recommendations

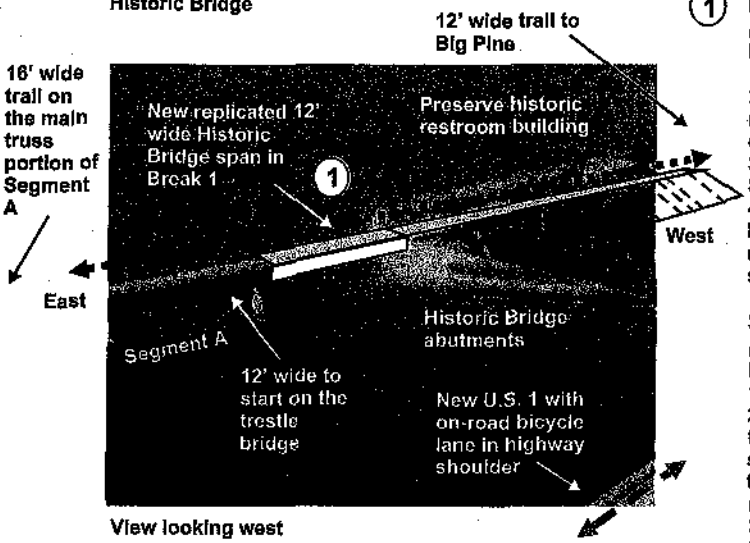
Bridge # 22

Bridge segments are described west - to - east

(See additional diagrams on following page)



Recommended trail alignment from Big Pine onto the Bahia Honda Historic Bridge



View looking west

1 Break 1

(At the southwest end of the bridge)

Recommendations:

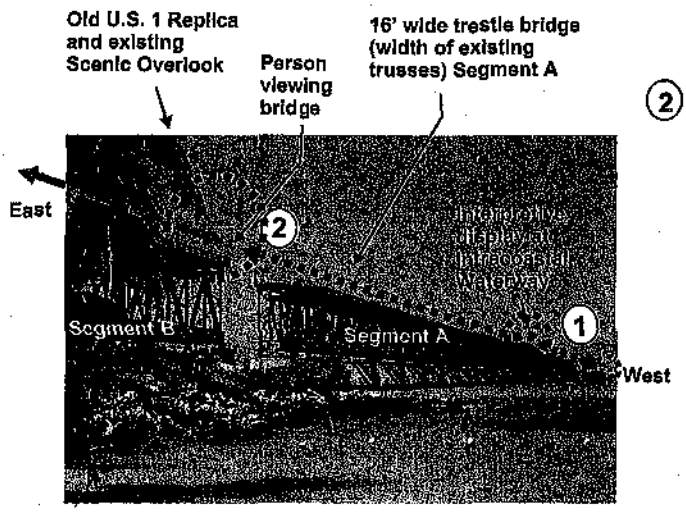
1) Uses include all non-vehicular trail users and fishermen.
2) Connect with Segment A with a replicated beam and matching trail decking (see following page) and tie into the elevated earthen approach ramp.
3) This connection will offer increased fishing use of Segment A.
4) coordinate the restoration of the roadside park and historic restroom building (as different use) while maintaining the rare existing vegetation on that disturbed site.

Segment A

(Break 1 to Break 2)

Recommendations:

1) Uses include all non-vehicular trail users and fishermen.
2) Retain the old U.S. 1 highway concrete decking but cut the sides off flush with the lower steel I-beams; Treat the sides of the cuts to prohibit deterioration of the slab; Repair the slab, the lower steel structure, and the concrete piers as needed.
3) Provide no obstructions that might interfere with the Intracoastal Waterway in the center of the bridge.
4) Segment A - Provide an interpretive display at the Intracoastal Waterway, the highest point on the bridge.



View looking west from the State Park beach

2 Break 2

(Between the Scenic Overlook and Segment A)

Recommendations:

1) Uses include all non-vehicular trail users and fishermen.
2) Restore the connection at the old U.S. 1 Highway level with a replicated concrete deck; Provide new traditionally styled handrails across the break at 4' ht. Bicyclists are to maintain to the center of the bridge and pedestrians to the sides.
3) Provide maximum navigational access to the State Park boats entering the safe harbor. Sign the clearances per U.S. Coast Guard standards. Future studies will survey the actual possible vertical clearance height.

Segment B

(The old U.S. 1 Interpretive Overlook)

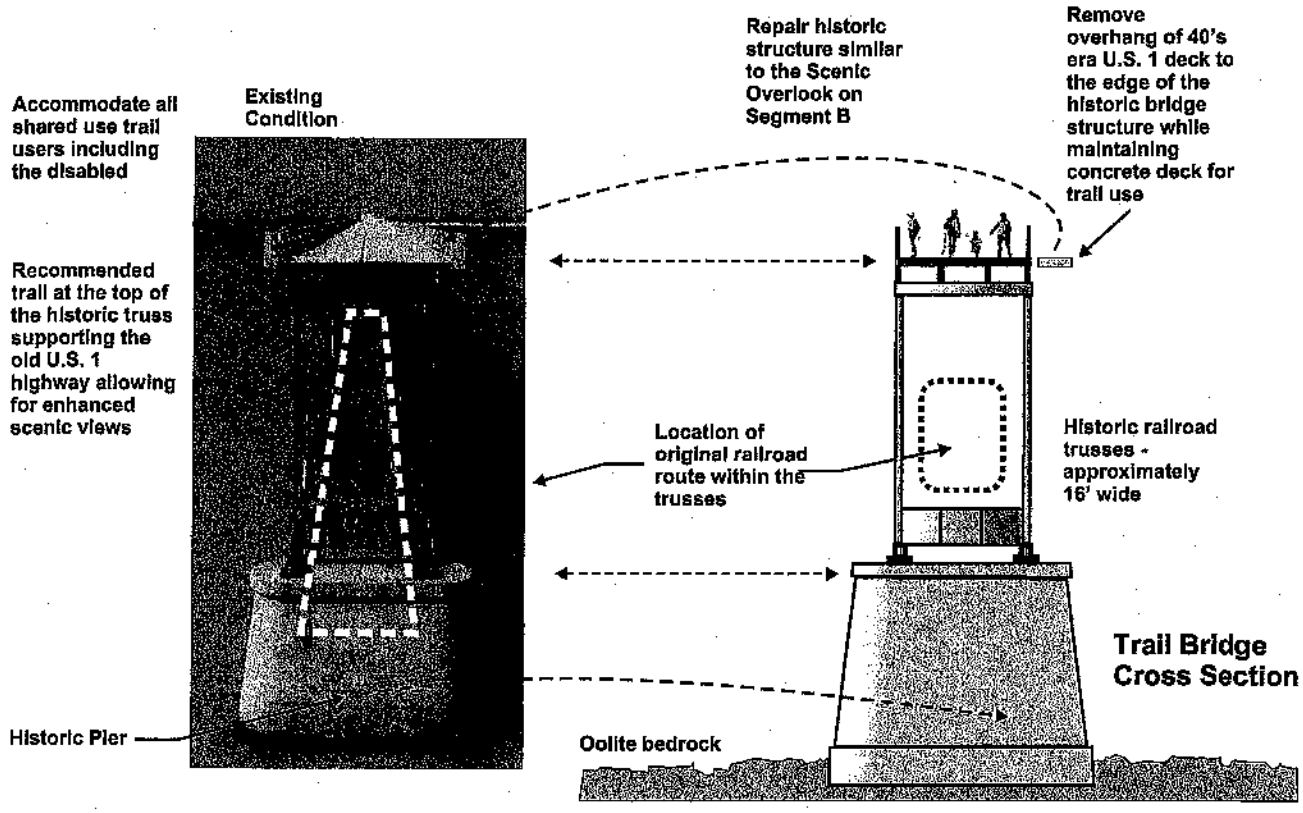
Recommendations:

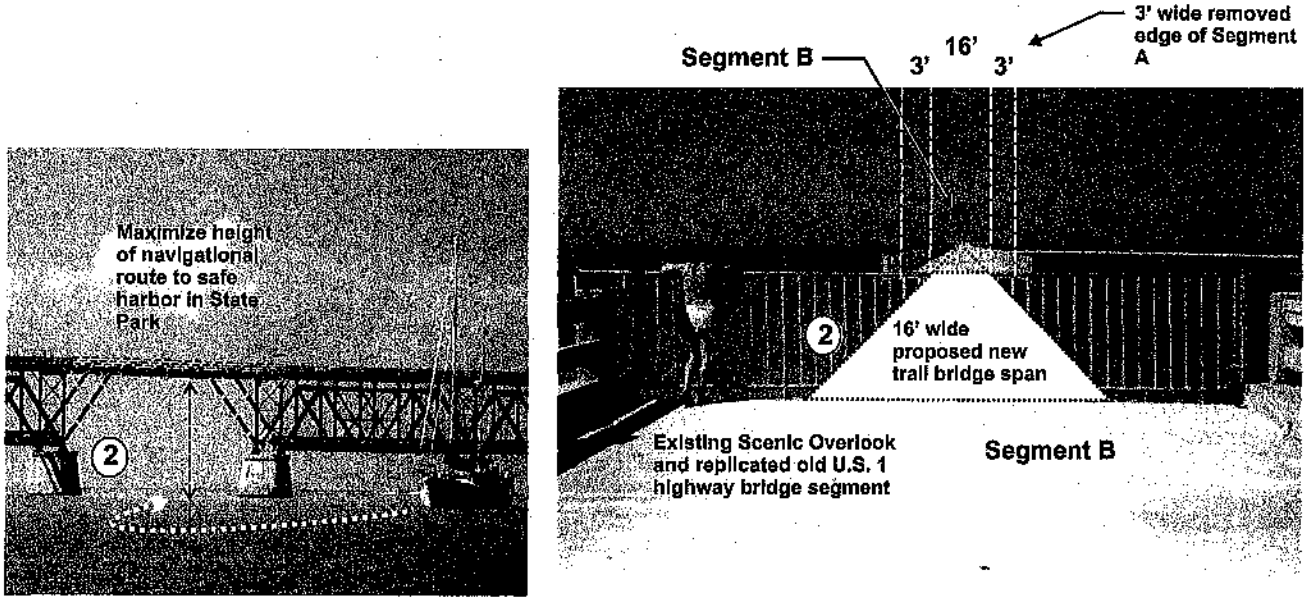
Provide no improvements to the already quality structure. This structure was repaired to reflect the 40's era U.S. 1 highway and serves as an interpretive display of that highway, and a Scenic Overlook to the Historic Bridge Segment A and Hawk Channel. There is the potential for the State Park to provide a historic Florida East Coast Railroad display beneath the highway where the original train ran between the steel trusses.

THE BAHIA HONDA BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

Bahia Honda Bridge Recommendations

Bridge # 22





Maintain historical character of railroad trusses to establish new trail bridge span in the existing Break 2, while maintaining acceptable clearances for most boats

Figure 8.3.2

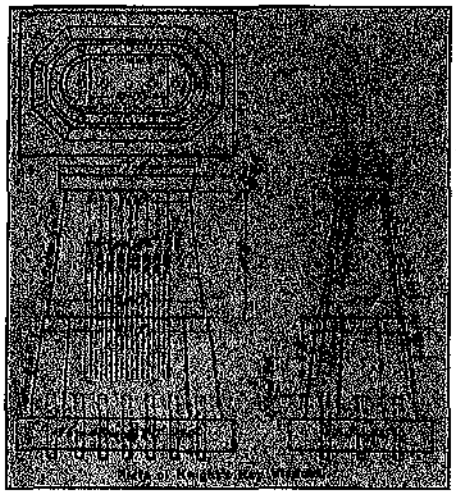
Seven Mile Bridge Analysis

Bridge # 26

Bridge Breaks Navigational Waterway Bridge Segments

(See next 4 pages for diagrams and recommendations for segments and breaks)

THE SEVEN MILE BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES



Historic Seven Mile Bridge pier plans from the Pigeon Key Historical Museum

PIGEON KEY HISTORIC MUSEUM (MM 45)

Conceptual Bridge Recommendations Note:

This Master Plan provides planning level conceptual recommendations for the improvements to the bridges for shared use trail use and is not intended to be a final design document. There is currently a Structural Engineering Survey being prepared by FDEP in partnership with FDOT and Monroe County, to document the actual structural stability of all the Historic Bridges in the Florida Keys. This Master Plan and the Structural Engineering Survey are intended to provide future trail implementers with quality planning guidance to design the bridges in a manner that best suits the public interests. The decisions in this Master Plan are based on:

- **Public Involvement**
- **Project Goals**
- **Agency Involvement**
- **Planning Expertise**
- **Shared Use Trail Needs**
- **Fishing User Needs**

Figure 8.3.3

Segment A
(The Existing Fishing Pier)
Length - Approximately .8 mile
Bridge Type -
Original Flagler Viaduct with concrete arches all with the 1940's era highway narrowed to the approximately 12' wide Fishing Pier width (see figure 8.3.1), with an asphalt surface and concrete hand rails
Condition - Good condition except for the corrosion of the rebar in the recently cut edges of the 1940's era highway concrete slab
Current Use - Fishing pier and nature viewing
Maintenance - FDEP with partial FDOT funding for trash pickup
Jurisdiction - FDEP

(1) **Break 1**
(Between Segment C and the Fishing Pier)
Length - One arched bridge span
Current Use - Non-navigational; Controls access between segments B and C

Segment B
(Intracoastal Waterway to the Fishing Pier)
Length - Approximately 3 miles
Bridge Type -
Original Flagler Viaduct with concrete piers and steel spans and the Spandrel (concrete arches), with the 1940's era U.S. 1highway concrete deck, asphalt surface and guard rails
Condition - 1940's era highway intact
Current Use - Not in use
Maintenance - Not maintained
Jurisdiction - FDEP

(2) **Break 2**
(At the Intracoastal Waterway, Moser Channel)
Length - The original swivel bridge was removed (approx. 90')
Current Use - Navigational opening in the Flagler Viaduct for the Intracoastal Waterway; A minimum structural clear height of 65 feet is required of any new bridge spanning Break 2, which is equal to the height of the U.S. 1 bridge

Segment C
(Pigeon Key to the Intracoastal Waterway)
Length - Approximately 1 miles
Bridge Type -
Original Flagler Viaduct with concrete piers and steel spans, and the 1940's era highway intact (see photo on the next page) with a approximately 22' wide concrete deck, asphalt surface and guard rails
Condition - 1940's era highway intact
Current Use - Not in use
Maintenance - Not maintained
Jurisdiction - FDEP

Break 3
(Immediately south of Pigeon Key)
Length - One bridge span removed
Current Use - Non-navigational; Controls access to Segment B

(3) **Segment D**
(Knights Key to Pigeon Key)
Length - Approximately 2.2 miles
Bridge Type -
Original Flagler Viaduct with concrete piers and steel spans; The 1940's era highway (see Figure 8.3.2) with an asphalt surface and guard rails
Condition - 1940's era highway intact and in use
Current Use - The existing bridge uses include the shared use trail, fishing and 2-way vehicular traffic route to Pigeon Key (Traffic is not limited to specific vehicle sizes or purpose)
Maintenance - Maintained by Monroe County and partially funded by both FDEP and FDOT
Jurisdiction - Monroe County, FDEP, and FDOT jointly

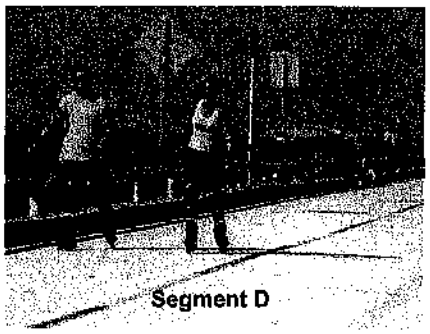
Seven Mile Bridge Analysis

(Continued)

THE SEVEN MILE BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

(See next page for diagrams of segments and breaks)

Note:
The bridge segment milage was approximated due to the unavailability of accurate information. The Structural Bridge Study currently underway by FDEP is tasked with providing more accurate bridge information.



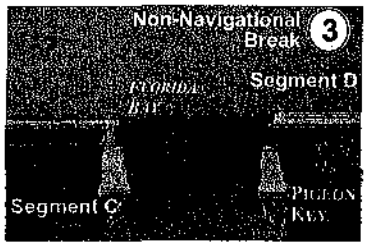
Segment D

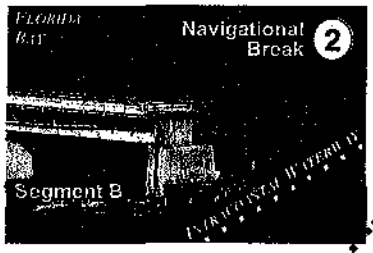
THE SEVEN MILE BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

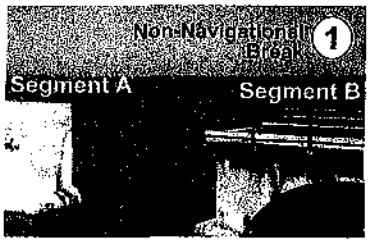
Seven Mile Bridge Analysis

(Continued)

3 Bridge Breaks



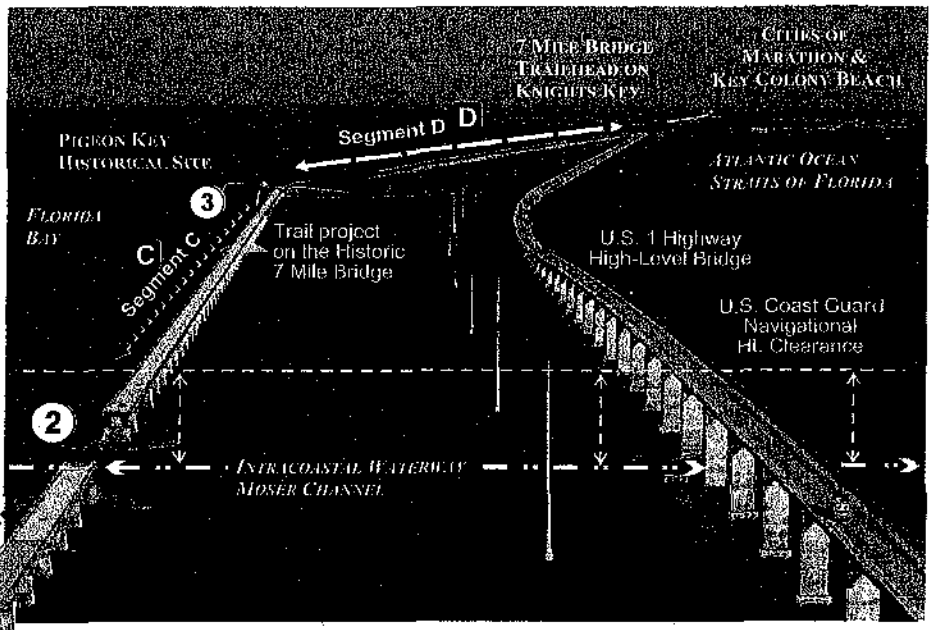




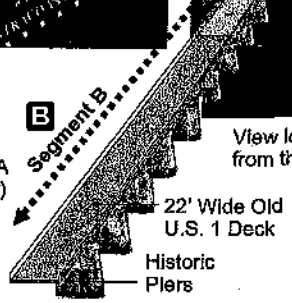
Existing Fishing Pier at west end of Seven Mile Bridge (Segment A)

1940's era U.S. 1 Highway on top 1912 railroad bridge (Segment B)

Bridge Segments

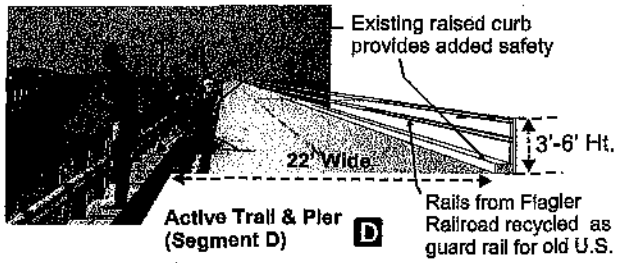


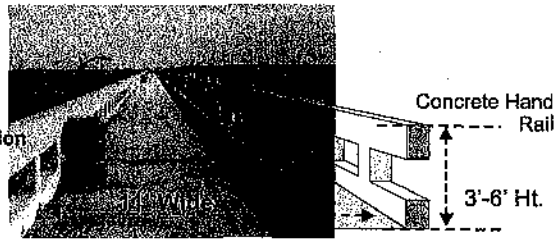
View looking north to the City of Marathon from the Intracoastal Waterway



Bridge Segment B extends to Segment A (Existing Fishing Pier)

Typical Deck Sections (Existing)





New Fishing Pier (Segment A) A

Note:
Typical existing sections for construction design purposes will be illustrated in future design phases of the trail implementation process.

Segment A

(The Existing Fishing Pier)
Recommendations:
1) Users include all non-vehicular trail users and fishermen
2) Maintain Fishing Pier as is and connect with Segment B;
3) Repair edges of old U.S. 1 concrete slab so rebar does not crack guard rail

(1) **Break 1**
(Between Segment B and the Fishing Pier/Segment A)
Recommendations:
1) Uses include all non-vehicular trail users and fishermen.
2) Connect Segments A and B with a simple span.
3) This connection will offer increased fishing use of Segment B to compensate for the trail use of Segment A (the Fishing Pier).

Segment B

(Intracoastal Waterway to the Fishing Pier)
Recommendations:
1) Uses include all non-vehicular users.
2) Repair and use U.S. 1 decking and substructure.
3) Connect to Segment C with new trail bridge (see Break 2).

(2) **Break 2**
(At the Intracoastal Waterway, Moser Channel)
Alternative Recommendation A:
1) Uses include all non-vehicular users.
2) Construct a navigational level trail bridge spanning Break 2 and over the Intracoastal Waterway complying with U.S. Coast Guard navigational requirement and complying with the Americans With Disabilities Act, as feasible, including but not limited to periodic level landings along the length of the trail bridge.
3) Remove U.S. 1 concrete decking from historic beams and piers beneath new bridge.
4) Use the existing railroad concrete piers with extensions for the new piers supporting the trail bridge, and incorporating traditional detailing to reflect the Flagler era design detailing in all aspects of the bridge design (piers, beams, handrails, overlooks, etc.).
5) Design the new trail bridge to structurally withstand sustained hurricane force
Alternative Recommendation B:
1) Utilize a water craft motion sensing device to activate a new lightweight trail bridge (draw, gondola, or other device) that would temporarily bridge the break during non-peak water craft use hours. A similar device is in use at Milton Whiting Air Field near Pensacola, Florida, on a shared use trail crossing the air field flight line. More research is needed.
Interim Solution to the Eventual Bridging of the Intracoastal:
Use a water taxi/ferry to transport trail users and others at set intervals from destination to destination along the Keys, including from Big Pine Key, to Bahia Honda State Park, to Pigeon Key, to Marathon, and to destinations beyond.
Note: These Break 2 recommendations are applicable to other high level bridge breaks, such as Niles Channel and Channel Five Historic Bridges.

Segment C

(Pigeon Key to the Intracoastal Waterway)
Recommendations:
1) Uses include all non-vehicular users.
2) Repair and use U.S. 1 decking and substructure.
3) Connect to Segment B with navigational-level trail bridge (see Break 2).

(3) **Break 3**
(Immediately west of Pigeon Key)
Recommendations:
1) Uses include all non-vehicular users.
2) Provide an outdoor interpretive display including a replicated segment of rail and tracks above a replicated beam spanning Break 3, an expanded concrete walk and trail to both the north and south of the replicated railroad display, and interpretive displays, all for use by the Pigeon Key Foundation and general trail users.
3) Remove concrete barrier walls, but provide one removable center barrier to prohibit vehicles from using the bridge Segment C, except for maintenance purposes only.
4) Provide adequate turn around room for vehicles accessing Pigeon Key.

Segment D

(Knights Key/ 7 Mile Trailhead to Pigeon Key)
Recommendations:
1) Uses include all trail traffic, fishermen, and limited vehicular traffic accessing Pigeon Key.
2) Recommend limiting vehicular traffic to only that necessary for Pigeon Key, providing signage and barriers to prohibit other vehicular traffic, and propose limiting vehicular traffic to the south lane of the bridge, while maintaining the north lane of the bridge for trail and fishing users.

Seven Mile Bridge Recommendations

Breaks and segments are described west - to - east

(See correlating diagrams on the previous page)

THE SEVEN MILE BRIDGE IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

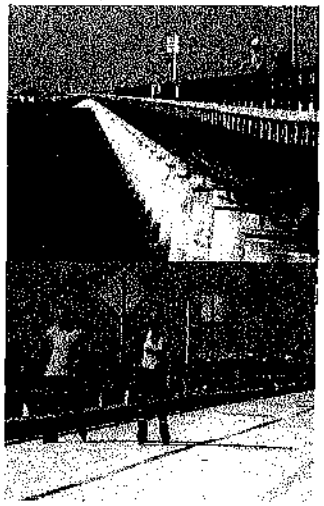


Figure 8.3.3

Break 2
Optional Alternatives -

The trail bridge illustrated below is the Conceptual "Plan" of a potential long-term solution for continuous trail access across the Seven Mile Bridge. This design is typical to bicycle and pedestrian bridge facilities throughout the U.S., with the exception of the proposed use of the historic piers, which already extend well above water level. This is an expensive solution that may be undertaken at a time in the future when and if adequate funding and public support are realized. There are many structural design concerns for a bridge such as this including use or non-use of the existing historic piers as supports, lateral stability in storms, and how to surmount the Moser Channel navigational span.

Other low cost alternatives including but not limited to a solution described on the previous page: Alternative Recommendation B: The utilization of a water craft motion sensing device to activate a new lightweight trail bridge (draw, gondola, or other device) that would temporarily bridge the break during non-peak water craft use hours...(please see a more detailed description on the previous page recommendations) Other interim solutions for continuous trail passage across the Seven Mile Bridge may include but not be limited to Ferry Boats from Marathon or Pigeon Key to western destinations, or even vehicular shuttles along the U.S. 1 highway bridge. Additionally, the Structural Engineering Study of the Historic Bridges will be providing more planning alternatives for the existing breaks and segments.

Seven Mile Bridge Breaks -

Conceptual Trail Planning Recommendations

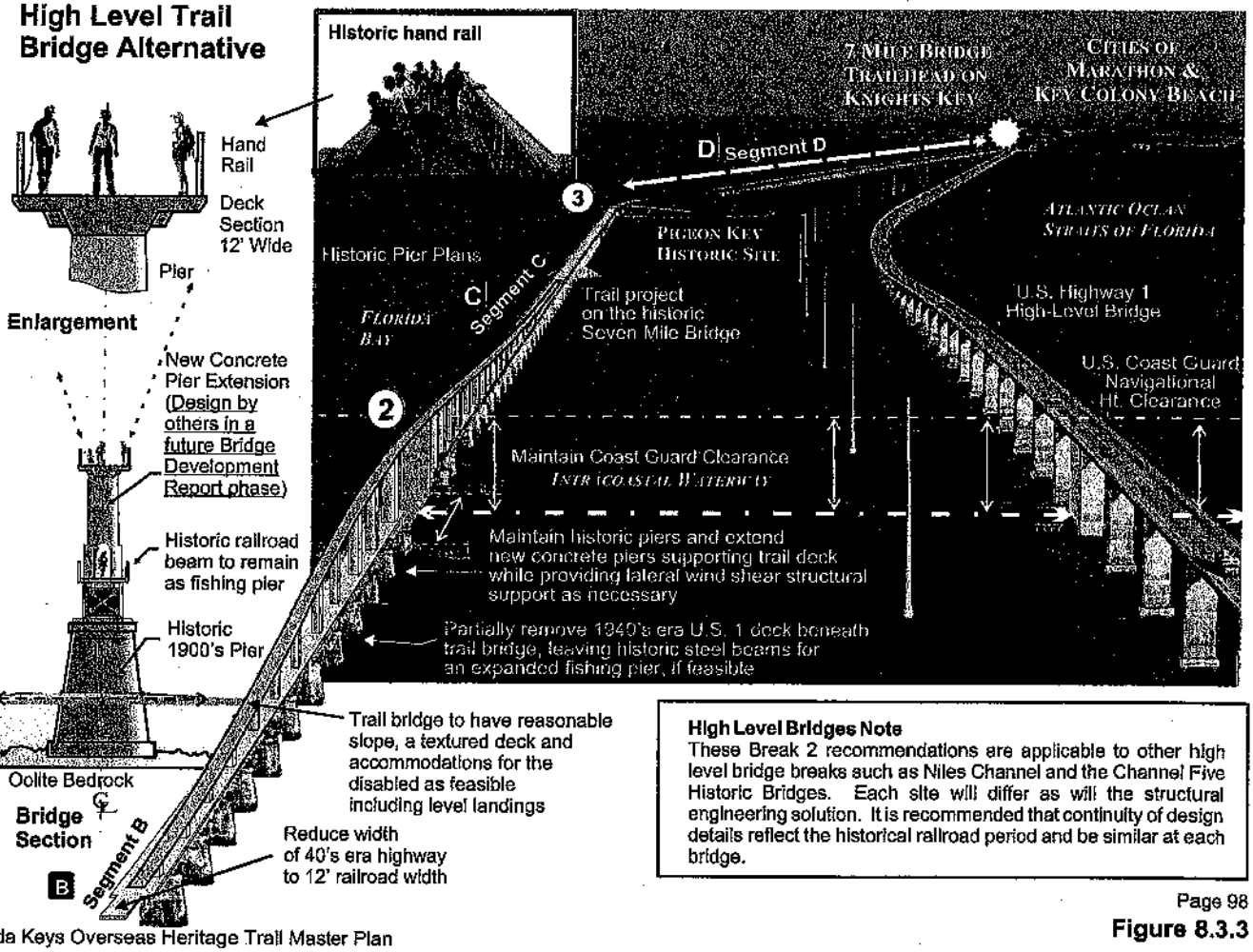
Moser Channel

Fishing Catwalks

Fishing Pier Catwalk Recommendation

Provide new fishing pier "catwalks" as have been actively in use on the Gandy Bridge since the 1950's, in Pinellas County, Florida. The fishing catwalks would be provided only at locations where fishing is most desirable and not typically along the entire bridge. The fishing catwalk cross section is approximately an 8' wide deck extended from the concrete bridge by cantilevered supports , with handrails and integral fishing pole mounts, and is typically at a lower and closer elevation to the water than the surface of the historic bridge, thus allowing for better fishing, without hindering water craft use. This fishing catwalk would be typically provided on the side opposite of the U.S. 1 bridge but may vary in the case of some bridges that are separated from the U.S. 1 highway bridge.. Adequate public involvement by the fishing and water craft users should be provided during the design phase of the bridge modification process.

Break 2
High Level Trail Bridge Alternative



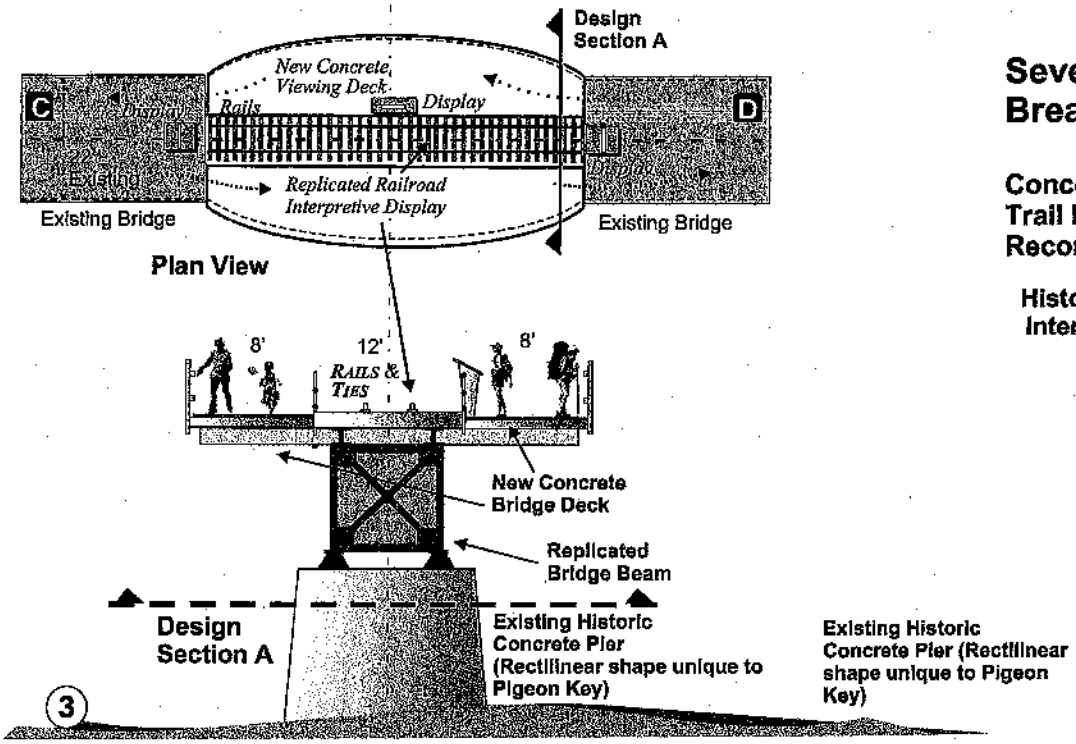
High Level Bridges Note
These Break 2 recommendations are applicable to other high level bridge breaks such as Niles Channel and the Channel Five Historic Bridges. Each site will differ as will the structural engineering solution. It is recommended that continuity of design details reflect the historical railroad period and be similar at each bridge.

Figure 8.3.3

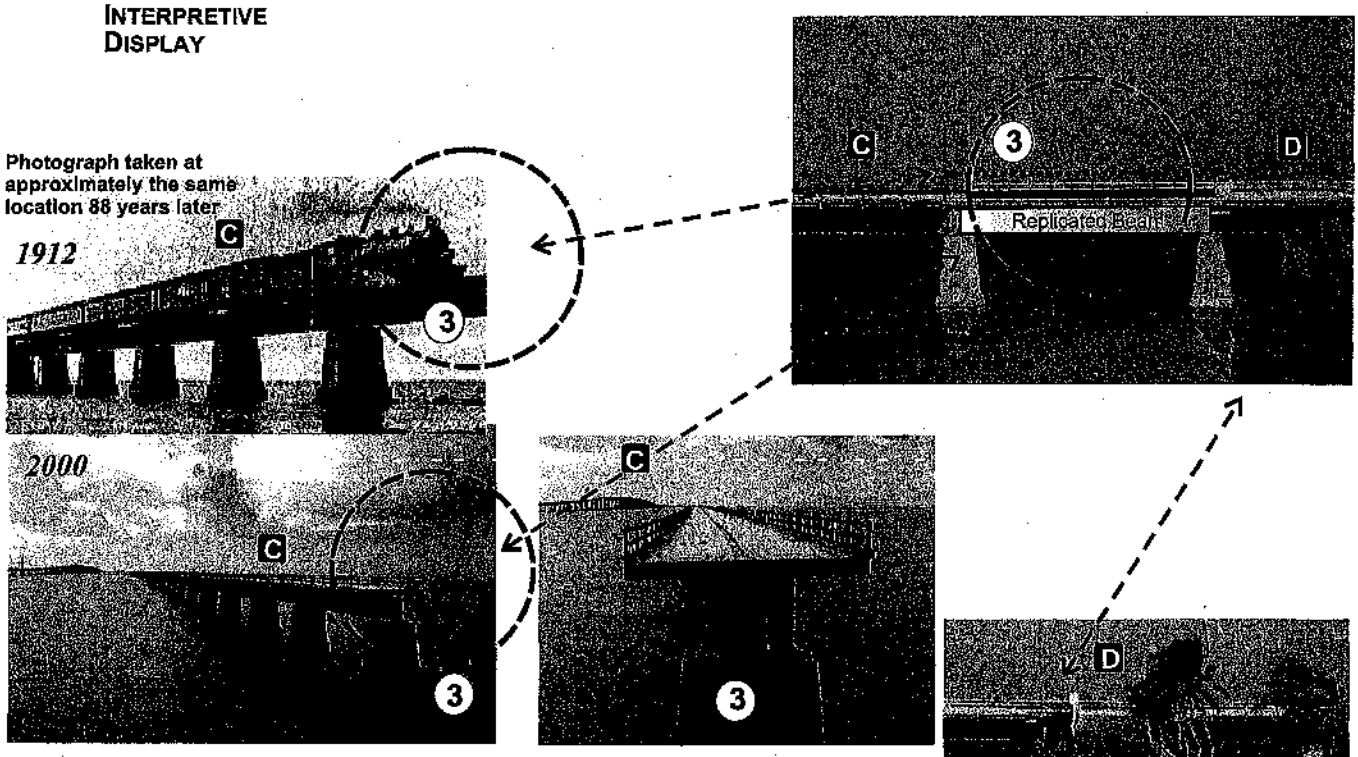
Seven Mile Bridge
Break 3 -

Conceptual Trail Planning Recommendation

Historic Railroad Interpretive Display



FLORIDA EAST COAST RAILROAD
INTERPRETIVE DISPLAY



Pigeon Key Ramp

Recommended Pigeon Key Ramp Repair -
The trail use will impact the already deteriorated ramp leading to Pigeon Key from the old U.S. 1 highway level bridge. It is in need of repair including the decking and some timber piers. The timber piers and decking for the ramp were originally removed from the railroad era boardwalks that existed along the edges of the railroad bridge over Pigeon Key which were removed for the old U.S. 1 highway construction. These timber piers are circa 1910 - 1930 according to Pigeon Key Foundation information.

8.4 TRAILHEADS & REST STOPS

The types of facilities the trail will need and their placement along the trail will depend on several factors: the setting and proposed uses of the trail, the trail's intensity of use, the level of servicing or maintenance that the facilities need, and the utility or infrastructure requirements of the facilities.

The FKOHT Master Plan, based on public input and focusing on sustainability, recommends use of the many existing Federal, State, County, and private facilities along the trail route. This recommendation takes advantage of the unique linear quality of the landscape and incorporates a scenic yet utilitarian use of the many parks along the proposed alignment (see 8.4.3 Listing of Trailheads and Rest Stops).

In an effort to plan a more sustainable trail, the Master Plan recommends co-using existing facilities as much as possible, instead of developing new parks and trailheads on green sites. Green sites are lands that have not been developed or degraded and, therefore, are significant natural and open lands. [11] There are not many green sites left throughout the Keys, so those that remain are even more valuable for the future health of the environment. There are additional trailheads planned, but these are on existing recreational sites that will be modified to accommodate trail use. One example is the Knight's Key trailhead at the Seven Mile Bridge, which at one point had restrooms, a waterfront promenade, and was a rest stop for old U.S. 1.

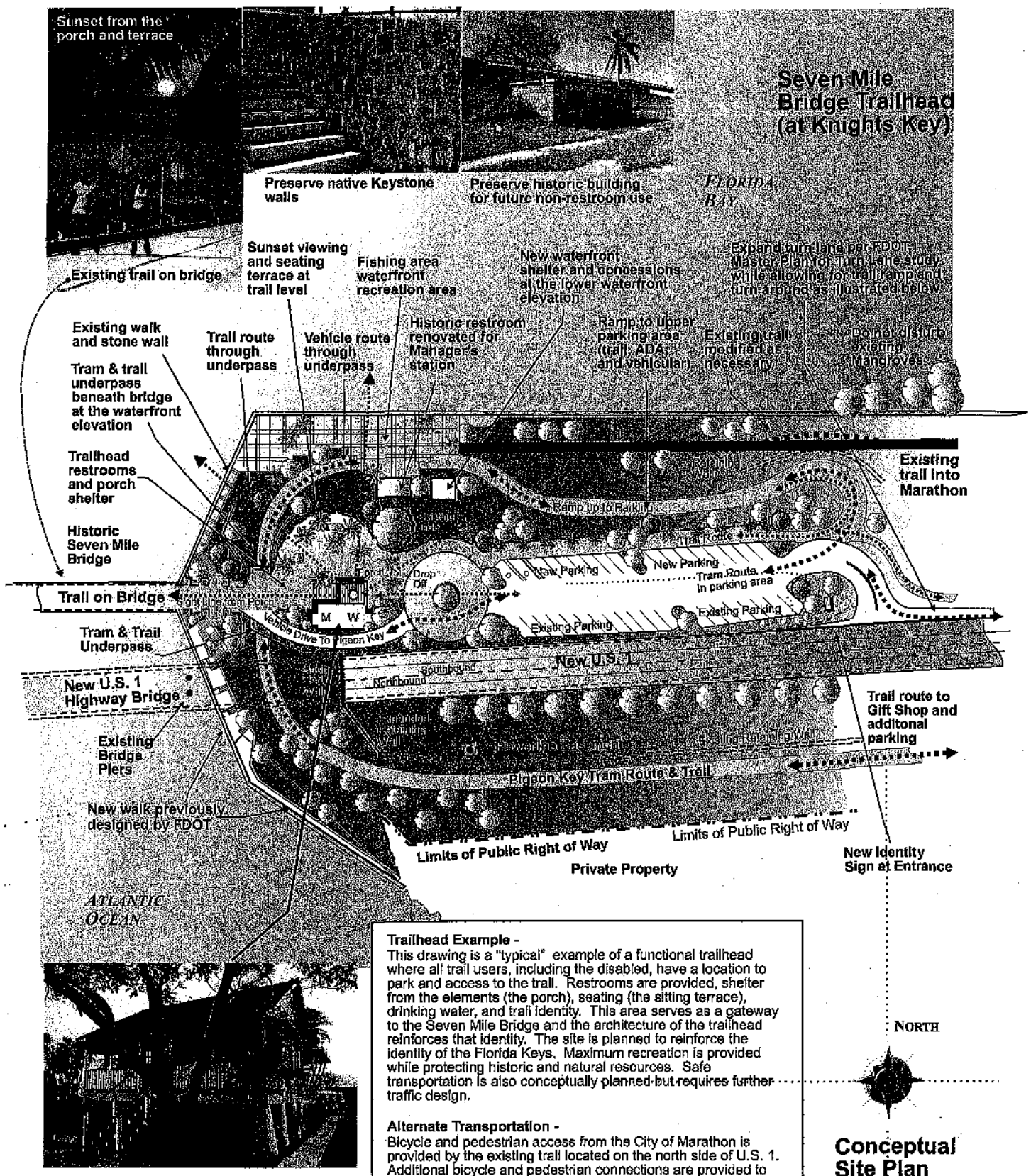
In addition to the environmental benefits of limiting trailhead and rest stops to existing facilities are the economic and social benefits. Many local businesses are located close to the trail corridor. There are few rural areas that will not provide access to convenience stores, restaurants, bike shops, or other businesses that offer goods and services often required by trail users. Encouraging trail users to frequent local businesses will provide increased economic benefits to all of the Keys communities. Community interaction among residents and eco-tourists will also be enhanced by this interaction. Limiting the new trailheads will also minimize the implementation costs and long-term maintenance costs. Appendix IV includes a listing of bike shops located in Monroe County.

There should be a consideration of establishing minor and major "rest stops." Some facilities will need to be improved to include necessary amenities while others such as state parks will simply have to sign and identify those facilities already available to trail users.

8.4.1 Trailheads

Trailheads are major rest stop facilities, and will likely include restrooms, drinking fountain, phone, recycling drop-off point, and possibly a vending machine. As is the case with existing facilities along the proposed trail alignment, major rest stops and trailheads should be located near more heavily used access points. The cost incurred to use these facilities will come in the form of improvements and long-term maintenance. Since the infrastructure is already in place throughout the trail corridor the cost for managing the increased use of the facilities should be minimal.

New trailheads are not proposed with the exception of the Knight's Key Trailhead at the Seven Mile Bridge. Figure 8.4.1 provides a conceptual site plan.



Pigeon Key Historical Museum as the new Trailhead building character and identity

Trailhead Example -
This drawing is a "typical" example of a functional trailhead where all trail users, including the disabled, have a location to park and access to the trail. Restrooms are provided, shelter from the elements (the porch), seating (the sitting terrace), drinking water, and trail identity. This area serves as a gateway to the Seven Mile Bridge and the architecture of the trailhead reinforces that identity. The site is planned to reinforce the identity of the Florida Keys. Maximum recreation is provided while protecting historic and natural resources. Safe transportation is also conceptually planned but requires further traffic design.

Alternate Transportation -
Bicycle and pedestrian access from the City of Marathon is provided by the existing trail located on the north side of U.S. 1. Additional bicycle and pedestrian connections are provided to additional parking areas along U.S. 1 near the Gift Shop, by the proposed narrow trail underpass beneath both U.S. 1 and the Historic Bridge approach immediately west of the planned restrooms. This route also provides a safe connection for Pigeon Key Foundation trams taking visitors to and from the popular Pigeon Key Historical Site

Conceptual Site Plan

Not to Scale

8.4.2 Rest Stops

Minor facilities, considered rest stops, include sitting areas, shade shelters, picnic areas, and informational or interpretive signs. These facilities are the least complicated to locate and accommodate. A minor rest stop should require little maintenance over its lifetime - so sustainable and durable products should be used. Some rural areas in the Keys will require new rest stops while other rest stops will be added at existing parks.

At both trailheads and rest stops, support facilities should be grouped together when possible. Grouping makes them recognizable from a distance and saves space along the trail's edge. Since open space is at a minimum in the Keys, clustering complex features such as restrooms, drinking fountains, and telephones, minimizes construction costs and preserves the diminishing landscape.

Facilities at Access Points

Support facilities for a multi-use trail system like the FKOHT should start with the trail's access points. It is important to have well-developed access points because the trail user's first and last impressions are formed when entering and exiting the trail. Think of access points as opportunities to link the trail with the surrounding community, including destinations and points of departure known to the entire community, not just trail users. The advantage in utilizing the many existing park facilities along the FKOHT route is that access points are already located in developed areas - next to or in public parks, shopping centers, or residential developments. Finally, access points should link the trail to as many systems of transportation as possible. The proximity of the trail to ample parking lots and bus stops, allows users to make convenient connections to the trail, thereby assuring its success as a true public amenity. The FKOHT being aligned along the US 1 corridor makes it a perfect alternative transportation corridor for the local communities as they traverse from home to work or to school and for daily errands.

8.4.3 Listing of Trailheads & Rest Stops

Table 8.4.1 provides a brief listing of existing federal, state and County parks proposed for use as trailheads, or rest stops. A trailhead will provide more facilities than a rest stop. Table 8.2.1, Trail Corridor Recommendations, includes a listing of the trailheads and rest stops in relation to the trail alignment and Figures 8.2.1 to 8.2.14 depict graphically the location of the trailheads and rest stops along the corridor.

TABLE 8.4.1
LOWER KEYS TRAILHEADS & REST STOPS

Ft. Zachary Taylor State Park (MM 0)
Recommended Use: Trailhead
Jurisdiction: FDEP
Facilities: Existing Facilities are satisfactory.

Higgs Beach Park (S. Roosevelt Blvd.)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing Facilities are satisfactory.

Smather's Beach (S. Roosevelt Blvd.)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing Facilities are satisfactory.

Bayview Park (MM 1.5)
Recommended Use: Trailhead
Jurisdiction: City of Key West
Facilities: Existing facilities are satisfactory.

Key West Botanical Gardens (MM 4.2)
Recommended Use: Trailhead
Jurisdiction: City of Key West
Facilities: Supplement facilities with a composting toilet, additional picnic tables, water fountain, shelter, and minimal parking. The gardens are located off U.S. 1 on College Road. The College Road bike path would take trail users to the entrance of the gardens.

The Key West Botanical Gardens have expressed an interest in being a trailhead along the FKOHT. The Key West Botanical Gardens is the last undeveloped native hardwood hammock in Key West. Landscape architect Ralph Gunn designed the gardens during the Great Depression as part of the Federal Emergency Relief Administration. At one point, the gardens covered a total of 55 acres, although today only 11 acres remain. Since opening in 1935, the gardens have been transformed by World War II, hurricanes, and different managing agencies.

Today, the Key West Botanical Society, whose mission is to encourage educational opportunities

and develop, preserve, and maintain the facility as a permanent botanical garden, arboretum and wildlife refuge, manages the gardens. The Society is working on improvements to their visitor entrance and educational building and is also submitting for several grants to make improvements to the gardens.

The Key West Botanical Gardens would make an enchanting trailhead. Thirty-six threatened and endangered species can be found on the site. The native hardwood hammock would mirror the Key Largo Hammocks Botanical Site, which is the recommended end point for the FKOHT. These two trailheads would offer a unique natural experience for trail users

Boca Chica Underpass (MM 6)
Recommended Use: Rest Stop
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
This is a proposed rest stop on the existing Boca Chica Underpass site. Enhancements are limited to a shelter and benches for resting. The Boca Chica Rest Stop was proposed in the FKOHT Conceptual Plan[5]. The area is already a popular windsurfing, snorkeling, and fishing spot and will be an ideal trail destination point. This area has been considered as a Scenic Highway enhancement site.

Boca Chica NAS (MM 7.8)
Recommended Use: Rest Stop
Jurisdiction: Department of Defense
Facilities: Supplement per Table 8.2.1.
A small shelter and water fountain are recommended at this site.

Wilhelmina Harvey Children's Park (MM 10)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Bay Point Park (MM 15)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Supplement per Table 8.2.1.
This trailhead was proposed in the FKOHT Conceptual Plan[5]. A shelter and restroom are recommended. Baby's Coffee is located directly in front of the park and has been an enthusiastic supporter of the trail. Baby's will continue to interact with the community and provide trail support facilities.

Bat Tower Historic Site (MM 16.6)
Recommended Use: Attraction
Jurisdiction:
Facilities: Supplement per Table 8.2.1.
This facility is located off of U.S. 1 on the Bay side.

Sugarloaf Fire Station (MM16.6)
Recommended Use: Rest Stop
Jurisdiction:
Facilities: Supplement per Table 8.2.1.
A shelter and water fountain are recommended.

Sugarloaf Elementary & Middle School (MM19.3)
Recommended Use: Trailhead
Jurisdiction: Monroe County School Board
Facilities: Supplement per Table 8.2.1.
A shelter, restroom, water fountain, and ten parking spaces are recommended.

Sheriff's Substation (MM 20.9)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Supplement per Table 8.2.1.
A shelter, water fountain, and five parking spaces are recommended.

Watson Field & Blue Heron Park (MM 30.3)
Recommended Use: Trailhead
Jurisdiction: Monroe County/Big Pine Athletic Association
Facilities: Existing facilities are satisfactory.

Lower Keys Chamber of Commerce (MM 30.8)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Supplement per Table 8.2.1.

Spanish Harbor Fishing Pier (MM 33.6)
Recommended Use: Rest Stop
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
A shelter is recommended at this location.

Bahia Honda State Park West (MM 35)
Recommended Use: Rest Stop
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
The Bahia Honda State Park West is a proposed facility that could extend the border of the existing Bahia Honda State Park to include the land west of the Bahia Honda Bridge. This land has been developed in the past with a walkway and restroom area, almost identical to the previous facilities at the Seven Mile Bridge at Knight's Key. This site is degraded and ideal for a future trailhead.

Bahia Honda State Park East (MM 36.4)
Recommended Use: Trailhead
Jurisdiction: FDEP/FDOT
Facilities: Existing facilities are satisfactory.
Bahia Honda, which means deep bay in Spanish, is one of the deepest natural channels in the Florida Keys. Pirates, Indians, wreckers, and modern day boaters have been stopping in Bahia Honda over the years. Bahia Honda State Park offers a safe harbor to boaters and beautiful

sandy beaches for recreational users. The park encompasses 524 acres and has one of the largest remaining stands of the threatened silver palms in the United States. The park was established in 1961 and is continually ranked one of the most beautiful parks in America.

Included in the park is a scenic overlook on the Old Bahia Honda Bridge offering panoramic views of the island and surrounding waters. Park users enjoy boating, camping, kayaking, snorkeling, bicycling, fishing, swimming, and picnicking. Concessions and lodging are available. An entrance fee is currently charged to pedestrians and motorists at the front entrance.

MIDDLE KEYS TRAILHEADS & REST STOPS

Seven Mile Bridge West (MM 40)
Recommended Use: Rest Stop
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
Parking facilities exist at this location. A shelter is recommended. The Veteran Memorial Park on the Atlantic side will also provide support facilities and therefore an underpass is recommended to take trail users safely to the Atlantic side.

Veteran Memorial Park (MM 40)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.
This Atlantic side park provides restrooms, picnic tables, shelter, and waterfront recreation opportunities.

Pigeon Key National Historic District (MM 45)
Recommended Use: Rest Stop
Jurisdiction: Pigeon Key Historic Foundation
Facilities: Supplement per Table 8.2.1.
A shelter and water fountain is recommended for this site.
An entrance fee of $7.50 for adults and $5.00 for children is charged.

Seven Mile Trailhead at Knight's Key (MM 47)
Recommended Use: Trailhead
Jurisdiction: Monroe County/FDEP
Facilities: Supplement per Table 8.2.1.
This proposed trailhead would enhance current plans by Monroe County to create a trailhead at this prominent site. The existing facilities are frequently used by residents and visitors for sunset viewing, fishing, and recreation. Enhancements would accommodate more parking and provide the necessary trail support facilities. Figure 8.4.1 provides a conceptual graphic site plan for the trailhead. This conceptual plan was developed from community input obtained at the first series of Public Workshops in December 1999. The final trailhead design should be coordinated between the new City of Marathon and the FDEP.

The site can be divided into two levels, with the upper level being the existing parking facilities and the lower level is beneath the new U.S. 1 Bridge. New diagonal parking would be added in the existing parking area and additional parking could be located on the lower level at the Pigeon Key Gift Shop. A trail route from the Gift Shop would loop underneath the bridge and up the Bay side of the site to the top level. This drive would be for pedestrians only. Beyond the parking would be a drop off loop. Service vehicles needing access to Pigeon Key would leave the west end of this loop and pass behind the proposed trailhead facility to the historic Seven Mile Bridge.

The small trailhead would be located just off the trail route at the entrance to the bridge. The trailhead building character should emulate the Pigeon Key facilities. A restroom and shelter would be housed in the building. The front porch will protrude into the trail route sight line and provide a beautiful vista point without blocking the view. Directly in front of the trailhead (Bay side) will be a seating terrace.

The existing stone walk and wall will take pedestrians from the top level down to the lower level. The lower level facilities will be enhanced to include a fishing area, waterfront recreation area, historic restroom facility, a new waterfront shelter, a new ramp to the upper level, shared use underpass, and the existing asphalt trail. The historic restroom could be leased or developed for private concession.

Marathon Community Park (MM 49)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.
This park is currently under construction and will make a great destination for trail users. There is an opportunity to loop the trail around the edge of the site allowing separation from the trail and U.S. 1. This route would provide access to the Florida Keys Marina, which is also owned by the County. The marina has restroom and shower facilities, a public boat ramp, and dockage.

Government & Civic Center (MM 48 - 49)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Jesse Hobbs Memorial Park (MM 49.7)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Tropical Crane Point Hammock (MM 50.5)
Recommended Use: Trailhead
Jurisdiction: Florida Keys Land and Sea Trust
Facilities: Existing facilities are satisfactory.
This site is home to the Museum of Natural History, The Florida Keys Children's Museum, and Adderley Village Black Historic Site. Board members have expressed in interest in becoming a trailhead for the FKOHT. Existing restrooms, water fountain, and parking facilities are satisfactory. Improvements to the entrance and signage are the only recommended improvements. There is a fee to tour the museum of $7.50 for adults and $4.00 for children.

Florida Keys Airport at Marathon (MM 51 – 52.2)
Recommended Use: Trailhead
Jurisdiction: Private
Facilities: Existing facilities are satisfactory.

Curry Hammock State Park (MM 56.1)
Recommended Use: Trailhead
Jurisdiction: FDEP
Facilities: Existing facilities are satisfactory.

Dolphin Research Center (MM 59.2)
Recommended Use: Attraction
Jurisdiction: Non-profit
Facilities: Existing facilities, which include a restroom and parking area. The Center would be interested in adding new facilities to attract trail traffic if funding sources could be secured. Improvements discussed include informational kiosks, re design of the parking lot, seating area, and a composting restroom.

Long Key State Recreation Area (MM 67.5)
Recommended Use: Trailhead
Jurisdiction: FDEP
Facilities: Existing facilities are satisfactory.

Layton Nature Trail (MM 68.1)
Recommended Use: Rest Stop
Jurisdiction: City of Layton
Facilities: Existing facilities are satisfactory

Layton City Center Area (MM 68.3)
Recommended Use: Rest Stop
Jurisdiction: City of Layton
Facilities: Supplement per Table 8.2.1.
A shelter and water fountain is recommended at this site.

Channel Five Rest Stop (MM 71.9)
Recommended Use: Rest Stop
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
A shelter and parking is recommended at this site. This site is currently used as a fishing destination on both the east and west ends. The west end has parking, while the east end does not. In order to create a safe environment for both trail users and motorists, a recognized parking area with 10 spaces should be added.

Channel Two Rest Stop (MM 73)
Recommended Use: Rest Stop
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
A shelter and parking spaces are recommended for this rest stop. Parking is necessary because it is a popular fishing site.

UPPER KEYS TRAILHEADS & REST STOPS

Anne's Beach County Park (MM 73.2)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.
This popular county park provides beach access and has existing parking, shelter, and a restroom facility. No additional facilities are recommended.

Triangle of History (MM 78.5)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Supplement per Table 8.2.1.
This site is a popular stop off for both motorists and pedestrians. There is no formal parking, however, it might be necessary in the future if it becomes a problem to either user group. A small shelter is also recommended.

Library, Park & Hurricane Monument (MM 82)
Recommended Use: Rest Stop (Trailhead to be determined in the future by Islamorada)
Jurisdiction: Islamorada, Village of Islands
Facilities: Existing facilities are satisfactory.

Islamorada Chamber of Commerce (MM 82.5)
Recommended Use: Rest Stop
Jurisdiction: Islamorada, Village of Islands
Facilities: Existing facilities are satisfactory.

Windley Key State Geological Park (MM 84.5)
Recommended Use: Trailhead
Jurisdiction: FDEP
Facilities: Existing facilities are satisfactory.

Islamorada, Village of Islands (MM 87)
(Formerly Plantation Yacht Harbor Resort)
Recommended Use: Trailhead
Jurisdiction: Islamorada, Village of Islands
Facilities: Existing facilities are satisfactory. This park is currently under construction. Proposed facilities include a competition pool with a diving center, ball field/, soccer fields, skate park, beach access, and a day park. There will most likely be an admission charge for non-residents.

Plantation Government Center (MM 88.8)
Recommended Use: Rest Stop
Jurisdiction: Islamorada, Village of Islands
Facilities: Existing facilities are satisfactory.

Plantation Elementary School (MM 89.6)
Recommended Use: Rest Stop
Jurisdiction:
Facilities: Supplement per Table 8.2.1.
A shelter and water fountain is recommended at this site.

Settler's Park (MM 92)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Historic Tavernier Town Center (MM 93)
Recommended Use: Rest Stop
Jurisdiction: Islamorada, Village of Islands
Facilities: Supplement per Table 8.2.1.
This location should be improved with a shelter and water fountain.

Harry Harris Park (MM 94)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Key Largo Community Park (MM 99.5)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Friendship Park (MM 100.9)
Recommended Use: Trailhead
Jurisdiction: Monroe County
Facilities: Existing facilities are satisfactory.

Key Largo Chamber of Commerce & Welcome Center (MM 103.3)
Recommended Use: Rest Stop
Jurisdiction: Monroe County
Facilities: Supplement per Table 8.2.1.
A shelter and water fountain is proposed at this site.

John Pennekamp State Park (MM 105.1)
Recommended Use: Trailhead
Jurisdiction: FDEP
Facilities: Existing facilities are satisfactory.
This scenic state park provides opportunities for boating, camping, canoeing, kayaking, scuba diving, fishing, snorkeling, glass bottom boat rides, picnicking, swimming, guided tours, and a concession. A fee is charged for pedestrians and motorists.

Key Largo Hammocks State Botanical Site (MM 106.5)
Recommended Use: Trailhead
Jurisdiction: FDEP
Facilities: Supplement per Table 8.2.1.
A shelter, water fountain, and five parking spaces are recommended at this site. There is currently parking available, however, this needs to be delineated in order to create the safest environment for both motorists and trail users. This site is an ideal ending point for the FKOHT that will provide opportunities to enjoy nature, trail support facilities, and environmental education opportunities.

8.4.4 Architectural Character Recommendations

The Florida Keys have a distinct architectural style all their own. A blending of Bahamian, New England, and African influences comprise the "Conch" architecture of the Keys. The seafaring carpenters that first inhabited the islands developed and handcrafted this unique style. They combined their architectural experiences of the well-proportioned, Victorian style buildings observed along the New England Coast and the tropical adaptations of the Caribbean and African coastlines. This architecture style is featured at the historic railroad camp at Pigeon Key.

"Conch" architecture is an energy-efficient and structurally sound design, perfect for the difficult natural conditions of the tropics. The buildings are raised on piers for natural air circulation to cool the structure, as well as to prevent rotting and flooding. The rooflines slope beyond the structures to cover the large porches, which offer shade and protection from the harsh natural elements. Traditional "Conch" architecture utilizes the standing metal-seam roof to reflect the heat from the sun and to carry clean water from the gutters to storage cisterns. Shutters are used to block the hot tropical sun, as well as offer protection from hurricanes. Each room was typically constructed using tongue-n-groove wood, from floor to ceiling, providing the structural rigidity necessary to withstand a hurricane. The "Conch" style typically utilizes wood construction materials, both internally and externally. The color scheme at Pigeon Key of yellow exterior paint with green and white trim is also recommended. These colorings allow the buildings to blend in with the vegetation and surrounding environment of the Keys.

Day to day public use requires more durable vandal-resistant materials, which can easily be incorporated with the traditional Florida Keys building materials. The materials and structures must also be designed to withstand hurricane wind forces, concurrent with the stringent and recently updated building code of Monroe County. The "Conch" architecture is recommended to be consistent throughout the trail development.

The following architectural building types are proposed for the trailheads and along the trail:

8.4.4.1 Restroom Building

(To be located in New Primary Trailhead buildings in Section 8.4.2.2; Existing facilities can be adapted at the individual jurisdiction level)

The restroom building design is based on the traditional "Conch" Architecture. The structure is recommended to be elevated on concrete piers, and accessed by a central stairway at the main entry and a handicapped ramp. The standing metal-seam roof shall slope over the entry porch, offering the visitors shade and protection from the elements. The trailhead porch will provide the necessary shelter from the elements. Wood shall be incorporated throughout the building construction, as typically used in "Conch" Architecture, however protected internally with vandal-resistant finishes.

The proposed structure is approximately 700 –900 sq. ft. in size accommodating both men and women's restrooms and a janitor/storage room. The men's restroom contains one handicapped stall with a handicapped lavatory, one stall, two urinals and lavatories, as well as all the required accessories. The women's restroom contains one handicapped stall with a handicapped lavatory, two stalls and lavatories, as well as all the required accessories. Composting toilets are recommended for all of the restroom facilities. The toilets require less infrastructure and water, which is welcomed in the Florida Keys delicate environment. The janitor/storage closet shall be non-accessible to the public, providing a mop sink and a storage space for cleaning equipment and products. A common plumbing chase allows easy access for maintenance and repair of restroom fixtures. The restrooms are to be mechanically ventilated for cooling and odor removal. Architectural elements anticipated within this restroom are as follows:

- Electrical outlets
- Lighting
- Compost toilets, urinals, lavatories

- Soap and paper towel dispensers
- Mirror on interior
- Ventilation/heating
- Trash receptacles

8.4.4.2 Primary Trailhead Building
This building is approximately 40' - 50' x 40' - 50' and consists of the restroom facility (see section 8.4.2.1) and a porch, typically 12' deep. The porch size may vary based on site requirements and the intensity of anticipated use. This structure serves as a shelter and provides hygienic functions for trail users. The building shall be elevated on concrete piers in the traditional "Conch" style, but completely accessible to the physically challenged by means of a handicapped ramp. A central stairway leads the public up to the open-air porch, which contains benches, picnic tables, and chair seating. The roofing material is proposed to be a standing metal-seam roof extending over the porch to provide protection and shade. Structural components shall be heavy wood timbers with exposed beams and posts. The structure is to be designed in the traditional "Conch" Architecture and positioned per the individual trailhead site designs. Architectural elements to be provided within this primary trailhead building are as follows:

- Picnic tables
- Drinking fountain adjacent or within close proximity
- Electrical outlets
- Lighting
- Trash receptacles
- Interpretive panels (optional)

8.4.4.3 Open Air Pavilion
This structure serves as a gathering space for small groups and individual family users. Its proposed size is approximately 400 sq. ft. (20' x 20'). It contains three to four benches beneath the shelter, mounted to the textured concrete floor slab. The structure shall be heavy wood timbers with exposed beams and posts. This pavilion is open on all sides and covered with a standing metal-seam roof with an ample overhang, consistent with the "Conch" Architecture of the Florida Keys. Architectural elements anticipated within this individual pavilion are as follows:

- Seating benches (3 - 4)
- Textured and stained concrete floor
- Trash receptacle
- Interpretive panels (optional)
- Security lighting (optional)

8.4.4.4 Conch Shelter
Outpost shelters shall be designed to protect users from inclement weather (sun, lightning, hail, etc.) and to offer a place to rest along the trail. A telephone and drinking fountain is recommended every 6 miles, or approximately every third outpost, implemented when trail traffic reaches approximately 10,000 users per month in a single segment or at the discretion of the managing agency. The typical spacing of the outpost shelter is every 2 miles on the trail, except near trailheads where spacing is reduced to every 1 mile to accommodate pedestrians and the disabled users.

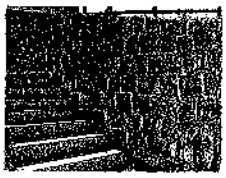
This structure is proposed to be approximately 12' x 15', and is open on all sides. A seating area is to be provided centrally within this structure for protection from the elements and a place to rest. The benches shall be mounted directly to the textured concrete floor slab. The structural components shall be exposed pressure treated pine timbers. The roof is a standing metal-seam roof, consistent with the traditional "Conch" style. Architectural elements anticipated within this outpost structure are as follows:

- Bench and shelter area
- Textured and stained concrete flooring
- Trash receptacle
- Interpretive panels
- Telephones (optional)

The diagrams of the Pigeon Key Conch architecture provided on the following page further illustrate the recommended primary trailhead building.

Conch Trailhead Architectural Character

Trailhead Building Notes:



Native Keystone -
Use native keystone for all non-building construction near the finished grade including low walls and , water fountain bases. Use concrete for building piers (see notes below).

Restroom & Porch Interiors
Provide open joist wood construction for the interiors of the restroom buildings.

Windows raised above the sight line will provide quality interior illumination and privacy.

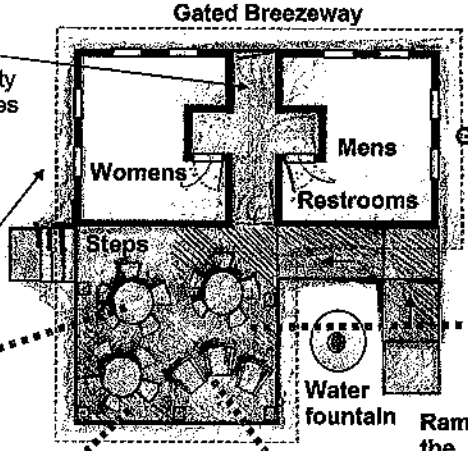
Keys styled wood frame wall construction and wood clad interior walls to evoke the naturally ventilated character present in traditional Conch architecture.

Paint Color
Paint the trailheads the original colors of the Florida East Coast Railroad buildings

Porch - Provide a covered porch with seating for weary trail users

Gated Breezeway

Gated Breezeway -
Gates will provide security for the restroom entrances and the breezeway. Secured fixed windows are provided on all sides but the porch side.



Gabled end of building similar to Museum

Ramp for the disabled

Conch Architecture

The restroom buildings will be rarely needed occasionally at trailheads. The Conch, railroad camp style, is a basic wood frame construction technique and is recommended for the interiors of all trailhead restrooms throughout the Florida Keys Overseas Heritage Trail.

In the existing parks where new trailhead buildings are needed, the style of the trailhead building may vary slightly to accommodate that existing architectural character within that park. The Keys Conch "railroad" style should be present in all new trail related construction to maintain consistency of architectural design throughout the trail. Where variation is desired, it is recommended that only the color of the building change to match that of other park buildings. This decision should be made on a site specific basis by the Trail Manager.

Restroom & Porch Floor Plan
The women's and men's restrooms are recommended to have internal entrances located in a common breezeway. The necessary access ramping for the disabled users is required by the Americans With Disabilities Act connecting to the main porch. Seating should reflect the flavor of the Florida Keys.

Front Porch -
Facing North to Florida Bay, and West to the Sunset
(As illustrated on Figure 8.4.1, the Seven Mile Bridge Trailhead at Knights Key)

View north to Florida Bay and onto the main Trailhead Gathering Terrace

View west to the center line of the Seven Mile Historic Bridge and the sunset

Piers
Use concrete piers generally matching the design of the original Florida East Coast Railroad buildings. New piers are to be approximately 1.5 feet above finished grade to raise the building for ventilation purposes. Plant base of building with native vegetation.

Museum Style
Provide a porch similar to the Pigeon Key Historical Museum on all restroom buildings that will function as a shelter

8.4 SIGNAGE AND INTERPRETIVE CENTER RECOMMENDATIONS

This section summarizes the planned signage and interpretive stations proposed for the Florida Keys Overseas Heritage Trail. Adequate signing and marking are essential on shared use paths. They alert bicyclists to potential conflicts and convey regulatory messages to bicyclists, motorists, and pedestrians. In addition, guide signs, such as those indicating directions, distances, route numbers, and names of crossing streets, should be used in a similar manner as they are on highways. [14] All signage should comply with FDOT guidelines. General guidance on signing and marking is provided in the Manual on Uniform Traffic Control Devices (MUTCD), from the Federal Highway Administration. The examples presented in this Master Plan are intended to be a starting point for future design phases of the project.

8.5.1 Signage Design

Trail safety, informational and instructional content, trail image, and trail character are addressed within this signage package. Signage should generally be consistent with other local trail signage. The design, placement, operation, maintenance, and uniformity of trail signage must adhere to the following requirements:

- Fulfill a need;
- Command attention;
- Convey a clear, simple meaning;
- Command respect of road users; and
- Give adequate time for proper response. [24]

Design is a critical feature to permit the device to fulfill a need and command the respect of road users. Placement plays an important part in making the device effective and in giving adequate time for proper response. Uniformity greatly enhances the ability of a device to convey a clear, simple meaning to the user. Uniformity in design includes shape, color, symbols, wording, lettering, and illumination or reflection. Signage design could vary based on informational content, but the examples provided should be considered the basis for a signage system with interchangeable components such as:

- The Florida Keys Overseas Heritage Trail logo is to be incorporated into all trail identity, directional, and informational signage.
- Incorporation of Statewide Trails System styles of heavy pressure treated pine members (timber styled) stained driftwood gray evoking a nautical scenic trail.
- Helvetica "styled" lettering should be used for quick reading from both U.S. 1 and the trail.
- Heavy timber construction to resist vandalism, low maintenance, and storms.
- Incorporation of the FDOT and FDEP basic signage standards into the signage proposed on the highway is recommended.
- Bicycle signs and markings must be maintained to command respect from motorists and bicyclists.

Figure 8.5.1 graphically displays two conceptual trail signage ideas. These images were presented at the Public Workshops in May 2000. Both images received comments, however, the majority of workshop attendees preferred image two.

8.5.2 Regulatory and Warning Signage

Care should be taken not to install too many signs. A conservative use of regulatory and warning signs is recommended, as these signs, if used to excess, tend to lose their effectiveness. Shared use paths should designate lanes for different user groups using markings and signage. These designations should provide adequate widths for two-way bicycle traffic and pedestrian/in-line skate traffic. Mixing high-speed bicyclist traffic with pedestrian traffic, including children, in-line skaters, and the disabled, is unsafe. Warning signs should also alert users to any dangers or hazards along the trail.

8.5.3 Directional Signage

Directional signs provide information regarding trail access, trail route, and trail lane designations. The frequent display of guide signs aids in keeping bicyclists on the designated route, and does not lessen their value. Communities in close proximity to the trail should use directional signage to market the trail to residents and visitors and to

provide distances to the trailhead. Signs should be placed appropriately to keep trail users on course, especially in areas like trail crossings and intersections or in places where the trail takes unexpected turns.

8.5.4 Informational Signage

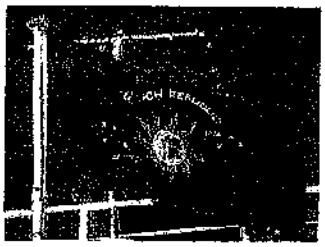
There are numerous topics that are important to address at informational kiosks and trailheads, including information relevant to the trail, trail bridges, and local communities. The following are examples of informational and instructional content that should be displayed:

- Scenic Highway Program information and history
- Keys history unique to that segment of the trail. This could include specifics on the Historic Flagler Railroad Bridges or early settlement information.
- Environmental topics such as native vegetation and wildlife, local environmental organizations, and environmental information specific to the individual Keys. There is some existing signage on both the Great White Heron National Wildlife Refuge and the Florida Keys National Marine Sanctuary. Efforts to collaborate on signage are recommended to ensure viewsheds are protected.
- Rails-to-Trails Conservancy and Statewide Greenways and Trails efforts, as well as other funding source recognition including FDOT, Monroe County, and Department of Recreation and Parks.
- The history of the Flagler Railroad, local community, and interpretation of the change from rail to road to trail.
- Commercial enterprise recognition in the local communities.

8.5.5 Signalized Crossings

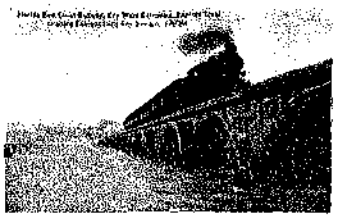
It is rare when a traffic signal is installed solely for bicyclists, but at some locations it may be necessary to install signal devices to facilitate bicycle travel through the intersection. The trail corridor along U.S. 1 presents a unique circumstance because it is the main road throughout the Keys. Traffic along U.S. 1 often reaches high speeds and is incessant. At mandatory crossings it will be beneficial to install a hot button for pedestrian and bicyclist use. Figures 8.2.1 – 8.2.14 provide details of the crossings in relation to the trail alignment.

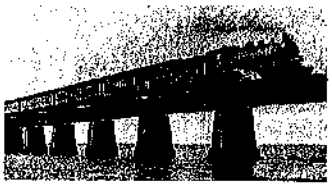
Florida Keys Images and Identity Signage Ideas

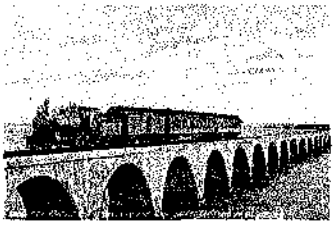


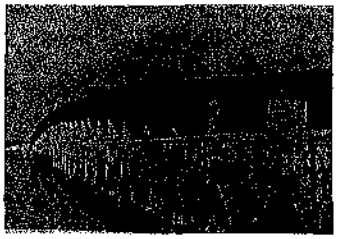
"Idea 1" of the trail identity sign was not preferred during 3 public involvement meetings.

Idea 1

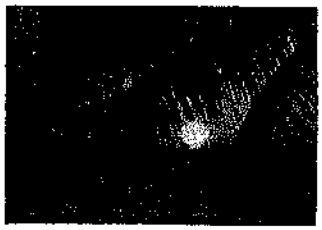


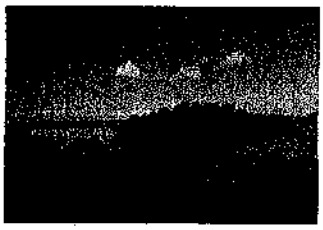


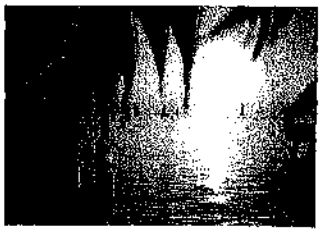




Preferred Idea 2







An early version of this graphic was displayed at the second series of Public Workshops and comments were received on which image the attendees preferred. Idea 2 was the overall preferred image. This is a conceptual planning level image and is not meant to be a construction document. Additional ideas and public comment should be researched during the trail design phase. Other trails have invited local artists to embellish original planning level concepts.

Section 9.0

TRAIL IMPLEMENTATION

As trail implementation begins, changes to this plan should be expected and anticipated as new opportunities arise. As the trail develops, new ideas and needs will also develop. The challenges to implementing a trail of this magnitude are very real. The complexities of the island geography, limited right of way, existing site conditions, environmental sensitivity, multiple jurisdictions and regulatory authority, and the requisite funding all contribute to how quickly and efficiently this trail can be "put on the ground." In this section we will identify implementation mechanisms that will ensure the long-term sustainability of this trail.

Henry Flagler's vision ultimately made rail service and later automobile travel possible in the Florida Keys. It is now incumbent upon Monroe County, the State of Florida, and others interested in a linear non-motorized trail along or near Flagler's original route to develop and implement a new vision for the Florida Keys. This time, however, this vision must take into account many new considerations. These include, but aren't limited to: environmental impacts; access to the numerous adjacent businesses; safety of the thousands of local residents and visitors who will interact with the trail; funding needs to construct a world-class trail that will be used by many different user groups; and a plan to properly manage and maintain the linear park. This Master Plan forms the trail vision and will assist in guiding the project throughout construction into a fully connected and user-friendly multi-use trail facility.

The implementation of the FKOHT has already begun in several areas throughout the Keys. Monroe County has existing bicycle/pedestrian facilities that will be incorporated into the FKOHT project. These paths are managed and maintained by Monroe County. Further, an existing memorandum of understanding between the FDOT and FDEP provides for litter control and minimal maintenance of the abandoned bridges. Several bridges and bridge segments have been converted into fishing piers and scenic pathways for public use and are maintained under the same agreement, with exception to the Seven Mile Bridge connection to Pigeon Key, which is maintained by Monroe County.

There are eight phases in the implementation process.

1. Complete existing projects
2. Install signage on existing trail
2a. Site Distance and Clearance
3. Develop new trail
3a. Trail Surface
4. Establish trail furnishings in communities
5. Points of Interest
6. Identification and signage of side structures
7. Develop boardwalks in constrained areas
8. Bridges

The first phase is to complete existing facilities and agreements that are already in place. FDOT, for example, has nine projects in Monroe County scheduled in its Five Year Work Program. Monroe County has requested that those projects already designed should continue through FDOT's Work Program process. The remaining enhancement funds will be administered by FDEP. The opportunity to integrate these projects into the unified FKOHT will come later in the process. The second phase will

be to install FKOHT signage and the appropriate safety signs along the existing portions of the trail. Section 8.5 discusses signage and recommendations. The third phase is establishing the new trail and connecting the gaps. The fourth phase of implementation will be to develop the trail furnishings within the communities including kiosks, directional and interpretive signs, benches, bicycle racks, and other items identified by the local communities. Creating a unified trail corridor will strengthen the perception of the trail and increase support for the project. Communities must also become part of the phasing plan. The information and amenities that will enhance the trail user's experience of the FKOHT are essential and should be developed along with the phased development by the Florida Park Service.

Private development within each community is also important and can occur simultaneously with the Florida Park Service trail development. These can include bicycle shops, restaurants, snack shops, shuttle services, and other private developments that support the trail.

The fifth phase will incorporate local points of interest into the trail corridor. All points of interest, including connecting Federal, State and County parks, interpretive structures, rest stops, and other local areas of interest should be completed. Any additional public trail facilities should be developed during this phase also. Phase six will include installation of the directional structures. The structures will identify side trips from the trail. The seventh phase of implementation will build the permitted boardwalks in constrained areas and scenic overlooks.

The final phase of trail implementation for this unique project is bridge conversion, rehabilitation and spanning gaps in the bridge structure. It should be noted that many bridges are ready for trail use with only minor improvements necessary. Non-continuous bridges or those that need major rehabilitation should be opened as repairs are completed. These issues are dealt with extensively in section 8.3.

9.1 STRATEGY

The strategy adopted by the planning team relies heavily upon input from local citizens and maximizing the use of existing facilities, including the abandoned bridges. As with other sizable trail projects, implementing the planning and design phase of the trail can be anything but a linear process. This process will continue even after the development of the Master Plan.

The recommended strategy for implementing the Master Plan reflects the overall planning process. Input from local citizens, comprehensive data gathering and analysis with an emphasis on safety concerns, and use of existing facilities including the abandoned bridges and park facilities was relied upon heavily. As data became available, it was coordinated with related local, state, and federal agencies and organizations that would be potentially impacted by the trail. Receiving early and frequent feedback from agencies allowed the team to "ground truth" the Master Plan as it was developing. Building flexibility into the approach and allowing the strength of the trail's vision, attracted widespread attention. Necessary officials and agencies needed to build and manage the trail were considered essential elements in successful implementation of this Master Plan.

Implementing the trail project should continue many of the same elements that were incorporated into the development of the master plan. The builders and managers of the trail should rely heavily upon citizen input through well-advertised and coordinated public workshops. With the commitment of the DRP to manage the trail and oversee the design and construction phases, it will be a comfortable transition for them to incorporate existing facilities into the developing trail. Implementation should continue to focus on protection of the fragile natural resources while creating a safe, accessible trail for local residents and visitors.

9.2 AGENCY COORDINATION

For a project of this magnitude to be successful, it is very important for all

involved agencies to be working together cooperatively. Coordination ranges from sharing the responsibility of planning and permitting the trail, to accessing funding for development and management activities.

Brief descriptions of current and future partnership agreements are outlined below.

- **Litter Control and Pick-up** – Responding to the local community's need and requests, an agreement between FDOT and FDEP was created to coordinate and fund litter control and pick-up on the abandoned bridges. This agreement has been gradually increased to offer more services and is very well received by the local community.

- **Allocation and Management of Design and Construction** – An arrangement has tentatively been reached between FDOT and FDEP in which FDEP will administer approximately $12.5 million worth of FDOT Enhancement Program funding projects identified in their Five Year Work Plan. Monroe County originally requested these individual projects as part of the Federally funded ISTEA and also manages these segments. Each project will serve as vital segments of an overall continuous trail. See Section 10.1 On-Going Efforts Toward Implementation and Management.

- **Permitting** – In response to the complexities of applying for and receiving the necessary permits to construct new open space initiatives in the Florida Keys, FDEP will take the lead in coordinating the necessary steps to successfully permit the trail through the South Florida Water Management District.

- **Management** – In order for a trail project to remain successful after it is planned, funded, and constructed it must be managed appropriately. FDEP has demonstrated their commitment and support of a trail that links the numerous state parks and public open spaces located throughout the Florida Keys. This will be by far the longest and most diverse state trail in Florida and perhaps the nation. FDEP has agreed to take over the responsibility of maintenance agreements between Monroe County and FDOT for existing bike paths along U.S. 1.

- **Local Government Participation** – A unique aspect about Monroe County is that several local governments have incorporated because the County has been unable to provide them with certain services. The success of the trail project will require additional cooperation between the local governments and Monroe County. Fortunately, the local governments have shown support for the trail by demonstrating a willingness to support and work with Monroe County in coordinating public input and design considerations. They include the cities of Key West, Marathon, Islamorada, Village of Islands, Key Colony Beach, and Layton.

- **Strong Commitment from FDEP** – A recently completed video created by OGT highlights three world-class trail and greenway projects that have been identified by the leadership of FDEP as priority projects. These amazing projects include: the Cross-Florida Greenway, the L.O.S.T. Trail (Lake Okeechobee Scenic Trail), and the Florida Keys Overseas Heritage Trail. Each has been identified for completion within six years.

- **Strong Commitment from FDOT** – FDOT has provided funding for the Monroe County Bicycle Pedestrian Planner and will continue to construct bike paths throughout the County as part of their Five Year Work Program. FDOT has committed $12.5 million in enhancement funding, formed

agreements with FDEP, and will continue to be an important supporter of the FKOHT.

- **Strong Commitment from DOS** – DOS has expressed an interest in preserving the Historic Bridges and will be working with Monroe County to include all the bridges on the National Register of Historic Places.

Although substantial progress has been made, several key steps need to be taken to continue advancing the trail. These key steps include, but are not limited to:

Old Keys Bridges Structural Study – This study will provide important research on the stability and subsequent public use of the abandoned bridges. This analysis is essential before a formal recommendation on how best to utilize these historic bridges is reached. The recommendations made in this Master Plan are assuming that the bridges are structurally stable. Alternatives are presented in case the bridges are not deemed structurally stable. The first phase of the study is scheduled for completion is December 2000. This study is a collaboration of FDOT and FDEP.

Identification of Necessary Funding/Phasing – Although the effort to coordinate the planning and construction of several segments of the trail is encouraging, clearly there is a significant funding void to complete the entire trail including retrofitting the historic bridges. Strong leadership from Monroe County's legislative delegation and its citizens as well as an equal commitment from FDEP and FDOT is needed for this to become reality. Funding sources include, but are not limited to TEA -21 Enhancement Program, FDEP - Office of Greenways and Trails Acquisition Funds under the Florida Forever Act, Department of Community Affairs - Florida Communities Trust under the Florida Forever Act, Florida Recreational and Development Assistance Program (FRDAP), and the Recreational Trails Program. See Section 9.4, Funding.

Given the complexity and cost of such a large project it will be necessary to phase in the development. The phase in timeline should be determined by the agency overseeing design and construction.

Continued Development of Public Support – All successful trails share the common thread of strong local support and an active citizen support effort. It is suggested that the County take the lead in nurturing the formation of a local citizen group whose purpose is to focus solely on the creation of the trail and subsequently for management and trail event related support. An Adopt-a-Trail program is highly recommended. Similar in nature to the Adopt-a-Highway programs, groups, families, or businesses are recruited to be responsible for making sure the trail is free of hazards, free of litter, and that signs or amenities are in good repair along certain segments of the trail. Another partnership option used by many managing agencies is a Trail Ranger Program. Volunteers in this program are trained in such things as basic first aid, trail maintenance and grooming, tree and brush trimming and safety. The Florida Park Service would train crewmembers.

Continued Development of A Formal Management Plan – The DRP has committed to manage the trail. Discussions need to take place that will address such issues as: 1) help identify the funding and resources DRP will need to appropriately manage the facility; 2) how the trail will interact with existing park facilities; 3) management of the bridge sub-structures; 4) phasing of the various segments as funding becomes available.

Preparation of Construction Documents – The Master Plan is not intended to provide actual construction documents needed to construct the entire 106.5-mile corridor. As funding becomes available to build segments of the trail, the agency administering the funds will need to retain individuals with extensive experience in multi-use trail design and construction.

9.3 PERMITTING

Numerous permits will need to be obtained for the project. FDEP will be the applicant because they have agreed to manage the

trail. Generally, the trail corridor is located in the FDOT right of way or on Division of State Lands (DSL) property.

9.3.1 Monroe County Permits

It should be noted that Monroe County permits would only be required in instances where the project is not in FDOT right of way or DSL property. An example of this is the proposed Seven Mile trailhead at Knight's Key. Monroe County utilizes the Wetland Development Regulations found in Sec. 9.5–347 of County Code of Ordinances for the protection of the various types of wetlands found throughout the County. The Keys Wetland Evaluation Procedure (KEYWEP) evaluates the function provided by each wetland. Based on the scoring results, the wetland is classified. Red-flag wetlands are those that exhibit high levels of function and in which development is prohibited. The trail corridor contains many such potential areas. Each wetland area should be carefully evaluated in partnership with a County Biologist. Other wetlands that have various levels of disturbance can be impacted provided appropriate levels of mitigation are provided as outlined in the Code.

Several upland vegetation community types are also identified within the Monroe County Code of Ordinances as sensitive habitat and as such are afforded certain protections within the County. The environmental design criteria (as discussed in Sec. 9.5-345 of the Code) advocates minimization by limiting development to the least sensitive habitat. In this preliminary review, it appeared that all of the natural upland habitats adjacent to the Overseas Highway are already disturbed to various degrees due to the presence of the highway. Should the Trail corridor intersect a high quality community, a Habitat Evaluation Index (HEI) analysis will need to be conducted (in coordination with a County Biologist), and all endangered or threatened plants will need to be identified and preserved.

If quality undisturbed habitat is present, the HEI analysis must be completed as part of an application for approval for a development within Monroe County. The analysis was developed to evaluate the relative ecological and cultural quality of the remaining hardwood hammocks and pinelands of the Florida Keys both with respect to their inherent character and integrity, and their context in the Florida Keys ecosystem. The HEI analysis must identify the distribution and quality of undisturbed hammocks and pinelands within a project. The overall goal of the County is to maintain in perpetuity the quality of the habitat within a project site, even after development.

9.3.2 South Florida Water Management District & Florida Department of Environmental Protection

The Trail is proposed to be located within fifty feet of the edge of U.S. 1. In many areas, there is sufficient width of upland available along the roadway to accommodate this project. However, there are environmentally constrained areas that have uplands that vary in width from only twenty-four feet to less than ten feet from the edge of the road shoulder. In these constrained areas, wetlands will be impacted. Obtaining environmental permits for proposed fill impacts such as pilings for boardwalks or secondary impacts such as the trimming of mangrove trees for bicycle riding will be necessary and challenging. The South Florida Water Management District (SFWMD) will have jurisdiction over the proposed fill impacts and will be the primary state permitting agency.

Public Interest Test

In order to determine whether or not a project such as the Trail is permittable, staff at the SFWMD evaluate each project against a Public Interest Test using Public Interest Assessment Criteria. The seven "tests" include:

1. The project will not result in adverse impacts on the health, safety, welfare, or the property of others.
2. The project will not result in adverse impacts on the conservation of fish and wildlife, including threatened and endangered species, or their habitats.
3. The project will not adversely affect navigation or the flow of water or cause harmful erosion or shoaling.
4. The project will not adversely affect fishing or recreational values or

marine productivity in the vicinity of the activity.

5. The temporary or permanent nature of the project.
6. The project will not have an adverse affect or enhancement of significant historical and archeological resources.
7. How the current condition and relative value of functions being performed in the project area may be affected by the construction and operation of the project.

Staff evaluates the merits of each project in light of the public interest, as listed above. In addition, when a project such as this one is located within sensitive waters, evaluation of the following additional criteria and the consistency with existing management plans will be weighed heavily when determining whether a project is in the public interest. Other benefit categories include public access and improved public land management. An example of a specific benefit includes providing public access or facilities for public land management activities.

- *Fish and Wildlife Abundance, Diversity and Habitat.*
  Reasonable assurances must be provided that the regulated activity (the trail) will not cause impacts to wetland and other surface water functions that in turn result in adverse impacts to the abundance, diversity, or the habitat of wetland dependent fish and wildlife including those listed as Endangered, Threatened, or Species of Special Concern. Careful consideration to avoid the locations of rookeries and favorite roosting and feeding spots in the design stage is one way to address this criterion.

- *Fisheries, Recreation, Marine Productivity*
  The SFWMD balances the criterion regarding fishing or recreational values and marine productivity. Reasonable assurances must be provided that (the trail) will not result in adverse effects to sport or commercial fisheries or marine productivity. The District has indicated that an example of a potential adverse impact is the construction of a traversing work, which could impact the current use of the waterway for boating. Knowledge of fish spawning areas and local boating "hot spots" will be necessary to avoid potential impacts.

- *Elimination or Reduction of Proposed Wetland Impacts*
  The degree of impact to wetlands and other surface water functions proposed by the implementation of an activity, whether the impacts can be mitigated, and the practicability of alternatives, which can reduce or eliminate impacts to these functions, is all considered by SFWMD in determining if the activity is permittable. To receive a permit, an activity must not cause a net adverse impact to wetland or other surface water functions, which is not offset by mitigation. Every effort should be made to avoid or reduce impacts on wetlands or other surface waters by locating the Trail in the least sensitive habitat.

Conditions for Issuance

In addition to the public interest test, the staff of South Florida Water Management District must show that a project meets the general conditions for issuance:

a) The project results in no adverse impacts to the value of functions provided to fish and wildlife and listed species by wetlands and other surface waters.
b) The proposed project to be located in, on, or over wetlands or other surface waters, will not be contrary to the public interest, or if the project is located within Outstanding Florida Water, the activity must be clearly in the public interest.
c) The project cannot result in adverse impacts on the quality of receiving waters.
d) A project located in or adjacent to Class II waters must comply with

additional criteria as set forth in paragraph 40E-4.302 (1) (c) F.A.C.

e) The construction of vertical seawalls must comply with additional criteria as set forth in paragraph 40E-4.302 (1) (d) F.A.C.

f) Once constructed, the regulated activity(ies) cannot cause adverse secondary impacts to water resources.

g) Once constructed, the regulated activity(ies) cannot cause unacceptable cumulative impacts upon wetlands and other surface waters.

Special Waters and General Criteria for Protection

The unique aquatic habitat that exists in and around the Florida Keys has been afforded extra protection by all levels of government. These areas will have regulations specifically designed to protect the natural resources found there. The layout of the proposed trail must take these specifically designed regulations into account, and avoid or minimize any potential adverse impacts that may occur from construction or eventual operation of the Trail. Table 3 in Appendix II includes a list of all specially designated areas within the Keys.

The State of Florida has set aside areas as parks and sanctuaries, but has gone a step further to protect the quality of water through out the Keys. The waters are classified based on quality and designated uses and most areas in the Keys are Class II. The classification system is as follows:

CLASS I	Potable Water Supplies
CLASS II	Shellfish Propagation or Harvesting
CLASS III	Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
CLASS IV	Agricultural Water Supplies
CLASS V	Navigation, Utility and Industrial Use

Water quality classifications are arranged in order of the degree of protection required, with Class I water having generally the most stringent water quality criteria and Class V the least. However, Class I, II, and III surface waters share water quality criteria established to protect recreation and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The specific criteria created in each classification are designed to maintain the minimum conditions necessary to assure the suitability of water for the designated use of the classification.

The SFWMD generally will deny a permit for a regulated activity in Class II waters unless the applicant submits a plan or proposes a procedure to protect the waters in the vicinity of the project. The plan should detail measures to prevent significant water quality damage and should provide reasonable assurances that the standards for Class II waters will not be violated.

In addition to the Class II waters in and around the Keys, there are several areas designated as Outstanding Florida Waters, Special Waters, or Outstanding National Resource Waters. Outstanding Florida Waters (OFW) are waters designated by the Environmental Regulation Commission as worthy of special protection because of their natural attributes. All or part of a water body may be included in the Special Waters Category of Outstanding Florida Waters. Outstanding National Resource Waters (ONRW) are waters designated by the Environmental Regulation Commission that are of such exceptional recreational or ecological significance that water quality should be maintained and protected under all circumstances, other than temporary activities allowed under the Federal Clean Water Act. It is the Department's policy to provide the highest protection to OFW and ONRW. Generally, no degradation of water quality is permitted in these waters.

These criteria established by the State are minimum levels to protect the designated uses and classifications of a water body. In order to keep the quality of water high enough meet the standards, activities including fill of any kind are generally prohibited. However, when reviewing the

proposed trail project, the SFWMD may find that a proposed fill impact is acceptable. If they determine that an impact, such as sinking the pilings for boardwalks, will not reduce the quality of the water below the classification established in that area, they *might* permit the activity. ***Under certain circumstances, they*** **may** ***permit the activity if the project is determined to be clearly in the public interest,*** and all other applicable state requirements are met.

Florida Sovereign Submerged Lands
Sovereignty lands are those lands including, but not limited to: tidal lands, islands, sandbars, shallow banks, and lands water ward of the ordinary or mean high water line, to which the State of Florida acquired title on March 3, 1845, by virtue of statehood, and of which it has not since divested its title interest. Nearly all of the waters within the Florida Keys are sovereign and as such are subject to the management policies, standards, and criteria set forth by the State in Chapter 18-21 of the Florida Administrative Code.

Construction of boardwalks in the water in the environmentally constrained areas will require approval from the state. For approval, all proposed activities on sovereign submerged lands must *not* be contrary to the public interest and must be limited to water dependent activities *unless* it is determined that it is in the public interest to allow an exception. In determining whether to approve or deny a request to use sovereign lands, the Board of Trustees (appointed by the Governor) will evaluate an activity on a case-by-case basis. The Board, acting as Trustees for all state-owned lands, reserves the right to approve, modify, or reject any proposal. A lease, easement, or consent of use is generally authorized only for water dependent activities or certain other activities identified under 18-20.004 (1) (e) (1-10). The boardwalk does not fit into any of these categories. However, 18-20.004 (l) states that other uses of the preserve, or human activity within the preserve, although not originally contemplated, may be approved by the Board, but only subsequent to a formal finding of compatibility with the purposes of Chapter 258, Florida Statutes, local management plans, and when all other applicable regulations are met.

Public projects, which are intended to provide access to and use of the waterfront, may be permitted to contain minor uses that are not water dependent. Proposed activities located along seawalls or other man-made structures, those located outside of aquatic preserves or Class II waters, and those whose non-water dependent use is incidental to the basic purpose of the project and constitutes only minor near-shore encroachments on sovereign lands may be permitted. These items should be addressed in the design of the trail and location of the corridor. If this is accomplished, the trail, although not water dependent in its entirety (recreational pleasure of looking out over the water is water dependent) may be permittable.

As a note, applications for activities on sovereign lands adjacent to uplands can only be made by and approved for by the owner of the uplands, their legally authorized agent, or persons with sufficient title interest in the uplands for the intended purpose. Also, the boardwalk structure cannot extend more than 25 percent of the total width of the waterway.

9.3.3 Federal - U.S. Army Corps of Engineers

The federal government has created several National Parks and sanctuaries such as Key Largo Marine Sanctuary. In addition, the U.S. Congress, in Section 101(a)(2) of the Federal Water Pollution Control Act, declares that the protection of water of a quality sufficient to protect fish, shellfish, and wildlife, as well as recreation in and on the water, is an interim goal to be sought whenever attainable.

The U.S. Army Corps of Engineers evaluates the merits of an application for fill in wetlands for the trail. Through memorandums of agreement, the USFWS and the EPA also review and provide comments for portions of the application. Generally speaking, the ecological data and narrative explanations as to the avoidance and reduction of impacts to wetlands and listed species collected for the state permits is adequate for federal review. However, it is

essential to address those species that are protected by the Federal Government and not by the State of Florida.

9.3.4 Permitting Summary

The environmental permitting of a project like the Florida Keys Overseas Heritage Trail is challenging. The project does not fit into the general activity categories that are regulated. The concept of the trail is clearly in the public interest, as it provides recreational, historical preservation, and environmental education opportunities for the public, ties into multiple State and National Parks, and promotes eco-tourism. However, it is essential to plan the trail so that adverse environmental impacts do not render it contrary to the public interest. It is important to evaluate and categorize the upland and wetland habitats in close association with the Monroe County Biologists. Red-flag wetlands, in which development is prohibited by County Ordinance, will control the corridors location and ultimate design.

The South Florida Water Management District will review the effect of the trail on wetland functions (including habitat for wetland dependent Threatened and Endangered Species, and Species of Special Concern), water quality (including specially designated areas and protection regulations), and whether consent of use or lease agreement is necessary for the project on sovereign submerged lands. Because of the project's non-water dependent nature and the unique habitat in which it occurs, SFWMD staff must determine that the project is clearly in the public interest for it to be permittable. The U.S. Army Corps of Engineers will also be evaluating the same issues, however, emphasis will be placed on avoidance of impacts both direct and indirect on federally listed plant and wildlife species.

Public support, along with that of the national parks, state parks, the Florida Keys National Marine Sanctuary, and upper level management support from local, state and federal governments will be necessary. Detailed pre-application meetings are recommended with Monroe County Biology staff, the South Florida Water Management District, the FDEP, and the U.S. Army Corps of Engineers to determine if the project (as conceptually designed) is permittable and if so, what specific additional information should be evaluated in order to implement this project.

The Florida Department of Protection will also need to be consulted because the majority of the land falls in their right-of-way. FDOT has played a prominent role throughout the Master Planning process and will continue to be important in the future.

TABLE 9.1
LIST OF REGULATIONS AFFECTING THE TRAIL PROJECT

Monroe County Code of Ordinances
- Environmental Design Criteria Sensitive Habitats (Section 9.5-338, 344, 345) Wetland Development Regulations (Section 9.5-347)

South Florida Water Management District
- Delegation and some oversight by the Florida Department of Environmental Protection
- Fill Impacts to Wetlands and State Listed Wetland Dependent and Threatened and Endangered Species and Species of Special Concern (Chapter 40E Florida Administrative Code and Chapter 373 Florida Statutes)
- Class II Water Designation and Additional Criteria (Chapter 62-302 Florida Administrative Code)
- Outstanding Florida Waters Designations and Additional Criteria (Chapter 62-302 Florida Administrative Code)
- Sovereign Submerged Lands, Criteria and Type of Use (Chapter 18-20, 21 Florida Administrative Code)

US Army Corps of Engineers
- Memorandum of Agreements with Environmental Protection Agency and U.S. Fish and Wildlife Service
- Fill Impacts to Wetlands and Federally listed Threatened and Endangered Species (33 CFR)

U.S. Coast Guard
- Bridge Permits

Florida Department of Transportation
- Permits specific to trail within FDOT right-of-way

9.3.5 Special Agency Considerations

While permitting in not necessarily required, the following additional agency guidelines will need to be consulted:

- Endangered Species Act (USFWS) – For impacts to Federally listed threatened or endangered species.
- Section 106 (National Historic Preservation Act) - For impacts to historic resources, such as the Historic Bridges.

9.4 FUNDING

The narrative of funding sources is only intended to assist in identifying potential opportunities. It does not guarantee funding or that an application submitted for funding meets the required criteria.

9.4.1 Florida Department of Transportation

Highway Beautification Council Grant Program – Provides funds to local governments for landscape beautification projects along roadsides. The main requirements of the grant program are the submittal of construction ready highway landscape plans and the signing of a maintenance agreement for the area. This is a 50/50 matching program.

Transportation Enhancements Program – Provides funds for transportation-related activities designed to strengthen the cultural, aesthetic, and environmental aspects of Florida's intermodal transportation system. The program provides for the implementation of a variety of projects including bike and pedestrian facilities.

> District 6 – Funds are available through a formula based program for projects submitted to the district offices.
>
> Central Office – A portion of this federally funded program is retained by the FDOT Central Office for use on projects of statewide significance or impact. Applications are submitted directly to the central office for consideration.

National Scenic Byways Grant – This program provides funding to projects associated with corridors designated as a scenic byway. Eligible activities include: safety improvements; construction of facilities for use by pedestrians and bicyclists; improvements that enhance access to areas for recreation; protection of historical, archeological, and cultural resources adjacent to the highway; and development and provision of tourist information. Typically funding is made available on an 80/20 split.

Section 402 Highways Safety Grant Program – This program is intended to provide seed money to assist in initiating new sate and local traffic safety programs involving the disciplines of engineering, enforcement, education, and emergency medical services. By law 40% of the funds must be spent by local agencies. Only non-construction activities such as inventories, training, equipment, manpower, and public information/education activities are eligible under this program.

Adopt-a-Highway Program – A program administered by the Department of Transportation to keep Florida's highway system litter free. Businesses and citizen groups may adopt a section for a two-year commitment of keeping their section free of litter.

State Block Grant Program – The various sections of the program are listed below:

> Section 5303 –Provides funds for planning projects.
> Section 5307 – A formula based program that funds capital and operating assistance in urbanized areas.
> Section 5310 – Programs for capital projects to meet special needs of elderly and handicapped persons.
> Section 5311 – A formula based program that funds capital and operating assistance in non-urbanized areas (rural).

Florida Scenic Highways Program – Provides technical assistance to local governments to identify and protect scenic roadways throughout the state. Designated corridors, including associated greenway

and trail projects, may be eligible for increased funding opportunities.

Mobility 2000 Program - House bill 1965 entitled, "Mobility Florida 2000 Trail Funding", was established this legislative session. This bill consists of road enhancements "package" which includes a provision allowing governments and non-profits seeking trail funding to compete with roads, airports, and ports. Funding will provide up to $92 million per year worth of extra road funds that will bring in economic development. There is great potential here for rural areas in need to attain funding for trails.

FHWA Public Lands Highway Discretionary Program – Under TEA – 21, this program provides funding to improve access to and within Federal lands of the nation. The program application would be submitted by FDOT.

FDOT County Incentive Grant Program - This program provides funding to counties to improve transportation facilities located or that relieve traffic congestion on the State Highway System. This program will receive about $490 million over a ten-year period.

9.4.2 Florida Department of Environmental Protection

Land and Water Conservation Fund (LWCF) – A program facilitated by the Department of Interior and administered through FDEP that provides matching funds to governmental jurisdictions. If approved by Congress, as anticipated, DOI will once again provide funding to this program that has gone without funding for several years.

Florida Recreational Development Assistance Program (FRDAP) – Is a competitive program that provides grants to local governments for acquisition or development of land for public outdoor recreation use.

Greenways and Trails Program – Provides non-profit organizations and local governments with technical assistance to create and implement greenway and trail projects. Also facilitates the acquisition of greenways and trails properties for public use.

Conservation and Recreation Lands Program (CARL) – A land acquisition program to acquire property from willing sellers to protect environmentally endangered lands for state parks, forest, wildlife management areas, beaches, and recreation areas which are sensitive due to the presence of unique or rare habitat, endangered or threatened species or unique historical, archaeological or geological features.

National Recreational Trails Program – This is a federally funded competitive grant program for projects that provide, renovate, or maintain recreational trails for non-motorized and motorized use.

Florida Boaters Improvement Fund – A program funded from proceeds collected from boat registrations that provides funds to local governments for improvements to boating related facilities. No match is required, but funds are limited to those collected by registration of vessels within that particular county's jurisdiction.

Pollution Recovery Program – The Florida Department of Environmental Protection provides funds for the program with no match requirement.

Coastal Protection Restoration Program – This program funds projects that enhance coastal restoration activities. No match is required.

Section 319 Non-point Source Management Implementation (Storm Water Management) – Provides funding for storm water management related projects with a 40 percent non-federal match required.

Mine Reclamation – The Bureau of Mine Reclamation administers programs for the reclamation and restoration of lands mined for phosphates, limestone, heavy metals, sand and clay.

9.4.3 Florida Department of Community Affairs

Florida Communities Trust (FCT) – This program provides grants, typically on a matching basis, as well as loans to local governments to protect resources identified in their comprehensive plans. Projects could include conservation of natural resources and resolving land-use issues by implementing conservation, recreation, open space, and coastal management elements. Changes were made to the program during the 1999 Legislative Session that mandates that no less than 5% of the total monies deposited into the trust fund be used for "trail system" projects.

Florida Coastal Management Grant Program – A program that provides matching funding for projects such as protection and management of coastal resources; improvements in water quality and natural resource protection; coastal non-point pollution controls; management of coastal development and redevelopment; and improved beach access and hazard mitigation.

Small Cities Community Development Block Grant – Neighborhood Revitalization – Provides funding to local governments for provision of infrastructure and facilities in low to moderate-income neighborhoods. These provisions could include recreation, neighborhood centers, water lines, sewer lines, fire protection, and other public facilities.

Small Cities Community Development Block Grant – Commercial Revitalization – Provides funding to local governments for projects that assist in revitalization of downtown areas. These projects could include sidewalks, streets, parks, drainage, landscaping, handicapped access, and rehabilitation of privately owned building facades.

9.4.4 Florida Department of State

Historic Preservation Grants-in-Aid – The Department of State's Division of Historical Resources provides funds that can be used to assist in the identification and preservation of Florida's historic resources. The types of projects eligible can include: Acquisition and Development, Survey and Planning, and Community Education. Funding available not to exceed 50 percent.

There is an interest in placing the bridges on the National Register of Historic Places. Currently, the Bahia Honda, Seven Mile, and Long Key bridges are on the National Register of Historic Places. The bridges could be nominated or a historic district could be nominated. This nomination would open up funding opportunities and should be explored by the managing agency.

Cultural Grants Program – This program provides funding to non-profit organizations and political subdivisions for renovation of cultural buildings, cultural disciplines, or media art. Potential uses include special events on the trail, renovations to potential support facilities, or art on the trail.

Main Street Program – Provides technical assistance and $10,000 seed money funding to facilitate a Main Street Manager. This position would facilitate programs to encourage the revitalization of traditional downtown commercial districts through a community-based comprehensive approach.

Museum Grants – This program awards $1.5 million annually to assist historical institutions with basic operating expenses and with the development of exhibits relating to Florida history.

Special Category Grants – This program funds major historic building restoration, archaeological excavations, and museum exhibit projects on the human occupation of Florida. Funding is dependent on an annual appropriation of funds by the Florida Legislature.

9.4.5 Florida Department of Agriculture and Consumers Services

Florida Plant-A-Tree Trust Fund – This is a program that encourages the planting of native trees on rural or urban landscapes. Funding available should not to exceed 50 percent.

National Urban and Community Forestry Matching Grant Program – This program makes available funds for projects that develop or enhance a community's ability to have a sustained, comprehensive tree care

program. Projects are typically funded on a 50/50 basis.

Florida Plant Conservation Program – The goal of the program is to restore and maintain existing populations of listed plants on public land and private lands managed for conservation purposes. Previous or ongoing projects address demography, monitoring, reintroduction, germination, pollination, and other aspects of population ecology.

9.4.6 U.S. Fish and Wildlife Service

North American Wetlands Conservation Act's Standard Grants Program – Provides funding for projects from $50,000 to a cap of $1 million that provide long-term conservation of wetlands and associated uplands through habitat protection, restoration, or enhancement.

Federal Aid in Sport Fish Restoration Act – Grants funds to individuals and non-profit organizations for projects which assist in the administration of sport fish and wildlife restoration programs and which facilitate the efforts of the States in implementing these programs.

Clean Vessel Act Pumpout Program – Program authorizes matching funds on a competitive basis for development of surveys and plans for installing pumpout/dump stations in the coastal zone of coastal States, and for the construction of pumpout/dump stations and development of an educational program in all States. Must provide for protection of sensitive areas from recreational boat sewage.

9.4.7 Other

Save Our Rivers – A land acquisition program administered by each of Florida's five water management districts. Selects projects based on protection of water quality, groundwater recharge areas and natural communities, and nonstructural flood control.

Legislative Appropriation – Members of the Florida Legislature are allowed to submit requests for specific individual items. The MM 0 –20 Concept Plan, as well as the original litter prevention and pick-up activities, were funded as a result of this legislative process. During the 2000 legislative session, 21 trail and greenway projects, totaling $17 million, were submitted for funding.

Safe Paths to Schools – The Secretary of the Department of Transportation has indicated a willingness to create a new program within FDOT that will focus funding towards projects that connect school age youth with the neighborhoods they live in. Once implemented, segments of the FKOHT near schools could qualify for this funding.

Monroe County Tourist Development Council – Tourist Development Trust Fund – This fund is comes from revenues collected by activities identified in FS 125.0104 and can be used for the following activities:

1. To acquire, construct, extend, enlarge, remodel, repair, improve, maintain, operate, or promote one or more publicly owned and operated convention centers, sports stadiums, sports arenas, coliseums, or auditoriums, or museums that are publicly owned and operated or owned and operated by not-for-profit organizations and open to the public. Tax revenues received may also be used for promotion of zoological parks that are publicly owned and operated or owned and operated by not-for-profit organizations and open to the public;

2. To promote and advertise tourism in the State of Florida and nationally and internationally; however, if tax revenues are expended for an activity, service, venue, or event, the activity, service, venue, or event shall have as one of its main purposes the attraction of tourists as evidenced by the promotion of the activity, service, venue, or event to tourists;

3. To fund convention bureaus, tourist bureaus, tourist information centers, and news bureaus as

county agencies or by contract with the chambers of commerce or similar associations in the county; or

4. To finance beach park facilities or beach improvement, maintenance, renourishment, restoration, and erosion control, including shoreline protection, enhancement, cleanup, or restoration of inland lakes and rivers to which there is public access as those uses relate to the physical preservation of the beach, shoreline, or inland lake or river. In counties of less than 100,000 population, no more than 10 percent of the revenues from the tourist development tax may be used for beach park facilities.

Additionally, tax revenues received by a county of less than 600,000 population imposing a tourist development tax may only be used by that county for the following purposes, in addition to those listed above: to acquire, construct, extend, enlarge, remodel, repair, improve, maintain, operate, or promote one or more zoological parks, fishing piers or nature centers which are publicly owned and operated or owned and operated by not-for-profit organizations and open to the public.

A recent survey conducted by the Monroe County BOCC and the TDC studied registered voter's views on tourism and related issues. A draft version was published in February with the preliminary findings indicating a push to use the TDC funding for local projects instead of advertising. Some residents also expressed concern on the how their community looks along U.S. 1 has affects on their quality of life. The top changes to U.S.1 that residents wanted most were bike and pedestrian pathways and improvements in landscaping and parks. These findings support the FKOHT and could help to secure funding for trail related activities.

Advertising Match Grant – The Florida Tourism Industry Marketing Corporation, a public/private organization, provides matching grants up to $2,500 to fund projects that contribute directly or indirectly to the promotion of tourism, industrial or agricultural advantages within Florida.

Florida Sports Foundation Grant Program This program is designed to assist organizations in attracting sport opportunities that will generate significant out-of-state economic impact to the state of Florida. The applicant must demonstrate that "but for" (without) the grant award, the event will not be successful.

Federal Historic Bridge Program - Administered by the U.S. Department of Transportation. In cooperation with the States, this section implements the inventory, retention, rehabilitation, adaptive reuse, and future study of historic bridges. Requires states to inventory all bridges on and off the Federal aid system to determine their historic significance. Provides eligibility for reasonable costs associated with action to preserve, or reduce impact on the historic integrity of historic bridges. Currently, the costs eligible as reimbursable project costs pursuant to this subsection shall not exceed the estimated cost of demolition of such bridge.

New Federal Legislation (Pending) - S.1144, Surface Transportation Act of 1999. Sec. 4. Historic Bridges - Increases the federal share of funds available for adaptive reuse or relocation of historic bridges. Funding is increased to either 200% of the cost of demolition of the historic bridge or the eligible reimbursable project costs available shall be equal to the greater of the Federal share that would be available for the construction of a new bicycle or pedestrian bridge. This new legislation is promising and should encourage project partners to pursue an application to list all Old Key Bridges on the National Register of Historic Places.

9.5 SCENIC HIGHWAY COORDINATION

Clean Florida Keys will continue their efforts to have U.S. 1 designated a Scenic Highway. This designation will provide additional funding sources that could be

utilized on various U.S. 1 enhancements including some trail projects.

The Corridor Management Plan (CMP) should identify optimum locations for additional recreational opportunities, which highlight natural, historic, cultural, and socioeconomic centers along U.S. 1. The CMP must also protect the corridor's intrinsic resources and functionality of U.S. 1 as the lifeline of the Keys. These areas will benefit the trail and enhance trail facilities. One example of this is the Boca Chica Bridge Underpass, which has been identified as a popular windsurfing area.

Section 10.0

MANAGEMENT

The approach to management and maintenance for a project of statewide significance should be guided by an overarching premise that the trail user is a visitor into nature and that minimal impact on nature must be observed while providing a safe, accessible experience for all. With this trail plan the team has created a balance between user needs and environmental protection along with the cooperation of all parties who share a common interest in the project. This particular trail presents numerous management challenges due to its length, bridge crossings, local culture, proximity to a fragile ecosystem, and intense use demands within a narrow right-of-way. The community clearly wants trail management that establishes partnerships with Federal, State, and local agencies to ensure that no undesired strain is put on Monroe county or local municipalities. Further, citizens want to give local municipal jurisdictions the opportunity to participate in maintenance of the trail within their jurisdiction. Offering a commitment to partnerships and a sharing of responsibilities is crucial assurance from those communities that will have the most impact on the success of this trail project.

10.1 ON-GOING EFFORTS TOWARDS IMPLEMENTATION AND MANAGEMENT

Continuing existing partnerships and bringing in new partners will be key in the success of this trail project. Many of these partners include the Federal Highway Administration, Army Corps of Engineers (Corps), NPS, FDOT, FDEP, DCA, Monroe County, non-profits, and various agencies and local governments with jurisdiction within the county and along the trail route.

In a letter dated March 1,2000 to Monroe County from Bob Ballard, Deputy Secretary of Land and Recreation, FDEP, Mr. Ballard confirms the full commitment of FDEP's Division of Recreation and Parks to manage the FKOHT. In several meetings between Monroe County, FDEP, FDOT, and RTC further agreements were made between the coordinating agencies that answer many questions regarding administration of funds, project phasing, management and maintenance. What follows is a summary of the content of those meetings and an analysis of their impact on this trial project.

10.1.1 Agency Coordination

- The Division of Recreation and Parks (DRP) committed to being the manager of the Overseas Heritage Trail, with the understanding that the substructure of the bridges will be managed by another agency besides DRP. **Analysis**: DRP's decision to manage the trail secures this project as a trail of statewide significance. Recently awarded the National Gold Medal for America's Best Parks, DRP has the resources and expertise to develop and maintain a world-class trail.

- DRP has contracted with FDOT for litter pickup on the Old Keys Bridges. In the future, DRP anticipates assuming responsibilities for litter pickup, and will prepare a transition strategy. DRP is working to have appropriate signage posted at the bridges. **Analysis**: Transferring litter and signage responsibilities will continue to improve existing conditions on bridges and fishing piers currently being used by the public. The transfer of litter and signage tasks will be the beginning of the overall transfer of county maintenance/ management to the state agency.

- Presently, Monroe County has nine bike/pedestrian FDOT enhancement projects scheduled for construction on upland areas. These enhancement projects, if built to recommended trail standards, will provide a significant portion of the trail. **Analysis**: Future coordination between Monroe County, FDOT, and DRP will be necessary in order to determine appropriate phasing of existing enhancement projects. Monroe County has requested that only those projects at 100% design be allowed to proceed to the construction stage. All others must be designed in accordance to the preferred recommendations of the master plan. The remaining enhancement funds will be administered by FDEP. Utilizing the Master Plan as the guiding standard in developing this project will ensure a consistent trail character, full use of existing facilities and an emphasis on user safety.

- Since DRP will be the manager of this facility, it prefers to oversee the project's design and construction. This will ensure consistency with DRP standards for the facility. DRP will look into using a private consultant for the design and construction process. **Analysis**: It is recommended that DRP oversee the project's design and construction with a built-in public input process at significant stages in the project's development. A strong coordination component between the various agencies and groups with vested interest in the project should also be continued.

- Monroe County and FDOT, have expressed a willingness to administer the existing enhancement funds to an agency that follows Local Agency Program (LAP) guidelines, and is LAP certified. This certification ensures that the design and construction meets FDOT federal highway standards. DRP is LAP certified to meet these standards. DRP will be meeting with the FDOT Central Office and the FDOT District VI to discuss the enhancement funding and coordination between the two agencies. **Analysis**: Centralizing the design, construction, and management responsibilities with the available funding to a LAP certified agency streamlines the function of this process. After FDOT and FDEP write the LAP agreements, the next step is for FDEP and its project partners to apply for state enhancement funds through the FDOT Central Office as well as pursuing the many other available funding sources.

- If DRP undertakes these enhancement projects, a Legislation Budget Request (LBR) is needed as soon as possible so spending authority is granted for the amounts to be spent on construction by 2001. The other amounts can be handled through the LBR process in future years. **Analysis**: This is a necessary internal budget function that the DRP must complete before funds can be allocated.

- DRP has concerns with keeping the FDOT design and construction timeline of the enhancement projects, especially those scheduled for completion in 2001. DRP will explore the possibility of setting up a new timeline so there is sufficient design time for these enhancement projects. **Analysis**: A new timeline determined by DRP should reflect the needs of Monroe County and its citizens. Using the master plan as the guiding tool, DRP should consider constructing the trail along those segments of U.S. 1 that currently endanger the public safety of pedestrians and bicyclists. Further, DRP should consider constructing segments that fully utilize and connect to existing facilities, provide access to and improvement of the historic bridges, and serve the most urbanized areas.

- DRP has requested of Monroe County the opportunity to participate in any future meetings with the staff working on the Master Plan, and to be notified of all public meetings concerning the Master Plan development. Monroe County has agreed to these requests, and acknowledges that DRP will be given the opportunity to review the master Plan prior to its completion. **Analysis**: A continual information exchange between the County and DRP is necessary for

continuity as state responsibilities increase for this project.

- The Department of Transportation (FDOT) District VI has not been given any direction from central FDOT office concerning their assuming responsibilities for the substructures of the Old Keys Bridges. This is an important issue and needs to be addressed as soon as possible on the Secretary level. **Analysis**: The FDEP/FDOT Old Keys Bridges Structural Study will provide important research on the stability and subsequent public use of the abandoned bridges. The analysis is necessary before FDOT can make a decision on who and how to best manage the bridges. For several years, Rails to Trails Conservancy has had on-going dialog with FDOT regarding the significance of the project. Discussions regarding the eventual management and/or maintenance of the Old Keys Bridges will continue as the Master Plan and the structural analysis are completed. As planning and design progresses and new funding sources become available to retrofit the bridges for trail use the profile of the bridges will increase accordingly. It is recommended that contact between Monroe County, DRP, and FDOT intensify as the findings of the structural analysis are completed.

- Monroe County will contribute $1,000,000 in impact fees during fiscal year 2000/2001 to upgrade and widen existing trail segments and to close existing gaps in portions of the Florida Keys Overseas Heritage Trail located within unincorporated Monroe County. Funds will be spent in accordance with the Monroe County Code. **Analysis:** The existing trails are substandard and improvements are important to the safety of trail users. The existing trail sections are heavily used with use increasing as more trail segments are developed.

10.2 BALANCING TRAIL IMPLEMENTATION WITH ENVIRONMENTAL PROTECTION

While developing the Master Plan, Monroe County and the permitting agencies must balance the project needs and costs against any environmental impacts to insure that future projects avoid or minimize these impacts to the greatest extent. The FDEP Office of Greenways and Trails and Monroe County have held coordination meetings with the Director of the South Florida Regulatory District Office, and officials from the FDEP district permitting office. The following is a description of the permitting concerns as they relate to implementation and management of the FKOHT:

- Currently, FDOT is responsible for applying for permits on the existing enhancement projects. DRP agreed to seek the permits for the trail if they build the trail. FDEP will be the permit applicant, and South Florida Water Management District (SFWMD) will be the issuing agency. **Analysis**: As DRP takes over permitting responsibilities, it is recommended that they explore the possibility of acquiring a categorical exclusion for the environmental permits. Another option is for the county or permit applicant to submit a conceptual permit application to the regulatory and resource agencies for the trail corridor and present it as one project. This will expedite the final permitting process, and avoid redesigns due to permit issues, as have been encountered in the past. Given the complexity and size of this project and its interaction with the Keys natural environment, a comprehensive approach to permitting may be the most efficient. The permitting process is best worked out between the involved agencies.

- Permitting boardwalks is a major concern for this project with the current regulations that SFWMD is enforcing. The South Florida Regulatory District Office is currently enforcing a rule written by the district office itself. Although, the rule does protect fragile natural resources, it's not intended to prohibit boardwalks that are in the

public's interest. Furthermore, safety is an important issue in the Keys and can most likely justify the construction of boardwalks where necessary. **Analysis:** Boardwalks play an integral role in the safety, continuity, and access to this trail. Boardwalks are only recommended when there is constrained right-of-way along U.S. 1 and no other alternative to creating a safe separated trail exists. Based on the disproportionate amount of injuries and fatalities in the Keys, the public interest is clearly being served by offering a boardwalk alternative. Future meetings between DRP, partnering agencies and the project designers are needed to determine how best to incorporate the recommended boardwalks for constrained areas in this trail project.

- Presently, there are permitting conflicts dealing with endangered species along the trail. These setbacks have resulted in a substandard trail width, which will not accommodate two-way traffic safely. **Analysis:** Creating a balance between environmental constraints, recreation and alternative transportation is paramount in this Master Plan. See Section 7.3 Permitting, for explanation and recommendations. DRP will need to coordinate with permitting agencies to determine the best management practices for accommodating endangered species. A 12' width is the standard recommendation throughout the trail project, but can be reduced in areas where endangered species are impacted. These areas will be identified in the Design Phase of the project.

- Monroe County is also discussing with FDOT the possible allocation of OPS funds in order to provide staff to assist in facilitating the project's permitting issues. **Analysis:** It is highly recommended that a new position be created to coordinate the complex permitting issues for this trail project. FDOT previously funded Monroe County's Bicycle/Pedestrian Coordinator position and has discussed additional staff for the County. In addition, the increasing importance of this trail as a project of statewide significance should garner an equally significant commitment of labor and resources from DRP, FDEP, and FDOT.

10.3 CONTINUING IMPLEMENTATION COORDINATION

Coordination efforts between Monroe County, DRP, FDEP, FDOT, and related agencies have increased recently in anticipation of the following: the completion of the Master Plan, the pending results of the structural analysis of the bridges, the commitment of the FDEP to manage the trail as a state park, the FDOT enhancement funds dedicated for development, and the growing public profile of this captivating trail project. The following summary represents the most recent steps towards implementation resulting from an inter-agency (FDEP, Division of Recreation and Parks, FDOT) meeting and Monroe County.

Administering County Enhancement Funds

- FDOT agreed to have FDEP administer the Monroe County enhancement funds through the LAP process, which will certify DRP to undertake the planning, design and construction work associated with the enhancement projects.
- Further details are being discussed between Monroe County and FDOT to get an exact interpretation of what money exists in FDOT's work plan for the Monroe County enhancement projects.
- Monroe County and its Cities need to decide how much of their enhancement funds they want to use on the FKOHT in lieu of other eligible projects (i.e. what other needs on the local network will be sacrificed or postponed for the FKOHT network).
- Staff from FDOT, FDEP, and Monroe County continues the transition of the design and construction phases of existing projects, as well as future projects. Final agreement on a specific transition point for DRP to become

involved in the planning and construction phases is pending.

Central EMO Involvement

- The Division will work with FDOT District 6 to coordinate the administration of funds allocated for Monroe County projects. FDOT Central Office is available for assistance in this process.

Trail Management

- Since the Division has agreed to manage the FKOHT, it is essential to have them involved in the FDOT maintenance agreements required when a project reaches 100% design.
- Currently, the existing projects at 100% design will continue to have the maintenance agreements approved by Monroe County, until the necessary details are discussed between Monroe County, FDEP, and FDOT. This is to ensure that the projects will progress as scheduled.

Transfer of U.S. 1 Surplus Property to the Trustees

- Currently, it is not necessary to transfer FDOT surplus property along the U.S. 1 corridor to the Trustees of Florida (Governor and Cabinet). If there is surplus property available to incorporate into the trail, then FDOT will assist in facilitating that process. FDOT staff has already been striving to preserve surplus property for the FKOHT based on Res. 565-1999 from the Monroe County Commission.

Process for Transition

- Monroe County plans to present the Master Plan of the FKOHT along with the LAP agreement between DRP and FDOT to the BOCC in May 18, 1999. Once the Board approves the Master Plan and the LAP agreement, the transition can be implemented within each agency.

10.4 SCENIC HIGHWAY INITIATIVE

- The Preliminary Eligibility Document has been reviewed by FDOT – District 6 staff. After the Corridor Advocacy Group (CAG) addresses items in the Final Eligibility Document, the District will forward the Document to Tallahassee for review by the State Scenic Highway Advisory Committee (SHAC). The SHAC will make an eligibility recommendation to the FDOT Secretary. If the eligibility phase is successful, the CAG will prepare a Corridor Management Plan (CMP). After review by District 6 Secretary and Staff, the CMP can be forwarded to the SHAC. The SHAC will make a recommendation on State Scenic Highway designation to the FDOT Secretary. If designation as a State Scenic Highway occurs, the Corridor may be further recommended to the USDOT Secretary for designation as a National Scenic Byway or All- American Road. The Actual date for State Scenic Highway designation is difficult to predict since it is dependent on the CAG's Eligibility Document and Corridor Management Plan, consensus from all the citizens and local governments involved, workload at District 6, and opinions of the District 6 offices and SHAC.

Appendix I
Public Involvement

Florida Keys Overseas Heritage Trail -- Environmental Meeting

DATE: October 27, 1999

PLACE: Monroe County FDOT Maintenance Building

LIST OF ATTENDEES

NAME	COMPANY	PHONE NO.	FAX NO.	EMAIL
Adriana Manzanares	FDOT	(305) 470-5283	(305) 470-6725	
Catherine Owen	FDOT	(305) 470-5220	(305) 470-5205	Catherine.owen@fdot.state.fl.us
Ron Peekstock	SFWMD	(561) 682-6956	(561) 682-6896	Rpeeksto@sfwmd.gov
Rowena Garcia	FWC	(305) 289-2365	(305) 289-2366	
Alex Marks	DCA	(305) 289 - 2402	(305) 289-2442	RPM4mar@mail.state.fl.us
Catherine Close	FPS	(305) 664-4815	(305) 664-2629	longkey@reefnet.com
Gary B. McKee	FPS/DEP	(305) 872-3897	(305) 292-6857	
Corine Burgess	FPS/DEP	(305) 292-6850	(305) 292-6881	
Robert Rulison	FDOT	(305) 289-2350	(305) 289-2356	
Randy Grau	DEP	(305) 289-2310	(305) 289-2314	Randy.grau@dep.state.fl.us
Pat Wells	DEP/FPS	(305) 451-8679	(305) 664-0713	patwells@terranova.net
Marie Klemann	Clean Florida Keys	(305) 296-3791	(305) 296-6132	keysbeauty@aol.com
Trish Stratton	Monroe County	(305) 289-2521		
Deborah Shaw	Florida Keys Electric	(305) 852-2431	(305) 82-9129	TREESNAIL@aol.com
Danny Jones	FPS	(305) 451-1202	(305) 853-3555	jpcrsp@reefnet.com
Brenda Altmaer	FKNMS	(305) 852 – 7717 ext. 21	(305) 853-0877	Brenda.altmaer@noaa.gov
Jamie Doubek-Racine	NPS-RTCA	(941) 330-8047	(941) 373-9067	Jaime_doubek-racine@nps.gov
Forest Michael	Michael Design Assoc.	(407) 645-3377	(407) 645-3760	Forest@mda-winterpark.com
Kim Ogren	Monroe County	(305) 289-2500		
Ginger Sinn	EMS	(904) 794-0244	(904) 794-0431	steams@aug.com
Jennifer Gaines	Michael Design Assoc.	(407) 645-3377	(407) 645-3760	Jennifer@mda-winterpark.com

Florida Keys Overseas Heritage Trail – Historic Preservation Meeting

DATE: February 3, 1999

PLACE: Pigeon Key

LIST OF ATTENDEES

NAME	COMPANY	PHONE NO.	FAX NO.	EMAIL
Peter J. Scalco	FPS	(561) 346-0900		
David Koppel	Monroe County	(305) 292-4426	(305) 295-4321	
Fred Gaske	Florida Bureau of Historical Preservation	(850) 487-2333	(850) 922-0496	
Jaime Doubek-Rocine	NPS – RTCA	(941) 330-8047		
Marie W. Klemann	Clean Florida Keys, Inc.	(305) 296-3791	(305) 296-6132	keysbeauty@aol.com
Nizar Jetha	Ayres Assoc.	(813) 558-3301	(813) 978-9369	jetha@ayres-tpa.com
Catherine Owen	FDOT	(305) 470-5399	(305) 470-5220	catherine.owen@dot.state.fl.us
George Born	Historic Florida Keys Foundation	(305) 292-6718	(305) 293-6348	hfkf@flakeysol.com
Chris Dube	FDOT – Planning	(305) 377-5910	(305) 377-5684	
Dale Adams	DEP	(305) 488-2725		
Rachel Goodson	DEP	(850) 488-3701		rachel.goodson@dep.state.us
Kathy W	Pigeon Key			
Dan Gallagher	Pigeon Key	(305) 289-9632	(305) 289-0139	dang@marathon key.com
Ken Bryan	Rails-to-Trails	(850) 942-2379	(805) 942-4431	rtcken@transact.org
Jeff Ciabotti	Rails-to-Trails	(850) 942-2379	(850) 942-4431	rtcjeff@transact.org
Forest Michael	Michael Design Assoc.	(407) 645-3377	(407) 645-3760	Forest@mda-winterpark.com
Jennifer Gaines	Michael Design Assoc.	(407) 645-3377	(407) 645-3760	Jennifer@mda-winterpark.com
Gary McKee	DEP – FPS	(305) 872-3897	(305) 292-6857	babiahonda@fl.keysaol.com
Trish Stratton	Monroe County			

PROPOSED AGENDA

Overseas Heritage Trail Meeting
DOT District Office
1000 NW 111th Avenue, Miami
Room 6207

Tuesday
October 26, 1999
10:00am – 11:30am**

Participants: DOT Planning, DOT Production and Environment, DOT Operations, Monroe County Planning Department, Monroe County Trail Consultants

✓ Welcome and Introductions

- Overseas Heritage Trail Master Planning Process
  - Conceptual Plan, MM 0-20
  - Master Plan, Key West to Key Largo
  - Local, State and Federal Partnerships

- Overview of DOT District TEA 21 Process
  - DOT and Monroe County Coordination
  - Status of existing TEA 21 Projects
  - Environmental Permitting Issues

- Three Demonstration Projects for the Trail Master Plan

- Funding for Future Projects

- Other Issues

** *All DOT representatives are invited to join Monroe County and its trail consultants in the field following the meeting. The planning team will be inventorying site conditions and collecting data for the master planning process. Participation by DOT is greatly appreciated. For those DOT representatives who would like to participate but are unavailable Tuesday afternoon, a second field visit is scheduled for Wednesday, October 27th.*

bridges from Mile Marker 0 to Crocodile Lake at County Road 905 on Key Largo, approximately 120 miles. There are several segments of the trail already in place and this master planning will address those existing segments and the missing gaps. This project is the next step after the initial MM 0-20 conceptual study by Clean Florida Keys last year. This is the larger and more detailed plan for the trail and we are addressing the entire trail. There will be more extensive public involvement. ***The Monroe County Bicycle and Pedestrian Planner and Point of Contact regarding the project is:***

Trish Stratton, Bicycle/Pedestrian Planner, (305) 289-2521

The purpose of this meeting is to get your help in identifying potential concerns regarding the master planning process and the future permitting of the trail. We will meet at the Monroe County DOT offices ***(3100 Overseas Highway, Marathon, FL Phone (305) 289-2350)*** at 10:00 am to discuss the project background and identify the concerns and permitting procedures of each agency involved. After the discussion, we will go out into the field and analyze a minimum of two typical trail segments. **Lunch will be served back at the meeting site for all participants.**

The meeting will begin at 10:00 and end at approximately 12:30

Introductions (Trish Stratton, Monroe County)

Clean Florida Keys/FDEP/FDOT Conceptual Planning (MM 0 – 20)

- Previous planning and design proposals (Forest Michael)
- Previous Environmental Coordination and the previous meeting of *November 19, 1998* (Jennifer Gaines)

Roundtable Discussion, (Ginger Sinn, *Environmental Management Systems*, Trish Stratton and Jennifer Gaines)

Participants:

South Florida Water Management District
Department of Environmental Protection
Department of Transportation
Department of Community Affairs
Army Corps of Engineers
Florida Keys National Marine Sanctuary
FFWCC
Monroe County
Florida Keys Electric
National Key Deer Refuge
Others on Request

We will be hoping to get a "**clear understanding of what the role of each agency**" and "**who to call to do what**" and if there are any "**hot permitting topics we should know about**"

Field Analysis

We will review one to two areas of the trail near Marathon to see constrained conditions on U.S. 1.

Please contact Trish Stratton to confirm your attendance and verify the room location by Friday, October 22, 1999. Also, please let us know if you wish to invite other persons who may have an interest in this meeting. In the meantime, if you have any comments and topics of discussion, please send them to Trish who will distribute them to everyone before the meeting.

We look forward to another productive meeting on the trail.

OVERSEAS HERITAGE TRAIL
MASTER PLAN
Citizen Advisory Group

Name	Organization	Role	Address	Telephone #	Fax #	Email	Comments Yes	Comments No
Ty Symroski	City of Key West	Director of Planning	P.O. Box 1409 Key West, FL 33041-1409	(305) 292-8229	(305) 293-8300	kwcpln@aol.com	X	
Theresa Szmanis	Planning Department Village of the Islands		Islamorada, FL	(305) 289-0179				
David Tuttle			P.O. Box 503 Big Pine, Fl 33043	(305) 872-9087	(305) 872-9087	tbuilders@sprynet.com		
Jerry Wilkinson	Historic Preservation Society of the Upper Keys	President	38 East Beach Road Tavernier, FL 33070	(305) 852-1620		jerry142@terranova.net		
Dale Adams	FDEP Division of State Lands	Senior Management Analyst	3900 Commonwealth Blvd. MS 100 Tallahassee, FL 32399	(850) 488-2725	(850) 922-6009	dale.d.adams@dep.state.fl.us	X	
Peggy Finch Fowler	Peggy Fowler & Associates	FKSH Eligibility Process Consultant	1010 N 12th Ave. Suite 211 Pensacola, FL 32501	(850) 432-8090	(850) 434-0153	pfowler4@bellsouth.net	X	
Lynne Marie Whately	Carter & Burgess, Inc.	Consultant	1000 Legion Pl. Suite 1400 Orlando, FL 32801	(407) 514-1433	(497) 514-1499	whatelylm@c-b.com		
Dave Henderson	Miami-Dade Bicycle and Pedestrian Coordinator			111 NW First St. Suite 910 Miami, FL 33128	(305) 375-4507		X	
Richard Reasin		Assistance with Scenic Highway Publications	P.O. Box 430507 Big Pine, FL 33043-0507	(305) 872-3283	(305) 872-3542			
Stephanie Hundley		Assistance with Scenic Highway Publications	P.O. Box 430507 Big Pine, FL 33043-0507	(305) 872-3283	(305) 872-3542			
Dennis Taylor	First National Bank of the Florida Keys	Speeches/ Meeting Assistance	12640 Overseas Hwy. Marathon, FL 33050	(800) 234-5397 ext. 807 (305) 289-5807	(305) 743-9984			
Forest Michael	Michael Design Associates, Inc.	Consultant	400 W New England Ave. Suite 1 Winter Park, FL 32789	(407) 645-3377	(407) 645-3760	Forest@mda-winterpark.com	X	
Jennifer Gaines	Michael Design Associates, Inc.	Consultant	400 W New England Ave. Suite 1 Winter Park, FL 32789	(407) 645-3377	(407) 645-3760	Jennifer@mda-winterpark.com	X	
Ken Bryan	Rails to Trails Conservancy	Executive Director	2545 Blairstone Pines Dr. Tallahassee, FL 32301	(850) 942-2379	(850) 942-4431	rtcoffl@aol.com	X	
Jeffrey Ciabotti	Rails to Trails Conservancy	Program Coordinator	2545 Blairstone Pines Dr. Tallahassee, FL 32301	(850) 942-2379	(850) 942-4431	rtcoffl@aol.com	X	
Heidi Holcomb		Program Assistant	2545 Blairstone Pines Dr. Tallahassee, FL 32301	(850) 942-2379	(850) 942-4431	rtcoffl@aol.com	X	
Tom Brown	Buckaroo Land Company	Private Grant Trustee	601 County Road 939 Sugarloaf, FL 33042	(305) 745-3570	(305) 745-9898			

OVERSEAS HERITAGE TRAIL
MASTER PLAN
Citizen Advisory Group

Name	Organization	Role	Address	Telephone #	Fax #	Email	Comments Yes	Comments No
June Helbling	TIB Bank of the Keys	Co-Chair	1103 Indies Drive South Marathon, FL 33051	(305) 743-7650	(305) 743-0358	jhelbling@tibbank.com	X	
Kathy Torlbio		Co-Chair	1014 Elgin Lane Key West, FL 33040	(305) 292-4433	(305) 292-4554	dial0004@mail.state.fl.us	X	
Jim Malcolm	Key West Bicycle and Pedestrian Safety Coordinator	Secretary	P.O. Box 1409 Key West, FL 33040	(305) 293-6495	(305) 293-8320	kwcbike@aol.com	X	
Marie W. Klemann	Clean Florida Keys	Treasurer	P.O. Box 1528 Key West, FL 33041-1528	(305) 296-3791	(305) 296-6132	keysbeauty@aol.com	X	
Michael and Pamela Chenoweth	Izaak Walton League		P.O. Box 236 Homestead, FL 33090-0236	(305) 451-0993	(305) 451-3627	michael.chenoweth@mail.com		
Chris Dube	FDOT District 6	Assistant Planning Manager & Scenic Highway Program Coordinator	602 South Miami Ave. Miami, FL 33130	(305) 377-5895	(305) 377-5684	christopher.dube@dot.state.fl.us	X	
Ray Fray			1004 96th St. Marathon, FL 33050	(305) 743-9918				
Dagny Johnson	Upper Keys Citizen Association		95600 Overseas Hwy. Key Largo, FL 33037	(305) 852-5268	(305) 852-7371			
Suzie Ladouceur	FDOT District 6	Transportation Planner	602 South Miami Ave. Miami, FL 33130	(305) 377-5895	(305) 377-5684	ladouceur@dot.fl.state.us		
Deanna Lloyd	Scenic Highway Newsletter Editor		1665 Canal Big Pine, FL 33043	(305) 872-2098	(305) 292-4474			
Alex Marks	DCA	Planner	2796 Overseas Hwy. Suite 212 Marathon, FL 33050	(305) 289-2402				
Mary Mather	Key Largo Civic Club		P.O. Box 1369 Key Largo, FL 33037	(305) 451-3237				
Paul Morrow			67 Shoreland Dr. Key Largo, FL 33037	(305) 451-1730		clarkp567@aol.com		
Fred Nickerson			138 Marina Ave. Key Largo, FL 33037	(305) 451-2604	(305) 451-2604			
Kim Ogren	Monroe County Growth Management Planning Department	Senior Administrator, Comprehensive Plan	2798 Overseas Hwy. Suite #410 Marathon, Fl 33050	(305) 289-2500	(305) 289-2536	kogren@mail.state.fl.us	X	
Jill Patterson			P.O. Box 2289 Key Largo, FL 33037	(305) 367-3118	(305) 367-3118			
Mandy Rodriguez	Dolphin Research Center	Executive Director	P.O. Box 522875	(305) 743-9102 ext. 220	(305) 743-7627	drc-sp@dolphins.org	X	
Marci Rose			818 White St.	(305) 293-1881	(305) 294-8551	squirerose@aol.com		
Deborah Shaw	Florida Keys Electric Cooperative	Environmental Affairs Coordinator	P.O. Box 700377 Tavernier, FL 33037	(305) 852-2431	(305) 852-9129	treesnail@aol.com		
Trish Stratton	Monroe County Growth Management Planning Department	Bicycle Pedestrian Planner	2798 Overseas Hwy. Suite #410 Marathon, Fl 33050	(305) 289-2521	(305) 289-2536	stratton@mail.state.fl.us	X	

Upper Keys – Key Largo Library, May 4, 2000:

New Village of Islamorada Park (mm87) on bayside. This was formerly Plantation Yacht Harbor Resort. Proposed amenities include competition pool/dive, ball field/soccer, skate park, beach, day park. Probable admission charge for non-residents. Park is currently under construction.

I called Mary Kay Reich about a bike trail the length of the keys 5 years ago but never followed through – glad it is being done! It will be the right kind of tourists to the keys – slow some people down! A paddling trail will compliment this and we're working on this now.

The use of shoulders for the trail across Indian Key…is scary even with the wide shoulders.

Potential for a demonstration project with DEP for Snake Creek draw bridge south to existing trail – also – new ¼ mile from the south to the existing bridge trails out to Indian Key area.

A great idea – keep up the good work!

Keep paths near US 1 for visibility and safety. No trails going off into the mangroves etc.

Park facilities (beverage, restroom, etc.) should be minimal.

Hurry up!!!

I would like to be kept abreast (Paul Steinman PO Box 523432 Marathon Shores, FL 33052)

Bike traffic would not be safe on 905 from mm 106 to Card Sound Road. People drive too fast already.

Logo #2!!

Concerned with the right-of-way width as it passes through Marathon (primarily by the airport).

This is a wonderful concept. Any bike path on Big Pine Key needs to be incorporated into the ongoing Habitat Conservation Plan.

A valuable project would be education for drivers to learn to watch for bikes. Brochures in rest stops on south end of Florida Turnpike and all through the Keys would help.

Logo suggestions – water and trees. Idea of quiet tranquillity with water views everywhere. This is our uniqueness – not the railroad and concrete conch shells (parking).

What a terrific conceptual plan and project. The plan to replace spans, particularly on the Bahia Honda Bridge and the 7-mile bridge are exciting and respect the historical integrity of the structures. It is important that the project is done right not that it is done cheap. Once done, we need to have something that we are proud of and which will be the most incredible trails in the country.

Idea: like the display showing the people who saved the bridge (Friendship trail) and the I-75 overpass as a way of showing things like 7 mile bridge can be done!!

Should include a waterfront portion along Boot Key Harbor at Florida Keys Marina Marathon and as much as possible adjacent to the marina and the park.

In regards to non-motorized: should accommodate vehicles (non-combustible) that are used by the elderly.

Crane Point Hammock is interested in becoming a destination point trail head. We will email our amenities to you.

County of Monroe

Planning Department
2798 Overseas Highway
Suite 400
Marathon, Florida 33050
Voice: (305) 289-2500
FAX: (305) 289-2536

Board of County Commissioners
Mayor Shirley Freeman, Dist. 3
Mayor Pro Tem George Neugent, Dist. 2
Commissioner Wilhelmina Harvey, Dist.1
Commissioner Nora Williams, Dist. 4
Commissioner Mary Kay Reich, Dist. 5

Florida Keys Overseas Heritage Trail
Public Workshop Series #2

Public Comments

Lower Keys – Sugarloaf Firehouse, May 2, 2000

Where is the kayak access? - Might we have closely placed recycled plastic 4x4's as tracks for overland ramp to water?

Don't forget the needs of the horses and riders from Big Pine to Sugarloaf (Big Pine Key Trail Riders – Elaine Wilmers 305/872-2679)

Absolutely essential that the trail be well away from the highway. If not, the majority of the potential users will not use it. I, for example, living at mm14, will sell my car and switch exclusively to bicycle if the trail is good and safe. If not safe, I doubt that I'll ever use it. Thus, failure to ensure proper separation from the highway, "allowing the ship to go down for a pennyworth of tar" will amount to a colossal waste of time, money, and energy.

This whole thing represents the best possible way to deal with the old bridges. They are a great community resource, walking, cycling, skating, fishing, and therefore must be preserved. They are also a major historical feature of this area and for this reason also, allowing them to rot would be criminal.

Great idea – do it!

Lower Keys Sub area goals – Summerland Key – West end – boy scouts just bought and are developing the old Ming property with its canal and basin

Niles Bridge – high vehicle fatalities. Built in parks on bulkheads. Barrier walls won't stop large transport trucks now.

Logo votes:
Logo 1 – no votes
Logo 2 – four votes

Middle Keys – Marathon Government Center, May 3, 2000

FLORIDA KEYS OVERSEAS HERITAGE TRAIL
WORKSHOP SERIES #2
LOCATION: Key Largo

NAME	ADDRESS	PHONE NUMBER	EMAIL	Did you attend December 1999 Workshops?	
				Yes	No
Adam Koslofsky	52 Orange Drive Key Largo, FL 33037	305/451-4048			x
Barry Patterson	1114 Heron Road, Key Largo, FL 33037	305/453-8558		x	
James Anderson	101 Coconut Row Tavernier, FL	305-852-2149			x
Joan Mowery	205 N. Ocean Key Largo, FL 33037	305/451-4195	jnmowery@email.com	x	
Murray Nelson	374 Bahia Key Largo, FL 33037	305/451-9316		x	
Frank and Monica Woll	PO Box 2513 Key Largo, FL 33037	305/451-3018	kayak@terranova.net		x
John McGill	171 N. Airport Road Tavernier, FL	305/852-4724			x
Pamela Pierce	31 Garden Cove Drive Key Largo, FL 33037	305/451-0993	molehill@ix.netcom.com		x
Greg Tindle, Village of Islamorada	PO Box 568 Islamorada, FL 33036	305/664-2345	www.islamorada.fl.com		x
Keith Tomat	350 Oleander Tavernier, FL	305/853-5850			x
K Duke	44 Bfish Avenue Key Largo, FL 33037				x

FLORIDA KEYS OVERSEAS HERITAGE TRAIL
WORKSHOP SERIES #2
LOCATION: Marathon Government Center

NAME	ADDRESS	PHONE NUMBER	EMAIL	Did you attend December 1999 Workshops?	
				Yes	No
Betty Vail	61 Sombrero Beach Road Marathon, FL 33050	305/743-6066			x
Joan Ross	PO Box 523176 Marathon Shores, FL 33050	305/743-5178			x
Ray Kitchener	122222 Overseas Highway Marathon, FL 33050	305/743-5417			x
Della Schuler	450 52nd Street Marathon, FL 33050	305/289-9756		x	
Mandy Rodriquez	450 52nd Street Marathon, FL 33050	305/289-9756		x	
Catherine Close, DEP	Long Key State Park PO Box 776 Long Key, FL 33001	305/664-4815		x	
Theresa Cook	Marathon Airport, Marathon, FL 33050	305/289-6060			x
Rich Fortmann	712 60th Street Marathon, FL 33050	305/743-4135	grange@marathonkey.com	x	
Kathy Fortmann	712 60th Street Marathon, FL 33050	305/743-4135		x	
Mr. and Mrs. Lesle	58652 Overseas Highway Marathon, FL 33050	305/743-3490			x
RJ Helbling	FDEP Marathon	305/289-2310			x
Michelle Sheldone	63 N. Conch Avenue Conch Key, FL 33050	305/289-3159	keyswoman@msn.com		x
Joseph DiNovo	PO Box 146 Key West, FL 33041	305/296-3335	jxdesquire@aol.com	x	

FLORIDA KEYS OVERSEAS HERITAGE TRAIL
WORKSHOP SERIES # 2
LOCATION: Sugarloaf Fire House

NAME	ADDRESS	PHONE NUMBER	EMAIL	Did you attend December 1999 Workshops?	
				Yes	No
Ty Symroski, City of Key West	PO Box 1409 Key West Florida 33041	305/292-8189	kwcty@aol.com	x	
George Leydic	1388 Wiles Road Summerland Key FL 33042	305/745-1619			x
Patricia Sutphen	PO Box 431642 Big Pine Key, FL 33042	305/872-9831			x
Florence M. Boyce	29210 Coconut Palm Drive Big Pine Key, FL 33042	305/872-2227			x
Chris Dube, FDOT	602 So. Miami Avenue, Miami, FL 33181	305/377-5910			x
Donald Parr	701 Spanish Main Dr. Cudjoe Key, FL 33042	305/745-3995		x	
Mike Montalto	924 Flagship Drive Summerland Key, FL 33042	305/745-3658			x
RC Jake Rutherford	3128 Riviera Drive Key West, FL 33040	305/296-7708		x	
David Combs	1088 Calico Jack Cir., Summerland Key, FL 33042	305/745-2790	daveoncudjoe@juno.com		x
Dona Merritt	PO Box 978 Big Pine Key, FL 33043	305/296-5667			x
Peter Braisted	PO Box 487 Summerland Key, FL 33042	305/744-7340	pbraisted@mm0.net		x
Thelma Halvorsen	29152 Violet Dr. Big Pine Key, FL 33042	305/872-9773			

Florida Keys Overseas Heritage Trail
Public Workshops Mapping Exercise
December 2 - 4, 1999

Upper Keys Map

905	40 Mile Card Sound Loop, using U.S. 1 (the stretch). High-speed traffic, but good for a trail. Good for high-speed cyclists.
MM 106.5	Butterfly park to be built. Crocodiles and ecotourism potential.
MM 106.5 to MM 100	High-density access from car traffic (safety concern).
MM 103	Bumpy
MM 101	Key Largo Community Park - Atlantic side
MM 100 to MM 97	Dark at night; bad visibility
MM 96.5	Snapper's!!! Dove Creek Good kayak canoe
MM 93	Wild Bird Center Good bike bridge (over Tavernier Harbor)
MM 90 to MM 78	Islamorada - own jurisdiction
MM 86.5	Dangerous bridge (over Treasure Harbor)
MM 84 to MM 81	Islamorada commercial area - congested
MM 82	Islamorada/Holiday Isle very congested
MM 79.5	Possible trailhead location
MM 78	Two historical areas - good stop
MM 78	Good paddling (Indian Key to Lignumvitae Key area)

Middle Keys Map

MM 79	Papa Joe and World Wide Sportsman; walking route 1+ mile
MM 76 to MM 74	Good skating
MM 74	Anne's Beach; good trailhead for swimming. Scenic Overlook Water; Boy Scouts; Sailing
MM 68	Long Key - Possible trailhead location (circled near campground symbol)
MM 60 to MM 48	Marathon is own jurisdiction
MM 51	Drivers don't look both ways; very unsafe.
MM 50	Dangerous area; hard to cross Hard to get to Sombrero Key
MM 48	Boot Key Scenic Loop
MM 47.5	Scenic Overlook
MM 47	County Park is located here (Pigeon Key) All along the bike route drivers don't look both ways; driveways.

Lower Keys Map

MM 41.5	1 Mile bridge; scenic overlook Conned bench park with bridge parking
MM 39	Good snorkeling Rest stop; trailhead; camping.
MM 34	Scenic overlook on North side of road at existing boat ramp between boat ramp, interpretive signs.
MM 32	Traffic congestion
MM 31	Good bike path - Big Pine This trail needs better marking
MM 30	Flea market on Saturday and Sunday - real traffic jam Gulf side of U.S. 1 - Existing trail needs repair.

MM 31	*Big Pine Area*
to MM 30	Major Equestrian area Equestrian trails on old roads Don't forget about horses! Gulf side of U.S. 1 - Fred Manillo - Handicap access trail in Key Deer Wildlife Refuge Atlantic Side of U.S. 1 - along Long Beach Road - maybe just a trail route Turtle nesting
MM 29 to MM 27.5	Trail for shopping and alternative transportation - Big Row
MM 28	Torch Key Road is great road; very low vehicle traffic
MM 28.5	Nature Conservancy Property
MM 27 to MM 26	Possible bike path (Ramrod Key)
MM 24.5	Mote Marine Lab
MM 23	Bayside - Old Highway good here for biking (State Road 4A) need to be reopened - DOT closed it
MM 23.5	Cross-over
MM 23 to MM 20	Feasibility Study (have copies)
MM 22	Please open State Road 4A Horses use this trail (Cudjoe Key area)
MM 20. 5	Cross over Old boat launch area; trailhead
MM 19.5	Gulf side of U.S. 1 - Paved roadbed Wildlife Refuge; Old paved road; great handicapped access!
MM 17	Horses use trails Kayak landing
MM 10	Danger!! Stay on south side at Coppitt Road. The cross over that we recommended in our conceptual plan doesn't work. The bridge view of

the road is poor and therefore when a vehicle is coming over the bridge they don't see the pedestrian crossing until it is too late.

MM 19.5 to MM 5

Stock Island Alternative Route
Scenic Loop where have car races
Wooden bridge
Turtle nesting along edge of this area
Old Papy Road
Open up - eliminate illegal dumping
At Saddlebunch Harbor, wooden bridge or pull ferry
At Saddlehill Key, kayak landing
Along Boca Chica Key, beach fishing
Existing beach
Western Sambos Ecological Reserve
Great but access now restricted by Navy, very rough.
At Stock Island, ferry or pull ferry
At Stock Island, Kayak landing

MM 4

Most dangerous intersection for bikers and walkers, sod only to Palm; Ave; better signage needed (i.e. Bike Logo saying yield!); Please continue trail to MM O
Last Stand (305) 296 - 7708 - Jake Rutherford, President or Jog Divaro.
Looking to alternative route - more eco-friendly, FDOT rebuild for south Roosevelt (Highway).
No light for pedestrians.

Roosevelt Blvd.

Continue trail
Spur into salt flats; beautiful.
Terminate Overseas Heritage Trail at Ft. Zachary Taylor

Misc. comments

Add an "s" to Florida Keys Overseas Heritage Trail S to connote the great variety of trails and thus we are not constrained by ASHTO standards for a "trail"
A system of scenic overlooks/trailheads with tourist info kiosks to advertise/advise tourist of the next 30 miles. Businesses pay to be located on kiosk and this pays for upkeep etc. Currently the only way a business can advertise to car driver is by billboard $1,700.00/month. This could help little businesses and perhaps replace billboards as the means to meet this demand.

FLORIDA KEYS OVERSEAS HERITAGE TRAIL
PUBLIC WORKSHOP FINDINGS

Internal Planning Team Use Only. This information is in the process of being evaluated for use in goal setting purposes and is not meant as a complete document.

LOWER KEYS

TRAIL ALIGNMENT SHEET – 18 SHEETS; 6 TRAIL SURVEY SHEETS

1. **What type of recreation do you enjoy?** (*This question was on both the Trail Alignment Sheet and the Trail Survey Sheet. 23 responded total; multiple responses were allowed. The first seven choices were listed and then a blank for other activities.)*

Walking	////////////////	17
Jogging	////	4
Bicycling	////////////////////	20
In-line skating	/	1
Scenic viewing	//////////	10
Fishing	//	2
Nature appreciation	//////////	11
Equestrian	//	2
Kayaking	/	1
Motorboat	/	1
Swimming	///	3
Tap Dancing	/	1

2. **What are the various types of amenities and facilities you would like to see along the Trail?** (*This question was on both the Trail Alignment Sheet and the Trail Survey Sheet; 20 responded total; multiple responses allowed.)*

Water fountains	////	4
Multiuse Trail (Paved & Unpaved)	/	1
Signage	/	1
Restrooms	//////////	12
Rest Areas	///////	7
Trailhead	///	3
Parking	//	2
Picnic Areas	//	2
Beach Swimming	/	1
Showers	//	2
Separation of vehicles and trail users	///	3
Safety	///	3
Trash cans	//	2

Bridges / 1
Hitching Post / 1
Paved Trail / 1
Kiosks // 2

Additional Comments:

- In summer months people should not ride without water.
- Equestrian signage and non-paved areas for equestrians.
- Users can carry own water.
- Simple amenities (i.e. unisex restrooms, limited parking, etc.)

3. **What do you see as an important function of the Trail system?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 21 responded total; multiple responses. The following four choices were listed on the sheet. Any additional responses were recorded as additional comments.)*

Alternative transportation //////////// 11
Recreation ////////////////// 17
Economic Stimulus /////// 7
Preservation of the area's natural and historical assets //////////// 11

Additional Comments:

- Fitness and exercise for people of all ages; increase cardiovascular health; physical development; alternative to sedentary recreation; cheap transportation; family activity; would buy more on a bike that in a car; increase buying power of cyclists; have to get food and drink when biking 30-40 minutes.
- It could foster a healthy lifestyle; proud of the areas resources and taking the time to appreciate them; quality of life enhancement; lifestyle attitude about protecting the area.
- Attracting tourists; It will rival the "reef".
- Great for grandchildren; future generations.
- A means to conserve energy, reduce pollution and reduce congestion; a means to gain access to secluded areas and enhance recreational opportunities.
- Bring in ecotourism.
- Important for it to be scaled down.

4. **What do you think about environmental education and/or historical interpretation along the Trail route?** *(This question was on the Trail Alignment Sheet only; 13 responded)*

For //////////// 13
Against 0

Additional Comments:

- Something very simple and easy to maintain.
- Vandal proof kiosks, strategically placed.
- Not a priority; appreciation of flora and fauna ok.
- Very important! Lots to tell tourists and educate them on.

22

- Very much like to see it; under waterways, wayside exhibits would be good too.
- Both positive additions. Don't go overboard. Interpret but not overkill.
- Some people would be interested. Bahia Honda and the viaduct.
- Very important.
- Given the extraordinary history of the area and its exceptional environmental attributes, I think this would be an excellent idea.
- Now that we are a natural marine sanctuary, the need to be educated and interpretation.

4. **What are some problematic traffic congested areas and/or road hazard areas along the proposed trail route?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 14 responded total)*
   - Cudjoe Key – Old road on one side from bridge
   - Bridge Crossings, narrow path for biker
   - All of Key West area.
   - In Big Pine, needs better marking.
   - Big Pine Key; Cudjoe and Summerland – where the traffic comes out across path is unsafe; Stock Island to Key West unsafe after Boca Chica Bridge.
   - Big Pine area problems; Stock Island to Key West need special considerations; vehicular traffic goes too fast – slow traffic; education to the motorist.
   - More narrower bridges and some of the bridge approaches are very narrow; heavy winds a little scary.
   - Traffic light on Big Pine Key.
   - People off shoulder
   - Everywhere for equestrians; right of way width for equines; whole one trail.
   - Big Pine Key on Key Deer Blvd. 1st half mile of U.S. 1 floods heavily.
   - Cross roads at 905 and U S. 1
   - Bridges and their approaches; heavy winds.
   - Big Pine through town; Near Holiday Isle resort; Whale Harbor.

6. **How frequently would you use the trail?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 21 responded total; one choice was selected from the four choices listed below)*

a.	At least twice per week	/////////	**9**
b.	At least once per week	////	**4**
c.	At least once per month	//////	**6**
d.	At irregular intervals	//	**2**

7. **Do you see the Trail being opened for 24 hours a day, with lighting for nighttime use?** *(This question was on the Trail Alignment sheet only; 14 responded; one choice with additional comments listed below depending on their answer.)*

Yes	///////	**8**

No ////// 6

In certain areas, explain where: *(11 responded)*

- Would be dangerous to use at night. Would have to be extremely well lit for nighttime use.
- 24 hours yes, but light pollution is a problems would be unsafe at night.
- If have lighting, have to have hostels for camping.
- Not at this time; questionable
- Maybe till 10:00 PM at night, but after that no, because it would open the door for problems.
- Not necessarily; different parts of the trail would have different purposes. For example, in Key West it would be for alternative transportation. Lighting along the Old Bridges might harm corals.
- Yes because of the heat in the summer months.
- Trail should start, however humbly, and then add amenities later. Lights to Stock Island (MM10) for commuters – Key West to Big Coppitt/Boca Chica.
- Would enjoy night riding with sufficient lighting; would like the lights to be on the ground.
- Scenic overlooks on U.S. 1
- Environmental problems with lighting, but it could be done. It would be nice, but there are env. Constraints. Lighting could be very useful to get back from camping at night from trail;

Additional Comments: *(17 responded)*

- Have handicapped accessibility; snorkeling trail.
- Toilet facilities are a must; food can be obtained at local food stores and restaurants.
- Would like to see a feasibility study done comparing overhead lighting to ground-type lighting. Think the ground lighting would be beneficial for night users yet keep the experience more relaxing without big fluorescent lights.
- Rides in town; used to ride to work; doesn't feel safe.
- Very enthusiastic about the trail – wants to know when it will be open because she can't wait. Owner of a bicycle store and asked one of her employees who road from Savannah to Key west what his comments were: Rest areas – especially for flat tires; educational kiosks.
- Landscaping – native vs. naturalized; Paul Scurlock Book – Native Plants of the Florida Keys. Equestrian Trails – Big Pine/Sugarloaf/Cudjoe: Trail use for local community no recreation or commercial use; use of US 1 primarily; user group awareness/education; hitching post at rest stop in the areas where equestrian use = community character.
- Salt marshes in KW; connect to the trail along ocean; don't allow FDOT to expand road along A1A.
- Outside the Everglades National Park a nice bike pathway and trail. It is still passable. Canal 111 or canal 11 runs along…
- Middle Torch Rd. = 8 Miles Spur; Little Torch Key N; Jolly Rodgers Estates/Bob Burns President.

- Make sure have areas to slow down at crossings; Old Keys Bridge owned by FFWCC on Summerland Key near Monty's open to pedestrians.
- Signage should give equal importance to all non-motorized vehicles.
- Just north of Tavernier is a bad stretch.
- Roots on bike path at MM 90, 91, 105.
- Great idea – hope it happens.
- A great idea and lots of people want it, need it. So let's see it happen – soon!
- All invasive plants should be removed and of course landscaping should be with native plants.
- Very good idea. Hope it can be put in place.

TRAILHEAD/KIOSKS SHEET – 9 TRAILHEAD/KIOSKS SHEETS; 6 TRAIL SURVEY SHEETS

8. **Can you bicycle or walk to US 1 from your home or business?** *(This question was on the Trailhead/Kiosks Sheet only; 10 responded (two people on one sheet); one choice)*

Yes	//////////	**10**
No		

Would you use the trail to walk or bicycle to work? *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 15 responded total; one choice)*

Yes	//////////	**10**
No	/////	**5**

How often would you commute to work on the trail? *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 12 responded total)*

- Every day according to weather.
- Every day he commutes to work by bike.
- If her office was located along the trail she would, but currently no.
- Work on boat, would if possible.
- Everyday to commute to the store, etc.
- Daily.
- Everyday – now 4 –5 days /week.
- 7 days a week.
- None – retired.
- 3 days a week
- None – retired.
- Actually I am retired, but I take a bicycle to shop and go to breakfast and various other activities that are close. Also I take long walks on the present bicycle trail.

9. **Would you like to see trailheads (with limited parking) and facilities designed for the trail system?** *(This question was on the Trailhead/Kiosks sheet only; 9 responded.)*

Yes //////// **9**
No

If yes, where should these be located? (Respondents should also demonstrate locations on the trail alignment map.) *(This question was on the Trailhead/Kiosk sheet only; 7 responded)*

- Big Pine, Cudjoe, Sugarloaf, trailheads having hitching posts at facilities; these areas are most heavily used for equine activity.
- They should be incorporated with scenic overlooks.
- Entrance to Key West; proposed 7 Mile.
- Would like to see trailheads like in Atlanta along the trail.
- In shaded areas, maybe every 10-15 miles; put them where they will sit naturally.
- Every 15 miles; every so often.
- In general, walking – bench with shade; cycling – 5 miles between rest area and water, restrooms not as often due to movement lessening -10 miles; skating different.

If you own a business, would you be interested in accommodating trail users with drinking water or restrooms? *(This question was on the Trailhead/Kiosks Sheet only; 3 responded)*

Yes / **1**
No // **2**

If yes, please state the name and location of your business:

- Shaughnessy and Friends, Key West

10. **Do you like the design of the proposed Seven-Mile model trailhead?** *(This question was on the Trailhead/Kiosks Sheet only; 4 responded.)*

Yes /// **3**
No **0**

Additional Comments: *(3 responded)*

- Already a facility there, but a trailhead would be nice.
- Likes the model, like the way it keeps people from crossing the road.
- Outdoor showers at the trailheads.

11. **What type of character or identity would you like to see for the Trail?** *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 13 responded.)*

- Leave to locals.
- Bike logo; water – need bike route signs blend in with surrounding.
- Flagler railroad identity
- Yes, certainly.
- Equal weight – ECO and HERITAGE; she would like to see the bridge and viaducts.

- Trail map with businesses along the route; Overseas Heritage Theme.
- In keeping with community character.
- It should represent the Keys specifically the history and the environment.
- Multiuse
- Athletic uses i.e. bicycle, rollerblading, walking, running – ECOTOURISM; indigenous growth.
- Natural
- Florida Keys Heritage Trail Logo Image – Dolphin on a bike.
- Scenic, cultural and historical; the keys bridges should be the basis for scenic and historical identity.

Additional Comments: *(From Trailhead/Kiosks Sheet only; 4 responded.)*

- A natural for water supply at businesses.
- Preserve the historic bridges.
- Link South end of the 7 Mile bridge; Teaching 6 millions tourists sustainability through the trail – tourists should be part of the solution; use sustainable development techniques in the trail; Key West electric car service; A trail into the 21st Century.
- Plants along the trail must be native; according to specific areas; must be some areas especially the ones mentioned in question 9 (Big Pine, Cudjoe, Sugarloaf) that are not paved and can be utilized for equestrian activity.

HISTORIC BRIDGES *– 13 SHEETS - NO QUESTIONS WERE DUPLICATED ON THE TRAIL SURVEY SHEET*

12. **Do you feel maximizing the use of these remaining bridges would enhance your trail experience?** *(13 responded)*

    Yes //////////// **12**

    No / **1**

    Additional Comments:

    - No – maximizing is a very strong word – sounds like "wise-use"

13. **If you answered yes to question 12, please rank the following bridge qualities from highest to lowest. (1 = Highest 4 = lowest)** *(13 responded including the no answer from above; the choices were listed; some people responded ranking each 1 –4 while others ranked multiple choices a 1. The number below reflects the responses that ranked the choice as their highest quality.)*

    Maximizes separation of trail users from highway vehicles **9**

    Preserves scenic water vistas **3**

    Historic Preservation **2**

    Fishing access **2**

14. **Please rank the following bridge features from highest to lowest. (1 = Highest 4 = lowest)** *(13 responded; the choices were listed; some people responded ranking each choice 1 –4 while others ranked multiple choices a 1. The number below reflects the responses that ranked the choice as their highest quality.)*

Safety of trail users	**8**
Preservation of the environment	**4**
Cost of construction	**2**
Connecting schools, parks and neighborhoods	**2**

15. **What are your thoughts relating to the abandoned bridges?** *(13 responded)*
    - Use the present replacement bridges.
    - Should utilize the Old US route to get folks off U.S. 1. Old route is more scenic.
    - The old pilings support coral communities.
    - The trails would enhance the community and save the historical beauty.
    - An existing resource that is underutilized.
    - I think they are a vital part of the Florida Keys and Florida's history and should be maintained.
    - Keep them in use.
    - I would like to see them become a part of the trail so they can be utilized and appreciated as part of our unique history.
    - Totally ridiculous to abandon. Do not preclude emergency vehicle use when a truck turns over, etc.
    - Some bridges are used by resting birds (i.e. Spanish Channel). Any use o trails and bridges must consider animals and plants equally with humans.
    - Make them work.
    - Put them back together and let's use them.
    - Save them – slowly going to ruin; should be preserved A.S.A.P.

16. **Additional Comments:** *(6 responded)*
    - Where possible use old Highway 31 roadbed.
    - Good luck.
    - Hurry!
    - Thank you
    - I would like to see the community character preserved, what works for one area will not necessarily work in another. No commercial use of this.
    - Fish debris is a problem.

MIDDLE KEYS

TRAIL ALIGNMENT SHEET – 20 TRAIL ALIGNEMENT SHEETS; 4 TRAIL SURVEY SHEETS.

1. **What type of recreation do you enjoy?** *(This question was on both the Trail Alignment Sheet and the Trail Survey Sheet. 23 responded total; multiple responses were allowed. The first seven choices were listed and then a blank for other activities.)*

Walking	////////////////	**16**
Jogging	///////	**7**
Bicycling	//////////////////	**19**
In-line skating	////	**4**
Scenic viewing	//////////	**11**
Fishing	//////	**6**
Nature appreciation	//////////	**9**
Historical	/	**1**
Swimming	//	**2**
Diving/Snorkeling	//	**2**
Kayaking	/	**1**
Boating	//	**2**
Camping	/	**1**

2. **What are the various types of amenities and facilities you would like to see along the Trail?** *(This question was on both the Trail Alignment Sheet and the Trail Survey Sheet; 23 responded total; multiple responses allowed.)*

Restrooms	//////////	**10**
Rest stops	////////	**9**
Points of interest	//	**2**
Water	///////	**8**
Safety/Call Boxes	/	**1**
Level Ground	/	**1**
Landscaping	/	**1**
Arts/Sculpture/Murals/Public Art	/	**1**
Separation from road	//	**2**
Paved Trail	/	**1**
Kayak landings	/	**1**
Education	/	**1**
Bike racks	/	**1**
Trash cans	//	**2**
Parking	/	**1**
Trailhead	///	**3**
Scenic overlooks	/	**1**

Additional Comments:

- Would like to see public art incorporated into the trail. Towers incorporated into the design of the trail and trailhead. Works with the Monroe County Public Arts Council and willing to work with us.
- Ingress and egress points for areas along trail route need to be considered.
- Water every five miles.
- Kiosks mean too much maintenance.

3. **What do you see as an important function of the Trail system?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 21 responded total; multiple responses. The following four choices were listed on the sheet. Any additional responses were recorded as additional comments.)*

Recreational opportunities //////////////// **16**
Alternative transportation //////// **8**
Economic Stimulus /////// **7**
Preservation of the area's natural and historical assets //// **4**

Additional Comments:

- Could be a cultural asset in binding the Keys together.
- Health – to help maintain.
- Community development and community.
- Education.
- Safety concern.
- If safe, might use to go to Key West (from Sugarloaf) in cooler weather.
- Health maintenance.
- Improving ecotourism; boosting natural resources and environmental, cultural resources; develop a destination that benefits residents and visitors alike.
- Keep all non-motorized vehicles off the road. To encourage people to use the trail more and the road sides less.
- Ecotourism.
- No. Want bike paths within cities rather than on the highways; Don't think tourist will use this! Not much to see between Marathon to Big Pine.
- Trail can't conflict with the cars.
- Develop destination that benefits residents and visitors alike.
- Recreational trail that will have an economic stimulus to the area. Will attract people from all over the world.

4. **What do you think about environmental education and/or historical interpretation along the Trail route?** *(This question was on the Trail Alignment Sheet only; 15 responded)*

Yes ////////////// **13**
No // **2**

Additional Comments: *(12 responded)*

- Develop the historic concept of the bridges.

- Points of interest.
- Very much needed.
- Very positive to have educational plaques but there are a great deal of maintenance that will accompany them.
- Would agree to have either along the trail.
- Educational kiosks would be costly due to upkeep, maintenance, and replacement.
- Super – would love history above the bridges and about natural history what type of flora and fauna.
- That would be nice too.
- Loves it- enjoys looking at vegetation and animals; enjoys history.
- Great – good to stop, rest, and educate.
- Fine to put out weatherproof signs.
- Would be an integral part.

5. **What are some problematic traffic congested areas and/or road hazard areas along the proposed trail route?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 14 responded)*
   - S.R. 4A on Cudjoe Key – open up barriers.
   - Driveways that abut U.S.1 where the bike path meets the driveways to particular businesses; should be proper signage for the trail route. This is the trail, etc.
   - Every entrance and exit.
   - None – you have to stop when you are supposed to.
   - Cross over at Cudjoe Key.
   - Bridges are hazardous, build cantilever bridge.
   - Bridges would be number one concern.
   - First 20 miles should be re-routed at Sugarloaf connecting keys to Boca Chica, then ferry across to Stock Island, use S.R. 905A.
   - All along the entranceways is a danger from cars.
   - Unsafe on the main road; safe too off the road; they feel safe on the old bridges; connection of the bridges; must include cross over.
   - Open the bridges; hard for people to lift bikes up over blockades.
   - Alternative route in lower keys – with 2 wooden bridges and ferry – off U.S. 1 (old historical route 1). Includes a scenic loop, which is an existing blocked off road that is only used 2x/year by car club. The ferry could be a tiny barge with an attendant. The bridges (abutments) are there and would just need a bridge up top.
   - When cars use trail to access commercial facilities.
   - Auto's crossing existing trail in many areas in Marathon and rest of route.

6. **How frequently would you use the trail?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 20 responded total; one choice was selected from the choices listed below)*
   a. At least twice per week //////////// 13
   b. At least once per week / 1

c. At least once per month ///// 5
d. At irregular intervals / 1

7. **Do you see the Trail being opened for 24 hours a day, with lighting for nighttime use?** *(This question was on the Trail Alignment Sheet only; 17 responded; one choice with additional comments listed below depending on their answer)*

Yes //////// 8
No //////// 8
Undecided / 1

In certain areas, explain where: *(14 responded)*

- Lighted bathrooms in parks and public places attract homeless people.
- Not the scenic route in lower keys (S.R. 959).
- They wouldn't use it because of safety.
- Everywhere there should be lighting for safe nighttime use.
- Would have to be open 24 hours due to nature of people in keys not wanting to adhere to the closing of the trail.
- Tarpon and sharks don't sleep with lighting.
- Be careful of turtles and view sheds of the night sky.
- Lighting detracts from the experience.
- Sure – not the highest priority but when it gets popular it will be needed.
- If money allows.
- No because it will cost more money.
- Yes in some areas – trailheads and facility areas. The rest let it be natural beauty.
- Some.
- As long as it was safe and well lit and patrolled.

Additional Comments: *(14 responses; the last one is from a corridor impressions survey submitted by CFK)*

- Bridges are structurally safe; intercoastal waterways/water flow/sewage – ACOE – contact Colin Jax. District; want to get from Sunshine to Bahia Honda; bridge – away from the road.
- "Too far reaching"; no need for 10 – 14 ft. trail; does not want this to come out of her pocket; no Monroe County money – it will raise taxes; does not like designers who are not in Monroe County;
- From Sunshine to Bahia Honda state parks and Sunshine to Seven Mile Bridge – a trail would be nice like the Key Largo pathway.
- What about the tree debris along US 1 from the storms.
- Bahia Honda bridge remove the road bed completely and build a new road underneath inside the structure; take the structure out; underpass is good idea for the other bridges, but not for Bahia Honda because the park is a restricted area.
- Problem with the trail and ingress/egress points along the trail.
- Wants to use money for reefs, not bridges.
- Very worthwhile.
- Priority middle from Bahia Honda to Marathon.

- In summer months there will be an extreme decrease in activity.
- Don't do switch at Big Coppitt (as recommended in concept plan) – path on north side is dangerous and ill planned. As vehicles come over the bridge, they can't see pedestrians crossing U.S.1 and when they slam on their brakes, cars behind them can't see vehicle in front causing accidents.
- Keeping up the lines on the trail; lock restrooms at night; would like to see native vegetation planted along the trail to keep down dust, beautify, and further delineate the trail from other areas.
- Width must handle multiple uses. Will be a great amenity for Keys. It will give tourists and locals an alternative activity. I can see people from all over the world coming to use the Heritage Trail.
- MM 54 to Grassy Key – Easy off road area for trail; MM 54 to Marathon Airport – existing trail cut by numerous driveways, alternate route fro trail difficult; Approx. MM 52 Marathon Airport to MM 51 – large area for trail. From end of airport to near 7 Mile bridge existing trail cut many times for commercial business. Alternate location for trail will be hard to find. (major signage will be needed on existing trial if used.); 7 Mile bridge obviously needs high span; will be awesome when completed.

TRAILHEAD/KIOSKS SHEET – 13 TRAILHEAD/KIOSKS SHEETS; 4 TRAIL SURVEY SHEETS

8. **Can you bicycle or walk to US 1 from your home or business?** *(This question was on the Trailhead/Kiosks sheet only; 11 responded; one choice)*

Yes	//////////	**10**
No	/	**1**

Would you use the trail to walk or bicycle to work? *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 14 responded total; one choice; please see the note under additional comments regarding the number of retired individuals in this area and the validity of this question)*

Yes	/////	**5**
No	/////////	**9**

Additional Comments:

- Bicycle yes, probably
- Retired **(Note: several of those surveyed at Sunshine are retired and so this question does not apply to all).**
- Too long - half and hour now.
- Only has access to the US 1 shoulder currently, but would use the trail if available.

How often would you commute to work on the trail? *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 9 responded total; blank space provide for answer)*

- Several times a week
- Once a month

- Weekly, but not daily
- In sales, not conducive for bicycling to work.
- If lived closer to work, would use the trail.
- Wouldn't commute due to the nature of the job.
- Everyday.
- 2-3 days.
- Retired.

9. **Would you like to see trailheads (with limited parking) and facilities designed for the trail system?** *(This question was on the Trailhead/Kiosks sheet only; 12 responded)*

Yes	////////////	**12**
No		**0**

If yes, where should these be located? (Respondents should also demonstrate locations on the trail alignment map.) *(This question was on the Trailhead/Kiosk sheet only; 10 responded)*

- Duck Key; Grassy Key; Curry Hammock; Seven Mile Bridge; Crane Point Hammock; Big Pine and bike down to blue hole; Any point of national interest; state or county park is a given; Either end of long bridges.
- Every so often along the trail.
- Pigeon Key/Knights Key.
- Beginning and end of ride; Alexandria Virginia Trail; Architecturally blend in; not too many trailheads; take advantage of what is there (parks, facilities); trailheads for trial use.
- With art installations, murals, sculpture.
- Would like to be able to come do a stretch of trail and go home; come back and do another some other time.
- Above or away from the road; far away from the road as possible.
- As long as they were away from shopping centers and high traffic areas there should be trailheads.
- Bahia Honda.
- On bridge heads, channels, multipurpose kayak, vistas.

If you own a business, would you be interested in accommodating trail users with drinking water or restrooms? *(This question was on the Trailhead/Kiosks Sheet only; 6 responded)*

Yes	///	**3**
No	///	**3**

If yes, please state the name and location of your business:

- Captain Hooks Dive and Bait
- Hurricane MM 49.5 – Half mile to Pigeon Key marina and possibly hot dog stand. (Business owner – turning Marine and Marine Power Supply)
- Very small clinic – The Clinic in Key West.

10. **Do you like the design of the proposed Seven-Mile model trailhead?** *(This question was on the Trailhead/Kiosks Sheet only; 8 responded.)*

    Yes //////// 8

    No

    Additional Comments: *(4 responded)*

    - Do with an underpass and use Bahia Honda.
    - Likes the way it directs people away from the traffic and having to cross it.
    - Would like to see a trailhead before the 7-Mile Bridge.
    - Yes, but concerned about the incline of proposed road under the bridge up to the trail.

11. **What type of character or identity would you like to see for the Trail?** *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 8 responded total.)*

    - Beautiful water and biking logo; egret; key deer trail; CONCH
    - Would like to see the natural integrity maintained as much as possible.
    - Art; cultural; ecotourism
    - Yes, Keys wide
    - Natural.
    - Unique signs or symbol keys wide; easy to recognize for people driving.
    - The trail would benefit not only locals, but tourists as well; a recognizable symbol used throughout the system.
    - Least amount of auto intrusion in trail system as possible.

    Additional Comments: *(3 responded)*

    - Susan Sprunt of Tavernier – Florida Keys Native Nursery; 106 Miles – big masses
    - Should have done 3 weeks later during season.
    - Very excited about it.

HISTORIC BRIDGES – 12 SHEETS - *NO QUESTIONS WERE DUPLICATED ON THE TRAIL SURVEY SHEET*

12. **Do you feel maximizing the use of these remaining bridges would enhance your trail experience?** *(12 responded)*

    Yes 12

    No

    Additional Comments: *(1 responded)*

    - I love the bridges and the views. You can escape.

13. **If you answered yes to question 12, please rank the following bridge qualities from highest to lowest.** *(12 responded; the choices were listed; some people responded ranking each 1 –4 while others ranked multiple choices a 1. The*

number below reflects the responses that ranked the choice as their highest quality.)

Maximizes separation of trail users from highway vehicles **8**
Preserves scenic water vistas **5**
Historic Preservation **2**
Fishing access **1**

14. **Please rank the following bridge features from highest to lowest. (1 = Highest 4 = lowest)** *(12 responded; the choices were listed; some people responded ranking each choice 1 –4 while others ranked multiple choices a 1. The number below reflects the responses that ranked the choice as their highest quality.)*

Safety of trail users **11**
Preservation of the environment **2**
Cost of construction **2**
Connecting schools, parks and neighborhoods **1**

15. **What are your thoughts relating to the abandoned bridges?** *(12 responded)*

- Great for recreation, fishing, walking, biking, etc. Beautiful historic sites.
- They can be a great resource (culturally, historically, significantly), however, if improvement and maintenance efforts are not started soon, they will continue be nothing more than a source of visual and environmental pollution.
- Bridges should be preserved and put to non-vehicle public use.
- Keep them open and free of housing or anything that limits their use or the view.
- What a waste, why can't we use them.
- Let's use them.
- Should be used if possible to cut down on the expense of the project. They also provide good water views.
- Use them.
- Beautiful and historic. Very valuable.
- People do use the bridges. Maintenance. Should be preserved.
- Use them.
- Should be more accessible.

16. **Additional Comments:** *(2 responded)*

- Development leads to added use, which requires well thought out plans for dealing with additional traffic, pollution, impacts on wildlife, etc. The only way to successfully deal with such issues is proactive, advance planning. Thank Yon.
- In the past a danger existed of turning the Old Bridges into trailer parks.

UPPER KEYS

TRAIL ALIGNMENT – *13 TRAIL ALIGNMENT SHEETS; 11 TRAIL SURVEY SHEETS*

1. **What type of recreation do you enjoy?** (*This question was on both the Trail Alignment Sheet and the Trail Survey Sheet. 22 responded total; multiple responses were allowed. The first seven choices were listed and then a blank for other activities.)*

Walking	///////////////	**15**
Jogging	///	**3**
Bicycling	//////////////////	**17**
In-line skating	/////	**5**
Scenic Viewing	///////////	**12**
Fishing	///////	**8**
Nature appreciation	/////////	**9**
Paintball	/	**1**
Boating	//	**2**
Snorkeling/Diving	//	**2**
Swimming	/	**1**
Golf	/	**1**
Kayak	/	**1**

2. **What are the various types of amenities and facilities you would like to see along the Trail?** (*This question was on both the Trail Alignment Sheet and the Trail Survey Sheet; 19 responded total; multiple responses allowed.)*

Bathrooms	/////	**5**
Fishing	/	**1**
Water fountains	/////	**5**
Crosswalks	/	**1**
Lighting	/	**1**
Rest areas	///////	**7**
Safety Patrol/Call box	////	**4**
Trailhead	//////	**6**
Multiuse trail	/	**1**
Information kiosks	///	**3**
Trash cans/recycling	/	**1**
Campgrounds	/	**1**
Separation from highway	/	**1**
Commercial	//	**2**

Additional Comments: *(8 responded)*

- Safety – get out of traffic; able to ride miles without being frightened; existing bike path is made too better too fast people are going to get hurt; MM106 – 100, if you speed it up more accidents.
- Against getting rid of fishing areas.
- Restroom issue – problem with environmental impact
- Interact with commercial areas when go through; scenic trail.
- I do not feel amenities are necessary.
- Small local flavor (not Mickey D's); sit outside café's; bike and skate shops.
- Tiki huts.

- Appropriately done interpretative trail markers relating to the natural, ecological and built historical sites/features; also, as few amenities as are deemed necessary/possible.

3. **What do you see as an important function of the Trail system?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 19 responded total (some responses counted towards additional comments only); multiple responses. The following four choices were listed on the sheet. Any additional responses were recorded as additional comments.)*

Recreational opportunities /////// 7
Alternative transportation /// 3
Economic Stimulus /// 3
Preservation of the area's natural and historical assets /// 3

Additional Comments: *(8 responded)*

- Recreational trail promoting health for people of our state and out of state.
- All of the above are equally important in terms of recreation, transportation, sustainable development, preservation and community.
- Yes! Recreation and education. I do not think we have a big enough space to advertise it as alternative transportation.
- Recreation, quality of life, increased property values; economic stimulus is no an issue other than small, local service establishments.
- Recreation I wish, but ecotourism I fear.
- Allowing the citizen to see the beauty of our country on foot and bicycle.
- Health benefits.
- Health benefits important; low impact.

4. **What do you think about environmental education and/or historical interpretation along the Trail route?** *(This question was on the Trail Alignment Sheet only; 8 responded)*

Yes /////// 8
No 0

Additional Comments: *(7 responded)*

- Need to know the fragility of the area.
- Wayside exhibits.
- The trail will be used for health and transportation to work.
- Real worthwhile; especially historical – Jerry Wilkinson does a historical tour with the girl scouts every year from MM90 to 104.
- Cultural and historical preservation.
- Wayside exhibits would be nice.
- Very good. Should do it.

5. **What are some problematic traffic congested areas and/or road hazard areas along the proposed trail route?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 18 responded)*

- Congestion; Jewfish Creek/Bike path vs. business driveways.
- MM 76 – uses the old highway, but on road bike shoulder is unsafe; southern Islamorada is still unsafe; should be removed from the road. Pea rock is not as safe as gravel areas.
- Any stop sign; traffic vehicles don't look for cyclists.
- Business driveways are dangerous.
- Harry Harris Park.
- Weigh station.
- Traffic intersection in Key Largo; safety between cars.
- Median between heavy commercial 97.5 to 99 MM; Rock Harbor business section.
- Along places where there are no people in desolate areas; Holiday Isles, Islamorada very important.
- MMM 100; MM 106 – MM 100; other than the railroad easement other alternatives should be looked at boardwalks.
- Congestion will be worse in high season. I don't know how to cope with that, it just is. I would like to see a barrier between the trail and U.S. 1. I mean like a safety railing. I have seen cars wander off the road. In Key Largo there are so many driveways and streets onto U.S. 1, it seems impossible. In K.L., they need an above-ground crosswalk for tourists and kids. It's a wonder that more people don't get killed crossing U.S. 1.
- Key Largo access to local business presents a hazard for bicycles. If you speed up the bike path you will increase accidents.
- Trail running close to U.S. 1, very little room to construct a trail.
- Medical strip MM 97.5 to MM 99 – commercial business access slowing down to get off U.S. 1 and crossing trail route.
- Any places where traffic crosses are problem areas. Most people don't stop for a bike path.
- Trucks and cars second.
- The traffic light right up on MM 99. There's no crosswalk.
- MM 100 (near/at T.I.B. bank crossing.) Mgr. Lizard area. Consider route/(rerouting if possible (necessary) very carefully.

6. **How frequently would you use the trail?** *(This question was on both the Trail Alignment sheet and the Trail Survey sheet; 20 responded total; one choice was selected from the four choices listed below)*

   a. At least twice per week //////////// 13
   b. At least once per week ///// 5
   c. At least once per month
   d. At irregular intervals // 2

7. **Do you see the Trail being opened for 24 hours a day, with lighting for nighttime use?** *(This question was on the Trail Alignment sheet only; 9 responded; one choice with additional comments listed below depending on their answer.)*

   Yes ////// 6

No // 2
Undecided / 1

In certain areas, explain where: *(7 responded)*

- In Key Largo because of safety issue due to pedestrian accidents.
- Lighting would be wonderful.
- Sun up to sun down.
- Commercial area; densely populated possibly fishing areas too.
- High traffic areas; Marathon, Key Largo, Key West.
- Till 1:00am shut off back in at 6:00am.
- Lighting not necessary or at least not 24 hours for lighting is necessary.

Additional Comments: *(17 responded)*

- MM 78 to 74 Matecumbe –good
- In-line skating
- Separation from vehicle traffic important.
- Bridge comments – likes Seven Mile and wants connections made on all Old Keys Bridges for the entire corridor; new park – Key Largo community center.
- Funding?; Existing problems with storm water run-off; sewage.
- No trail beyond 106.5; water trails – spots in northern Keys; Dove Creek – canoe trail; mixed feeling about the project – worried about the environmental impact.
- Doesn't want the trail; worried about the affects the project might have on fishing.
- Bike side on the bridges is too small and unsafe; please see the Card Sound Road trail on the suggested map.
- Who is working on median strip in Key Largo? These have been lost from the hurricane and not replaced and we need more landscaping similar to the plants put in by Pennekamp.
- I think everyone down here deserves a nice trail to exercise on.
- It would be wonderful to have more access to trails, scenic views, and recreation in the Keys. I would like to drive to Marathon, bike the trails or Lower Keys. Also, it would be nice to bike along 905 on trails.
- Why does the bike path along the old road in Plantation Key end at Jammers. We need a connection from this spot past the weight station to the Snake Creek Bridge.
- I think it's great idea and as a trail user I would use a trail like this regularly.
- Question whether segmented with specific highlights may be more appropriate for the Keys.
- It is worth trying to accomplish if money becomes available.
- This trail will attract a more conscious visitor to the Keys; help alleviate some of the traffic; stimulate a different type of retail business.
- Kudos to Michael Design team. Thanks to all for the newsletter, which prompted our brief participation at the Key Largo workshop.

TRAILHEAD/KIOSKS SHEET – 8 TRAILHEAD/KIOSKS SHEETS; 11 TRAIL SURVEY SHEETS

8. **Can you bicycle or walk to US 1 from your home or business?** *This question was on the Trailhead/Kiosks Sheet only; 8 responded (two people on one sheet); one choice)*

Yes	///////	7
No	/	1

Would you use the trail to walk or bicycle to work? *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 15 responded total; one choice)*

Yes	/////////	9
No	//////	6

How often would you commute to work on the trail? *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 13 responded total; blank space provide for answer)*

- Too far
- Depends what errands I would need to run.
- Too far.
- 2- 3 times per week.
- 1 –2 times per week.
- Would use it to go to the flea market; too far to commute to work, but used to commute to work by bike.
- As often as possible
- Occasionally (its 5miles one way) in the winter. But as it is now, the K.L. trail is dangerous – no "break" from the highway.
- Never.
- I wish yes, but I fear no.
- Weekly.
- I presently do ride my bike on the bike path in Islamorada.
- Once or twice a week.

9. **Would you like to see trailheads (with limited parking) and facilities designed for the trail system?** *(This question was on the Trailhead/Kiosks sheet only; 5 responded.)*

Yes	/////	5
No		

If yes, where should these be located? (Respondents should also demonstrate locations on the trail alignment map.) *(This question was on the Trailhead/Kiosk sheet only; 4 responded)*

- No meters; no multilevel; Entrance to the Seven Mile Bridge; near the Long Key Bridge; Indian Key Fill;
- Seven Mile Bridge.

- Wouldn't bother one way or another; If it was well kept up, then ok.
- Maybe restrooms at botanical site; could bring vagrants; even vagrants at parks.

If you own a business, would you be interested in accommodating trail users with drinking water or restrooms? *(This question was on the Trailhead/Kiosks Sheet only; 1 responded)*

Yes
No / **1**

10. **Do you like the design of the proposed Seven-Mile model trailhead?** *(This question was on the Trailhead/Kiosks Sheet only; 2 responded.)*

Yes // **2**

11. **What type of character or identity would you like to see for the Trail?** *(This question was on both the Trailhead/Kiosks Sheet and the Trail Survey Sheet; 12 responded.)*

- Conch, fish, boats.
- Keys wide logo or identifier
- The most important character would be safety from cars and trucks. Old Florida Identity.
- Definitely historic and also local, this identity should capture all the different cultures across the 100-mile stretch.
- Running, biking, strolling through paradise; I would like to take advantage of our local plants (palms) to line the trail wherever possible.
- "Kesian" and rustic; safe from auto traffic; scenic viewpoints and historic markers along the way.
- Native vegetation – environmental education.
- Highlight native vegetation, area heritage, and take advantage of the water views.
- Reflect a slow pace of a laid back community.
- Rural and quiet.
- A safe trail that covers a long distance with a smooth surface and a scenic view.
- Being able to use the Old Bridges and not having to worry about traffic.

Historic Bridges - 11 SHEETS - *(NO QUESTIONS WERE DUPLICATED ON THE TRAIL SURVEY SHEET)*

12. **Do you feel maximizing the use of these remaining bridges would enhance your trail experience?** *(10 responded)*

Yes **9**
No **1**

13. **If you answered yes to question 12, please rank the following bridge qualities from highest to lowest. (1 = Highest 4 = lowest)** *(8 responded; the choices were listed; some people responded ranking each 1 –4 while others ranked multiple choices a 1. The number below reflects the responses that ranked the choice as their highest quality.)*

Maximizes separation of trail users from highway vehicles 6
Preserves scenic water vistas 1
Historic Preservation 3
Fishing access 0

14. **Please rank the following bridge features from highest to lowest (1 = Highest 4 = lowest).** *(13 responded; the choices were listed; some people responded ranking each choice 1 –4 while others ranked multiple choices a 1. The number below reflects the responses that ranked the choice as their highest quality.)*

Safety of trail users 7
Preservation of the environment 1
Cost of construction 1
Connecting schools, parks and neighborhoods 1

15. **What are your thoughts relating to the abandoned bridges?** *(9 responded)*

- Like walking high; should save for historical and safety; about being away from the highway. Bridges have "stood the test of time".
- Leave alone; don't want to pay for them; paying enough taxes already.
- Lets fix them up and use them to exercise.
- PRESERVE, PRESERVE, PRESERVE.
- Need to be used.
- They should be used for the Overseas Heritage Trail in every area feasible in order to preserve the historical structures and enhance the trail for users.
- They must be included. This opportunity is too great to pass up! The entire trail length must be connected.
- They should be used for walking, riding bikes, etc. My wife and myself often walk on the bridges on U.S. 1 and it really is not safe. The Old Bridges would be the perfect place to walk and be safe.
- It would be great if you are successful in obtaining funding to utilize the trails. But this is an extremely expensive proposition. What are you going to do about the new bridges and the safety of bicyclists and pedestrians?

16. **Additional Comments:** *(5 responded)*

- I would be in favor of a special tax if the above could be completed to provide a safe and scenic place to work.
- I wish there were more areas where it was safe enough for rollerbladers.
- 7 Mile bridge – get flats because of glass; fishing hooks are a big problem. If you were to use the bridges, there would be a problem with fishermen and bicyclists. Need maintenance cleaning of debris. Trail would have to be cleaned.
- Bikers might be tourists – not locals. Trail – no more than 6' and no trailheads. No vagrants in bathrooms and parks.

- Like Big pine bike trails except crossing. 18-wheelers on 7 Mile not for 3 wheeler bicycles.

PUBLIC WORKSHOP - *DEVELOPING THE LOCAL PERSPECTIVE*
FLORIDA KEYS OVERSEAS HERITAGE TRAIL MASTER PLAN

TRAIL PLANNING QUESTIONS

Trail Alignment

1. What type of recreation do you enjoy?

a. walking b. jogging c. bicycling d. in-line skating e. scenic viewing

f. fishing g. nature appreciation other:_____

2. What are the various types of amenities and facilities you would like to see along the Trail?

_____

_____

3. What do you see as an important function of this Trail system?
(For example, recreational opportunities, alternative transportation, economic stimulus, preservation of the area's natural and historical assets?)

_____

_____

_____

_____

4. What do you think about environmental education and/or historical interpretation along the Trail route?

_____

_____

_____

_____

5. What are some problematic traffic congested areas and/or road hazard areas along the proposed Trail route? (Additionally, respondent should demonstrate problem areas on map.)

_____

_____

_____

6. How frequently would you use the trail?

a. At least twice per week
b. At least once per week
c. At least once per month
d. At irregular intervals

7. Do you see the Trail being opened for use 24 hours a day, with lighting for nighttime use?

Yes

No

In certain areas, explain where:

_____

_____

Trailhead/Kiosks

8. Can you bicycle or walk to US 1 from your home or business?

Yes

No

Would you use the trail to walk or bicycle to work?

Yes

No

How often would you commute to work on the trail?

_____

9. Would you like to see trailheads (with limited parking) and facilities designed for the trail system?

Yes

No

If yes, where should these be located? (Respondents should also demonstrate locations on the trail alignment map.)

_____

_____

_____

If you own a business, would you be interested in accommodating trail users with drinking water or restrooms?

Yes

No

If yes, please state the name and location of your business:

_____

_____

10. Do you like the design of the proposed Seven-mile model trailhead?

_____

_____

11. What type of character or identity would you like to see for the Trail?

_____

_____

Historic Bridges

12. What are your thoughts regarding the use of the Historic Bridges for portions of the Trail system, for example like Pigeon Key in Marathon?

13. What do you think about reconnecting the old Seven-Mile Bridge for pedestrian, recreation and non-vehicular use?

14. What do you think about reconnecting the Bahia Honda Bridge for pedestrian, recreation and non-vehicular use?

15. ***Additional Comments:***

FKOHT Lower Keys Public Workshop
December 4, 1999

L I S T O F A T T E N D E E S

Note: The following attendees were at the Bike Action Key West meeting also at the Wyndam Beach House (Casa Marina). A modified presentation was given during the conference and many participants came over the Public Workshop.

NAME	ADDRESS	PHONE NO.	FAX NO.	EMAIL
B. Paulson	P.O. Box 531 Key West, FL	294-3025		kwbarb@webtv.net
R. Homman	P.O. Box 531 Key West, FL	294-3025		rkster@hotmail.com

Florida Keys Overseas Heritage Trail Master Plan Public Workshops

DATE: December 4, 1999

PLACE: Wyndam Beach House (Casa Marina)

L I S T O F A T T E N D E E S

NAME	ADDRESS	PHONE NO.	FAX NO.	EMAIL
Lacie Adana	723 Fleming	296-4411		
R. Hommann	P.O. Box 531 Key West, FL	294-3023		rkster@hotmail.com
Rick Hawthorn	1400 Von Phister			
Barbara Paulson	P.O. Box 531	294-3023		kwbarb@webtv.com
F. Ford	1200 Washington	296-5598	296-1189	
Anthony Kuhn	29423 Saratoga Avenue	872-4771		
Carol Shaughnessy	1307 Whitehead Street	294-0320	292-3653	cslico2419@aol.com
Bob Burns	513 Lafette Road Little Torch Key	872-9456		gabburns@spryent.com
Marcie L. Riose	818 Whitehead Street Key West, FL 33040	293-1881	294-8551	squirerose@aol.com
Fritz Wattstein	216 Am. Street Key West, FL 33040	292-0311	292-5065	Fritz.metbfair@noaa.gov
Merli McCoy	88 Hilton Head Road Key West, FL33040	296-5123	296-5132	merlimccoy@compuserve.com
Mighk Wilson	315 E. Robinson Street Orlando, FL 32801	(407) 5672 X318	481-5680	mwilson@metroorlando.com
David Henderson	120 Mariposa Avenue, #419 Coral Gables, FL 33146	(305) 666-4718		David93146@aol.com

FKOHT Middle Keys Public Workshop
December 3, 1999

L I S T O F A T T E N D E E S

NAME	ADDRESS	PHONE NO.	FAX NO.	EMAIL
Diane Gauthier President – Big Coppit Comm. Monroe Council of the Arts	750 Prada Circle	(305) 293-8484	(305) 292-8978	dianeg@keysdigital.com
Mark Hamilton	FDOT- District 6 Miami, FL	(305) 319-5683		
Suzie Laucene	FDOT- District 6 Miami, FL	(305) 377-5895		
Jeff Wisch	Marathon, Florida Glenwood Springs Colorado	(305) 289-1027 (970) 447-9811		jwisch@aol.com
John Rolli	P.O. Box 369 Sugarloaf Key, Florida	(305) 745-3564	(305) 744-0264	johnrolli@cs.com
Beth Johannason	134 Cutlass Lane	(305) 745-2769		
Brian and Joanne Cogan	33801 Highway 1 Big Pine Key	(305) 872-2217		
Carl Fives	11 Sombrero Apt. 16 Matathon, FL 33050	(305) 743-6073		
Pete Braisted				pbraisted@mm0.net
Brian and Sue Moore	St. Louis, Missouri			Briansuemoore@webtv.net

Florida Keys Overseas Heritage Trail Master Plan Public Workshops

DATE: December 3, 1999

PLACE: Sunshine Key Campground

L I S T O F A T T E N D E E S

NAME	ADDRESS	PHONE NO.	FAX NO.	EMAIL
Judith A. Banks	29178 Cedar Drive Big Pine Key, Florida	(305) 872-3766		
Gary McKee	36850 Overseas Highway	(305) 872-3897		
M. Anderson	30981 Willane			
George McClellen	10895 N. State Road 267	(305) 872-8891		
Chad Meadows	2098 Overseas Highway, Suite 410 Marathon, FL	(305) 289-2511		
Marge Pierce	1 47th Street Marathon, FL	(305) 743-3007		
Chuck Pierce	1 47th Street Marathon, FL	(305) 743-3007		
R.C. Jake Rutherford, MD	3128 Riviera Drive Key West, FL 33040	295-7308	295-5958	pres@last-stand.org
Bill & Barb Landt	10 Jerry Street	(740) 625-6631		
Kathy & Rich Forman	11833 Overseas Highway Marathon, FL	(305) 743-2444	289-1384	capthooks@bellsouth.com
Shane S. Smith	1996 Overseas Highway Marathon, FL	(305) 509-1104		
B. Finger	39301 Overseas Highway Sunshine Key, FL	(305) 872-5769		
Monica Haskell Monroe Council of the Arts	P.O. Box 717 Key West, FL 33041	(305) 294-4406	(305) 296-4372	arts@keysdigital.com

FKOHT Key Largo Public Workshops
December 2, 1999

L I S T O F A T T E N D E E S

NAME	ADDRESS	PHONE NO.	FAX NO.	EMAIL
Peggy Fowler	Pensacola, Florida	(850) 432-8090		Pfowler4@bellsouth.net
Janine Raby	Pensacola, Florida	(850) 438-3770		jlraby@prodigy.net
Ann Henson	The Reporter	852-3216	852-8249	anhenson@keysreporter.com
Sharon Macut	Chamber of Commerce	451-4747	487-4726	
Ginny Oshaben	27 Transylvania Avenue	451-1322		goshaben@naskeys.terrod.net
Jim Wilkinson	38 E. Beach Road	852-1620		Jerry142@tavernier.net
George Geisler	88500 Overseas Highway #509 Islamorada, FL 33070	(305) 852-3018	(850) 852-2648	chieffgg@aol.com
Brian Weinstein	104 Atlantic Lane Islamorada	289-2500	289-2536	bweinstein@hotmail.com
Carroll Borger	P.O. Box 1221 Key Largo, FL 33037	(305) 451-3890	451-1527	carrollborger@yahoo.com
Dale Adams	DEP	(850) 488-2725		
Murray E. Nelson	374 Bahia	(305) 451-2316	451-4190	Mnels93538
Fred & Ann Nickerson	138 Marina	(305) 451-2604	451-0054	
Brenda Altmeier	136 Bay View Drive	(305) 451-9947		Brenda.altmeier@noaa.gov
Luis Gutman	Ocean Bay Marina	453-4773		
Joan R. Mowery	205 N. Ocean Drive	451-4195	451-6449	jrmowery@mciworld.com
Joshua A Gross	136 Buttonwood Ave.	451-4140	453-0140	Jg132@aol.com
Marilee Dodge	P.O. Box 791 Islamorada	849-4878		

Florida Keys Overseas Heritage Trail Master Plan Public Workshops

DATE: December 2, 1999

PLACE: Key Largo Public Library

L I S T O F A T T E N D E E S

NAME	ADDRESS	PHONE NO.	FAX NO.	EMAIL
Jim Patterson	P.O. Box 2289	367-3118		
Marjorie Dougherty	Free Press	664-2266		
Paula Morrow	67 Shoreland	451-1730		
Margaret Laptham	1309 Alma Key Largo	852-3476		
Lonara A. Houry	103 First Avenue	852-5277	852-5277	lenahoury@aol.com
Mike Norcross	102 Port Vista	664-2756		
Chas Williams	Box 2852 Key Largo	453-7849		
Ivy Kelley	P.O. Box 1152	452-5074		Ivy.Kelley@noaa.gov
Maureen Kirkwood	217 Gasparilla Drive	(305) 852-4851		
Bob and Judie Fix	216 S. Airport Road	852-5425		judiefix@aol.com
Galen and Brooke Spalding	506 Sound Drive	453-3344		Ilanders4@aol.com
Frank Kelly	96000 Overseas Highway	852-2163		fkelly@attglobal.net
Mr. Robert L. Brooke		451-1519		BrookL@mangrove.k12.fl.us
CK Brooks	35 Pigeon Road	452-5271		
Pete Scalco	Hobe Sound	(561) 546-0900		

Florida Department of
Environmental Protection

Memorandum

Date: March 1, 2000

To: Bob Ballard
Deputy Secretary of Land and Recreation

From: Mike Bullock, Assistant Director of Recreation and Parks
Debbie Parrish, Director of the Office of Greenways and Trails

Re: The Florida Keys Overseas Heritage Trail

The following is a briefing of issues we discussed in a recent meeting between our respected offices and Monroe County regarding the Florida Keys Overseas Heritage Trail:

- Department of Transportation (DOT) District VI has not been given any direction from central DOT office concerning their assuming responsibilities for the structural condition of the Old Keys Bridges. This is an important issue and needs to be addressed as soon as possible on the Secretary level.

- Division of Recreation and Parks (Division) looks forward to being the manager of the Overseas Heritage Trail, with the understanding that the structural condition of the bridges will be managed by another agency besides the Division.

- Currently, the Division has contracted with DOT for litter pickup on the Old Keys Bridges. In the future, the Division anticipates assuming responsibilities for litter pickup, and will prepare a transition strategy. The Division is working to have appropriate signage posted at the bridges.

- Presently, Monroe County has nine bike/pedestrian DOT enhancement projects scheduled for construction on upland areas (the attachment provides information on each project). These enhancement projects, if built to trail standards, will provide a significant portion of the trail.

- Since the Division will be the manager of this facility, it prefers to oversee the project's design and construction. This will ensure consistency with Division standards for the facility. The Division will look into using a private consultant for the design and construction process.

- Monroe County has spoken with DOT, who has expressed a willingness to transfer the existing enhancement funds to an agency that follows Local Agency Program (LAP) guidelines, and is LAP certified. This certification ensures that the design and

construction meets DOT federal highway standards. The Division of Recreation and Parks is LAP certified to meet these standards. The Division will be contacting the DOT Central Office and the DOT District VI to discuss the transfer of the enhancement funding and coordination between the two agencies.

- If the Division undertakes these enhancement projects, a Legislation Budget Request (LBR) is needed as soon as possible so spending authority is granted for the amounts to be spent on construction by 2001. The other amounts can be handled through the LBR process in future years.

- The Division has concerns with keeping the DOT design and construction timeline of the enhancement projects; especially those scheduled to be completed in 2001. The Division will explore the possibility of setting up a new timeline so there is sufficient design time for these enhancement projects.

- The Division has requested of Monroe County the opportunity to participate in any future meetings with the staff working on the Master Plan, and to be notified of all public meetings concerning the Master Plan development. Monroe County agrees to these requests, and acknowledges that the Division will be given the opportunity to review the Master Plan of the Overseas Heritage Trail as soon as it is ready at the end of May.

- All of the above issues, except for issue one, will be addressed in a meeting being scheduled by the Office of Greenways and Trails with the appropriate officials from Central DOT, District DOT, Division of Recreation and Parks and Monroe County.

Our offices and Monroe County also met with Rick Cantrell, Director of the South Florida Regulatory District Office, and officials from the DEP district permitting office following the above meeting. The following is a briefing of the permitting concerns discussed regarding the Florida Keys Overseas Heritage Trail:

- Currently, DOT is responsible for applying for permits on the existing enhancement projects. The Division agreed to seek the permits for the trail if they build the trail. DEP will be the permit applicant, and South Florida Water Management District (SFWMD) will be the issuing agency.

- Permitting boardwalks is a major concern for this project with the current regulations that SFWMD is enforcing. Rick Cantrell mentioned that he wrote the rule being enforced, and explained that the rule was not intended to prohibit boardwalks that are in the public's interest. Furthermore, safety is an important issue in the Keys and can most likely justify the construction of boardwalks where necessary.

- A future meeting will be scheduled for DEP and the permitting agencies to discuss the master plan results and to resolve concerns about building boardwalks.

- Presently, there are permitting conflicts dealing with endangered species along the trail. These setbacks have resulted in an unreasonable trail width, which will not accommodate two-way traffic safely.

- These are important concerns to be addressed in an upcoming meeting with DEP, SFWMD and DOT.

- Also, Monroe County will discuss with DOT the possible allocation of OPS funds in order to provide DEP with staff to see through the project's permitting issues.

If you have any questions or comments on the above briefing, please feel free to contact us. Our offices are excited with the future success of this project, and will continue to inform you on the progress of the Florida Keys Overseas Heritage Trail.

OVERSEAS HERITAGE TRAIL
MASTER PLAN
TECHNICAL REVIEW

Name	Organization	Role	Address	Telephone #	Fax #	Email
Jon Johnson	City of Marathon	City Councilman	11522 Overseas Highway Marathon, FL 33050	305/743-4049		
Marie Klemann	Clean Florida Keys	Executive Director	PO Box 1528 Key West, FL 33041-1528			
Rebecca Jetton	DCA - FL Keys Field Office	Planning Manager	2796 Overseas Highway, Suite 210 Marathon, FL 33050	305/289-2408		
Rachel Goodson	DEP	OGT	3900 Commonwealth Blvd, MS 795 Tallahassee, FL 32399	850/488-3701		rachel.goodson@dep.state.fl.us
Debbie Parrish	DEP	OGT Director	3900 Commonwealth Blvd, MS 795 Tallahassee, FL 32399	850/488-3701		
Randy Grau	DEP Marathon	Submerged Lands	2796 Overseas Highway Marathon, FL 33050	305/289-2310	305/289-2314	randy.grau@dep.state.fl.us
Gus Rios	DEP Marathon Office		2796 Overseas Highway Marathon, FL 33050	305/289-2310	305/289-2314	
Al Gregory	DEP Recreation & Parks	Park Planning	3900 Commonwealth Blvd, MS 525 Tallahassee, FL 32399			
Jerry Oshesky	DEP Recreation & Parks	Design and Rec Services	3900 Commonwealth Blvd, MS 520 Tallahassee, FL 32399	850/488-5372	850/488-3537	
Dale Adams	DEP State Lands	Director's Office	3900 Commonwealth Blvd, MS 100 Tallahassee, FL 32399	850/488-2725	850/922-6009	dale.d.adams@dep.state.fl.us
George Jones	DEP, District 5	Bureau Chief	13798 SE Federal Hwy Hobe Sound, FL 33455	561/546-0900	561/223-2591	
Pete Scalco	DEP, District 5	O&M Manager	13798 SE Federal Hwy Hobe Sound, FL 33455	561/546-0900	561/223-2591	
Fred Gaske	Department of State	Bureau of Historic Preservation	500 South Brounough Street Tallahassee, FL 32399-0250	850/487-2333	850/922-0496	fgaske@mail.dos.state.fl.us
Adriana Manzanares	DOT District 6	Engineer	1000 NW 111 Avenue Miami, Florida 33172	305/470-5283	305/470-6725	adriana.manzanares@dot.state.fl.us
Catherine Owen	DOT District 6	Biologist	1000 NW 111 Avenue Miami, Florida 33172	305/470-5399	305/470-5205	catherine.owen@dot.state.fl.us
Gary Donn	DOT District 6	Director of Planning	602 South Miami Avenue Miami, FL 33181	305/377-5900	305/377-5967	
Gus Pego	DOT District 6	Director of Operations	1000 NW 111 Avenue Miami, Florida 33172	305/470-5466	305/470-5610	
Chris Dube	DOT District 6	Bike/Ped Contact	602 South Miami Avenue Miami, FL 33181	305/377-5895	305/377-5684	
Deborah Shaw	Florida Keys Electric			305/852-2431		treesnail@aol.com
Joy Tatgenhorst	Florida Keys National Marine Sanctuary		PO Box 500368 Marathon, FL 500368	305/743-2437, x21	305/853-0877	joy.tatgenhorst@noaa.gov

OVERSEAS HERITAGE TRAIL
MASTER PLAN
TECHNICAL REVIEW

Name	Organization	Role	Address	Telephone #	Fax #	Email
Greg Tindle	Islamorada, Village of Islands	Planning	81011 Overseas Highway Islamorada, FL 33036			
Jeanette Hobbs	Monroe County	biologist		305/289-2537		
Diana Stevenson	Monroe County	biologist		305/289-2588		
Dave Koppel	Monroe County	Engineering				
Kim Ogren	Monroe County	Planning				
Nora Williams	Monroe County BOCC	Commissioner	490 63rd Street #110/Marathon Gov't Annex Marathon, FL 33050			
George Neugent	Monroe County BOCC	Mayor Pro Tem	25 Ships Way Big Pine Key, FL 33040			
Mary Kay Reich	Monroe County BOCC	Commissioner	Government Center Tavernier FL 33070			
Shirley Freeman	Monroe County BOCC	Mayor	530 Whitehead Street Key West, FL 33040			
Wilhelmina Harvey	Monroe County BOCC	Commissioner	310 Fleming Street Key West, FL 33040			
Jaime Doubek-Racine	National Park Service	RTCA	531 Pinapple Avenue #8 Sarasota, Florida 34236	941/330-8047	941/373-9067	jaime_doubek-racine@nps.gov
Dan Gallahager	Pigeon Key Foundation		PO Box 500130 Marathon, FL 33050-0130	305/289-0025	305/289-1065	
Ron Peekstock	SFWMD	Permitter		561/682-6956	561/682-6896	rpeeksto@sfwmd.gov
Jeanette Gallihugh	US Fish and Wildlife	permitter	Big Pine Key Plaza Big Pine Key, FL 33040	305/872-5563	305/872-3469	
Trish Stratton	Monroe County Growth Management	Bike/Ped Coordinator	2798 Overseas Highway #400 Marathon, FL 33050	305/289-2521		stratton@mail.state.fl.us
Dave Henderson	Dade County	Bike/Ped Coordinator				
Marlene Conaway	Monroe County Growth Management		2798 Overseas Highway #400 Marathon, FL 33050			
Tim McGarry	Monroe County Growth Management	Division Director	2798 Overseas Highway #400 Marathon, FL 33050	305/289-2519	305/289-2524	
Ty Symroski	City of Key West	Planning Director	605 A Simonton Street Key West, FL 33	305/292-3229	305/293-3300	kwcpln@aol.com
Lew Scruggs	FDEP - DRP	Planning Manager	Office of Park Planning , MS 525 Tallahassee, FL 32399 -3000	850/488-2200	(850) 487-3939	'Lewis.Scruggs@dep.state.fl.us'
Frank Matmuller	FDEP - DRP	Professional Engineer II	M.S. 520 3900 Commonwealth Blvd. Tallhassee, FL 32399			Frank.Matmuller@dep.state.fl.us
RJ Helbling	FDEP	Environmental Specialist	2796 Overseas Highway Marathon, FL 33050	941/289-2310		

The following list was provided by Islamorada, Village of Islands for improvements they would like included with the FKOHT through their jurisdiction.

ISLAMORADA
Village of Islands

Overseas Heritage Trail Improvements

1. Funding for Planning, Design and Construction of Capital Projects (led by OSH Trail Coordinator w. Village participation)
   - Provide safe bridge crossings, physically separated from traffic (retrofits, cantilevers, etc.)
   - Program FDOT funds to complete gaps to the physical trail surface
     - Plantation Key- approximately MM 90-91
       MM 85.9-86.7
     - Windley Key approximately MM 84-85.9
     - Channel Two Bridge to Lower Matecumbe
       MM 72.5-73.5
   - Program storm-water management funds as part of ANY surfacing agreement
   - Funding for secondary trail system to connect existing and proposed parks, recreation, and historic and archeological sites.
   - Widening existing trail up to 10' where possible to accommodate multiple uses.

2. Cost Sharing for Planning, Design and Construction (led by Village planning staff)
   - North Plantation Key and Upper Matecumbe Key Business Center Revitalization Plans to accommodate trail in safe manner
   - Pedestrian/cyclist crossings of US 1 in Business Centers

3. Roadside Facilities, Particularly Upgrades to Channel Two (MM 73) and Lignumvitae (MM 78) Roadside Recreation Areas to include:
   - Bathrooms and drinking fountains
   - Bicycle racks
   - Tourism information kiosks (joint Chamber of Commerce/w. coordinating agency) throughout Keys
   - Quality coordinated ecological, historical, and cultural interpretive program

4. Regulatory
   - Recommended standards for trail construction
   - Bicycle helmet laws
   - Occupiers Liability Law to protect adjacent landowners
   - Multi-use trail educational program
   - Keys-wide coordinated signage program for all pull-outs

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

FORT MYERS SERVICE CENTER 2301 McGregor Boulevard, Fort Myers, FL 33901
(941) 338-2929 • FL WATS 1-800-248-1201 • Suncom 748-2929 • Fax (941) 338-2936 • www.sfwmd.gov/org/exo/ftmyers/

CON 24-06

Environmental Resource Regulation Division

June 27, 2000

Mr. Forest Michael
Michael Design Associates
400 West New England Avenue
Catherine Hall, Suite 1
Winter Park, FL 32789

Dear Mr. Michael:

Subject: Florida Keys Overseas Heritage Trail Master Plan, Monroe County

The South Florida Water Management District (District) staff has completed a review of the Draft (May 12, 2000) Florida Keys Overseas Heritage Trail Master Plan (FKOHT) and offers the following comments.

Section 5.2.3 discusses the wetland buffer issue, stating concerns regarding boardwalk construction within 15-feet of the defined (pursuant to Rule 62-340, Florida Administrative Code) wetland boundary. Pursuant to Section 4.2.7(a) of the District's Basis of Review (BOR), an average 25-foot, minimum 15-foot buffer between the wetland and adjacent development is presumed to avoid secondary impacts to the wetland as a result of the development. A project design that does not meet these buffer requirements must address the potential for secondary impacts to the wetland and will require additional mitigation to offset those impacts. A copy of this portion of the BOR is attached to this document for your reference.

Section 5.2.3 states that FDEP will be the permittee for this project and that "this agreement should be more favorable to permitting agencies because FDEP is viewed as a steward of the environment". Please note that the applicant(s) for the District permit must be the property owner or an entity with other legal interest in the property (e.g. contract purchaser, lessee). District staff is aware that there are several property owners involved in the entire length of the proposed trail. The property owner(s)/applicant(s) may be co-permittees, however, they must also meet the reasonable assurance requirements of the Environmental Resource Permit (ERP) criteria including a commitment to manage the mitigation areas in perpetuity and the financial resources to maintain the mitigation areas in accordance with the permit conditions.

GOVERNING BOARD

Michael Collins, *Chairman*
Michael D. Minton, *Vice Chairman*
Mitchell W. Berger
Vera M. Carter
Gerardo B. Fernandez
Patrick J. Gleason
Nicolas J. Gutierrez, Jr.
Harkley R. Thornton
Trudi K. Williams

EXECUTIVE OFFICE

Frank R. Finch, P.E., *Executive Director*
James E. Blount, *Chief of Staff*

SERVICE CENTER

Chip Merriam, *Director*

DISTRICT HEADQUARTERS: 3301 Gun Club Road, P.O. Box 24680, West Palm Beach, FL 33416-4680 • (561) 686-8800 • FL WATS 1-800-432-2045

Section 8.1.1 discusses a habitat restoration zone at least 12-feet beyond the U.S. 1 clear zone that may provide an area where mitigation may be conducted. This concept will require site specific review wherever it is proposed along the corridor. The District, however, typically does not consider areas adjacent to a roadway (and separated from the natural wetland system by a paved trail) as an appropriate mitigation area. Such a design could potentially increase the interaction between wildlife and birds attempting to utilize this area and the adjacent traffic. Additionally, wetland buffers as discussed above, are required adjacent to mitigation areas, and are not provided within the typical sections represented in the FKOHT. Also, the District typically requires mitigation areas to be encumbered by a conservation easement, which may not be possible at these locations. This section also discusses stormwater management associated with this project. District staff is also available to provide input regarding the surface water management design components of the project. Carlos deRojas (x6505) is the District contact person for surface water management issues in Monroe County.

Section 8.1.2 discusses the Trail Boardwalk section. As previously stated, District staff has concerns related to secondary and cumulative impacts associated with the boardwalk design. Additionally, the permittability of proposed structures through mangroves and over water to provide for non-water dependent uses is an issue of concern in the ERP process. Also, in those areas where permittability issues are resolved, boardwalk materials utilized may not result in a degradation of water quality.

Section 8.1.3, the Constrained Trail Cross Section, discusses a minimum three-foot buffer as the recommended buffer width. Please refer to the attachment that discusses buffer requirements.

Section 8.2.2.1 references an underpass proposal. Please provide additional information such as locations, design criteria, cross-sections, etc. regarding this proposal.

Bridge Connection Alternative three and four propose additional structures over the water. If the project design includes these structures, the additional area over the water will be considered an impact that must be addressed during the permitting process.

The Draft document did not address wetland mitigation requirements associated with this project. Please be aware that, once avoidance and minimization of wetland impacts is addressed and if it is determined that the project is permittable, mitigation to offset the proposed impacts must be provided.

1- 800 432-2045

Should you have any questions, please contact Ron Peekstok at (561) 682-6956 or Carlos deRojas at (561) 682-6505.

Sincerely,

Anita R. Bain

Anita R. Bain
Senior Supervising Environmental Analyst
Natural Resource Management Division

AB/rp ext. 6866
Enclosure

c: U.S. Army Corps of Engineers, Marathon – Vic Anderson
FDEP, Marathon – Randy Grau
Monroe County Environmental Resource Management - Jeanette Hobbs

4.2.6 Vertical seawalls

(a) The construction of vertical seawalls in estuaries or lagoons is prohibited unless one of the following conditions exists:

1. the proposed construction is located within a port as defined in Section 315.02, F.S., or Section 403.021, F.S.;

2. the proposed construction is necessary for the creation of a marina, the vertical seawalls are necessary to provide access to watercraft, or the proposed construction is necessary for public facilities;

3. the proposed construction is to be located within an existing manmade canal and the shoreline of such canal is currently occupied in whole or in part by vertical seawalls; or

4. the proposed construction is to be conducted by a public utility when such utility is acting in the performance of its obligation to provide service to the public.

(b) When considering an application for a permit to repair or replace an existing vertical seawall, the District shall generally require such seawall to be faced with riprap material, or to be replaced entirely with riprap material unless a condition specified in subparagraphs 1.-4. above exists. Nothing in this subsection shall be construed to hinder any activity previously exempt or permitted, or those activities permitted pursuant to Chapter 161, F.S.

4.2.7 Secondary Impacts

Pursuant to paragraph 4.1.1(f), an applicant must provide reasonable assurances that a regulated activity will not cause adverse secondary impacts to the water resource, as described in paragraphs (a) through (d), below. Aquatic or wetland dependent fish and wildlife are an integral part of the water resources which the District is authorized to protect under Part IV, Chapter 373, F.S. Those aquatic or wetland dependent species which are listed as threatened, endangered or of special concern are particularly in need of protection.

A proposed system shall be reviewed under this criterion by evaluating the impacts to: wetland and surface water functions identified in subsection 4.2.2; water quality; upland habitat for aquatic or wetland dependent listed species; and historical and archaeological resources. Deminimis or remotely related secondary impacts will not be considered. Applicants may propose measures such as preservation to prevent secondary impacts. Such preservation shall comply with the land preservation provisions of subsection 4.3.8. If such secondary impacts can not be prevented, the applicant may propose mitigation measures as provided for in subsections 4.3 through 4.3.9.
This secondary impact criterion consists of the following four parts:

(a) An applicant shall provide reasonable assurance that the secondary impacts from construction, alteration, and intended or reasonably expected uses of a proposed system will not cause violations of water quality standards or adverse impacts to the functions of wetlands or other surface waters, as described in subsection 4.2.2.

Impacts such as boat traffic generated by a proposed dock, boat ramp or dry dock facility, which causes an increased threat of collision with manatees; impacts to wildlife from vehicles using proposed roads in wetlands or surface waters; impacts to water quality associated with the use of septic tanks or propeller dredging by boats and wakes from boats; and impacts associated with docking facilities as described in paragraphs 4.2.4.3(f) and (h), will be considered relative to the specific activities proposed and the potential for such impacts. Impacts of groundwater withdrawals upon wetlands and other surface waters that result from the use of wells permitted pursuant to Chapter 40E-2, F.A.C., shall not be considered under rules adopted pursuant to Part IV, Chapter 373, F.S., since these impacts are considered in the consumptive use permit application process.

Secondary impacts to the habitat functions of wetlands associated with adjacent upland activities will not be considered adverse if buffers, with a minimum width of 15' and an average width of 25', are provided abutting those wetlands that will remain under the permitted design, unless additional measures are needed for protection of wetlands used by listed species for nesting, denning, or critically important feeding habitat. The mere fact that a species is listed does not imply that all of its feeding habitat is critically important. Buffers shall remain in an undisturbed condition, except for drainage features such as spreader swales and discharge structures, provided the construction or use of these features does not adversely impact wetlands. Where an applicant elects not to utilize buffers of the above described dimensions, buffers of different dimensions, measures other than buffers or information may be proposed to provide the required reasonable assurance.

Deminimis or remotely related secondary impacts such as changes in air quality due to increased vehicular traffic associated with road construction will not be considered unacceptable.

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(b) An applicant shall provide reasonable assurance that the construction, alteration, and intended or reasonably expected uses of a system will not adversely impact the ecological value of uplands to aquatic or wetland dependent listed animal species for enabling existing nesting or denning by these species, but not including:

1. areas needed for foraging; or

2. wildlife corridors, except for those limited areas of uplands necessary for ingress and egress to the nest or den site from the wetlands or other surface water;

Table 4.2.7-1 identifies those aquatic or wetland dependent listed species that use upland habitats for nesting or denning.

For those aquatic or wetland dependent listed animal species for which habitat management guidelines have been developed by the U.S. Fish and Wildlife Service (USFWS) or the Florida Game and Fresh Water Fish Commission (FGFWFC), compliance with these guidelines will provide reasonable assurance that the proposed system will not adversely impact upland habitat functions described in paragraph (b). For those aquatic or wetland dependent listed animal species for which habitat management guidelines have not been developed or in cases where an applicant does not propose to use USFWS or FGFWFC habitat management guidelines, the applicant may propose measures to mitigate adverse impacts to upland habitat functions described in paragraph (b), provided to aquatic or wetland dependent listed animal species.

(c) In addition to evaluating the impacts in the area of any dredging and filling in, on, or over wetlands or other surface waters, and as part of the balancing review under subsection 4.2.3, the District will consider any other relevant activities that are very closely linked and causally related to any proposed dredging or filling which will cause impacts to significant historical and archaeological resources.

(d) An applicant shall provide reasonable assurance that the following future activities will not result in water quality violations or adverse impacts to the functions of wetlands and other surface waters as described in subsection 4.2.2.:

1. additional phases or expansion of the proposed system for which plans have been submitted to the District or other governmental agencies; and

2. on-site and off-site activities regulated under Part IV, Chapter 373, F.S., or activities described in section 403.813(2), F.S., that are very closely linked and causally related to the proposed system.

As part of this review, the District will also consider the impacts of the intended or reasonably expected uses of the future activities on water quality and wetland and other surface water functions.

In conducting the analysis under paragraph (d)2., above, the District will consider those future projects or activities which would not occur but for the proposed system, including where the proposed system would be considered a waste of resources should the future project or activities not be permitted.

Where practicable, proposed systems shall be designed in a fashion which does not necessitate future impacts to wetland and other surface water functions. If future phases or project expansion have the potential to cause adverse secondary impacts, applicants must provide sufficient conceptual design information to provide reasonable assurance that these impacts can be successfully eliminated or offset.

System expansions and future system phases will be considered in the secondary impact analysis, and if the District determines that future phases of a system involve impacts that appear not to meet permitting criteria, the current application shall be denied unless the applicant can provide reasonable assurance that those future phases can comply with permitting criteria. One way for applicants to establish that future phases or system expansions do not have adverse secondary impacts is for the applicant to obtain a conceptual approval permit for the entire project.

4.2.8 Cumulative Impacts

Pursuant to paragraph 4.1.1(g), an applicant must provide reasonable assurances that a regulated activity will not cause unacceptable cumulative impacts upon wetlands and other surface waters within the same drainage basin as the regulated activity for which a permit is sought. The impact on wetlands and other surface waters shall be reviewed by evaluating the impacts to water quality as set forth in subsection 4.1.1(c) and by evaluating the impacts to functions identified in subsection 4.2.2. The drainage basins within the District are identified on Figure 4.2.8-1.

An applicant must provide reasonable assurance that the proposed system, when considered with the following activities, will not result in unacceptable cumulative impacts to water quality or the functions of wetlands and other surface waters, within the same drainage basin:

(a) Projects which are existing or activities regulated under Part IV, Chapter 373 which are under construction, or projects for which permits or determinations pursuant to Sections 373.421 or 403.914 have been sought.

(b) Activities which are under review, approved, or vested pursuant to Section 380.06 or other activities regulated under Part IV, Chapter 373 which may reasonably be expected to be located within wetlands or other surface waters, in the same drainage basin, based upon the comprehensive plans, adopted pursuant to Chapter 163 of the local governments having jurisdiction over the activities, or applicable land use restrictions and regulations.

Only those activities listed in paragraphs (a) and (b) which have similar types of adverse impacts to those which will be caused by the proposed system will be considered. (All citations in paragraphs (a) and (b) refer to provisions of Florida Statutes.)

The cumulative impact evaluation is conducted using an assumption that reasonably expected future applications with like impacts will be sought, thus necessitating equitable distribution of acceptable impacts among future applications.

Memorandum FLORIDA DEPARTMENT of STATE

TO: Fred Gaske, Chief, Bureau of Historic Preservation

FROM: Walter S. Marder, AIA, Architectural Preservation Services

DATE: July 7, 2000

SUBJECT: Florida Keys Overseas Heritage Trail

I have reviewed the various documents thus far produced for this project, with especial attention to the proposed treatments for the 23 historic bridges the trail will traverse. The bridges were built between 1905 and 1912 by Flagler for railroad use. That use was discontinued after the hurricane of 1935 and the bridges were converted, by widening the roadway from 11 to 22 feet, for automobile use. Today, they are abandoned in favor of the new U.S. 1 constructed from the 1960's though 1980's. Some sections of the historic bridges have had the roadway construction removed and have been returned to their original appearances and are used as fishing piers. Additionally, a number have had roadbed sections removed for safety and/or navigational reasons. Three of the 23 have been listed in the National Register, however, the remaining 20 are all eligible for such listing. The bridge construction varies; there are three basic types: spandrel, truss, and steel beam.

The proposal for trail use will restore the areas of bridge which have been removed and will also reduce most of the bridges to their original railroad width. The proposal is premised on retaining the historic integrity of the bridges and is very respectful of that integrity. I believe that the proposal is an excellent one and will have no adverse effect on these resources.

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DANNY L. KOLHAGE
CLK. CIR. COURTS
MONROE COUNTY, FLA.

RESOLUTION 205 2000

A RESOLUTION BY THE MONROE COUNTY BOARD OF COUNTY COMMISSIONERS TO ALLOW THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION TO DESIGN, BUILD, AND MAINTAIN THE PROPOSED FLORIDA KEYS OVERSEAS HERITAGE TRAIL

Whereas, Monroe County is committed to safe alternative transportation options along US 1 for non-motorized users; and

Whereas, Monroe County has been seeking a method for attracting low impact, resource friendly tourists; and

Whereas, Monroe County has been seeking alternatives to long-term maintenance costs associated with a Keys-wide recreational trail; and

Whereas, the Monroe County Board of County Commissioners approved the development of a master plan for the Florida Keys Overseas Heritage Trail; and

Whereas, Monroe County, the Florida Department of Transportation, and the Florida Department of Environmental Protection worked as partners and contributed equally to the funding of the Florida Keys Overseas Heritage Trail Master Plan; and

Whereas, trail implementation strategies and agency partnerships were explored throughout the master planning process; and

Whereas, the Florida Department of Environmental Protection has designated the Florida Keys Overseas Heritage Trail as one of three statewide priority trails; and

Whereas, the Florida Department of Environmental Protection offered to build and maintain the Florida Keys Overseas Heritage Trail; and

Whereas, the Florida Department of Transportation has programmed over $10,000,000 in its current Five-Year Transportation Plan for the design and construction of recreational trail segments along US 1 in the Florida Keys;

Whereas, the Florida Department of Transportation will allow the Florida Department of Environmental Protection, as a Local Agency Program (LAP)-certified organization for federally funded projects, to administer programmed enhancement funding for the design and construction of the Florida Keys Overseas Heritage Trail;

Whereas, Monroe County has been coordinating closely with its municipalities throughout the trail master planning phase;

NOW THEREFORE, BE IT RESOLVED THAT THE BOARD OF COUNTY COMMISSIONERS OF MONROE COUNTY SUPPORTS THE FOLLOWING MEASURES TO IMPLEMENT THE FLORIDA KEYS OVERSEAS HERITAGE TRAIL:

1. The Florida Department of Environmental Protection will become the lead agency in the planning, design, and construction of the Florida Keys Overseas Heritage Trail;

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2. The Florida Department of Environmental Protection will act as the agent for Monroe County in the administration of programmed trail funds in the Florida Department of Transportation, District 6 Five Year Transportation Plan including:

Project Name	Mile Marker	# Miles	DOT Item #	Year	Estimate (3/00)
Grassy Key	54.5-59.5	5	2505681	2001	$1,118,920.00
Big Coppitt Key	11-15	4	2505651	2001	$885,263.00
Knight's Key	47		2505671	2001	$784,704.00
Saddlebunch Key	15-16.5	1.5	2505721	2002	$382,134.00
Bahia Honda to Little Duck	36.5-40.2	3.5	2505711	2003	$895,230.00
Key Haven to Big Coppitt	5.2-9.6	4.4	2505851	2003	$1,104,290.00
Summerland-Bahia Honda	25-37	12	4056321	2004	$1,654,450.00
Summerland-Bahia Honda	25-37		4056321	2004	$330,044.00
Sugarloaf to Summerland	16.5-24.5	8	4056331	2004	$1,317,831.00
Grassy Key to Long Key	59.2-65.2	6	4056301	2004	$973,123.00
City of Layton to Annes Beach	68.4-73.8	5.4	4056341	2004	$856,516.00
Totals		49.8			$10,302,505.00

3. The Florida Department of Environmental Protection has permission to enter into a maintenance agreement with the Florida Department of Transportation District 6 for all portions of the Florida Keys Overseas Heritage Trail including those currently maintained by Monroe County Public Works Division;

4. The Florida Department of Environmental Protection may apply for future design, construction, and maintenance funds for the Florida Keys Overseas Heritage Trail. The Florida Keys Overseas Heritage Trail will be the top priority for Monroe County during the selection and ranking of future Florida Department of Transportation enhancement projects and other grant funds.

5. Monroe County will contribute $1,000,000 in impact fees during fiscal year 2000/2001 to upgrade and widen existing trail segments and to close existing gaps in portions of the Florida Keys Overseas Heritage Trail located within unincorporated Monroe County and the new City of Marathon. Funds will be spent in accordance with the Monroe County Code.

6. Monroe County will continue to coordinate closely with its municipalities and other participating agencies to forward the goals of the Florida Keys Overseas Heritage Trail.

7. Monroe County requests the Florida Department of Transportation, District 6 to reallocate design and construction funds currently programmed for the CR 905 shoulder widening towards the Florida Keys Overseas Heritage Trail.

PASSED AND ADOPTED By The Board of County Commissioners of Monroe County, Florida, at a regular meeting of said Board held on the 18th day of May, 2000.

Mayor Shirley Freeman	Yes
Mayor Pro Tem George Neugent	Yes
Commissioner Wilhemina Harvey	Not Pre
Commissioner Mary Kay Reich	Yes
Commissioner Nora Williams	Yes

BOARD OF COUNTY COMMISSIONERS
OF MONROE COUNTY, FLORIDA

By: Shirley Freeman
Mayor/Chairperson

(Seal)

Attest: DANNY L. KOLHAGE, Clerk

By: _____
Deputy Clerk

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
BY _____
ROBERT N. WOLFE
DATE 5-6-00

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For Immediate Release:
January 28, 2000

Contacts:
Jeff Ciabotti
(850) 942-2379
Cell: (850) 556-3466
Bradley Coulter
(850) 224-0108
Cell: (850) 509-9639

TRAIL RIDERS ON A MISSION
106.5 mile Florida Keys Overseas Heritage Trail in the works

KEY WEST, FL - - This Saturday, February 5, a group of trail experts and bike enthusiasts will make a 106.5 mile trek from Key Largo to Key West along what will eventually be the "Florida Keys Overseas Heritage Trail." The ride is an effort to bring attention to the recent progress in the trail's development. With the assistance of the Florida Field Office of Rails to Trails Conservancy, Monroe County is currently engaged in an effort to develop a master plan to design, construct, and manage issues related to the trail.

Portions of the trail will begin construction this summer. The Florida Keys Overseas Heritage Trail will eventually stretch the length of the Keys and be the longest public multi-use trail in the state. The trail, designated exclusively for non-motorized vehicle use but handicapped accessible, will be a mecca for joggers, hikers, cyclist, in-line skaters, and other outdoor enthusiasts.

Ken Bryan, Director of the Florida Field Office for the nationally based "Rails to Trails Conservancy", and one of the members of the group who will ride the entire length of the trial, notes that this project possesses two important characteristics of a world-class trail. "First of all," Bryan says, "it is an incredible asset for those who live in this area and want safe, easily accessible, recreational opportunities and alternative transportation. And second, it provides a way for tourists from around the state, country, and globe to experience the natural beauty of the Keys without harming the fragile eco-system."

In the early 1990's the Rails to Trails Conservancy in cooperation with Monroe County, the Florida Departments of Environmental Protection, Transportation (FDEP and FDOT) and a local non-profit group, Clean Florida Keys, Inc., began working with the citizens of the area to determine the viability of embarking on such a large project.

The group discovered overwhelming public support from citizens, environmental groups, and local officials, all the way up to the Governor's Task Force on Old Keys Bridges, to pursue the planning and design of the trail. The trail, expected to be completed in the next six years, will fall under the auspices of the Florida State Parks system.

Over 85 million Americans use rail trails every year. Sixty-six million walked or jogged on rail trails, and 55 million rode bikes. While there are currently no firm estimates of the number of users for the Florida Keys Overseas Heritage Trail, the 36 mile Pinellas Trail, which runs through Tampa and Clearwater, was used by over a million people last year alone. June Helbling the Vice President of TIB Bank of the Keys and heavily in this project and also the effort to designate US 1 as a scenic highway, gives an economic perspective of the trail, " I am excited array of opportunities for new business as well as expansions to existing business with the birth of this trail."

Editors Note:
On Saturday, the most convenient times and locations for interviews and photos will be as follows:
In Key Largo at Key Largo Hammocks State Botanical Site for a 6:00 a.m. departure, in the middle of the route at the base of the Seven Mile bridge in Marathon (Parking Lot area) at approximately 12:00 p.m*, and in Key West at Smathers Beach off of A1A or S. Roosevelt Blvd. at approximately 6:00 p.m.

* This is the only confirmed time and location due to the fact that the start and end points may be reversed due to weather and wind conditions. Please call to confirm.

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CLEAN FLORIDA KEYS INC.

PO Box 1528, Key West FL 33041-1528
Phone (305) 296-3791 * Fax (305) 296-6132
Email: KeysBeauty@aol.com
Home Page www.KeysBeauty.org

Road to Paradise

No, it's not an old Bob Hope & Bing Crosby movie....it's how folks in the Florida Keys describe the stretch of US 1 from Key Largo to Key West that travels through some of the nation's most spectacular scenery. In 1995, Clean Florida Keys—an affiliate of Keep Florida Beautiful and Keep America Beautiful—initiated The Florida Keys Scenic Highway Project Corridor Advocacy Group (CAG). The mission of the CAG is to complete the Florida Department of Transportation (FDOT) Scenic Highway process and achieve scenic highway designation for this special route. The CAG has worked hard and the first phase of the process has been completed, the next phase is now underway—to work with the Florida Keys Community to develop a vision and strategy for this special road.

This southern section of US 1 is part of "the old national road" that starts in Maine and travels down the East Coast to Florida. It's predecessor routes were primitive roads built in the 1880s to connect pineapple farms around old Key Largo to docks where crops were transported to the mainland. Before that the only way to travel in the Keys was by boat. Most of the Keys were sparsely populated, and this isolation made Key West one of the wealthiest cities in the US. From 1821 to the start of the 1900s, Key West fortunes came from their strategic location where the Gulf Stream meets Atlantic currents and the richness this brought in fishing, sponging, piracy, trade, and bounty from shipwrecks caught on the nearby reefs.

Isolation came to a halt at the start of the 20th Century. From 1905 to 1912 Henry Flager, founder of the Standard Oil Company with John D. Rockefeller, financed the building of his dream--the Florida East Coast Railroad Extension to take rail passengers from points north along the Florida Keys to Key West...and then onto ships headed for Cuba.

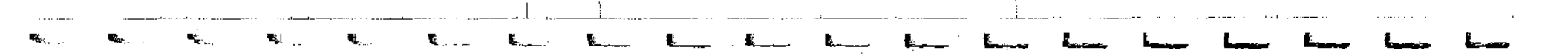
Workers and materials came from all over the world—everything had to be imported--even fresh water for workmen was shipped from Miami. Fighting heat, malaria, and deprivations of all types—workers created bridges, viaducts and roadbed for what some considered at the time, the 8th Wonder of the World. The Seven Mile Bridge that extends over vast expanses of open seas near Marathon, is in itself a man-made wonder. Extending from Homestead to Key West over 128 miles of track, Flagler's East Coast Railroad opened the Keys to the world. It ran from 1912 until the hurricane of September 1935 hit the railroad at Islamorada station with a 17-foot wall of water. The railroad already suffered from mismanagement and the Great Depression-- the hurricane was the final blow ending Flager's dream.

A new dream took shape in 1936 when Monroe County's Overseas Road and Toll Commission secured the railroad right-of-way and built a two-lane road along the old railroad route. This Overseas Highway opened the remote Florida Keys to new generations of travelers starting in 1938. In the late 1970s and early 1980s the road was redone and new bridges were built to handle increased traffic. Many of the abandoned old Keys bridges are prized today by walkers, runners, nature lovers and fishermen as unique vantage points to enjoy the surrounding waters.

A drive on today's Overseas Highway takes the traveler through spectacular vistas of sky and water...a sub-tropical paradise that's home to a range of threatened and endangered wildlife including Key Deer, Osprey, Bald Eagles, the Green Sea Turtle and the only living coral reef in the continental United States. Residents and visitors alike come to fish, boat, sail, swim, snorkel, scuba dive and relax amidst the crystalline turquoise and emerald waters surrounding the highway. They come to experience festivals, sunset celebrations, state parks and recreation areas, historic sites, museums, artists, the rich cultural heritage of the Keys, island cuisine, sunshine, and the laid-back, tropical atmosphere and friendly people of the Keys. US 1 is the only route to these attractions, as well as being "The Main Street" for the Keys community—the daily roadway to jobs, schools, colleges, shops and commercial areas, hospitals and services—all the necessities of life for Keys residents.

This scenic corridor of the Florida Keys Overseas Highway is one of a kind in the world. Surrounded by the Atlantic Ocean and Gulf of Mexico stretching out as far as the eye can see—it winds through vistas of natural beauty, areas rich in history and legend, views of spectacular sunrises, sunsets, sparkling stars and moonlight. It's a highway where travelers experience their own adventures in paradise...a special route worthy of the "scenic highway" designation, with hidden treasures waiting to be discovered.

Written by Marie W. Klemann



Appendix II
Environmental Tables

Table 1. Protected wildlife species with the potential to occur in Monroe County, Florida.

Species Name	Common Name	FFWCC	USFWS	FNAI	FCREPA	Habitat
Centropomus undecimalis	Common snook	SSC				Shallow, coastal waters, estuaries and lagoons; seasonal freshwater movements
Cyprinodon cf variegatus	Florida Keys sheepshead minnow			S2		Coastal rockland lakes, ruderal lakes, and various estuarine habitats
Fundulus grandis saguanus	Southern gulf killifish			S3		Coastal rockland and ruderal lakes, marine and estuarine tidal swamps
Fundulus similis n. subsp.	Florida Keys southern longnose killifish			S2		Various marine and estuarine habitats
Gambusia rhizophorae	Mangrove gambusia			S3	SSC	Marine and estuarine tidal swamps, and artificial streams
Gobionellus stigmaturus	Spotfail goby			S3?	SSC	Marine tidal areas
Lucania cf parva	Florida Keys rainwater killifish			S2		Marine and estuarine tidal swamps
Menidia conchorum	Key silverside	T		S2	SSC	Coastal rockland lakes and estuaries
Poecilia cf latipinna	Florida Keys sailfin molly			S2		Coastal rockland and ruderal lakes, and estuarine tidal swamps
Rivulus marmoratus	Mangrove rivulus	SSC		S2	SSC	Marine and estuarine tidal wetlands
Starksia starcki	Key blenny	SSC		S1		Coral reef
Alligator mississippiensis	American alligator	SSC	T(S/A)	S4		Various aquatic habitats
Caretta caretta	Atlantic loggerhead turtle	T	T	S3	T	Shallow, coastal waters; nests on sandy beaches and frontal dunes
Chelonia mydas mydas	Atlantic green turtle	E	E	S2	E	Shallow, coastal waters; nests on sandy beaches and frontal dunes
Crocodylus acutus	American crocodile	E	E	S1	E	Coastal estuarine swamps and landlocked, saline lakes *CRITICAL HABITAT*
Dermochelys coriacea	Leatherback turtle	E	E	S2	R	Oceanic; nests on sandy beaches and frontal dunes
Diadophis punctatus acricus	Big Pine Key ringneck snake	T		S1	T	Rocky, pine scrub, and edges of tropical, hardwood hammocks
Drymarchon corais couperi	Eastern indigo snake	T	T	S3	SSC	Wide variety of habitats; winters in tortoise burrows in higher areas
Elaphe guttata guttata	Lower Keys red rat snake	SSC*		S2	SSC	Pine woods, mangrove forests and estuarine tidal swamps
Eretmochelys imbricata imbricata	Atlantic hawksbill turtle	E	E	S1	E	Offshore, hard bottomed habitats; nests on sandy beaches and frontal dunes
Eumeces egregius egregius	Florida Keys mole skink	SSC		S2	SSC	Beach dunes, coastal strands, coastal berms and ruderal habitats
Gopherus polyphemus	Gopher tortoise	SSC		S3	T	Sandhills, scrub, hammocks, dry prairies, flatwoods, mixed forests and ruderal
Kinosternon baurii	Lower Keys striped mud turtle	E*		S2	E	Temporary ponds and ditches, estuarine tidal swamps and the edges of hardwood hammocks
Lepidochelys kempi	Atlantic (Kemp's) ridley turtle	E	E	S1	E	Coastal, benthic habitats; nests almost exclusively in Mexico
Malaclemys terrapin rhizophorarum	Mangrove terrapin			S2?	R	Estuarine and marine tidal swamps on mangrove islands
Storeria dekayi victa	Lower Keys Florida brown snake	T*		S1	T	Rocky, pine forests, and hardwood hammocks near water
Tantilla oolitica	Rim Rock crowned snake	T		S1S2	T	Pine flatwoods, tropical hammocks, shrubby pastures and vacant lots
Thamnophis sautilus sackeni	Lower Keys Florida ribbon snake	T*		S1	T	Pine rocklands, rockland hammocks, freshwater marshes, estuarine tidal marshes and swamps
Accipiter cooperi	Cooper's hawk			S3?	SSC	Deciduous and mixed forests, especially riparian woodlands
Ammodramus maritimus mirabilis	Cape Sable seaside sparrow	E	E	S1	E	Prairies, swales and marshes *CRITICAL HABITAT*
Anous stolidus	Brown noddy			S1	SSC	Pelagic; beach dunes, coastal grasslands, strands and berms
Aramus guarana	Limpkin	SSC		S3	SSC	Swamps, forested floodplains, mangrove swamps and marshes
Ardea alba	Great egret			S4	SSC	Marshes, swamps, lakes, ponds, ditches and estuaries
Ardea herodius occidentalis	Great white heron			S2	SSC	Various estuarine habitats
Buteo brachyurus	Short-tailed hawk			S3	R	Open country and forested areas; avoids dense forest
Charadrius melodus	Piping plover	T	T	S2	E	Breeds on beach dunes; feeds on marine and estuarine tidal flats
Charadrius wilsonia	Wilson's plover				SSC	Dry, sandy soil or pavement, near salt or brackish water
Chordeiles gundlachii	Antillean nighthawk			S3	R	Open and semi-open habitats
Coccyzus minor	Mangrove cuckoo			S3	R	Rockland and maritime hammocks, coastal berms and strands, marine and estuarine tidal swamps
Columba leucocephala	White-crowned pigeon	T		S3	T	Rockland and maritime hammocks, marine and estuarine tidal swamps
Dendroica discolor paludicola	Florida prairie warbler			S3	SU	Maritime hammocks, marine and estuarine tidal swamps; breeds in mangroves
Dendroica kirtlandii	Kirtland's warbler	E	E	S1	E	Migrant, utilizing various terrestrial and palustrine habitats
Dendroica petechia gundlachi	Cuban yellow warbler			S3	R	Marine and estuarine tidal swamps
Egretta caerulea	Little blue heron	SSC		S4	SSC	Marshes, ponds, lakes, meadows, streams and mangroves
Egretta rufescens	Reddish egret	SSC		S2	R	Marine and estuarine tidal swamps
Egretta thula	Snowy egret	SSC		S4	SSC	Marshes, lakes, ponds and shallow, coastal habitats
Egretta tricolor	Tricolored heron	SSC		S4	SSC	Marshes, ponds and rivers
Elanus caeruleus	Black-shouldered kite			S1S3		Savanna, riparian woodlands, marshes and prairies
Eudocimus albus	White ibis	SSC		S4	SSC	Marshes, mangroves, lakes and estuaries

Falco peregrinus tundrius	Arctic peregrine falcon	E		S2	E	Wide variety of open habitats
Falco sparverius paulus	Southeastern American kestrel	T		S3?	T	Open, or partly open habitats with scattered trees
Fregata magnificens	Magnificent frigatebird			S1	T	Mangrove islands, and shrubby, undisturbed coasts
Grus canadensis pratensis	Florida sandhill crane	T		S2S3	T	Shallow wetlands, freshwater marshes and wet prairies
Haematopus palliatus	American oystercatcher	SSC		S3	T	Sandy and rocky coasts and islands
Haliaeetus leucocephalus leucocephalus	Southern bald eagle	T	T	S2S3	T	Coasts, rivers and large lakes in open areas
Mycteria americana	Wood stork	E	E	S2	E	Marshes, swamps, streams and mangroves
Nyclanassa violacea	Yellow-crowned night-heron			S3?	SSC	Marshes, swamps, lakes, lagoons, tidal mudflats, rocky shores and mangroves
Nycticorax nycticorax	Black-crowned night-heron			S3?	SSC	Marshes, swamps, ponds, lakes, lagoons, mangroves and wet prairies
Pelecanus occidentalis carolinensis	Eastern brown pelican	SSC		S3	T	Open, coastal habitats on islands
Picoides borealis	Red-cockaded woodpecker	T	E	S2	E	Open, mature pine woodlands
Picoides villosus	Hairy woodpecker			S3?	SSC	Deciduous and coniferous woods
Plegadis falcinellus	Glossy ibis			S2	SSC	Marshes and swamps
Rallus longirostris insularum	Mangrove clapper rail			S3		Salt marshes, and mangrove swamps
Rallus longirostris scottii	Florida clapper rail			S3?		Freshwater and salt marshes
Recurvirostra americana	American avocet			S1S2	SSC	Ponds, marshes, mud flats, alkaline lakes and estuaries
Rynchops niger	Black skimmer	SSC		S3	SSC	Coastal beaches and salt marshes
Sterna antillarum	Least tern	T		S3	T	Open, flat beaches, river and lake margins
Sterna caspia	Caspian tern			S2?	SSC	Flat sand and gravel beaches, shell banks and occasionally marshes
Sterna dougallii	Roseate tern	T	T	S1	T	Offshore islands with sandy, rocky, pebble beaches, and in open, bare, grassy habitat
Sterna fuscata	Sooty tern			S1	SSC	Pelagic; island sand and coral beaches, among scattered grass
Sterna maxima	Royal tern			S3	SSC	Open sand beaches and sparsely vegetated sandbars
Sterna sandvicensis	Sandwich tern			S2	SSC	Coastal beaches, flats and islands
Vermivora bachmanii	Bachman's warbler	E	E	SH	E	Lowland forests; breeds in hardwood swamps
Vireo altiloquus	Black-whiskered vireo			S3	R	Mangrove swamps
Balaenoptera physalus	Finback whale	E	E		E	Oceanic
Blarina carolinensis shermani	Sherman's short-tailed shrew	SSC		S1	SU	Hydric hammocks, wet prairies, prairie hammock and ruderal habitats
Megaptera novaeangliae	Humpback whale	E	E		E	Oceanic
Mustela vison mink	Southern Florida (Everglades) mink	T		S2	R	Shallow wetlands
Neofiber alleni	Round-tailed muskrat			S3	SSC	Shallow freshwater and salt marshes
Odocoileus virginianus clavium	Key deer	E	E	S1	E	Pinelands, hardwoods and mangroves near fresh water
Oryzomys palustris natator	Lower Keys (silver) rice rat	E	E	S2	R	Salt flats, marshes, coastal strands and mangrove forests
Physeter macrocephalus	Sperm whale	E	E		E	Oceanic
Procyon lotor auspicatus	Key Vaca raccoon			S2?		Variety of habitats
Sciurus niger avicennia	Big Cypress fox squirrel	T		S2	T	Cypress swamps, flatwoods, tropical hardwood forests, mangrove forests and ruderal
Sigmodon hispidus exsputus	Lower Keys cotton rat			S2		Pine rocklands, freshwater marshes and ruderal habitats
Sylvilagus palustris hefneri	Lower Keys marsh rabbit	E	E	S1	E	Marshes, prairies, and tropical hammocks
Tadarida brasiliensis cynocephala	Brazilian free-tailed bat				SU	Caves, buildings and trees near water
Trichechus manatus latirostris	Florida manatee	E	E	S2?	E	Spring-runs, alluvial streams, and coastal estuaries *CRITICAL HABITAT*
Ursus americanus floridanus	Florida black bear	T		S2	T	Variety of forested landscapes

Notes:

USFWS=U.S. Fish & Wildlife Service

E=Endangered, T=Threatened, (S/A)=Similarity of Appearance, (E/P)=Experimental Population

FGFWFC=Florida Fish and Wildlife Conservation Commission

E=Endangered, T=Threatened, SSC=Species of Special Concern

FNAI=Florida Natural Areas Inventory

S1=Critically Imperiled Due to Extreme Rarity, S2=Imperiled Due to Rarity, S3=Very Rare and Local, S4=Apparently Secure, SH=Historical Occurrence, ?=Tentative Ranking

FCREPA=Florida Committee on Rare and Endangered Plants and Animals

E=Endangered, T=Threatened, SSC=Species of Special Concern, R=Rare, SU=Status Undetermined

Source: Environmental Management Systems, Inc., Endangered Species Database, 1998.

Table 2. Protected plant species with the potential to occur in Monroe County, Florida.

Species Name	Common Name	FDA	USFWS	FNAI	Habitat
Acacia choriophylla	Tamarindillo	E		S1	Pine-palmetto shell mounds, and coastal strands
Acrostichum aureum	Golden leather fern	E		S3	Brackish marshes
Acrostichum danaeifolium	Giant leather fern	CE			Brackish and freshwater marshes
Adiantum melanoleucum	Fragrant maidenhair fern	E		S1	Limestone sinks in tropical hammocks
Alvaradoa amorphoides	Everglades leaf lace	E		S1	Hammocks
Amyris balsamifera	Balsam torchwood			S2	Hammocks and sandy or rocky shores
Argythamnia blodgettii	Blodgett's wild mercury	E		S2	Rocky woods and wet hammocks
Asplenium serratum	Bird's-nest spleenwort	E		S1	Hammocks and swamps
Basiphyllaea corallicola	Orchid	E		S1	Rock pinelands
Bletia patula	Haitian Bletia			SH	Dry pinelands
Bletia purpurea	Pine pink	T			Flatwoods, and rocky, disturbed sites; epiphytic on cypress stumps
Bourreria cassinifolia	Little strongback	E		S1	Rocky pinelands
Bourreria radula	Rough strongbark			S1	Rocky hammocks
Brassia caudata	Long-tailed spider orchid	E		S1	Hammocks
Bulbophyllum pachyrrhachis	Rattail orchid	E		S1	Swamps and sloughs
Byrsonima lucida	Locustberry	E		S2	Pinelands, limestone soil
Calopogon multiflorus	Many-flowered grass pink	E			Pine flatwoods, esp. recently burned
Calyptranthes zuzygium	Myrtle-of-the-river	E		S1S2	Hammocks
Campylocantrum pachyrrhizum	Leafless orchid	E		S1	Swamps
Campyloneurum phyllitidus	Strap fern	E			Hammocks; epiphytic
Canella winteriana	Wild cinnamon	E		S2	Hammocks
Cassia keyensis	Big Pine partridge pea	E		S2	Open, rocky pinelands
Catesbaea parviflora	Small-flowered lily thorn	E		S1	Rocky pinelands and vegetated dunes
Catopsis berteroniana	Powdery catopsis	E		S1S2	Hammocks, mangrove swamps and pinelands; epiphytic
Cereus gracilis	West coast prickly apple	E		S2	Coastal hammocks
Cereus pentagonus	Dildoe cactus	E			Disturbed, dry, coastal hammocks
Cereus robinii	Tree cactus	E	E	S1	Rocky hammocks
Chamaesyce deltoidea serpyllum	Wild thyme spurge			S1	Rocky pinelands
Chamaesyce garberi	Garber's spurge	E	T	S1	Rocky pinelands, coastal grasslands and berms
Chamaesyce porteriana keyensis	Keys hairy-podded spurge			S1	Coastal grasslands, strands and rock barrens
Chamaesyce porteriana porteriana	Porter's hairy-podded spurge	E		S2	Rocky pinelands, hammocks and beach dunes
Chamaesyce porteriana scoparia	Porter's broom spurge			S2	Rocky pinelands and hammocks
Cheilanthes microphylla	Southern lip fern	E		S3	Limestone hammocks
Chrysophyllum olivaeforme	Satinleaf	E			Hammocks and pinelands
Cienfuegosia yucatanensis	Yellow hibiscus	E		S1	Coastal hammocks
Clusea rosea	Balsam apple	E			Coastal hammocks
Coccothrinax argentata	Silver palm	E		S2?	Rocky pinelands
Colubrina cubensis	Snake-bark	E		S1	Rocky pielands and hammocks
Cordia sebastena	Geiger tree	E		S2S3	Coastal hammocks
Cranichis muscosa	Orchid	E		SH	Hammocks
Crossopetalum ilicifolium	Christmas berry	E		S2	Rocky pinelands and hammocks, and sinkhole margins
Crossopetalum rhacoma	Rhacoma	E		S2	

Cupania glabra	Cupania	E	S1	Hammocks and disturbed areas
Cyrtopodium andersonii	Orchid		S1	Open grasslands
Cyrtopodium punctatum	Cowhorn orchid	E		Cypress swamps; epiphytic
Dichromena floridensis	Florida white-top sedge		S2	Wet pinelands and wetland margins
Drypetes diversifolia	Milk bark		S2	
Electroplectris calcarata	Spurred neottia	E	S1	Hammocks
Elytraria carolinensis angustifolia	Narrow-leaved Carolina scalystem		S2	Wet pinelands
Encyclia boothiana erythronioides	Dogtooth orchid	E	S1	Mangrove and cypress swamps; epiphytic
Encyclia cochleata	Shell orchid	E	S2	Hammocks
Encyclia tampensis	Butterfly orchid	CE		Mangrove, cypress and hardwood swamps; hammocks
Epidendrum acunae	Acuna's epidendrum	E	S1	Cypress and hardwood swamps; epiphytic
Epidendrum anceps	Dingy-flowered epidendrum	E		Cypress and hardwood swamps; epiphytic
Epidendrum difforme	Unbelled epidendrum	E		Hammocks and swamps
Epidendrum nocturnum	Night-scent orchid	E	S2	Moist hammocks, cypress and hardwood swamps; epiphytic
Epidendrum rigidum	Rigid epidendrum	E		Moist hammocks, cypress and hardwood hammocks; epiphytic
Epidendrum strobiliferum	Pendent epidendrum	E	S1	Swamps and sloughs; epiphytic
Eriochloa michauxii simpsonii	Longleaf cupgrass		S1S2	Pinelands, dunes, riverbanks and disturbed sites.
Eugenia confusa	Redberry ironwood	E	S2S3	Hammocks
Eugenia rhombea	Red stopper	E	S1	Coastal hammocks
Eulophia alta	Wild coco	T		Cypress and hardwood swamps, marshes and wet, pine flatwoods.
Galactia pinetorum	Narrow-leaf milkpea		S2	Pinelands
Galeandra beyrichii	Orchid	E	S1	Hammocks
Gossypium hirsutum	Wild cotton	E	S37	Coastal hammocks and beaches
Guaiacum sanctum	Lignum-vitae tree	E	S2	Tropical hammocks
Guzmania monostachia	Fuch's bromeliad	E	S1S2	Hammocks and swamps; epiphytic
Gymnanthes lucida	False boxwood		S1	Hammocks
Habenaria distans	Rein orchid	E		Hammocks
Harrisella filiformis	Orchid	T		Cypress and hardwood swamps, old citrus groves; epiphytic
Hippomane mancinella	Manchineel	E	S2	Coastal swamps behind mangroves
Hymenocallis latifolia	Broad-leaved spiderlily		S2S3	Coastal swales and mangrove swamps
Hypelate trifoliata	Inkwood	E	S1	Hammocks and pinelands
Indigofera keyensis	Decumbent indigo		S1	Rockland and Maritime hammocks
Ionopsis utricularioides	Delicate ionopsis	E	S1	Cypress swamps; epiphytic
Ipomoea tenuissima	Rocklands morning glory	E	S1S2	Rocky pinelands and disturbed sites
Jacquemontia curtissii	Pineland clustervine	E	S2	Pinelands and limestone outcrops
Jacquemontia havanensis	Cuban jacquemontia		S1	Hammocks and coastal strands
Jacquinia keyensis	Joewood	T	S3	Coastal hammocks
Lechea cernua	Nodding pinweed	T	S3	Scrub
Leiphaemos parasitica	Ghost plant		S1	
Leochilus labiatus	Orchid	E	S1	Swamps and sloughs; epiphytic
Lepanthopsis melanantha	Harris' tiny orchid	E	S1	Swamps and sloughs; epiphytic
Linum arenicola	Sand flax	E	S1S2	Ephemeral pools in rocky pinelands
Linum carteri smallii	South Florida flax	E	S2	Open pinelands
Liparis nervosa	Tall liparis orchid	E		Cypress and hardwood swamps, hammocks
Lycopodiella cernua	Nodding clubmoss	CE		Wet pinelands
Macradenia lutescens	*Trinidad macradenia*	E	S1	Hammocks; epiphytic

Manilkara bahamensis	Wild dilly		S2	Hammocks
Maxillaria crassifolia	Hidden orchid	E	S1	Swamps and sloughs
Melanthera parvifolia	Small-leaved cat tongue; South Florida cat tongue	E	S2	Open, deciduous woods, pinelands and beaches
Microgramma heterophylla	Polypody fern	E	S2S3	Rocky hammocks and sinkholes
Myrcianthes fragrans	Simpson's ironwood; Simpson's stopper	T	S3	Coastal hammocks
Nephrolepis biserrata	Giant sword fern	T		Swamps and wet hammocks
Nevrodium lanceolatum	Ribbon fern	T	S1S2	Coastal berms and marine tidal swamps; epiphytic
Okenia hypogaea	Burrowing four-o'clock	E	S2	Coastal hammocks and beaches
Oncidium floridanum	Florida oncidium	E	S1	Dry hammocks, or epiphytic in wetter areas
Oncidium luridum	Mule-ear orchid; dingy-flowered oncidium	E	S1	Swamps; epiphytic
Ophioglossum palmatum	Hand adder's tongue fern	E	S2	Hammocks; epiphytic on Sabal palmetto
Opuntia spinosissima	Semaphore cactus	E	S1	Rocky hammocks and tidal swamp margins
Opuntia triacantha	Three-spined prickly-pear	E	S1	Sandy clearings, roadsides and pinelands
Osmunda cinnamomea	Cinnamon fern	CE		Wet woods and swamps
Osmunda regalis	Royal fern	CE		Wet woods and swamps
Passiflora multiflora	Whitish passionflower		S1	Woodlands, thickets and disturbed areas
Pecluma dispersa	Polypody fern	T		Hammocks
Pecluma plumula	Polypody fern	T		Hammocks; epiphytic
Peperomia humilis	Pepper	E	S2	Limestone grottos
Peperomia magnoliifolia	Spatulate peperomia	E		Hammocks
Peperomia obtusifolia	Florida peperomia	E	S2	Rocky hammocks, dome and strand swamps; epiphytic or on rocks
Phoradendron rubrum	Mahogany mistletoe	E	S1	Hammocks; epiphytic on mohogany trees
Phyllanthus pentaphyllus floridanus	Florida five-petaled leaf flower		S2	Rocky pinelands and roadsides
Picramnia pentandra	Bitter bush		S1	Hammocks
Pisonia floridana	Rock key devil's-claws		SX	Rocky hammocks
Pleurothallis gelida	Orchid	E	S2	Cypress and hardwood swamps; epiphytic
Polygala boykinii var. sparsifolia	Boykin's few-leaved milkwort		S2	Pinelands
Polyradicion lindenii	Ghost orchid	E	S2	Hammocks, sloughs and swamps; epiphytic
Polystachya flavescens	Pale-flowered polystachya	E		Cypress, hardwood and mangrove swamps, hammocks
Ponthieva brittoniae var brittoniae	Bahama shadow-witch	E	S1	Open pinelands
Prescottia oligantha	Orchid	E	S1	Dense hammocks
Prunus myrtifolia	West-indian cherry		S1S2	
Pseudophoenix sargentii	Buccaneer palm; Sargent's cherry palm	E	S1	Coastal thickets
Pteris bahamensis	Bahama brake	E	S3	Rocky pinelands and sinkhole edges
Restrepiella ophiocephala	Snake orchid		SX	Sloughs and swamps; epiphytic
Rhipsalis baccifera	Mistletoe cactus	E	S1	Hammocks
Rhynchosia cinerea	Brown-haired snoutbean		S3	Dry pinelands
Roystonea elata	Florida royal palm	E	S2	Moist hammocks
Sachsia bahamensis	Bahama sachsia	E		Rocky pinelands
Sachsia polycephala	Bahama sachsia		S1	Rocky pinelands
Salvia blodgettii	Blodgett's sage		SH	Rocky hammocks
Sarracenia minor	Hooded pitcherplant	T		Wet, open, acid pinelands and bogs
Savia bahamensis	Maiden bush		S1	Coastal thickets
Scaevola plumieri	Inkberry	T		Coastal strands
Schaefferia frutescens	Yellowwood		S2	Hammocks
Solanum bahamense var rugelii	Rugel's key west		SH	Hammocks and coastal dunes

Sophora tomentosa	Necklace pod		S3	Coastal strands and hammocks
Spiranthes brevilabris var. floridana	Florida ladies' tresses	E		Pine flatwoods
Spiranthes costaricensis	Ladies' tresses	E	S1	Hammocks
Spiranthes elata	Tall neottia	E	S1	Hammocks
Spiranthes laciniata	Lace-lip ladies' tresses; lace-lip spiral orchid	T		Marshes and cypress swamps
Spiranthes longilabris	Long-lip ladies' tresses	T		Marshes and wet pine flatwoods
Spiranthes polyantha	Green ladies' tresses	E	S1S2	Hammocks
Spiranthes torta	Southern ladies' tresses	E	S1	Dry, rocky pinelands
Strumpfia maritima	Pride-of-Big-Pine	E	S1	Brackish, protected shorelines
Stylosanthes calcicola	Pineland pencil flowers		S2	
Suriana maritima	Bay cedar	E		Coastal beaches and dunes
Swietenia mahogani	West Indian mahogany	E	S2	Coastal hammocks
Tectaria fimbriata	Halberd fern	E	S2	
Tetrazygia bicolor	Tetrazygia	T	S3	Hammocks and pinelands
Thrinax morrisii	Brittle thatch palm	E	S3	Hammocks and pineland margins
Thrinax radiata	Florida thatch palm	E	S2	Seashores
Tillandsia balbisiana	Wild pine	T		Hammocks, pinelands and scrub; epiphytic
Tillandsia fasciculata	Common wild pine	E		Pinelands, hammocks, cypress swamps
Tillandsia flexuosa	Twisted air plant	E	S3	Coastal hammocks; epiphytic
Tillandsia utriculata	Giant wild pine	E		Hammocks and cypress swamps; epiphytic
Tillandsia valenzuelana	Wild pine	T		Hammocks and cypress swamps; epiphytic
Tournefortia gnaphalodes	Sea lavender	E	S3	Coastal dunes
Tragia saxicola	Florida Keys noseburn	E	S2	Rocky pinelands
Trichomanes holopterum	Filmy fern	E	S1	Strand swamps and hydric hammocks
Triphora gentianoides	Nodding-caps	?		Hammocks and sand pine scrub
Tripsacum floridanum	Florida gamagrass	E	S2	Low, rocky pinelands
Tropidia polystachya	Young-palm orchid	E	S1	Limestone hammocks
Vallesia antillana	Pearl berry		S1	Hammocks
Vanilla barbellata	Worm-vine orchid	E	S2	Hammocks
Vanilla dilloniana	Leafless vanilla	E		Hammocks
Vanilla mexicana	Vanilla	E	S1	Hammocks; epiphytic
Vanilla phaeantha	Leafy vanilla	E	S2	Hammocks; epiphytic
Vanilla planifolia	Commercial vanilla	E		Hammocks and swamps
Vernonia blodgettii	Blodgett's ironweed		S2	Pinelands
Zamia pumila	Florida coontie	CE		Hammocks, pinelands and Indian middens
Zanthoxylum coriaceum	Biscayne prickly ash	E	S1	Coastal hammocks
Zanthoxylum flavum	Yellowheart	E	S1	Dry, tropical hammocks

Notes:

USFWS = U.S. Fish & Wildlife Service

E = Endangered; T = Threatened; C# = Candidate for Listing

FDA = Florida Department of Agriculture

E = Endangered; T = Threatened; CE = Commercially Exploited

FNAI = Florida Natural Areas Inventory

S1 = Critically Imperiled Due to Extreme Rarity; S2 = Imperiled Due to Rarity; S3 = Very Rare and Local; S4 = Apparently Secure; ? = Tentative Ranking;

Source: Environmental Management Systems, Inc., Endangered Species Database, 1998.

Table 3. List of all Federal, State, and Local Classified Areas

Everglades National Park (as mod. 8-8-94)
Crocodile Lake (12-1-82; as mod. 5-14-86, 4-19-88; 8-8-94)

Great White Heron (as mod. 5-14-86, 4-19-88)
Key West
National Key Deer (as mod. 5-14-86, 4-19-88, 10-4-90; 8-8-94)
Bahia Honda State Park (as mod. 5-14-86)
John Pennekamp Coral Reef State Park (as mod. 5-14-86, 4-19-88)
Long Key State Recreation Area
Fort Zachary Taylor State Historic Site (10-4-90)
Indian Key State Historic Site (10-4-90)
Key Largo Hammock State Botanical Site (5-14-86)
Lignum vitae Key State Botanical Site (5-14-86)
Windley Key Fossil Reef State Geological Site (10-4-90)
San Pedro State Underwater Archaeological Preserve (10-4-90)
Curry Hammock (8-8-94)
North Key Largo Hammock (5-14-86; as mod. 4-19-88, 10-4-90, 8-8-94)
Port Bougainville (10-4-90)
Biscayne Bay (Cape Florida)
Biscayne Bay (Card Sound) (12-1-82)
Coupon Bight
Lignum vitae Key
Florida Keys: including channels as defined in Rule 62-312.020(4), F.A.C., and described as follows: Commence at the northeasterly most point of Palo Alto Key and run due north to a point at the center of the channel of Broad Creek as the point of beginning, thence due east to the eastern boundary of the jurisdictional waters of the State of Florida, thence meander southerly along said eastern boundary to a point due south of the westernmost point of the island of Key West; thence westerly, northerly and easterly along the arc of a curve three leagues distant from the westernmost point of the island of Key West to a point due north of the island of Key West; thence northeasterly three leagues distant from the most northerly land of the Florida Keys to the intersection with the boundary of the Everglades National Park; thence southeasterly, northeasterly and northwesterly along the boundary of the Everglades National Park to the intersection with the Dade County - Monroe County line; thence northeasterly and easterly along the Dade County - Monroe County line to the point of beginning; less however, three areas:

a. Key West Sewage Outfall, being a circle 150 feet in radius from the point of discharge located at approximately 24 32'13" N. Latitude and 81 48'55" W. Longitude; and

b. Stock Island Power Plant Mixing Zone; being a circle 150 feet in radius from the end of the power plant discharge canal; and

c. Artificial waterbodies, defined as any waterbody created by dredging, or excavation, or by the filling in of its boundaries, including canals as defined in Rule 62-312.020(3), F.A.C. (5-8-85).

Key Largo Marine Sanctuary
Looe Key Marine Sanctuary (12-1-82)

Table 4. List of Regulations Affecting the Trail Project

Monroe County Code of Ordinances
- -Environmental Design Criteria
  - Sensitive Habitats (Sec. 9.5-338,344,345)
  - Wetland Development Regulations (Sec. 9.5-347)

South Florida Water Management District
Delegation and some oversight by Florida Department of Environmental Protection
-Fill Impacts to Wetlands and State listed Wetland Dependent Threatened and Endangered Species and Species of Special Concern (Chapter 40E Florida Administrative Code and Chapter 373 Florida Statutes)
-Class II Water Designation and Additional Criteria (Chapter 62-302 Florida Administrative Code)
-Outstanding Florida Waters Designations and Additional Criteria (Chapter 62-302 Florida Administrative Code)
-Sovereign Submerged Lands, Criteria and Type of Use (Chapter 18- 20, 21 Florida Administrative Code)

US Army Corps of Engineers
Memorandums of Agreements with Environmental Protection Agency and US Fish and Wildlife Service
-Fill Impacts to Wetlands and Federally listed Threatened and Endangered Species (33 CFR).

Appendix III
Master Plan Bibliography

APPENDIX III

FLORIDA KEYS OVERSEAS HERITAGE TRAIL
MASTER PLAN BIBLIOGRAPHY

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Appendix IV
Bicycle Shops

APPENDIX IV

Florida Keys Bicycle Shops

BUSINESS NAME	ADDRESS	CITY	ZIP	PHONE
Lower Keys Bike Shops				
Adventure Scooter & Bicycle Rentals	2900 N. Roosevelt Blvd.	Key West	33040	293-9933
Banana Bikes	506 Caroline St.	Key West	33040	295-2933
Bicycle and Moped & Scooter Rental	601 Truman Ave.	Key West	33040	296-3344
Bicycle Center	523 Truman Ave.	Key West	33040	294-4556
Bicycle Rentals	523 Truman Ave.	Key West	33040	294-0399
Bike Shop	1110 Truman Ave.	Key West	33040	294-1073
Caribbean Scooter Rental	3031 N. Roosevelt Blvd.	Key West	33040	293-9971
Conch Bike Express	930 Eaton St.	Key West	33040	294-4318
Island Bicycles	929 Truman Ave.	Key West	33040	292-9707
Island Watersports	245 Front St.	Key West	33040	296-1754
Keys Moped & Scooter Inc.	523 Truman Ave.	Key West	33040	294-0399
Laskooters	1313 Simonton St.	Key West	33040	294-4999
Mobile Bike Repair	1919 Venetia St.	Key West	33040	292-1941
Moped and Bicycle Rental	1300 Duval St.	Key West	33040	294-8136
Moped Bicycle & Scooter Sales & Rentals	2900 N. Roosevelt Blvd.	Key West	33040	293-9933
Moped Hospital	601 Truman Ave.	Key West	33040	296-3344
Paradise Rentals	105 Whitehead St.	Key West	33040	
Paradise Rentals	430 Duval St.	Key West	33040	293-1112
Scooter Adventure Rentals	2900 N. Roosevelt Blvd.	Key West	33040	296-9933
Scooter and Bicycle & Moped Rental	601 Truman Ave.	Key West	33040	296-3344
Scooter Daily Rental of Key West	1300 Duval St.	Key West	33040	294-8136
Scooter Rentals	523 Truman Ave.	Key West	33040	294-0399
Scooters at Tropical	1300 Duval St.	Key West	33040	
Sun N Fun	1316 Duval St.	Key West	33040	296-1543
Sun N Fun	925 Duval St.	Key West	33040	295-6686
Truman Varela Scooters at the Bike Shop	1110 Truman Ave.	Key West	33040	294-1073
Yates Lori	930 Eaton St.	Key West	33040	294-4318
Big Pine Bicycle Center	31 County Rd.	Big Pine		872-0130
Four Star Rentals, Inc.	Overseas Hwy.	Big Pine		872-2229
Middle Keys Bike Shops				
Equipment Locker Sport & Bicycle	MM 53 Gulf, 11518 Overseas Hwy.	Marathon		289-1670
Bike Marathon Bike Rentals		Marathon		743-3204
Knight Bikes	20456 S. Dixie Hwy.			238-2047
Knight Bikes at the Cutler Ridge Mall	20505 S. Dixie Hwy.			235-3105
Mack Cycle & Fitness	5995 Sunset Dr. S.			661-8363
Upper Keys Bike Shops				
Tavernier Bicycle & Hobbies	91958 Overseas Hwy.	Tavernier		852-2859
Florida Bay Outfitters	104050 U.S. Hwy. 1	Key Largo		451-3018
Equipment Locker Sport & Bicycle	MM 101.4 Tradewinds Plaza, 10148	Key Largo		453-0140
Bill's Discount Bicycle Shop	103530 Overseas Hwy.	Key Largo		453-4070
Note: This is a preliminary list of bicycle shops located along U.S. 1. More bike shops may be				
interested in providing trail support.				