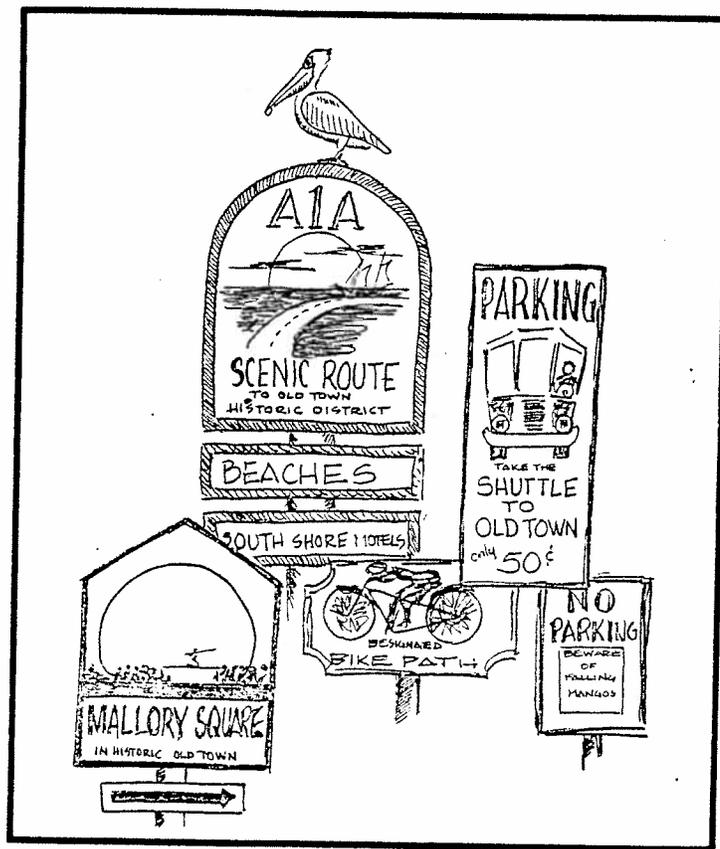


KEY WEST

TRAFFIC CIRCULATION STUDY

FINAL DRAFT REPORT



PREPARED FOR

CITY OF KEY WEST

BY

THE FLORIDA DEPARTMENT OF TRANSPORTATION

FINAL REPORT

The Preferred Plan

Key West Traffic Circulation Study

Prepared For

City of Key West

Prepared By

Florida Department of Transportation

January 1988

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INTRODUCTION

Existing and potential traffic circulation problems were identified by transportation planners from the Department of Transportation in February of 1984.

After an initial survey of the street system, it became evident that the primary problems associated with Key West could be defined as including:

- (1) Narrow streets
- (2) Tight corners (small turning radii)
- (3) Visibility obstructions (parked cars, buildings, poles, etc.)
- (4) Poor signing and signalization
- (5) Poor pavement conditions
- (6) Inadequate parking
- (7) Limited right-of-way

These problems are compounded by substantial tourist generated traffic, delivery trucks and the allowance of bicycles and recreational vehicle traffic to use the street system.

An initial analysis was conducted on the existing road network. Future traffic was assigned to the existing road network and the capacity deficiencies were identified.

The capacity deficiencies identified were presented to the Study Advisory Committee for their review. The Study Advisory Committee's review led to the development of a number of system concepts. These concepts provided for improvements to major travel corridors which serve as access to the large trip attractors

located within Key West.

Based on discussions with City of Key West planning staff, the system concepts developed by the Study Advisory Committee were refined into five alternative plans.

Traffic assignments of buildout travel demands were then made for each of the five alternate traffic circulation plans. The capacity deficiencies were identified and presented to the Study Advisory Committee for their review.

The Study Advisory Committee's review led to the development of a number of new system concepts, as well as the elimination of previously developed concepts that were considered to be infeasible. The new concepts were developed to provide a solution to problem areas that were not addressed previously or were developed to help smooth the effects of the elimination of those projects considered to be infeasible. Concepts were considered to be infeasible if they caused neighborhood/commercial disruption or were physically constrained. Inadequate right-of-way and buildings constructed to the edge of existing right-of-way were primary considerations as to whether a concept was constrained. For the most part, cost was not a consideration for elimination of a concept unless a cheaper alternative providing the same relief could be developed.

After the Study Advisory Committee's review, the five previously developed alternatives were reduced to two alternatives. As before, assignments of buildout travel demands were made to each of the alternative plans.

The results of the traffic assignments for the two

alternatives were presented to the Study Advisory Committee. After reviewing the results, the Study Advisory Committee reduced the two remaining alternatives to a preferred plan.

The analysis to this point concerned itself strictly with developing improvements to the street system. However, it becomes evident early in the study that the street improvement opportunities were very limited. Consequently, the improvements that could be made to the street system will not provide enough additional capacity to solve the problems that will be brought on by future demand.

Elements other than street improvements are included in the plan in an attempt to address the unsatisfied demand. These elements are designed to encourage the use of other modes of travel such as the bicycle and transit, as well as increase the efficiency of the existing transportation system. The final recommendations are reported herein and are intended for use as a guide to improving the transportation system in Key West.

HIGHWAY ELEMENT

The primary purpose of the Highway Element is to designate improvements to encourage traffic to utilize facilities other than North Roosevelt Boulevard. Although some improvement is being projected for North Roosevelt Boulevard, the addition of more pavement width is being proposed to improve safety only.

STUDY ADVISORY COMMITTEE PROPOSED PLAN

The projects proposed by the Study Advisory Committee were developed to provide an alternate route into town by encouraging the usage of a underutilized Flagler Avenue.

Flagler Avenue is a four laned divided facility carrying very little traffic when compared to the amount of traffic carried by other similar facilities.

The primary reason why Flagler Avenue is underutilized is because the four lane section abruptly terminates without distributing traffic to other facilities. This leaves traffic stranded without a logical route to the downtown area.

The improvements proposed by the Study Advisory Committee would create another corridor leading to the downtown area. The improvements would bring Flagler Avenue to a more logical terminus feeding the road network leading to the downtown area. This new corridor would give traffic an alternative to using North Roosevelt Boulevard.

The Study Advisory Committee's proposal is shown in Figure 1.

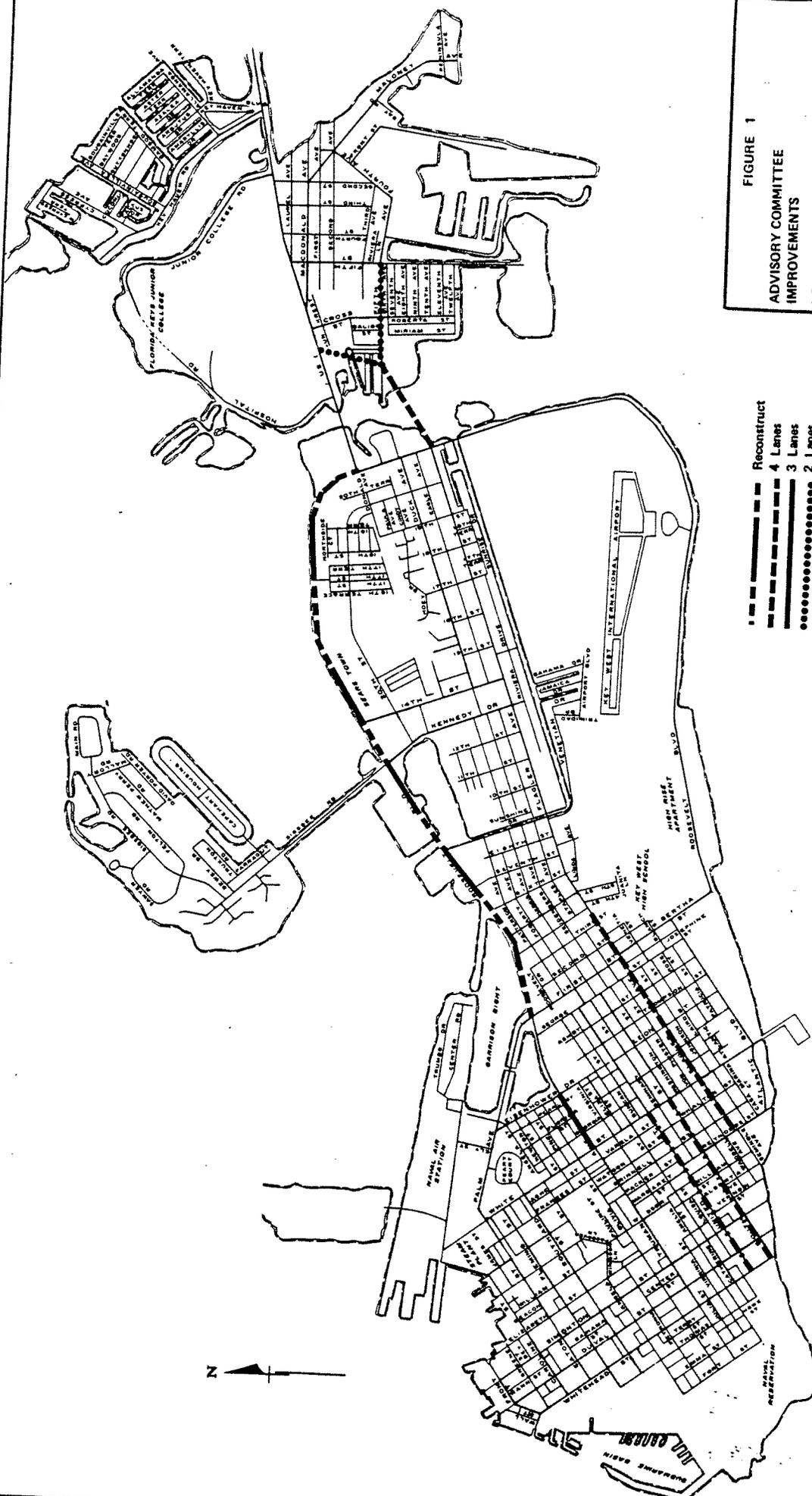


FIGURE 1

ADVISORY COMMITTEE
IMPROVEMENTS

KEY WEST
FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION 1984

- Reconstruct
- 4 Lanes
- 3 Lanes
- 2 Lanes
- One Way

SCALE IN FEET
0 1000 2000

Study Advisory Committee Project Listing

The following list describes the projects recommended by the Study Advisory Committee for inclusion as the Highway Element of the Key West Traffic Circulation study.

1. North Roosevelt Boulevard

Leave as a four lane divided arterial but increase the total pavement width from 50 feet to 59 feet. This will provide a 12 foot curb lane on the Gulf side, three 11 foot center lanes and a 14 foot curb lane along the business side.

2. Flagler Avenue

Improve to four lanes undivided from Reynolds Street to the existing four lane section. The improvement will provide four 12 foot lanes

3. Truman Avenue

- Eliminate on street parking from White Street to Eisenhower Street and restripe for three lanes. Two lanes will be provided for outbound traffic and one lane for inbound traffic.

4. South Street

Designate South Street as a one-way street between Whitehead Street and White Street. South Street will provide two lanes eastbound (outbound).

5. United Street

Designate United Street as a one-way street between Whitehead Street and White Street. United Street will provide two lanes westbound (inbound).

6. Cow Key Channel Bridge

Construct a new bridge across Cow Key channel linking US 1 and Stock Island with Flagler Avenue. The bridge will be a four lane structure terminating at the old drive-in movie site on Stock Island. As part of the bridge project, a connector road linking the bridge directly to US 1 and 5th Avenue will be constructed. The connector road will be two lanes from US 1 to 5th Avenue then four lanes to the bridge.

Design Considerations for North Roosevelt Boulevard

As the North Roosevelt Boulevard project moves into the design phase of implementation, several options on how to reduce turning movements should be considered.

Left turns from the businesses along the south boundary of the street should be evaluated for need and safety and wherever possible, the left turn should be prohibited.

At a minimum, exits from Key Plaza and the Searstown Shopping Plaza should be right turn only onto North Roosevelt Boulevard. The one exception would be the main entrance to the Searstown Plaza. The entrance should be signalized to allow an orderly flow of traffic into and out of the shopping center. Traffic coming out of Key Plaza which is headed back into town should be directed to make the left turn movement onto North Roosevelt Boulevard via Kennedy Drive.

In addition to considering left turn prohibitions from businesses, right turn lanes should be considered on North Roosevelt Boulevard where heavy right turning movements are found (into the shopping centers). Right turning vehicles would then have an exclusive lane to make their turning maneuvers, therefore reducing the occurrence of conflicts between turning vehicles and through traffic.

Reducing the number of driveways along North Roosevelt Boulevard should also be considered as a means of reducing the turning movements. The entrances of adjacent establishments should be combined to form one driveway (or a reduced number of

improving the flow characteristics of the existing principal street system. Figure 2 illustrates these improvements. Broadly speaking, these improvements are aimed directly at making existing road space more efficient.

Flow Characteristics Improvement Listing

The following list describes the additional projects necessary to better promote the development of the Highway Element, as proposed by the Study Advisory Committee, into a complete systems plan.

1. South Street

- a) Repave between Vernon Street and Simonton Street.
- b) Continue curb from Reynolds Street to White Street and repave.
- c) Stripe and/or restripe for two lanes from Whitehead Street to White Street.
- d) Change the stop at the Grinnell Street intersection so that it favors South Street.

2. United Street

- a) Change the stop at the Duval Street intersection so that it favors United Street.
- b) Stripe and/or restripe for two lanes from Whitehead Street to White Street.

3. Duval Street

Stripe and/or restripe for two lanes from South Street to Front Street.

4. Whitehead Street

- a) Repave between United Street and Truman Avenue.
- b) Repave between Southard Street and Caroline Street.
- c) Stripe and/or restripe for two lanes from South Street to Front Street.

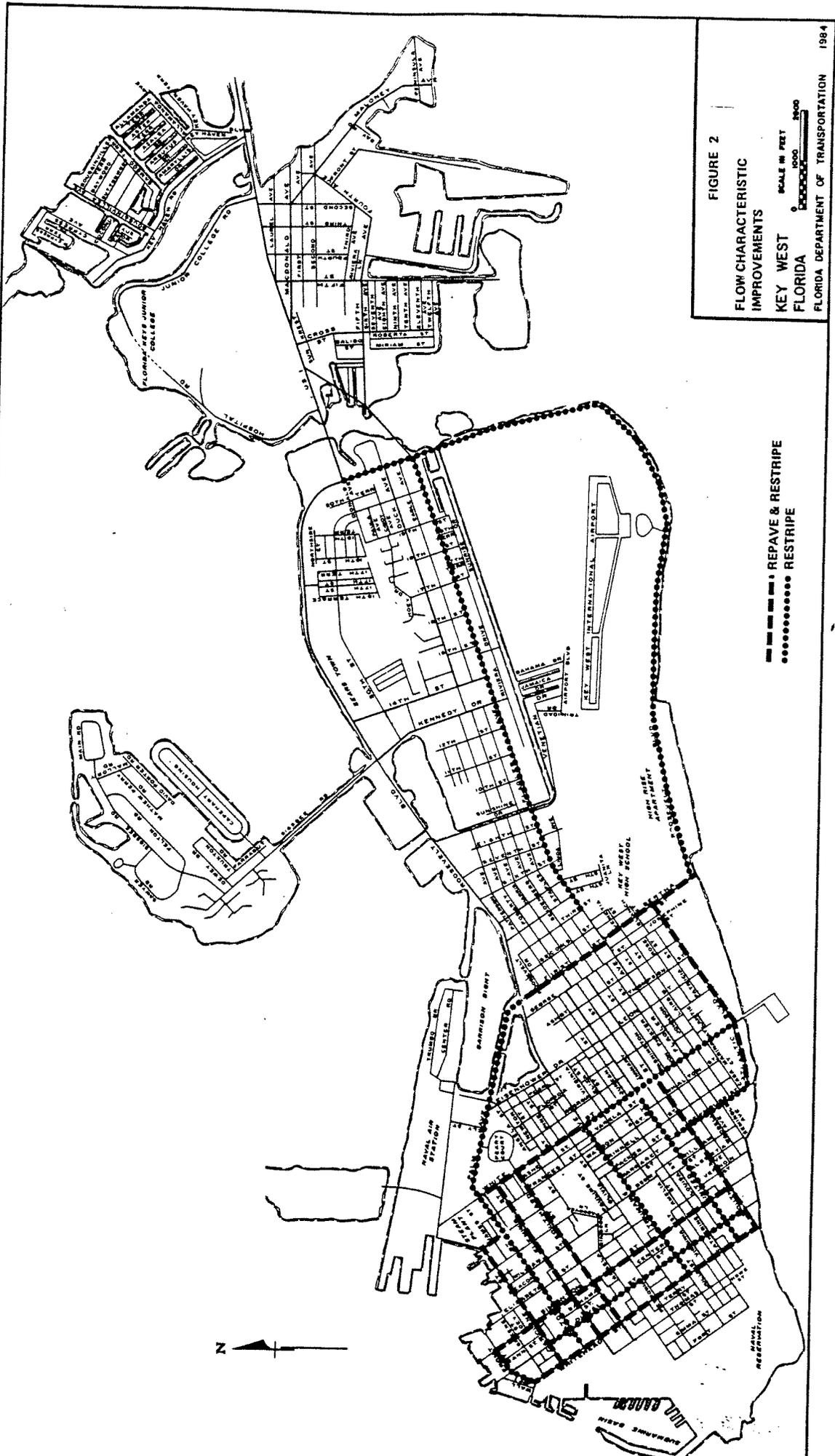


FIGURE 2

FLOW CHARACTERISTIC IMPROVEMENTS

KEY WEST
FLORIDA

SCALE IN FEET
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FLORIDA DEPARTMENT OF TRANSPORTATION 1984

--- REPAVE & RESTRIPE
..... RESTRIPE

5. Simonton Street

- a) Repave between United Street and Eaton Street.
- b) Stripe and/or restripe for two lanes from South Street to Front Street.

6. Front Street

Stripe and/or restripe for two lanes from Whitehead Street to Simonton Street.

7. Caroline Street

- a) Repave between Whitehead Street and Grinnell Street.
- b) Stripe and/or restripe for two lanes from Whitehead Street to Grinnell Street.

8. Grinnell Street

- a) Repave between Caroline Street and Eaton Street.
- b) Stripe and/or restripe for two lanes from Caroline Street to Eaton Street.

9. Eaton Street

Stripe and/or restripe for two lanes from White Street to Whitehead Street.

10. Fleming Street

- a) Repave between Whitehead and White Street.
- b) Stripe and/or restripe for one lane from Whitehead Street to White Street.

11. Southard Street

- a) Repave between Whitehead Street and White Street.
- b) Stripe and/or restripe for one lane from Whitehead Street to White Street.

12. Truman Avenue

Stripe and/or restripe for two lanes from Whitehead Street to White Street.

13. South Roosevelt Boulevard

Stripe and/or restripe for four lanes undivided from US 1 to Bertha Street.

14. Bertha/First Street

- a) Correct offset intersection at Flagler Avenue.
- b) Construct curbs along both sides of Bertha Street between South Roosevelt Boulevard and Flagler Avenue.
- c) Repave roadway between South Roosevelt Boulevard and North Roosevelt Boulevard.
- d) Stripe and/or restripe for two lanes from South Roosevelt Boulevard to North Roosevelt Boulevard.

15. Palm Avenue

Stripe and/or restripe for two lanes from North Roosevelt Boulevard to White Street.

16. White Street

- a) Repave between Truman Avenue and Eaton Street.
- b) Stripe and/or restripe for two lanes from Atlantic Boulevard to Eaton Street.

17. Reynolds Street

Stripe and/or restripe for two lanes from Atlantic Boulevard to United Street.

18. Atlantic Avenue

- a) Remove stop with Reynolds Street. Traffic should flow non-stop from Atlantic Avenue to Reynolds Street and vice versa.
- b) Construct curb along both sides of the roadway between Bertha Street and Reynolds Street.
- c) Repave roadway between Bertha Street and Reynolds Street.
- d) Stripe and/or restripe for two lanes from Bertha Street to Reynolds Street.

19. Flagler Avenue

Stripe and/or restripe for four lanes divided from South Roosevelt Boulevard to end of four lanes.

Long-Term Flow Characteristics Improvements

The preceding project list constitutes the minimum improvement necessary to improve traffic flow on the existing principal street system. In most instances, the streets are old and have failed, as evidenced by the many rutted and patched

areas. Repaving will only provide a temporary fix to the problem. Eventually the ruts and the potholes will reappear under the constant stress exerted by the traffic. To provide a more permanent solution, the roadways listed above should be reconstructed to the established design standards to provide for long-term usage.

SAFETY IMPROVEMENTS FOR N. ROOSEVELT BLVD

Traffic accident data were provided by the Key West Police Department. The accident data covered a period of one year from January 1983 to December 1983. The data was compiled by location at intersections and at mid-block. Figure 3 is a summary of the accidents for the island.

The greatest number of accidents have occurred along the Truman Avenue/North Roosevelt Boulevard corridor leading into and out of town. Along this corridor from Eisenhower Drive to the point where US 1 splits to become North and South Roosevelt Boulevard, six deaths and 183 injuries have been recorded from January 1984 to November 1986. The great number of accidents on North Roosevelt Boulevard can be attributed to the substandard design to which the roadway was constructed. Because of the substandard design, visibility for vehicles pulling out of the businesses is very poor. Poor visibility is a contributing factor in a majority of all accidents along this heavily traveled corridor.

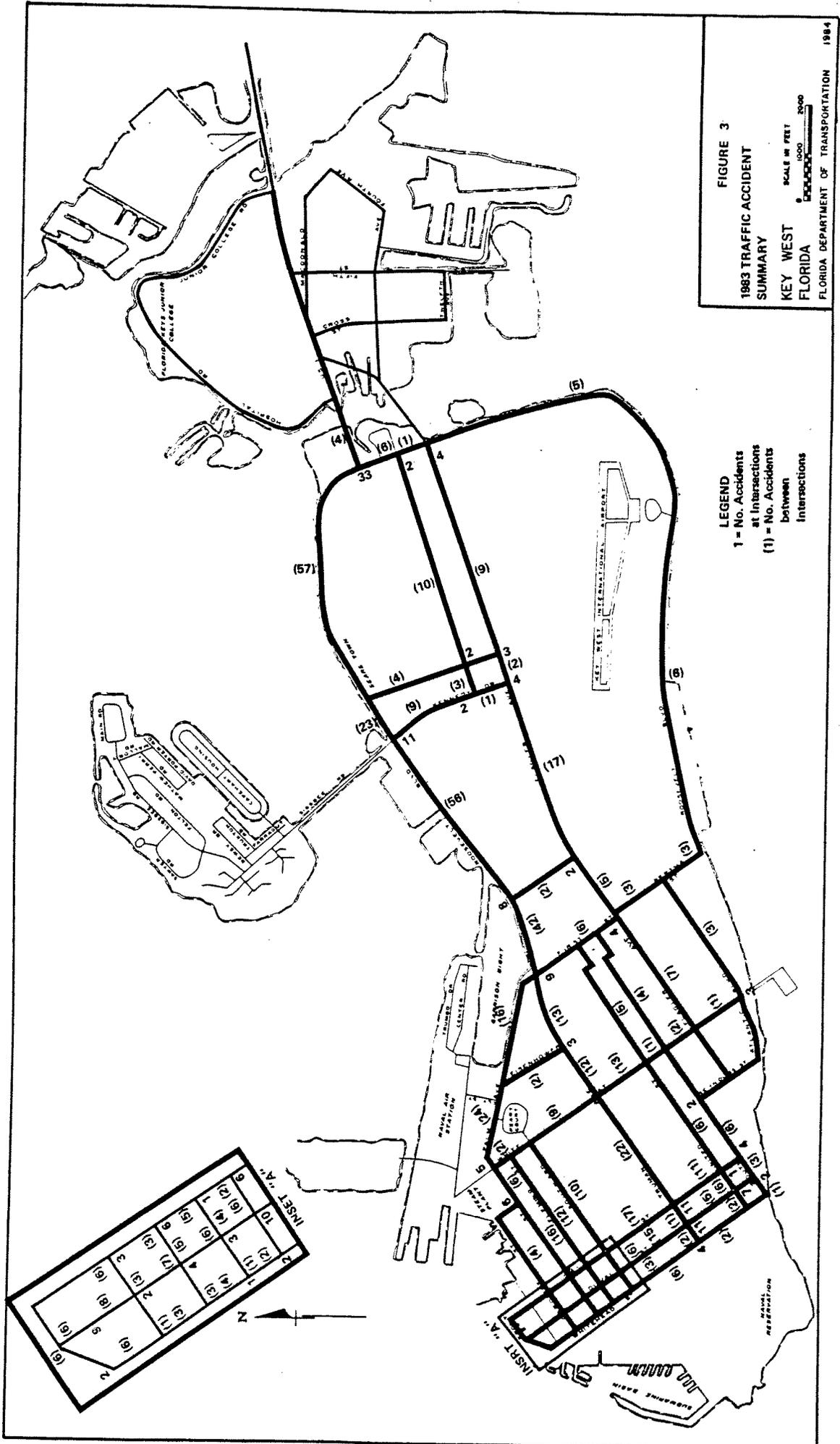


FIGURE 3
 1983 TRAFFIC ACCIDENT
 SUMMARY

KEY WEST
 FLORIDA
 FLORIDA DEPARTMENT OF TRANSPORTATION 1984

LEGEND
 1 = No. Accidents
 at Intersections
 (1) = No. Accidents
 between
 Intersections

INSET "A"

1	2	3	4	5	6
(1)	(2)	(3)	(4)	(5)	(6)
(1)	(2)	(3)	(4)	(5)	(6)
(1)	(2)	(3)	(4)	(5)	(6)
(1)	(2)	(3)	(4)	(5)	(6)
(1)	(2)	(3)	(4)	(5)	(6)



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speak to the reduction of the height of vegetation adjacent to the roadway.

PARKING ELEMENT

Traffic has been increasing in Key West in recent years at a rate of four percent per year. As a result, accident rates and congestion have reached unacceptable levels, especially on the vital Truman Avenue/North Roosevelt Boulevard corridor. Part of the solution to the growing traffic problem is to increase the capacity of the existing roadways. However, for the majority of the city, the possibilities of increasing capacity are very limited.

If capacity can not be increased to accommodate the congestion problem, then traffic must be reduced to fall within acceptable capacity levels. Providing adequate off-street parking at the fringe of the congested areas of Key West, will help to reduce the traffic that uses the city streets.

OFF-STREET PARKING

Providing adequate off-street parking and promoting parking outside congested areas will help keep traffic off congested facilities by providing an alternate to parking Downtown. Park-n-ride lots away from congested facilities will reduce the amount of congestion by reducing the need for traffic to come into the Downtown area. Even adequate off-street parking within congested areas can help reduce traffic. One source of congestion comes from motorists circulating throughout an area searching for parking. A motorists could pass by a point in the roadway several times

before finding parking. If every motorist passed over a particular point three times before parking, the congestion would appear three times as bad as the actual demand would suggest. By providing adequate off-street parking, congestion can be reduced by eliminating the need to circulate in search of parking.

New Park-n-Ride Lots

Figure 4 shows eleven(11) potential off-street parking sites within the Key West area that were considered by the Study Advisory Committee. Table 1 gives more information on these potential sites as to ownership, size and number of spaces that could be accommodated. The site numbers in Table 1 correspond to the site numbers in Figure 4.

In addition to the sites shown in Figure 4, two more sites are being considered by PATA as potential park-n-ride lots. These sites are the City Electric site and the Malory Square site.

The Study Advisory Committee has recommended to establish at least two new parking facilities at the edge of the Old Town area. From the park-n-ride lots discussed previously, the Jose' Marti site and the City Electric site are recommended for construction. The advantages of these sites are: (1) Their centrally located and easily served by public and private transit systems; (2) Their likely to increase ridership on the city transit system; (3) Their at the edge of Old Town; (4) Their owned by the city; and (5) Their large enough to be a park-n-ride facility and can serve as a transit terminal for the city.

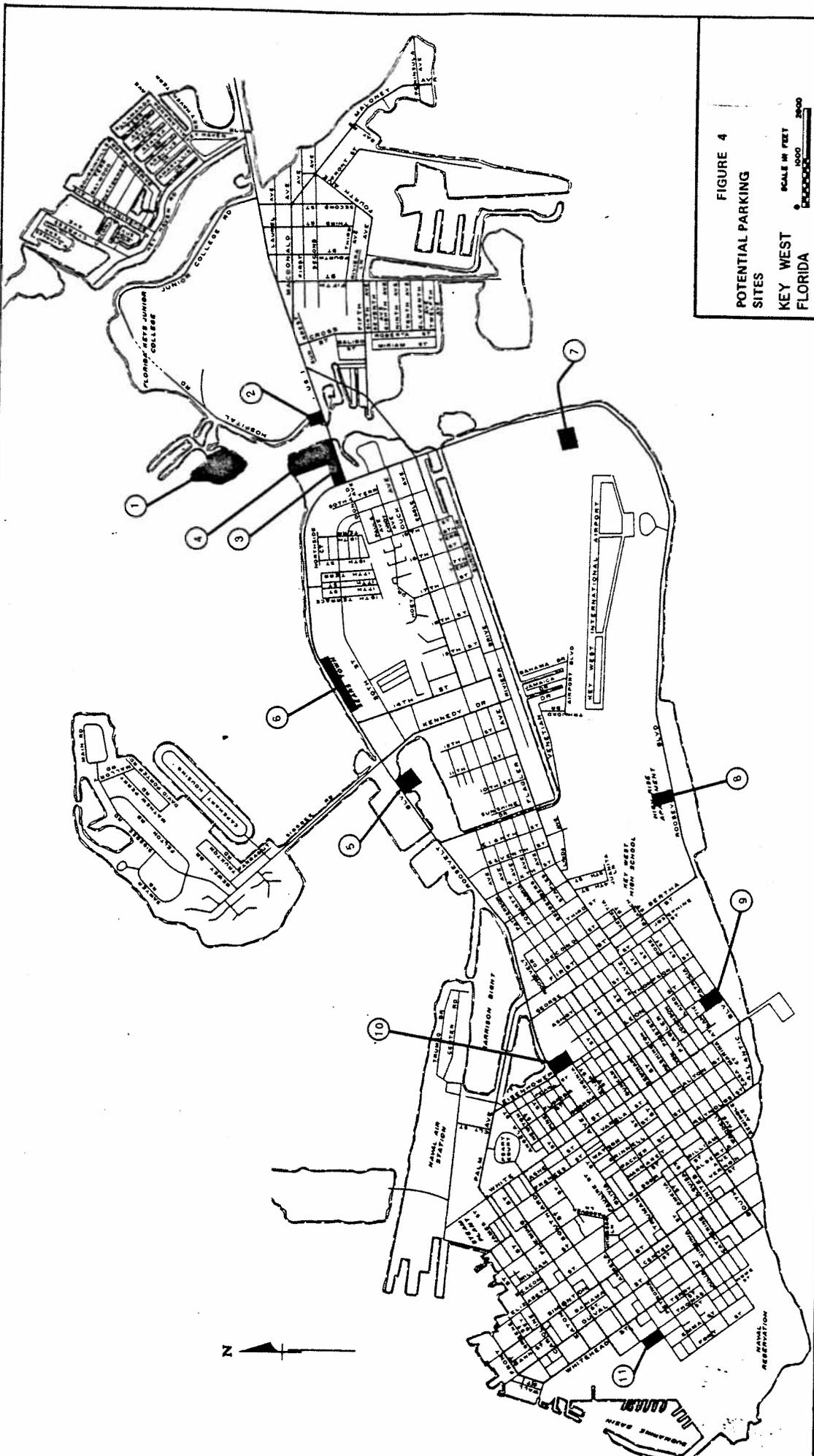


FIGURE 4
POTENTIAL PARKING
SITES

SCALE IN FEET
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FLORIDA DEPARTMENT OF TRANSPORTATION

Table 1 Inventory of Pontential Parking Sites

Site	Ownership	Area	Parking	Comments
1. Norman's Island	Private	800,000	1200 (RV)	An RV park on this site could reduce RV traffic in the city.
2. Stock Island	City/FKAA	90,000	180	This site is at the intersection of US1 and Jr. College Rd.
3. Presidential Park	State	45,000	90	The area figure represents the existing paved area.
4. Holiday Inn	Private	225,000	337 (RV)	This is a 5 arce scarified site behind Holiday Inn.
5. Key Plaza	Private	20,000	50	Both of these shopping centers are well-situated for park and ride lots.
6. Searstown	Private	100,000	288	Parking figures are based on a count of existing spaces.
7. Marks-Butler site	Private	225,000	337 (RV)	Scarified areas could be used for RV campsite.

Table 1 (Continued)

Site	Ownership	Area	Parking	Comments
8. Hyatt site	Private	200,000	600	The site could serve Smathers Beach parking needs.
9. Indigenous Park	City	100,000	300	The area figure represents less than half of the site and is unused.
10. Jose' Marti site	City	150,000	450	The site is appropriate a multi-story facility. A 3-level facility could park over 1000 cars.
11. Truman Annex	Private	n.a.	100 (RV)	An agreement with the developer provides for 100 oversize vehicle spaces.

Before any grant applications are submitted or any funds are committed to build these parking facilities, a detailed feasibility study should be preformed. If a feasibility study concludes that these two sites (City Electric and Jose' Marti) are not good locations, then two additional locations should be considered.

It is not recommended to create any more public parking within the Old Town area of Key West. The reasoning behind this will be covered within the transit element of this report.

Existing Park-n-Ride Lots

The City of Key West now operates a recreational vehicle (RV) parking lot along Palm Avenue at Garrison Bight. This is a paved lot with enough spaces to accommodate 44 vehicles.

Recreational vehicles are now restricted from parking in the Old Town area of Key West and therefore must park in the provided RV lot. However, RVs are not prohibited from driving in the Old Town area. To help promote usage of this lot, a ban prohibiting the movement of RVs in the most congested parts of the City should be established. Additionally, a shuttle should be provided (at leasted during the heavy tourist season) linking this lot with the attractions of the Old Town area.

ON-STREET PARKING REMOVAL

The principal result of removing on-street parking is a

substantial increase in roadway capacity. Only 55 to 65 percent of roadway capacity is utilized on two-way streets where parking is permitted.

Improved traffic speeds (5mph), a reduction in peak period travel time (25 percent for autos and 10 percent for buses) and up to a 50 percent reduction in traffic delays and stops have been attributed to on-street parking restrictions. However, the level of traffic flow improvement depends upon the existing street width.

It is recommended to prohibit on-street parking along Simonton Street from South Street to at least Eaton Street. This would improve capacity in this North/South corridor, thus increasing the likelihood of motorists utilizing Flagler Avenue as an alternate route to the Old Town area. In addition, the Study Advisory Committee should consider additional streets to impose on-street parking restrictions. At least two other streets would be good candidates for parking restrictions. These streets are Whitehead Street and Eaton Street. These streets serve as primary access routes to the Old Town area. See Figure 5.

Motorists denied on-street parking can be accommodated in the off-street parking lots to be created as part of the complete plan.

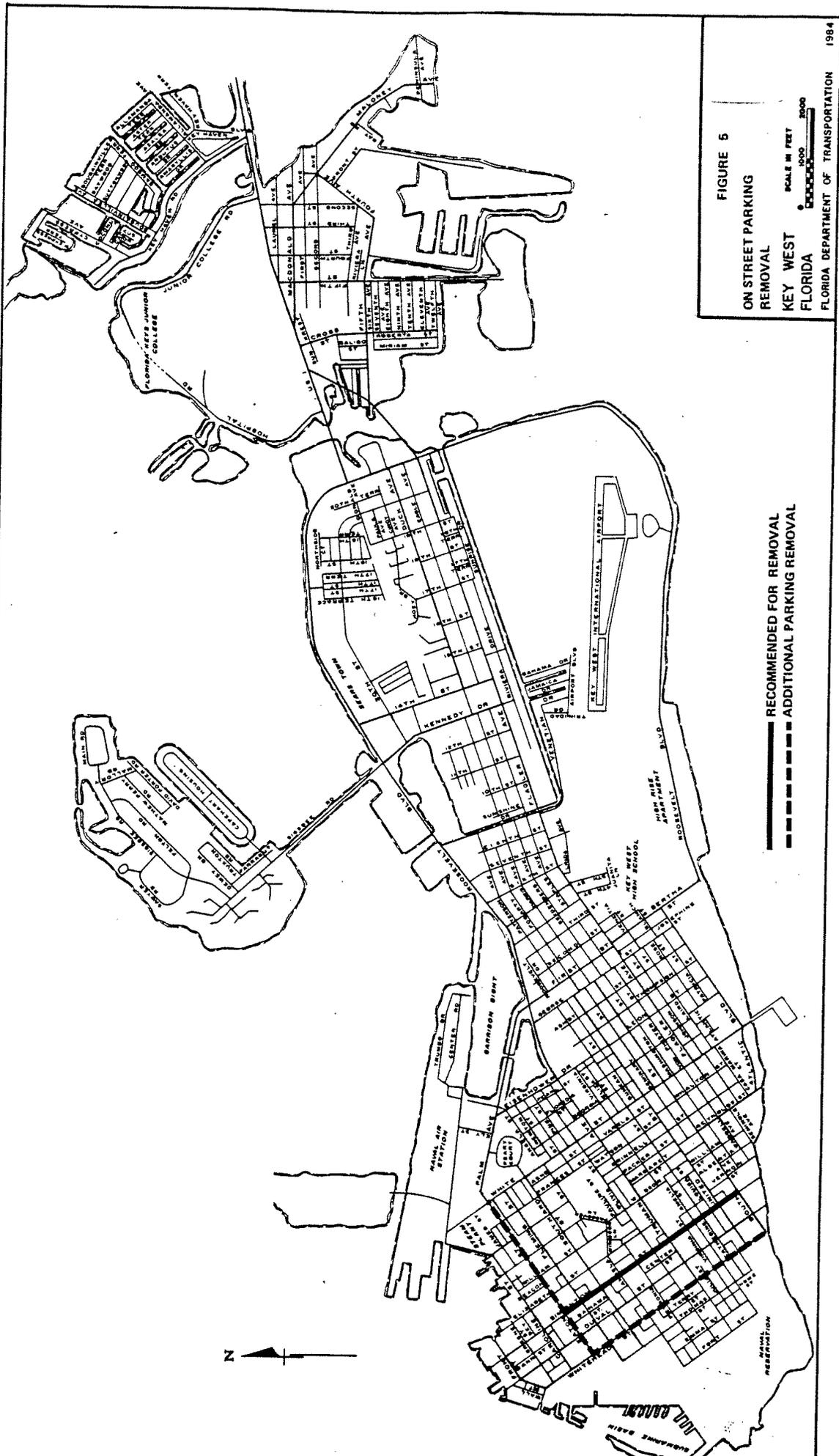


FIGURE 5

ON STREET PARKING
REMOVAL

KEY WEST
FLORIDA

SCALE IN FEET
1000 2000 3000

FLORIDA DEPARTMENT OF TRANSPORTATION 1984

RECOMMENDED FOR REMOVAL
ADDITIONAL PARKING REMOVAL

TRANSIT ELEMENT

Typically, transit is utilized by the poor and elderly or by those who are unfortunate as not having access to an automobile. Those persons having access to an automobile will continue to utilize their vehicle so long as it is faster and more convenient. A plan of incentives for transit and disincentives for the automobile usage must be applied to make the odds more favorable for public transit.

There will be those who simply will not utilize public transit no matter what the incentives or disincentives are. The Transit Element will be aimed at converting to transit those persons who are undecided.

EXISTING TRANSIT ROUTES

The existing transit system consists of essentially one route with buses traveling along this route in opposite directions. Figure 6 shows those roads which make up the transit route.

The existing transit route provides access to major Shopping Centers, Hospitals, the Junior College, Stock Island, a majority of the hotel/motels and the subsidized housing areas. The existing route will also provide access to the proposed Truman Annex development. No major changes to the existing routing is recommended.

Minor changes in the routing will be necessary to conform to the recommendations approved in the Highway Element. The routing

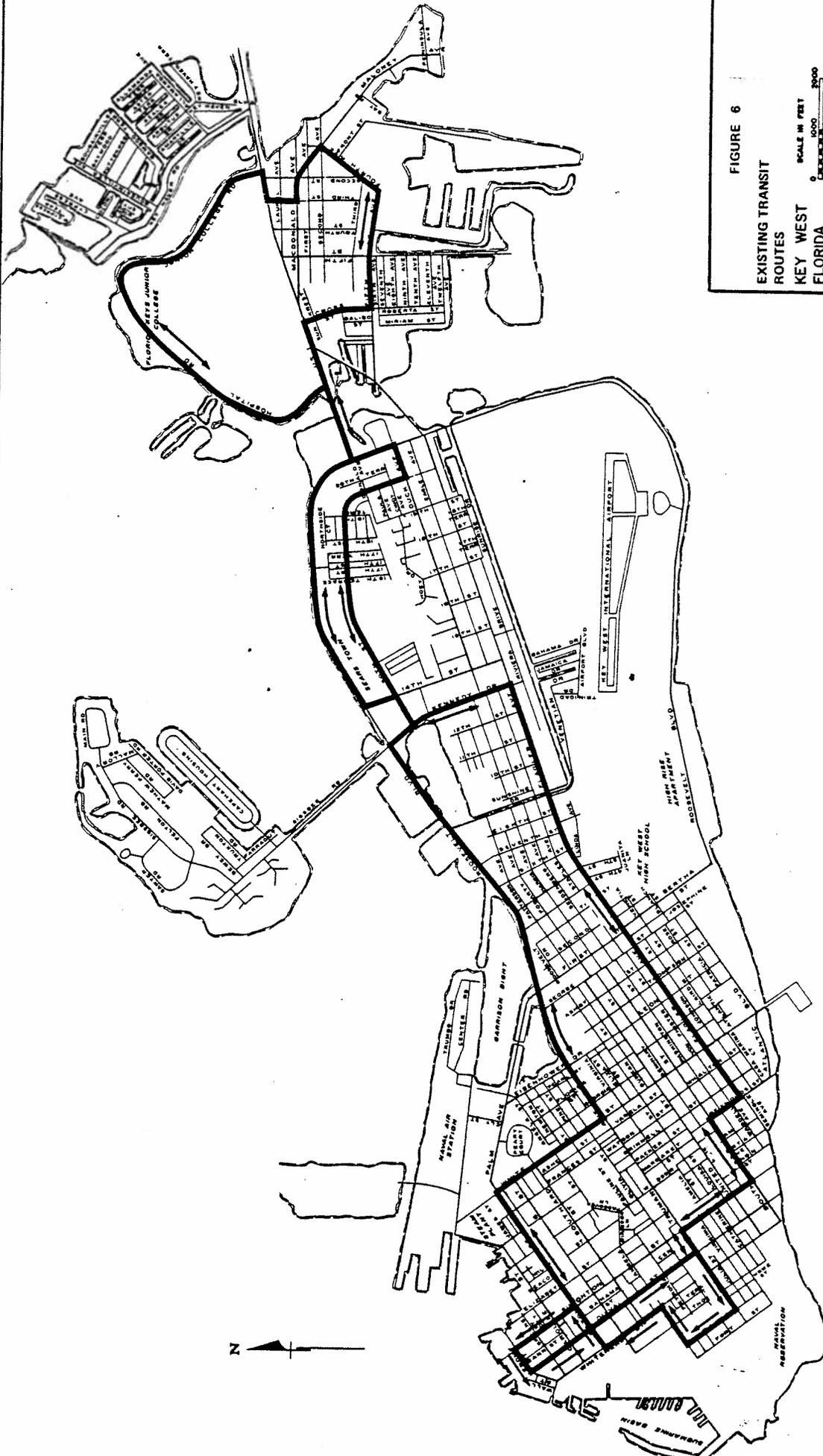


FIGURE 6

EXISTING TRANSIT ROUTES

KEY WEST FLORIDA

SCALE IN FEET
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FLORIDA DEPARTMENT OF TRANSPORTATION 1984

in the Old Town area will need to be changed due to the creation of the new one-way pair with United and South Street.

PARK-N-RIDE SHUTTLE

In addition to the existing transit system, it is recommended to create a shuttle system to access the new off street parking lots recommended in the Parking Element. In order to get motorists to utilized park-n-ride lots, service to and from these lots must be prompt. The existing transit service with its many stops can not provide the prompt service needed. The shuttle's only purpose is to link these park-n-ride lots with attractions in the Old Town area. These attractions being both business and tourist oriented.

DOWNTOWN SHUTTLE (TROLLY)

The majority of the attractions in the Old Town area are within a corridor delineated by Whitehead, South, Simonton and Front Streets or are within easy walking distance from the corridor. These attractions include commercial businesses, hotels/motels, restaurants, recreational areas, tourist attractions as well as government offices. Such a high concentration of attractions within a small area creates a high demand for travel within the corridor. The length of approximately one mile for the corridor eliminates walking as a mode for all but short trips. Travel within the corridor is by bicycle or motorized vehicles.

The situation within the Whitehead/Simonton Street corridor creates an environment which could foster a successful shuttle system or trolley.

It is recommended to create a downtown shuttle on a trial basis, circulating on a one-way loop. The loop should at first consist of Front, Whitehead, South and Simonton Streets. Headways should be no more than 15 min. and preferably 10 min. or less. The system should be free, because this will give an indication what the maximum ridership will be.

The vehicle used should be attractive but at the same time fit in with the character of the area it will service. A vehicle patterned after the San Francisco Trolley would be appropriate. The vehicle must be open to a large degree and informal enough to invite people to hop on and hop off, as they desire.

Ridership should be monitored and if ridership is low, the route should be altered as necessary. Duval street would be a possible alternative to Simonton or Whitehead Street.

Before the shuttle is put into service it should be preceded by an advertisement campaign announcing its creation.

The trial period should last for at least six months and preferably a year in order to get enough exposure and to build patronage. At the end of the trial period, if the ridership is low, the service should be discontinued. If the ridership is encouraging at the end of the trial period, the service should be extended. As the ridership builds, a fare should be considered to help cover the operating costs.

OLD TOWN PARKING

The availability of an abundance of parking within an area becomes an incentive for using the automobile and a disincentive for using transit. The total trip length, measured in time, is the time it takes a motorist to walk to his car plus the time it takes him to drive and find parking plus the time it takes him to walk from the parking space to his destination. An abundance of parking shortens that total trip length by reducing the amount of time it takes to find parking and by reducing the average walking time from parking to final destination (with an abundance of parking, the likelihood of finding parking close by is high). Transit can not compete with such short trip lengths.

Limiting the public parking in the Old Town area will act as a disincentive to automobile travel into the Old Town area by increasing the total trip length. This will help to make public transit a more viable alternative.

TRANSIT MARKETING

Transit marketing involves not only selling the system to prospective riders but also continually monitoring and evaluating it in terms of its responsiveness to patrons' service needs. The primary objectives of transit marketing are:

- 1) Develop a favorable image of the transit system and its activities.
- 2) Make the public aware of the scope of service available.

- 3) Promote and increase ridership - i.e., attract new riders and encourage present riders to use transit more frequently by continually responding to the patrons' service needs. This will improve the quality of the transit system's service.

Although transit ridership can be influenced by other variables, there have been instances where transit operators have largely attributed increases in ridership to comprehensive marketing programs based on aggressive promotional campaigns. Table 2 shows the amount of ridership increase in six bus systems throughout the United States that have been attributed to transit marketing.

Advertising and Promotion

Mass advertising can be effective in informing the public of transit benefits, special programs and of even greater importance, the range of routing and scheduling options and how to use the transit system.

Marketing efforts should be directed toward making the consumer aware that the transit in Key West is a valid alternative to the automobile. Passengers can acquire first hand knowledge by inducements such as free or reduced fares on designated days to encourage transit patronage. These days can be either sponsored by PATA, area merchants or a combination of both.

The transit vehicle can act as an advertising medium in itself. By its very presence it tells the potential patron about service that exists in that location. A smartly decorated bus can

Table 2 Ridership Increases in Six Bus Systems Attributed to Transit Marketing

LOCATION	INCREASE IN RIDERSHIP (%)	OTHER PROMOTIONAL PROGRAMS
Nashville, TN	25.8	Continuing service improvements (e.g., new routes and schedules); special fare programs (Nickle Day and reduced student fares); fareless flyer.
Duluth, MI	26.6	Instituted a telephone information center
Pittsburg, PA	22.2 9.2	Inexpensive weekend travel pass good for all travel modes; free fare on roving wild card bus; several free or reduced fare programs during off-peak hours (Tuesday Special, First Day of Spring); special fare programs.
Seattle, WA	19.1 4.7	Free "Magic Carpet" service in downtown area.
Portland, OR	20.0	Change from zonal to flat fare; institution of monthly transit pass; fare-free transit zones in CBD; new park-and-ride lots.
Akron, OH	19.2	Several new buses; several buses painted red/white/blue to help celebrate local centennial; fareless zone along downtown area; annual newspaper promotional supplement providing information on transit; special fare programs (Nickle Day, Dime Day); "Ride-Metro" iron-on decals placed in local paper.

increase visibility and drive the point home.

Through the use of trade exchanges, the transit fleet can be used to increase the company's advertising coverage. For example, local radio station can enter into an advertising exchange whereby radio stations call letters are posted on the fleet's buses in exchange for "free" radio air time for transit commercials.

User Information Aids

The dissemination of information to transit users is essential to a successful marketing program. The lack of clearly understandable route information can be a discouragement to potential patrons. Clearly written route information should be made available and easily accessible. Schedules can be posted at hotels and motels and distributed to guests as they check in. Route information can be printed in local newspapers and other local publications. Schedules and route information can be passed out at various other public buildings and places.

The creation of manned information centers in areas of high visibility can be effective for disseminating information. These information centers can be either permanent facilities or portable facilities that can be easily moved from place to place.

As the City of Key West grows, a permanent information center should be considered for Stock Island, adjacent to US 1. This center would distribute information on the availability of transportation services, as well as the location of parking facilities. In addition to providing information on transportation

services, the center can give out general tourist information on lodging, restaurants, and tourists attractions. Brochures as well as maps detailing places to go and places to see can be distributed here.

System Identification

The promotion of transit through marketing should also be complimented by a campaign to improve the identification of the system. A distinctive logogram and use of colors or word symbols on buses can aid in system identification and public awareness of transit improvements and modifications.

Attention must also be given to signs marking the bus stops. A clearly visible and distinctly marked sign must be posted at every bus stop. On buses, destination and route information, if possible, should appear on either the front, side or rear of the bus.

Program Monitoring and Evaluation

Monitoring service is necessary in order to evaluate the effectiveness of the service provided so to initiate corrective action, if necessary. For the system to grow and improve, it is important that weak points be identified and eliminated. Service evaluations can be incorporated as part of a marketing survey effort. These surveys can aid in determining the responsiveness of the system to customer needs and should be a continuing process

since travel habits and passenger requirements change from time to time.

Cards can be passed out by the bus driver as a means of soliciting customer comments. The cards can be filled out on the bus and returned to the bus driver or mailed to a central collection point.

Information on consumer attitudes can be solicited at permanent or portable information booths. These booths, as discussed earlier, should be located at heavily traveled public places to maximize the chances of receiving an abundance of usable information. Both methods of soliciting information have been used successfully in the past. Nashville gathered information on public opinions from portable information booths and both Miami and San Francisco have successfully gathered information from cards distributed from transit vehicles.

Existing Marketing Effort

PATA has, at this time, a marketing study underway. A marketing firm was hired to develop a marketing plan for Key West transit. The marketing firm will first identify the market they will be directing their attention to. When the market has been identified, the firm will do an analysis and determine what strategies would be most cost effective. The marketing firm will draw upon its resources and experience and develop a comprehensive marketing plan that is tailor made for Key West. Some of the ideas to be considered are discussed previously within this section.

Some marketing ideas have already been implemented under a pilot promotions program. Some of the pilot promotions that have been implemented to date are a "Name the Bus" contest and a "Design the Bus" contest. Prizes have been awarded to the winners. Advertisements have appeared in newspapers and television promoting the system. A new Logo was developed and unlimited student passes have been distributed.

The marketing firm will be analyzing the responses to these pilot promotion programs in order to better develop a comprehensive marketing plan.

Marketing Recommendations

It is recommended that the recommendations from the marketing study that is underway, be implemented as soon as possible.

In addition to the marketing study that is underway, a procedure for monitoring and evaluating the effectiveness of the service needs to be developed. The monitoring and evaluation of service should be a continuous effort. Information gleaned from the monitoring and evaluation effort can be used to make changes to the service, in order to maximize the service.

Route information needs to be made available to all potential patrons. Since the City of Key West has an influx of visitors almost continuously, information about the system has to be readily available. It is recommended to distribute route information at hotels/motels much like they distribute maps of the street system. It is recommended to print the bus routes in the

local newspaper periodically. It is also recommended to create information centers in areas of high visibility for the dissemination of transit information. These information centers can be either manned or unmanned and either permanent or portable.

Marketing of a transit system does not stop at the completion of a study. For a successful system, marketing of that system has to be a continuous process.

MULTI-MODAL TRANSIT TERMINAL

It is recommended to construct, as part of one of the new parking facilities in the Old Town area, a centralized transit terminal. This terminal would be a comfortable and attractive place where people could wait to switch travel modes while protected from the elements.

The transit terminal would be designed to accommodate the various modes of transportation in operation in Key West. The transit terminal would be a centralized point where residents, as well as visitors can access the regular bus service, taxi service and the newly created park-n-ride shuttle.

The transit terminal could also serve as an information center. Like the Stock Island information center described earlier, information on tourist attractions, restaurants, hotel/motels as well as information on the various modes of transportation available on the island, can be disseminated here. Space could be rented to private vendors, at a modest cost, to help bring in additional revenues.

The services provided at the terminal would provide convenient access to various points of interest in Key West for those motorists utilizing the parking facility.

TRANSIT SHELTERS

One factor known to influence travel decisions is the amount of excess time (time spent getting to a pickup point and/or time spent waiting for a vehicle) associated with different modes of travel. Research indicates that the amount of excess time involved in waiting for transit is generally perceived to be at least twice the value attached to travel time. Adding amenities, such as a sheltered waiting area at transit stops, tends to reduce the perceived waiting time.

Passenger shelters at stops along well-traveled routes and at interchange points can increase the attractiveness of transit shelters by diminishing the discomfort passengers experience while waiting to board.

The availability of the comfortable shelters are likely to motivate passengers to walk the added distance to the shelter to use the service.

It is recommended to place shelters at all park-n-ride facilities as well as major boarding points along the transit route.

TRANSIT CROSSWALKS

Transit passengers have experienced difficulty accessing the commercial establishments along North Roosevelt Boulevard from the transit stops on the north side of the road. This is due to the lack of protected crossing points. The only protected crossing points are at signalized intersections which are limited to only two points along a stretch of roadway that measures approximately 2.5 miles long. Deboarding passengers are forced to cross a heavily traveled roadway in order to gain access to the commercial developments on the opposite side of the road. The difficulty in accessing a major commercial district acts as a disincentive for utilizing transit.

It is recommended to provide additional protected crossing points to major attractors along North Roosevelt Boulevard. This can be accomplished by erecting signalized crossings which are pedestrian activated. When a transit vehicle discharges passengers, the passengers activate the signal which stops North Roosevelt Boulevard traffic, enabling the passengers to cross. All other times, the signal will be green for North Roosevelt Boulevard traffic.

BICYCLE ELEMENT

Bicycling could prove to be a prime means for reducing demand on the road system within Key West. The level terrain, sunny climate and short trips provide an excellent inducement to get people out of their cars and onto bicycles to make a majority of their trips.

The potential effect that a substantial shift from autos to human powered travel modes could have on reducing traffic congestion is great. For instance, recent estimates indicate that for short distance bicycle trips (i.e., less than five miles) for trip purposes that were onced served by autos, now represent over one billion vehicles-miles annually nationwide.

Bicycle usage should be encouraged as a means for reducing the numbers of motorized vehicles on the roadways. However, encouraging bicycle usage without adequate planning and the construction of proper facilities, can actually worsen congestion. Bicycle traffic that is allowed to move unrestricted on the roadways will slow motorized traffic down thus reducing capacity.

In order for bicycle usage to work as a reliever of congestion, a network of bicycle routes must be developed that reduce conflicts between motorized vehicles and non-motorized vehicles. These routes should be developed to provide safe and easy access between major vehicle and pedestrian traffic generators such as residential areas, employment centers, schools, shopping centers, parks and recreation areas.

The goal of the bicycle element is to encourage the use of

bicycles in order to: ease motor vehicle traffic congestion, encourage energy conservation and to encourage bicycling for health and recreation purposes.

BIKEWAY DESIGN STANDARDS AND FACILITY LOCATIONS

The primary resultant from a bicycle plan is the development and construction of an on the ground network of bicycle routes which connect the various landuses within the city.

Ideally these routes should be completely separated from motorized vehicles with some type of physical divider. However, in most urban areas the opportunities to provide this type of facility is limited. For this reason, streets and roads will serve as the bicyclist's primary network of routes.

Bicycle Facility Types

Bicycle facilities are those improvements or provisions made to public streets which will accommodate or encourage bicycling. There are three standard facilities used throughout the country and these are listed below.

1) Class I (Bike Path or Bike Trail): A separate trail for the exclusive use of bicyclists and pedestrians that may be entirely independent of other facilities or utilize existing highway right-of-way, with cross flows by motorists minimized.

2) Class II (Bike Lane): A portion of an existing street or sidewalk striped and reserved for exclusive or semi-exclusive use of bicycles and pedestrians. Though travel by motor vehicles is not allowed, disabled vehicle parking and cross flows by motorists

to gain access to driveways can be allowed.

3) Class III (Bike Route or Shared Roadway): A roadway or sidewalk which is signed as a bikeway and shared with motor vehicles or pedestrian traffic. However, no reserved lanes are provided.

Figure 7, illustrates these three commonly used bicycle configurations.

Design Widths

For Class I bike facilities, paths should be a minimum of four(4) feet wide for one-way traffic and eight(8) feet wide for two-way traffic, :

For Class II bike facilities, where street parking is not permitted the bike lane should be a minimum of four(4) feet. Where street parking is permitted, the bike lane should be a minimum of five(5) feet.

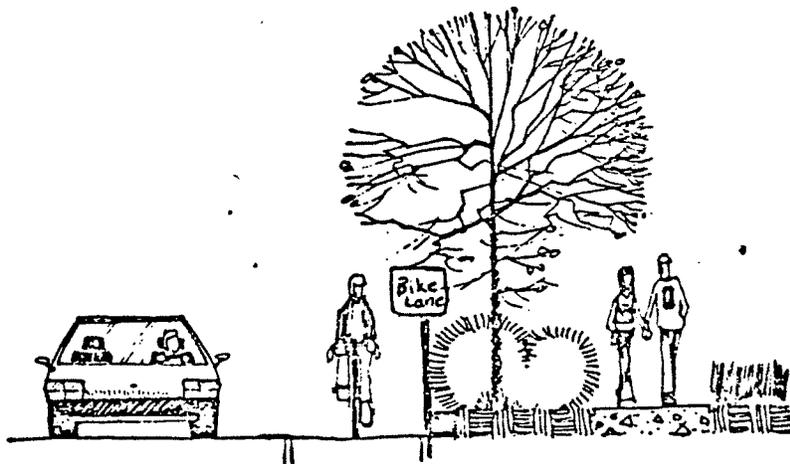
For Class III bike facilities, the roadway is shared with the motorists and the curb lane should be a minimum of fourteen(14) feet wide.

Vertical Clearance

Vertical clearance of a minimum of 8.5 feet should be provided between the bikeway pavement and any overhead obstruction (generally signs, cables and tree branches).



Class I Bikeway



Class II Bikeway



Class III Bikeway

Figure 7 Class I, II, and III Bikeway Configurations

Surface Condition

Pavement surfaces should be free of irregularities and the edge of the pavement should be uniform in width.

Bicycle Route Locations

Due to the limited availability of right-of-way, the narrow nature of the roadway and the permitting of on-street parking, the opportunities for constructing both the Class I and Class II bike facilities are limited. When the opportunities exists, bike routes should be upgraded, as much as practicable, to the appropriate standards stated previously.

Figure 8 shows the proposed bike route system for Key West. It is not the intent of the bicycle element to preclude the construction of additional bikeway facilities should the opportunities become available. New or improved bikeway facilities should always be considered during major roadway construction, street restripings and resurfacings. Bikeway facilities should also be considered when any roadside shoulder or drainage improvements are made.

In the Old Town area of Key West, as more off-street parking is created, on-street parking in the most congested areas should be considered for removal to accommodate bicycles. This will increase capacity of these segments by bettering the separation between the motorists and bicycles. This in turn makes it safer for bicycle traffic thus encouraging a greater usage of bikes.

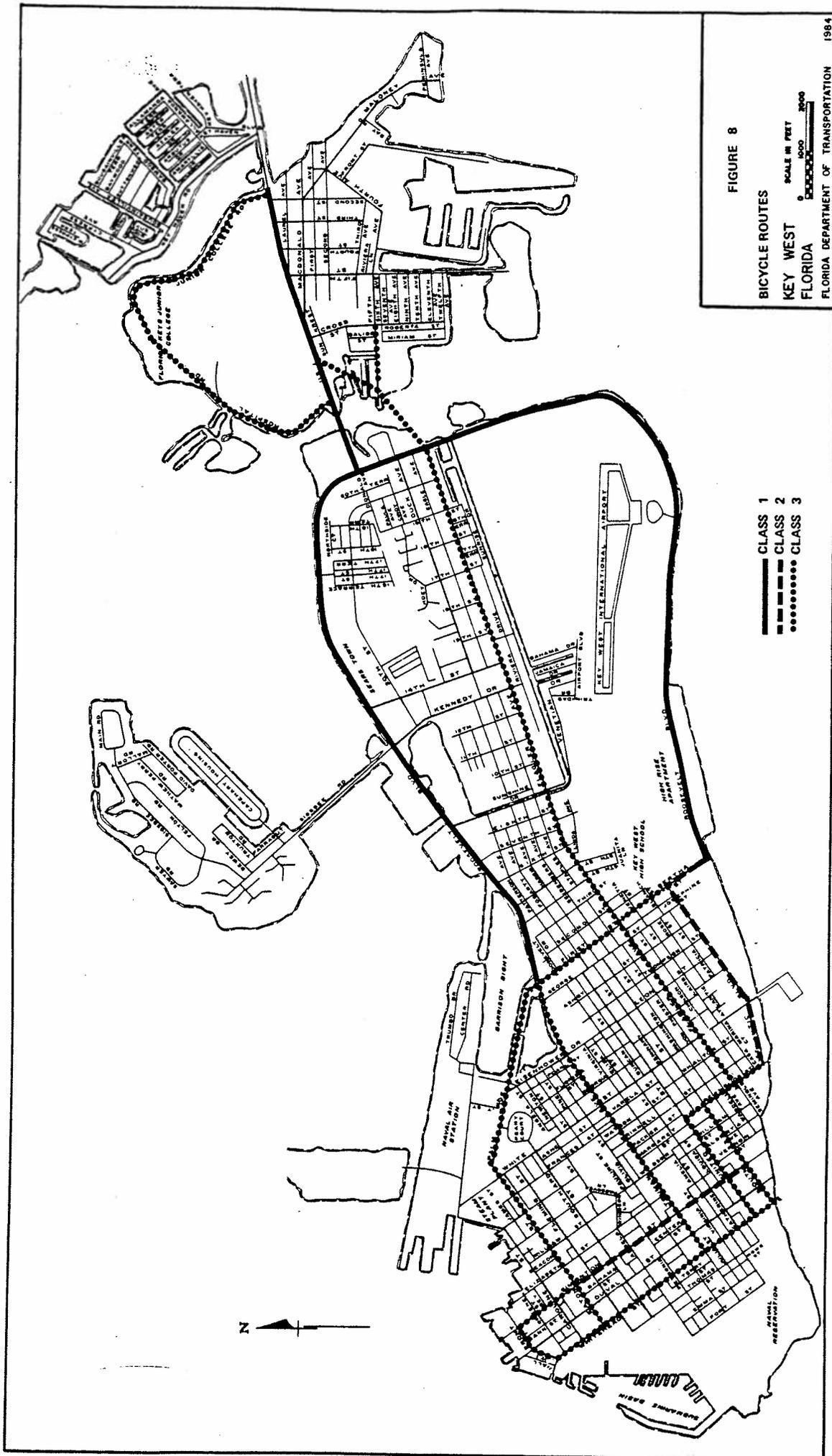


FIGURE 8

BICYCLE ROUTES
 KEY WEST
 FLORIDA
 FLORIDA DEPARTMENT OF TRANSPORTATION 1984

- CLASS 1
- CLASS 2
- CLASS 3

The Class III facilities along North Roosevelt Boulevard, South Roosevelt Boulevard and US 1 on Stock Island are existing facilities. The Class II facilities are located along Simonton Street, Atlantic Boulevard and on a small section of Bertha Street. The removal of on-street parking along Simonton Street will provide enough room for bicycle traffic to utilize an exclusive striped bicycle lane without impeding motorized vehicular traffic. Atlantic Boulevard and Bertha Street may require some minor widening in order to provide an exclusively striped bike lane. The remaining facilities are Class III facilities and will be shared by the motorists and bicyclists alike.

BICYCLE PARKING FACILITIES

The availability of adequate and secure bicycle parking is critical for encouraging the use of the bicycle for transportation.

The wide variety of bicycle parking devices fall into two categories of user needs; commuter or long-term parking and convenience or short-term parking.

The facilities should be designed so that it will not damage bicycles (bent rims are common with racks that only support one wheel). If bicycle parking is not properly designed and located, bicyclists will use trees, railings and other appurtenances. This practice can damage the appurtenance and create a hazard to pedestrians as well.

Commuter Parking (long-term)

Long-term parking is needed at locations where bicyclists have to leave their bikes for extended periods of time.

Locations where there is a high concentration of employment would be a prime example where long-term parking should be provided. State, County and City Governments employ the largest concentrations of people and should be considered as locations for long-term parking facilities.

These facilities should provide the bicyclists with the ability to secure the frame as well as both wheels and accessories. Ideally, long-term bicycle parking facilities should provide protection from the weather, as well as vandalism, as an added inducement. Bicycle lockers and attended storage areas are good examples of long-term parking facilities.

One more long-term parking facility should be centrally located within the Mallory Square area. This facility should be within easy walking distance from a majority of the attractions within the area between Mallory Square and Eaton Street. This will help encourage tourists and sightseers to park their bikes and walk to the various attractions.

Facility location and convenience in relation to a bicyclist's destination are major factors in the utilization of any parking facility.

Convenience Parking (short-term)

Short-term parking is needed at locations where there is a rapid turnover of bicycles. Bicyclists may use the facilities for extended periods of time if necessary, but the majority of the bicyclists will use the facility for an hour or less.

Short-term parking is needed at locations where bicyclists could satisfy their travel needs quickly and move on. Locations such as shopping centers, libraries, recreation areas, post offices and tourist attractions are a few types of places where short-term parking would be used.

These facilities should be convenient and near the entrance of the various trip generators. If at all possible, the short-term facilities should be in areas of high visibility to give the bicyclist a better feeling of security.

Parking Ordinance

One method of assuring adequate bicycle parking on a continuing basis is to adopt a bicycle parking ordinance for incorporation into the local zoning regulations. Such an ordinance would require developers to provide bicycle parking spaces based on square footage of building development.

BICYCLE ROUTE MAPS

A bicycle route map should be created and distributed to bicycle users in Key West. Bike route maps can help bicyclists locate bikeways, parking facilities and identify the relative suitability of different segments of the road system.

The bicycle route map should be distributed at bicycle rental shops, schools, hotels/motels, public buildings and other points frequented by bicyclists. This map would indicate the designated bicycle routes, roads that are not designated but are suitable for bicycle travel, as well as those roads that are not advisable for bicycle use.

This map could also indicate the roadway surface condition and the traffic situation. Roadway surface conditions could be categorized as poor, fair and smooth and the traffic situation could be categorized as light, medium or heavy. Surface condition and traffic are two primary factors which affect bicyclists choice of routes.

The map should also identify those locations where there are parking facilities available. Distinguishing between long-term and short-term would be helpful to the bicyclists and may help determine the route he/she takes.

Commercial establishments and points of interest could be included on the map. A modest fee might be collected for having a commercial establishment on the map. The fee could be used to defray the cost of the development and printing of the map. Any funds that are left over could be used to help maintain the

bicycle paths and route markers.

The maps would be good advertisement for the commercial side and would help reduce congestion by providing the most direct route to places within Key West.

This map should be geared to tourists. Local residents would already be familiar with the area and what the area has to offer.

BIKEWAY SYSTEM MAINTENANCE

The concept that a bicycle is a means of transportation and not just a source of recreation needs to be adopted if the bikeways are to become an intergral part of the overall transportation system. Responsibility for maintenance should be assigned to the same department which maintains the roadways.

It is recommended that the program be initiated by designating a bikeway manager capable of handling all aspects of maintenance including administration, inspection, cleaning and repair.

Citizens should be encouraged to report problem areas such as potholes, sand or debris build-up or any other problem restricting the operation of the bikeways. These problems should be brought to the attention of a central contact point. This person would most logically be the bikeway manager. He would have the authority to authorize maintenance work. Neglecting maintenance will render bicycle facilities unrideable, thus making the facility a liability to the community rather than an asset.

Bikeways and roadways with bicycle traffic are often

susceptible to having debris, such as glass or sand, accumulate in the area where bicyclists ride. Regular cleaning of the surface is necessary. A smooth surface, free of potholes and cracks should be provided. An excessive build-up of patch material should be avoided. This will cause a rough ride and create a hazard. Special care needs to be taken when patching potholes in bike paths. The patch material should be left flush to the surface leaving as smooth a surface as possible.

In addition to surface condition treatments, the maintenance program should include the replacement of damaged or stolen signs, repainting of bikeway striping and markings and trimming of low hanging vegetation and edge grass or plants to maintain adequate width, clearances and sight distances.

SIGNING ELEMENT

Signing is an inexpensive way to address many of Key West's immediate traffic needs. One of the primary problems facing motorists when driving in Key West for the first time is the lack of informative signs directing them to various destinations throughout town. Consequently, motorists circulate, creating more traffic than should be. With proper signage, motorists can proceed to their destinations via the most advantageous route.

Signage can also be used to redirect traffic to utilize those roadways with excess capacity thus creating some measure of relief to those roadways which are over capacity.

TRAFFIC REDIRECTION SIGNS

By far, traffic along North Roosevelt Boulevard is the worst of any roadway within the city. The traffic has reached the point where there are serious problems with congestion. However, there is very little that can be done to alleviate the problem. Along the southside of the roadway there is intense strip development and along the northside there is the Gulf of Mexico. Expanding the number of lanes along North Roosevelt Boulevard at this time is unacceptable. A viable solution is to redirect some of that traffic to alternate routes into the Old Town area. This can only be accomplished through signage. It is recommended to place signs at three alternate routes into town. The North Roosevelt Boulevard route can be signed as the business route into town, Flagler

Avenue can be signed as the primary route into town and South Roosevelt Boulevard can be signed as the scenic route into town. Figure 9 shows the three possible routes into town.

BICYCLE ROUTE SIGNS

The bicycle paths, as depicted in Figure 8, should be signed with a distinctive sign placed on a vertical post for all Class III bicycle facilities. For Class II or Class I facilities, signs should be placed either on vertical posts or stenciled on the pavement. Stenciling bike route markings on the pavement makes the motorists more aware of the division of the pavement between the motorists and the bicyclists. However, pavement markings have a tendency to get covered with sand and trash and require more costly maintenance.

Those facilities which are particularly unsafe for bicyclists should be signed to discourage bicycle usage. Signs could be erected which read "Not a Bicycle Path" or "Not a Bike Throughway".

OFF-STREET PARKING SIGNS

The lack of direction to parking facilities causes the motorist to drive around searching for parking. This compounds an already serious problem. By providing adequate signing that directs motorists to available parking facilities, traffic can be reduced by reducing the need to circulate while searching for a

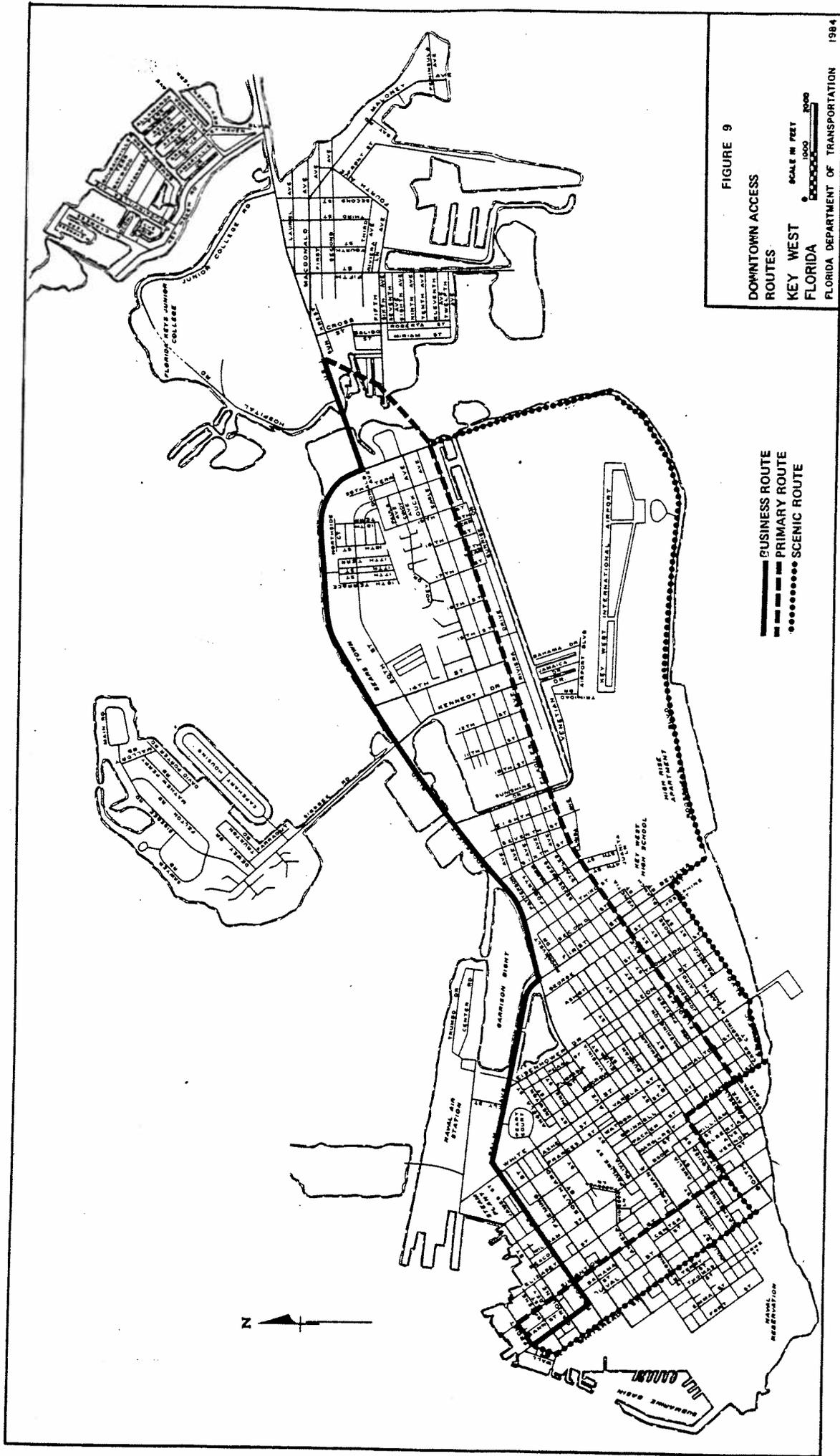


FIGURE 9

DOWNTOWN ACCESS
ROUTES

KEY WEST
FLORIDA

SCALE IN FEET
0 500 1000

FLORIDA DEPARTMENT OF TRANSPORTATION 1984

— BUSINESS ROUTE
- - - PRIMARY ROUTE
..... SCENIC ROUTE

parking space.

BUS STOP SIGNS

Not only can a distinctive logogram and smartly colored buses bring about public awareness of the transit system, so can bus stop markings. Bus stop markers can make potential riders aware of the extent of the service by telling potential patrons that service exists in that location.

All bus stops should be marked and signs should be erected directing motorists to the nearest park-n-ride facility.

MISCELLANEOUS INFORMATION SIGNS

These signs should be designed to catch the eye and give directions to the various points of interest. Signs should be erected directing motorists to the beaches along AlA, hotels and motels, shopping centers and downtown. Tourist attractions such as the southern most point, "sunset" at Mallory Square, Fort Taylor State park and other points of interest should be clearly marked.

Information signs should be attractive, easy to pickout and fun to read. Proper signing can be an inexpensive and effective way to reduce unnecessary traffic problems.

RECOMMENDED TRAFFIC CIRCULATION PLAN

The following lists the Traffic Circulation Plan improvements as recommended by the Study Advisory Committee. The plan is listed by Element, without regard to project priority. A project priority listing is included as Appendix D.

PROJECT LISTING

HIGHWAY ELEMENT

Advisory Committee Projects

1. N. Roosevelt Blvd - Widen to Standards
2. Flagler Avenue - Improve to four lanes
3. Truman Avenue - Improve to three lanes
4. South Street - Establish as one-way Eastbound
5. United Street - Establish as one-way Westbound
6. Establish a new bridge over Cow Key channel

Flow Characteristics Improvement Projects

1. South Street

- a) Repave - Vernon to Simonton Street
- Reynolds to Whitehead Street
- b) Continue Curbs - Reynolds to Whitehead Street
- c) Stripe and/or Restripe
- d) Change Stop at Grinnell Street

2. United Street

- a) Change Stop at Duval Street
- b) Stripe and/or Restripe

3. Duval Street - Stripe and/or Restripe

4. Whitehead Street

- a) Repave - United Street to Truman Avenue
- Southard to Caroline Street
- b) Stripe and/or Restripe

5. Simonton Street
 - a) Repave - United to Eaton Street
 - b) Stripe and/or Restripe
6. Front Street - Stripe and/or Restripe
7. Caroline Street
 - a) Repave - Whitehead to Grinnell Street
 - b) Stripe and/or Restripe
8. Grinnell Street
 - a) Repave - Caroline to Eaton Street
 - b) Stripe and/or Restripe
9. Eaton Street - Stripe and/or Restripe
10. Fleming Street
 - a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
11. Southard Street
 - a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
12. Truman Avenue - Stripe and/or Restripe
13. S. Roosevelt Blvd - Stripe and/or Restripe
14. Bertha/First Street
 - a) Correct Offset
 - b) Construct Curb - S. Roosevelt Blvd to
Flagler Avenue
 - c) Repave - S. Roosevelt Blvd to Flagler
Avenue
 - d) Stripe and/or Restripe
15. Palm Avenue - Stripe and/or Restripe
16. White Street
 - a) Repave - Truman to Eaton Street
 - b) Stripe and/or Restripe
17. Reynolds Street - Stripe and/or Restripe

18. Atlantic Avenue

- a) Remove Stop with Reynolds Street
- b) Construct Curb - Bertha to Reynolds Street
- c) Repave - South to North Roosevelt Blvd
- d) Stripe and/or Restripe

19. Flagler Avenue - Stripe and/or Restripe

Safety Improvements for N. Roosevelt Blvd

1. Provide Street Lighting for N. Roosevelt Blvd
(Project to be constructed as part of the
N. Roosevelt Blvd Improvement Project)
2. Implement Roadside Visibility Ordinance

PARKING ELEMENT

Create Additional Offstreet Parking

1. City Electric Parking Facility
2. Jose' Marti Parking Facility (Includes
Multi-Modal Terminal)

On Street Parking Removal - Simonton Street .

TRANSIT ELEMENT

Alter Existing Transit Route to Accommodate
Highway Element Improvements

Create a Park-n-Ride Shuttle

Create a Downtown Shuttle

Limit Public Parking In Oldtown

Transit Marketing

1. Implement Marketing Study Recommendations
2. Monitor & Evaluate Transit Service
3. Distribute Transit Route Information
4. Create Transit Information Centers

Create a Multi-Modal Transit Terminal (Included
with the Jose' Marti Parking
Facility)

Provide Transit Shelters

Provide Transit Cross Walks on N. Roosevelt Blvd

BICYCLE ELEMENT

Construct Bicycle Routes

Bicycle Parking Facilities

1. Construct Commuter Bicycle Parking Facilities
2. Construct Convenience Bicycle Parking Facilities
3. Implement Bicycle Parking Ordinance

Provide Bicycle Route Maps

Bikeway System Maintenance

1. Assign Bikeway Maintenance Responsibilities
2. Designate Bikeway Manager
3. Create Bikeway Contact Point

SIGNING ELEMENT

Install Traffic Redirection Signs

Install Bicycle Route Signs

Install Off-Street Parking Signs

Install Bus Stop Signs

Install Miscellaneous Information Signs

PLAN COSTS

The total estimated cost to implement the projects as described in this report is \$15,438,350. Additionally, it will cost approximately \$35,000 per year to hire a person and/or persons to help manage the Bikeway system maintenance program.

The individual project costs as shown in Appendix A are rough costs, and are meant to show the relative differences between projects only.

As each project moves into the implementation stage, more details about the construction techniques and materials needed

will be known and the actual costs may vary.

PRIORITIZATION OF PROJECTS

The prioritization of projects for the Key West Traffic Circulation study was a completely subjective process. Each project was judged in five categories. These categories are:

- 1) Cost of implementation
- 2) Ability to relieve congestion
- 3) Ability to improve safety
- 4) Ability to improve the historical environment
- 5) Personal judgment

Each judgment category was given a numerical score of 1 to 10. The numerical score for each category was totaled and that score became the projects ranking score.

EXPLANATION OF RATING SCALE

The following summarizes the rating scale for each of the five judgment categories. Intermediate scores can be given to each project depending on what degree each project satisfies the judgment categories.

- 1) Cost of implementation

If the cost of implementation was low, the project was rated a 10. If the cost of implementation was high, the project was rated as low as 1.

- 2) Ability to relieve congestion

If the ability to relieve congestion was great, the project was rated a 10. If the ability to relieve congestion was low, the project was rated as low as 1.

3) Ability to improve safety

If the ability to improve safety was great, the project was rated a 10. If the ability to improve safety was low, the project was rated as low as 1.

4) Ability to improve historical environment

If the ability to improve/maintain the historical environment was high, the project was rated a 10. If the ability to improve/maintain the historical environment was low, the project was rated as low as 1.

5) Personal judgment

If the rater felt strongly that the project would be a benefit to Key West, the project was rated a 10. If the rater felt that the project would be a detriment, the project was rated as low as 1.

The final score and rankings, were determined from the average of the individual Study Advisory Committee members scores.

EXPLANATION OF APPENDICES

Appendix A contains the project implementation costs that were used for prioritization. These costs are very rough estimates and are meant for use only as a means of determining the relative difference in costs for each project.

Appendix B contains a sample prioritization score sheet that was used for this analysis.

Appendix C contains the recommended project priorities as determined by the Study Advisory Committee. The final score is the average score among the committee members.

Appendix D contains the Recommended Traffic Circulation Study projects listed by priority in decending order of importance.

APPENDIX

APPENDIX A

**RECOMMENDED IMPROVEMENTS AND COSTS
(IN DOLLARS)**

HIGHWAY ELEMENT

Advisory Committee Projects

1. N. Roosevelt Blvd - Widen to Standards	714,000
2. Flagler Avenue - Improve to four lanes	194,000
3. Truman Avenue - Improve to three lanes	4,000
4. South Street - Establish as one-way Eastbound	30,000
5. United Street - Establish as one-way Westbound ...	30,000
6. Establish a new bridge over Cow Key Channel	2,475,000

Flow Characteristics Improvement Projects

1. South Street

a) Repave - Vernon to Simonton Street	7,000
- Reynolds to Whitehead Street	14,000
b) Continue Curbs - Reynolds to Whitehead	71,000
Street	
c) Stripe and/or Restripe	7,000
d) Change Stop at Grinnell Street	700

	99,700

2. United Street

a) Change Stop at Duval Street	700
b) Stripe and/or Restripe	7,000

	7,700

3. Duval Street - Stripe and/or Restripe	9,000
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4. Whitehead Street

a) Repave - United Street to Truman	23,000
Avenue	
- Southard to Caroline Street	26,000
b) Stripe and/or Restripe	10,000

	59,000

5. Simonton Street

a) Repave - United to Eaton Street	63,000
b) Stripe and/or Restripe	10,000

	73,000

6. Front Street - Stripe and/or Restripe	2,000
7. Caroline Street	
a) Repave - Whitehead to Grinnell Street	46,000
b) Stripe and/or Restripe	5,000

	51,000
8. Grinnell Street	
a) Repave - Caroline to Eaton Street	8,000
b) Stripe and/or Restripe	1,000

	9,000
9. Eaton Street - Stripe and/or Restripe	7,000
10. Fleming Street	
a) Repave - Whitehead to White Street	61,000
b) Stripe and/or Restripe	5,000

	66,000
11. Southard Street	
a) Repave - Whitehead to White Street	61,000
b) Stripe and/or Restripe	5,000

	66,000
12. Truman Avenue - Stripe and/or Restripe	7,000
13. S. Roosevelt Blvd. - Stripe and/or Restripe	54,000
14. Bertha/First Street	
a) Correct Offset	217,000
b) Construct Curb - S. Roosevelt Blvd to	89,000
Flagler Avenue	
c) Repave - S. Roosevelt Blvd to Flagler	1,203,000
Avenue	
d) Stripe and/or Restripe	7,000

	1,516,000
15. Palm Avenue - Stripe and/or Restripe	7,000

16. White Street

a) Repave - Truman to Eaton Street	42,000
b) Stripe and/or Restripe	11,000

	53,000

17. Reynolds Street - Stripe and/or Restripe 3,500

18. Atlantic Avenue

a) Remove Stop with Reynolds Street	200
b) Construct Curb - Bertha to Reynolds Street	178,000
c) Repave - South to North Roosevelt Blvd	1,218,000
d) Stripe and/or Restripe	8,000

	1,404,200

19. Flagler Avenue - Stripe and/or Restripe 37,000

Safety Improvements for N. Roosevelt Blvd

1. Provide Street Lighting for N. Roosevelt Blvd
(Project to be constructed as part of the
N. Roosevelt Blvd Improvement Project)
2. Implement Roadside Visibility Ordinance 10,000

PARKING ELEMENT

Create Additional Offstreet Parking

1. City Electric Parking Facility 1,800,000
2. Jose' Marti Parking Facility (Includes
Multi-Modal Terminal) 6,000,000

On-Street Parking Removal - Simonton Street 5,000

TRANSIT ELEMENT

Alter Existing Transit Route to Accommodate 2,000
Highway Element Improvements

Create a Park-n-Ride Shuttle (2 @ \$75,000 ea.) 150,000

Create a Downtown Shuttle (2 @ 100,000 ea.) 200,000

Limit Public Parking In Oldtown 1,000

Transit Marketing

1. Implement Marketing Study Recommendations 50,000
2. Monitor & Evaluate Transit Service 10,000

3. Distribute Transit Route Information	10,000
4. Create Transit Information Centers	15,000
Create a Multi-Modal Transit Terminal (Included with the Jose' Marti Parking Facility)	
Provide Transit Shelters (20 @ 2,500 ea.)	50,000
Provide Transit Cross Walks on N. Roosevelt Blvd	40,000
BICYCLE ELEMENT	
Construct Bicycle Routes	30,000
Bicycle Parking Facilities	
1. Construct Commuter Bicycle Parking	20,000
Facilities	
2. Construct Convenience Bicycle Parking	5,250
Facilities	
3. Implement Bicycle Parking Ordinance	10,000
Provide Bicycle Route Maps	10,000
Bikeway System Maintenance	
1. Assign Bikeway Maintenance Responsibilities.....	25,000/yr
2. Designate Bikeway Manager	5,000/yr
3. Create Bikeway Contact Point	5,000/yr
SIGNING ELEMENT	
Install Traffic Redirection Signs	15,000
Install Bicycle Route Signs	10,000
Install Off-Street Parking Signs	2,000
Install Bus Stop Signs	5,000
Install Miscellaneous Information Signs	10,000

APPENDIX B

PROJECT PRIORITAZATION SCORE SHEET

HIGHWAY ELEMENT

Advisory Committee Projects

- 1. N. Roosevelt Blvd - Widen to Standards (_ _ _ _)
- 2. Flagler Avenue - Improve to four lanes (_ _ _ _)
- 3. Truman Avenue - Improve to three lanes (_ _ _ _)
- 4. South Street - Establish as one-way EB (_ _ _ _)
- 5. United Street - Establish as one-way WB ... (_ _ _ _)
- 6. Establish new bridge over Cow Key Channel . (_ _ _ _)

Flow Characteristics Improvement Projects

- 1. South Street (_ _ _ _)
 - a) Repave - Vernon to Simonton Street
- Reynolds to Whitehead Street
 - b) Continue Curbs - Reynolds to Whitehead
Street
 - c) Stripe and/or Restripe
 - d) Change Stop at Grinnell Street
- 2. United Street (_ _ _ _)
 - a) Change Stop at Duval Street
 - b) Stripe and/or Restripe
- 3. Duval Street - Stripe and/or Restripe (_ _ _ _)
- 4. Whitehead Street (_ _ _ _)
 - a) Repave - United Street to Truman
Avenue
- Southard to Caroline Street
 - b) Stripe and/or Restripe
- 5. Simonton Street (_ _ _ _)
 - a) Repave - United to Eaton Street
 - b) Stripe and/or Restripe
- 6. Front Street - Stripe and/or Restripe (_ _ _ _)
- 7. Caroline Street (_ _ _ _)
 - a) Repave - Whitehead to Grinnell Street
 - b) Stripe and/or Restripe

- 8. Grinnell Street (_ _ _ _)
 - a) Repave - Caroline to Eaton Street
 - b) Stripe and/or Restripe
- 9. Eaton Street - Stripe and/or Restripe (_ _ _ _)
- 10. Fleming Street (_ _ _ _)
 - a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
- 11. Southard Street (_ _ _ _)
 - a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
- 12. Truman Avenue - Stripe and/or Restripe (_ _ _ _)
- 13. S. Roosevelt Blvd. - Stripe and/or Restripe (_ _ _ _)
- 14. Bertha/First Street (_ _ _ _)
 - a) Correct Offset
 - b) Construct Curb - S. Roosevelt Blvd to
Flagler Avenue
 - c) Repave - S. Roosevelt Blvd to Flagler
Avenue
 - d) Stripe and/or Restripe
- 15. Palm Avenue - Stripe and/or Restripe (_ _ _ _)
- 16. White Street (_ _ _ _)
 - a) Repave - Truman to Eaton Street
 - b) Stripe and/or Restripe
- 17. Reynolds Street - Stripe and/or Restripe... (_ _ _ _)
- 18. Atlantic Avenue (_ _ _ _)
 - a) Remove Stop with Reynolds Street
 - b) Construct Curb - Bertha to Reynolds
Street
 - c) Repave - South to North Roosevelt Blvd
 - d) Stripe and/or Restripe
- 19. Flagler Avenue - Stripe and/or Restripe ... (_ _ _ _)

Safety Improvements for N. Roosevelt Blvd

- 1. Provide Street Lighting for N. Roosevelt Blvd
(Project to be Constructed as part of the
N. Roosevelt Blvd Improvement Project)
- 2. Implement Roadside Visibility Ordinance ... (_ _ _ _)

PARKING ELEMENT

Create Additional Offstreet Parking

- 1. City Electric Parking Facility (_ _ _ _)
- 2. Jose' Marti Parking Facility (Includes (_ _ _ _)
Multi-Modal Terminal)

On-Street Parking Removal - Simonton Street (_ _ _ _)

TRANSIT ELEMENT

Alter Existing Transit Route to Accommodate (_ _ _ _)
Highway Element Improvements

Create a Park-n-Ride Shuttle (_ _ _ _)

Create a Downtown Shuttle (_ _ _ _)

Limit Public Parking In Oldtown (_ _ _ _)

Transit Marketing

- 1. Implement Marketing Study Recommendations . (_ _ _ _)
- 2. Monitor & Evaluate Transit Service (_ _ _ _)
- 3. Distribute Transit Route Information (_ _ _ _)
- 4. Create Transit Information Centers (_ _ _ _)

Create a Multi-Modal Transit Terminal (Included
with the Jose' Marti Parking
Facility)

Provide Transit Shelters (_ _ _ _)

Provide Transit Cross Walks on N. Roosevelt Blvd (_ _ _ _)

BICYCLE ELEMENT

Construct Bicycle Routes (_ _ _ _)

Bicycle Parking Facilities

- 1. Construct Commuter Bicycle Parking (_ _ _ _)
Facilities
- 2. Construct Convenience Bicycle Parking (_ _ _ _)
Facilities

- 3. Implement Bicycle Parking Ordinance (_ _ _ _)
- Provide Bicycle Route Maps (_ _ _ _)
- Bikeway System Maintenance
 - 1. Assign Bikeway Maintenance Responsibilities (_ _ _ _)
 - 2. Designate Bikeway Manager (_ _ _ _)
 - 3. Create Bikeway Contact Point (_ _ _ _)

SIGNING ELEMENT

- Install Traffic Redirection Signs (_ _ _ _)
- Install Bicycle Route Signs (_ _ _ _)
- Install Off-Street Parking Signs (_ _ _ _)
- Install Bus Stop Signs (_ _ _ _)
- Install Miscellaneous Information Signs (_ _ _ _)

APPENDIX C

PROJECT PRIORITAZATION SCORES

HIGHWAY ELEMENT

Advisory Committee Projects

- 1. N. Roosevelt Blvd - Widen to Standards 40.7
- 2. Flagler Avenue - Improve to four lanes 39.8
- 3. Truman Avenue - Improve to three lanes 36.0
- 4. South Street - Establish as one-way EB 39.5
- 5. United Street - Establish as one-way WB 39.3
- 6. Establish new bridge over Cow Key Channel 34.1

Flow Characteristics Improvement Projects

- 1. South Street 38.5
 - a) Repave - Vernon to Simonton Street
- Reynolds to Whitehead Street
 - b) Continue Curbs - Reynolds to Whitehead
Street
 - c) Stripe and/or Restripe
 - d) Change Stop at Grinnell Street
- 2. United Street 38.7
 - a) Change Stop at Duval Street
 - b) Stripe and/or Restripe
- 3. Duval Street - Stripe and/or Restripe 37.8
- 4. Whitehead Street 40.6
 - a) Repave - United Street to Truman
Avenue
- Southard to Caroline Street
 - b) Stripe and/or Restripe
- 5. Simonton Street 40.5
 - a) Repave - United to Eaton Street
 - b) Stripe and/or Restripe
- 6. Front Street - Stripe and/or Restripe 38.6
- 7. Caroline Street 37.0
 - a) Repave - Whitehead to Grinnell Street
 - b) Stripe and/or Restripe

- 8. Grinnell Street 36.5
 - a) Repave - Caroline to Eaton Street
 - b) Stripe and/or Restripe
- 9. Eaton Street - Stripe and/or Restripe 36.8
- 10. Fleming Street 37.2
 - a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
- 11. Southard Street 37.8
 - a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
- 12. Truman Avenue - Stripe and/or Restripe 40.7
- 13. S. Roosevelt Blvd. - Stripe and/or Restripe .. 33.9
- 14. Bertha/First Street 39.1
 - a) Correct Offset
 - b) Construct Curb - S. Roosevelt Blvd to
Flagler Avenue
 - c) Repave - S. Roosevelt Blvd to Flagler
Avenue
 - d) Stripe and/or Restripe
- 15. Palm Avenue - Stripe and/or Restripe 35.0
- 16. White Street 38.6
 - a) Repave - Truman to Eaton Street
 - b) Stripe and/or Restripe
- 17. Reynolds Street - Stripe and/or Restripe..... 37.7
- 18. Atlantic Avenue 34.0
 - a) Remove Stop with Reynolds Street
 - b) Construct Curb - Bertha to Reynolds
Street
 - c) Repave - South to North Roosevelt Blvd
 - d) Stripe and/or Restripe
- 19. Flagler Avenue - Stripe and/or Restripe 34.8

Safety Improvements for N. Roosevelt Blvd

1. Provide Street Lighting for N. Roosevelt Blvd
(Project to be constructed as part of the
N. Roosevelt Blvd Improvement Project)
2. Implement Roadside Visibility Ordinance 41.0

PARKING ELEMENT

Create Additional Offstreet Parking

1. City Electric Parking Facility 33.2
2. Jose' Marti Parking Facility (Includes 37.2
Multi-Modal Terminal)

On-Street Parking Removal - Simonton Street 43.2

TRANSIT ELEMENT

Alter Existing Transit Route to Accommodate 36.6
Highway Element Improvements

Create a Park-n-Ride Shuttle 40.3

Create a Downtown Shuttle 39.3

Limit Public Parking In Oldtown 40.8

Transit Marketing

1. Implement Marketing Study Recommendations 39.7
2. Monitor & Evaluate Transit Service 39.7
3. Distribute Transit Route Information 41.1
4. Create Transit Information Centers 40.1

Create a Multi-Modal Transit Terminal (Included
with the Jose' Marti Parking
Facility)

Provide Transit Shelters 38.7

Provide Transit Cross Walks on N. Roosevelt Blvd .. 43.2

BICYCLE ELEMENT

Construct Bicycle Routes 44.4

Bicycle Parking Facilities

1. Construct Commuter Bicycle Parking 37.7
Facilities
2. Construct Convenience Bicycle Parking 40.8
Facilities

3. Implement Bicycle Parking Ordinance	39.7
Provide Bicycle Route Maps	43.1
Bikeway System Maintenance	
1. Assign Bikeway Maintenance Responsibilities ..	40.7
2. Designate Bikeway Manager	38.9
3. Create Bikeway Contact Point	38.7

SIGNING ELEMENT

Install Traffic Redirection Signs	46.3
Install Bicycle Route Signs	45.4
Install Off-Street Parking Signs	45.6
Install Bus Stop Signs	45.4
Install Miscellaneous Information Signs	42.3

- 19 Create Park-n-Ride Shuttle
- 20 Create Transit Information Centers
- 21 Flagler Avenue Improve to Four Lanes
- 22 Implement Marketing Study
Recommendations
- 22 Monitor & Evaluate Transit Service
- 22 Implement Bicycle Parking Ordinance
- 25 South Street - Establish as one-way EB
- 26 United Street - Establish as one-way WB
- 26 Create a Downtown Shuttle
- 28 Bertha/First Street
 - a) Correct Offset
 - b) Construct Curb - S. Roosevelt Blvd to
Flagler Avenue
 - c) Repave - S. Roosevelt Blvd to Flagler
Avenue
 - d) Stripe and/or Restripe
- 29 Designate Bikeway Manager
- 30 Create Bikeway Contact Point
- 30 Provide Transit Shelters
- 30 United Street
 - a) Change Stop at Duval Street
 - b) Stripe and/or Restripe
- 33 Front Street - Stripe and/or Restripe
- 33 White Street
 - a) Repave - Truman to Eaton Street
 - b) Stripe and/or Restripe

- 35 South Street
- a) Repave - Vernon to Simonton Street
- Reynolds to Whitehead Street
 - b) Continue Curbs - Reynolds to Whitehead Street
 - c) Stripe and/or Restripe
 - d) Change Stop at Grinnell Street
- 36 Duval Street - Stripe and/or Restripe
- 36 Southard Street
- a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
- 38 Reynolds Street - Stripe and/or Restripe
- 38 Construct Commuter Bicycle Parking Facilities
- 40 Construct Jose' Marti Parking Facility
- 40 Fleming Street
- a) Repave - Whitehead to White Street
 - b) Stripe and/or Restripe
- 42 Caroline Street
- a) Repave - Whitehead to Grinnell Street
 - b) Stripe and/or Restripe
- 43 Eaton Street - Stripe and/or Restripe
- 44 Grinnell Street
- a) Repave - Caroline to Eaton Street
 - b) Stripe and/or Restripe
- 45 Alter Existing Transit Routes to Accomodate Highway Element Improvements
- 46 Truman Avenue - Improve to Three Lanes
- 47 Palm Avenue - Stripe and/or Restripe
- 48 Flagler Avenue - Stripe and/or Restripe
- 49 Establish new bridge over Cow Key Channel

50

Atlantic Avenue

- a) Remove Stop with Reynolds Street
- b) Construct Curb - Bertha to Reynolds Street
- c) Repave - South to North Roosevelt Blvd
- d) Stripe and/or Restripe

51

S. Roosevelt Blvd - Stripe and/or Restripe

52

Create City Electric Parking Facility