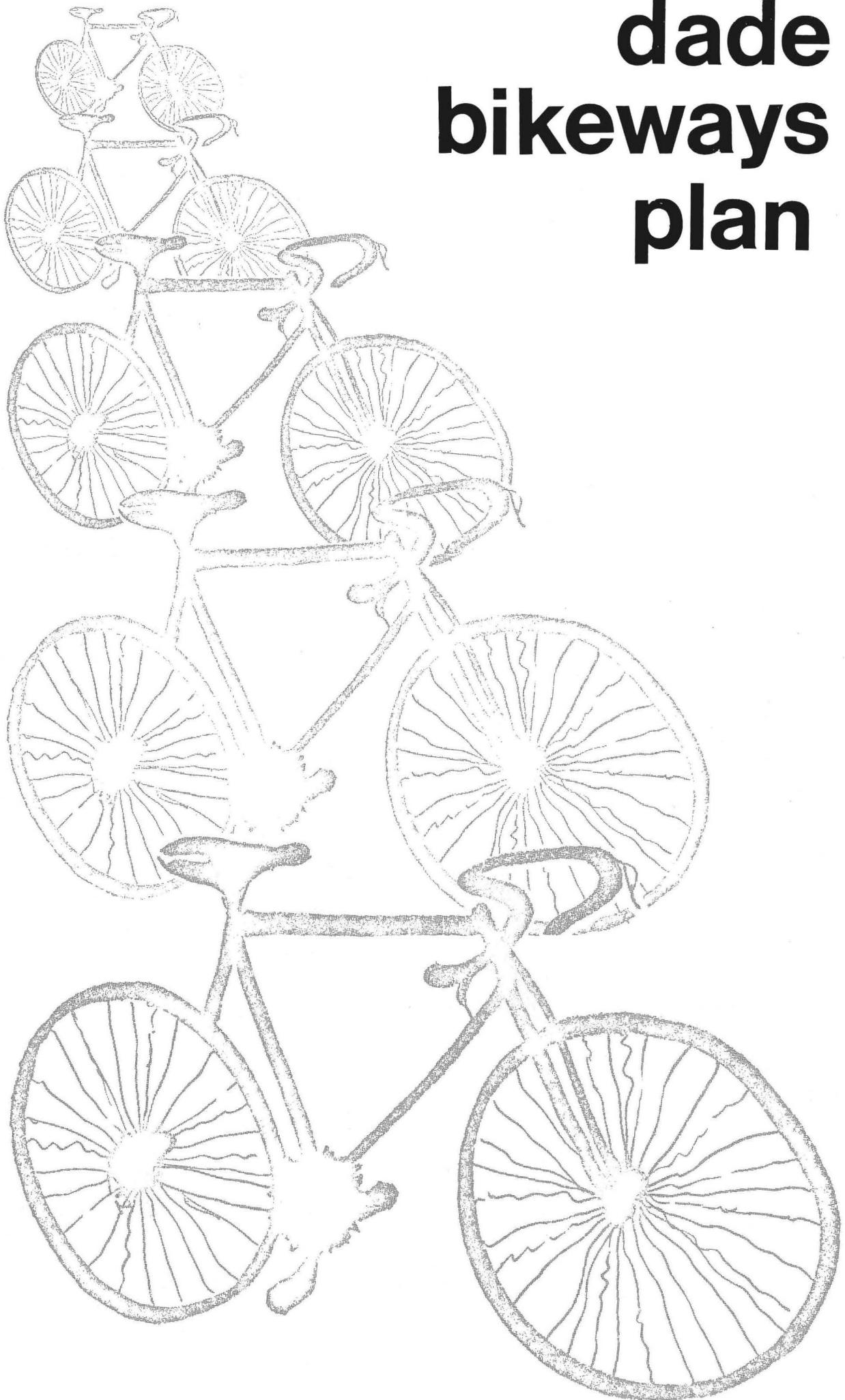


proposed
**dade
bikeways
plan**



PROPOSED
DADE COUNTY BIKEWAYS PLAN

Prepared by
Metropolitan Dade County Planning Department
1351 N. W. 12th Street

April, 1972

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DADE COUNTY BIKEWAYS PLAN

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Introduction

The Dade County Bikeways Plan has been prepared at the request of the County Manager in recognition of the need for a coordinated system of bikeways in Dade County to better meet the recreation and transportation needs of our residents.

The Plan is a joint effort of the Dade County Park and Recreation, Planning, Public Works, and Traffic and Transportation Departments in cooperation with the City of Miami Department of Public Works and the City of Miami Beach Planning and Zoning Department.

It is expected that this Plan will be of use to policy-makers and cyclists in creating the environment for safe cycling by effectively guiding the allocation of our public resources, educating the public to the needs of cycling, and recommending actions to accompany the expenditure of public funds. The Plan should not be considered a static document but rather as a means for stimulating public commentary and input into a continuing process of providing for the bicycle within the structure of the urban area.

I. The Need for Bikeways

A. Demand

The bicycle has again attained the popularity it once enjoyed in the United States, and Dade County residents are actively participating in this bicycle boom. Before the advent of the automobile, bicycles were widely used in the United States for recreation and transportation. But with increasing numbers of automobiles came the concomitant decrease in bicycles and bicycle riding, especially among adults. Now the trend has reversed.

It is estimated that over 8.5 million bicycles were sold in 1971 in the United States, compared to 3.7 million in 1960. The number of cyclists is estimated at 80 million, a startling increase from the 57 million estimated in 1965. In Dade County, a 1968 survey found that over 25 percent of the resident population participated in bicycling as a recreational activity; only boating, fishing, swimming, and picnicking enjoyed a greater share of Dade County residents' attention.

Add to the resident demand for bicycles and bicycle-riding facilities the seasonal and tourist population demand for recreation, and the magnitude of the activity becomes clear.

One indication of the bicycle explosion in Miami and Dade County is the number of bicycles registered by the Public Safety Department. From April, 1971 (when a law was passed requiring the registration of all bicycles sold in the County), through the end of the year, over 48,000 bicycles were registered. In January, 1972, another 12,000 bicycles were registered.

It is easy to understand why cycling is so popular in the Miami area. Unquestionably, the major influences are climate and topography. Dade County's mild winter and moderate summer weather characterized by warm temperatures prevailing throughout the year allows year-round bicycling. The topography merely reinforces the desirability of the area for cycling--the terrain is very flat, making it easy to pedal for long distances without becoming tired.

Several other trends may also be responsible in part for the bicycle boom in Dade County and the rest of the United States. More people have more leisure time than ever before, and Dade Countians have always been leisure-oriented. The search for activities based in the natural environment has had a positive impact on the demand. And, of course, the anti-pollution movement has led to increased interest in bicycles as a non-polluting means of transportation.

B. Why People Cycle

1. Recreation

More people ride for fun than any other reason. The advent of suburban living has created many quiet, curvilinear streets in low density housing areas that are perfect for casual bicycle riding. And the introduction of three, five, and ten speed bicycles have made it easy to ride up a grade or against wind. The bicycle also offers the means for observing one's surroundings more closely while riding, but still be able to travel swiftly when needed. It is a logical compromise between walking and driving a car.

2. Transportation

Increasing numbers of commuters use the bicycle every day to get to and from work, especially in the large cities that suffer from acute congestion. They have found it a pleasant alternative to the aggravating and expensive automobile commuting ritual. College campuses are a stronghold of bicycle transport, with several universities constructing an elaborate network of bicycle paths connecting all parts of the campus. And, of course, many school children are dependent on the bicycle as a means of transportation.

In Miami, bicycle commuters haven't reached the level of say, San Francisco or Chicago, but the trend is upward. For shopping and visiting, the bicycle is quite popular in several areas of Miami, especially Coconut Grove and Key Biscayne.

3. Physical Fitness

Cycling is excellent exercise for persons of all ages because of the adaptability of the mode and the non-boring nature of the activity. Three-wheelers, tandems, and fold-away bicycles have expanded the range of age-groups desirous of riding for healthful reasons. Dr. Paul Dudley White, the famed heart specialist, has for years advocated cycling as a pleasurable way of maintaining one's physical fitness.

C. Safety

Because of the increased use of bicycles in Dade County and the rest of the United States there has been a surge in accidental injuries and deaths related to their use. Throughout 1970 in Dade County there were 511 people injured in bicycle accidents with 8 fatalities. The first ten months of 1971 saw a sharp increase in bicycle mishaps: 621 injured with 11 fatalities. Areas of high incidence of bicycle accidents are shown on Map 1.

Especially vulnerable in a collision because of the lack of protection for the rider, bicycles are not highly visible to the motorist at night, even with lights and typical reflectors on the bicycle. Cyclists also suffer from the lack of respect given to them by motorists. Too often the cyclist is considered an annoyance, instead of as another vehicle with as much right to the road as the automobile and its driver. On the other hand, because many cyclists are young and inexperienced, they are unaware that they must obey all the traffic regulations and signals that motorists must obey. The result is tragic in many cases with injuries that could be avoided if provision was made for the bicycle within the structure of the city, both in terms of physical facilities and information programs designed to educate the motorist and cyclist to their respective responsibilities.

II. Objectives of the Study

- A. Provide a guide for the form, location, and scheduling of bikeways in Dade County.
- B. Develop recommendations in the areas of bicycle safety, legislation, security and financing.
- C. Provide an input to the proposed statewide system of Bicycle Safety Routes.
- D. Be consistent with the goals, objectives, and recommendations of the 1969 Dade County Open Space and Recreation Master Plan.

III. Plan Methodology

Definitions

Bikeway

Bicycle path

Pedestrian safety path

Bicycle safety route

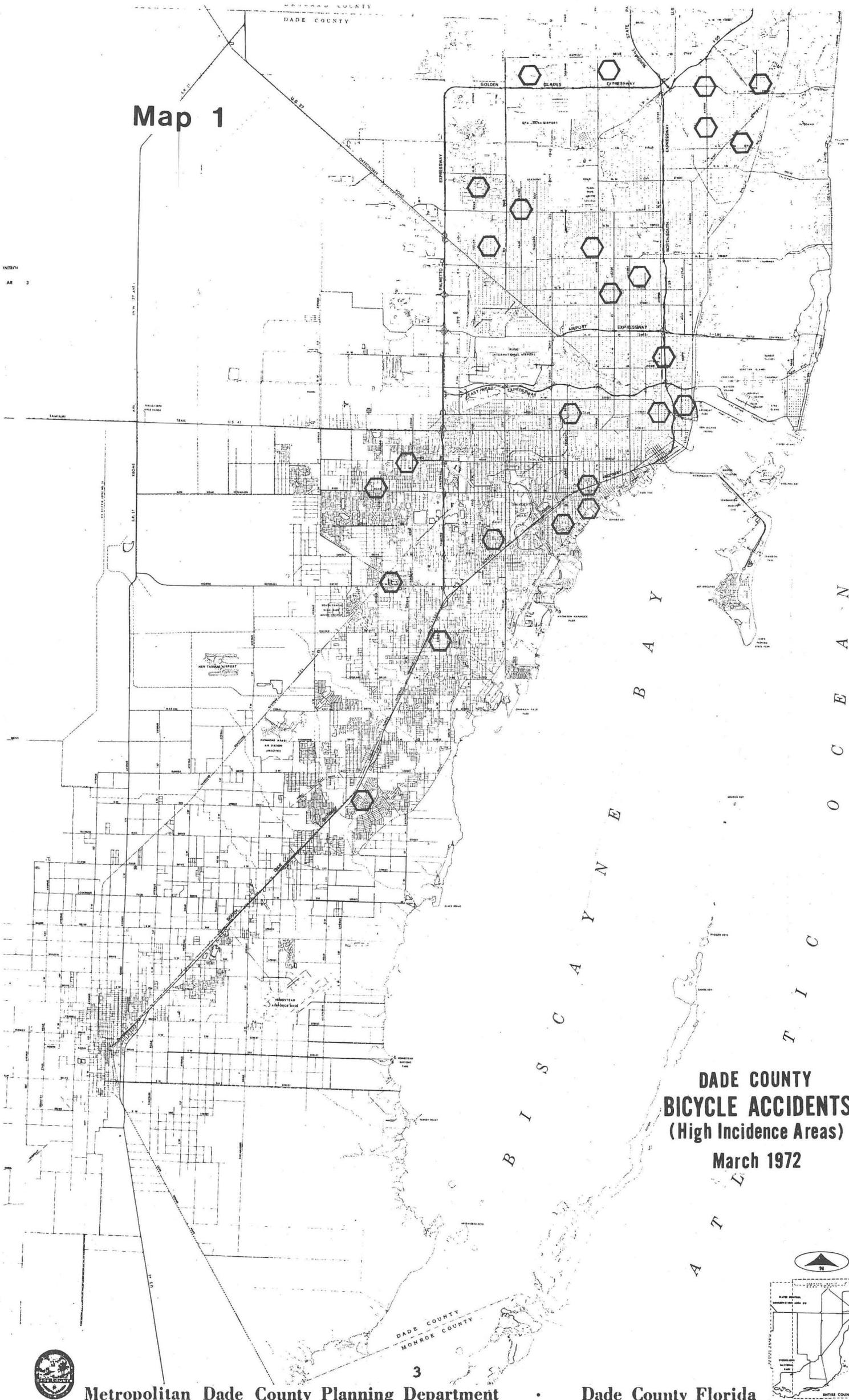
Although the above terms are used interchangeably by many people, for the purpose of this study and report, the following definitions will be used:

Bikeway: any designated and/or constructed route for bicycles, of which there are four types:

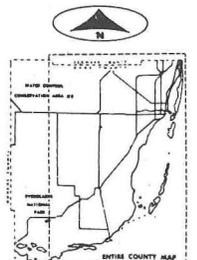
- (1) A path physically separated from auto traffic.
- (2) Part of an existing street right-of-way delineated by appropriate street markings.
- (3) Sidewalks or other similar rights-of-way shared with pedestrians.
- (4) Streets designated by signs as bikeways, but offering no other accommodation for bicycles.

Bicycle path: the same as (1) above.

Map 1



**DADE COUNTY
BICYCLE ACCIDENTS
(High Incidence Areas)
March 1972**



Pedestrian safety path: the same as (3) above.

Bicycle safety route: any type of bikeway.

- A. Initially, and throughout the study, the cooperation of many government agencies, private organizations, and individuals needed to develop a coordinated plan was of vital interest to the staff directly concerned with producing the plan document.
- Lines of communication were established, information was requested and procured, interviews and meetings were held, and the planning process publicized in the media.
- B. A study design was prepared and responsibility for the segments of the study allocated to staff members.
- C. Demand factors were studied to determine the recreation and transportation needs of the resident and tourist community.
- D. An inventory of existing bikeways, both designated and constructed, and pedestrian safety paths was conducted and the information mapped.
- E. Relevant state and local laws and ordinances were reviewed and revisions recommended.
- F. Past plans for bikeways in Dade County and their history of implementation were reviewed. Of special concern was the County's Open Space and Recreation Master Plan.
- G. Current practice in other cities vis-a-vis bikeways was reviewed for potential use in the Miami area. This survey was generally accomplished through a literature search, but several interviews were held and correspondence exchanged.
- H. Criteria for the form and location of bikeways in Dade County were developed through staff research and discussion.
- I. Field surveys of potential bikeway corridors were made by the staff. State and Federal officials assisted where potential corridors were located on State and Federal land.
- J. Recommendations for a coordinated system of bikeways were developed, along with suggested actions related to safety, legislation, security, financing and staging.

IV. Current and Recent Efforts to Provide Bikeways in Dade County

A. Bikeways

The idea of a bikeway was pioneered in Dade County in 1961-62 with the designation of a 25-mile system in the Homestead area. It was the first such system in the United States. Since that time, other communities in Dade County have designated bikeway routes, most notably Coral Gables and its 20-mile system.

The longest designated bikeway route is the Metropolitan Dade County Bikeway stretching from Greynolds Park in North Dade County to Homestead in the South. The route extends for almost 60 miles and provides a link to the Coral Gables and Homestead systems.

The accompanying Map 2 shows the location of designated bikeways in the County. In all, there are over 100 miles of designated bikeways in Dade County.

B. Pedestrian Safety Paths

Historically the bicycle has been a popular mode of travel for elementary school children in the Miami area. Because of increasing automobile traffic and the resulting rise in injuries to young children on bicycles, Dade County, primarily through its Department of Public Works, began an aggressive program of providing "pedestrian safety paths" for school children in particularly dangerous locations. Within the past few years several miles of these paths have been newly constructed or extended from existing sidewalks linking elementary schools with their service area. The design of these paths is

Map 2

BROWARD COUNTY
DADE COUNTY

SEE
MAP
3

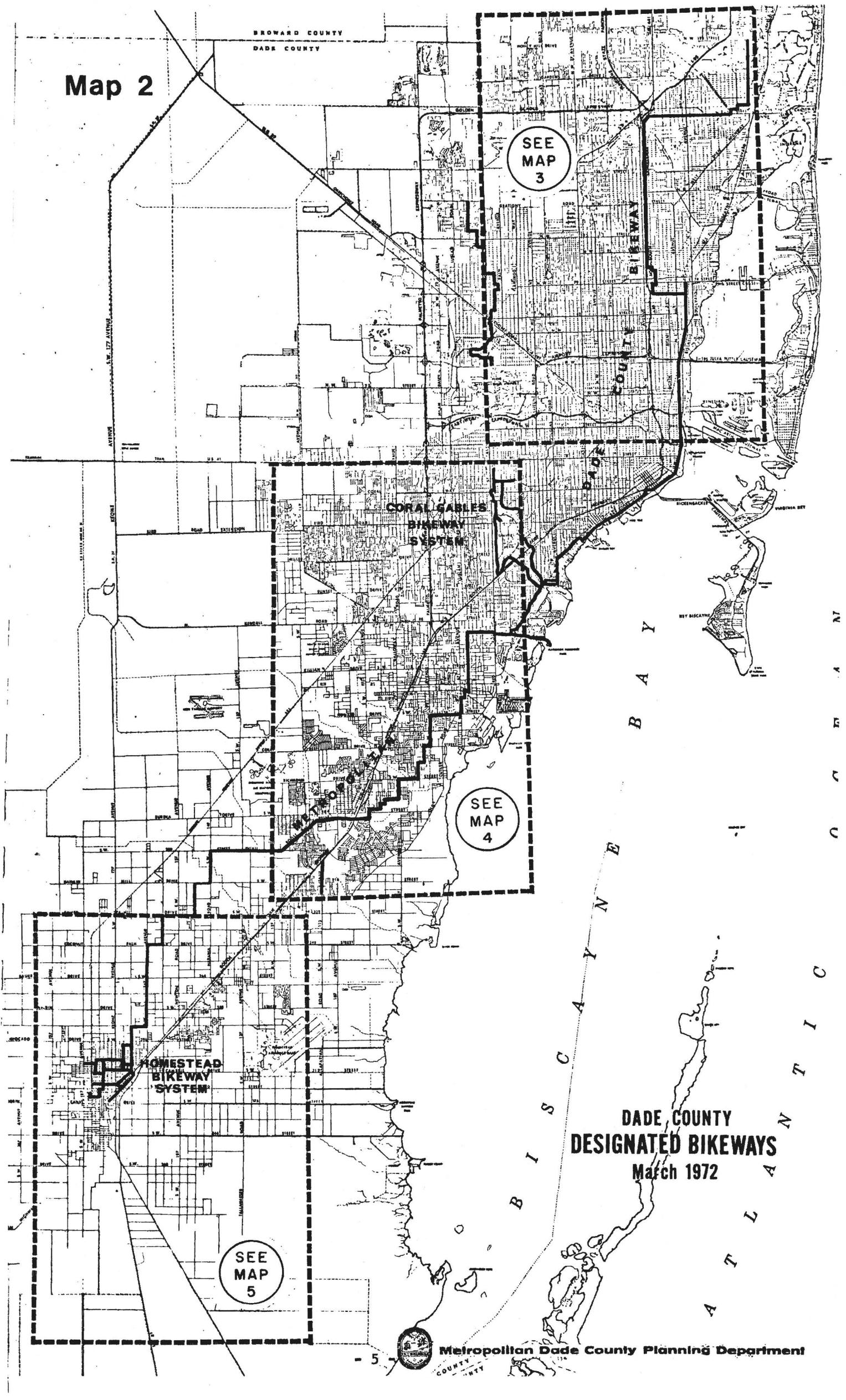
CORAL GABLES
BIKEWAY
SYSTEM

SEE
MAP
4

HOMESTEAD
BIKEWAY
SYSTEM

SEE
MAP
5

DADE COUNTY
DESIGNATED BIKEWAYS
March 1972



such that cyclists as well as pedestrians can utilize them for safe passage. These "pedestrian safety paths" are shown on the accompanying Maps 3,4,5. Of course, in many residential areas sidewalks function as bicycle paths. However, there are several drawbacks to their use at the present time. Where curbs are present, no provision for bicycles has been made for ramped sidewalk/street access at intersections (with the exception of auto driveways which are often dangerous but used nevertheless). Where no curbs are present, the cyclist must go through grass, dirt, or mud to reach the street from the sidewalk. This is often undesirable for the cyclist and residents of the area. And lastly, the pedestrian/cyclist conflict potential is high in some areas.

C. State of Florida

Last September the Governor and Cabinet of the State of Florida approved a proposal providing for a system of bicycle routes throughout the State. Of special interest to our area is the State proposal to assist county and city government in developing local Bicycle Safety Routes based on minimum state standards. These local routes would be coordinated with longer touring routes developed by the State.

The County is continuing to work with the Department of Natural Resources in designating such a system.

D. City of Miami

In recent months the City of Miami has been working on the design for a system of bikeways within the City. First priority attention has been given to the area between Coconut Grove and the Rickenbacker Causeway. Initial work has centered on preparation of an application for State funds for the system. City staff has coordinated their efforts with the County planning program.

E. Open Space and Recreation Master Plan

The Open Space and Recreation Master Plan for Dade County, completed in 1969, puts forward many recommendations aimed at guiding public policy (and private investment and actions) in creating an attractive and pleasurable urban environment.

Of specific interest to the bikeways study is the recommendation suggesting a network of greenways: "An interconnecting system of greenways should be built using highways, rail-lines, major utility rights-of-way, canals and rivers. The system should provide recreational opportunities as well as visual enjoyment. Linear open spaces may be used for walking, horse-back riding, bicycling and boating."

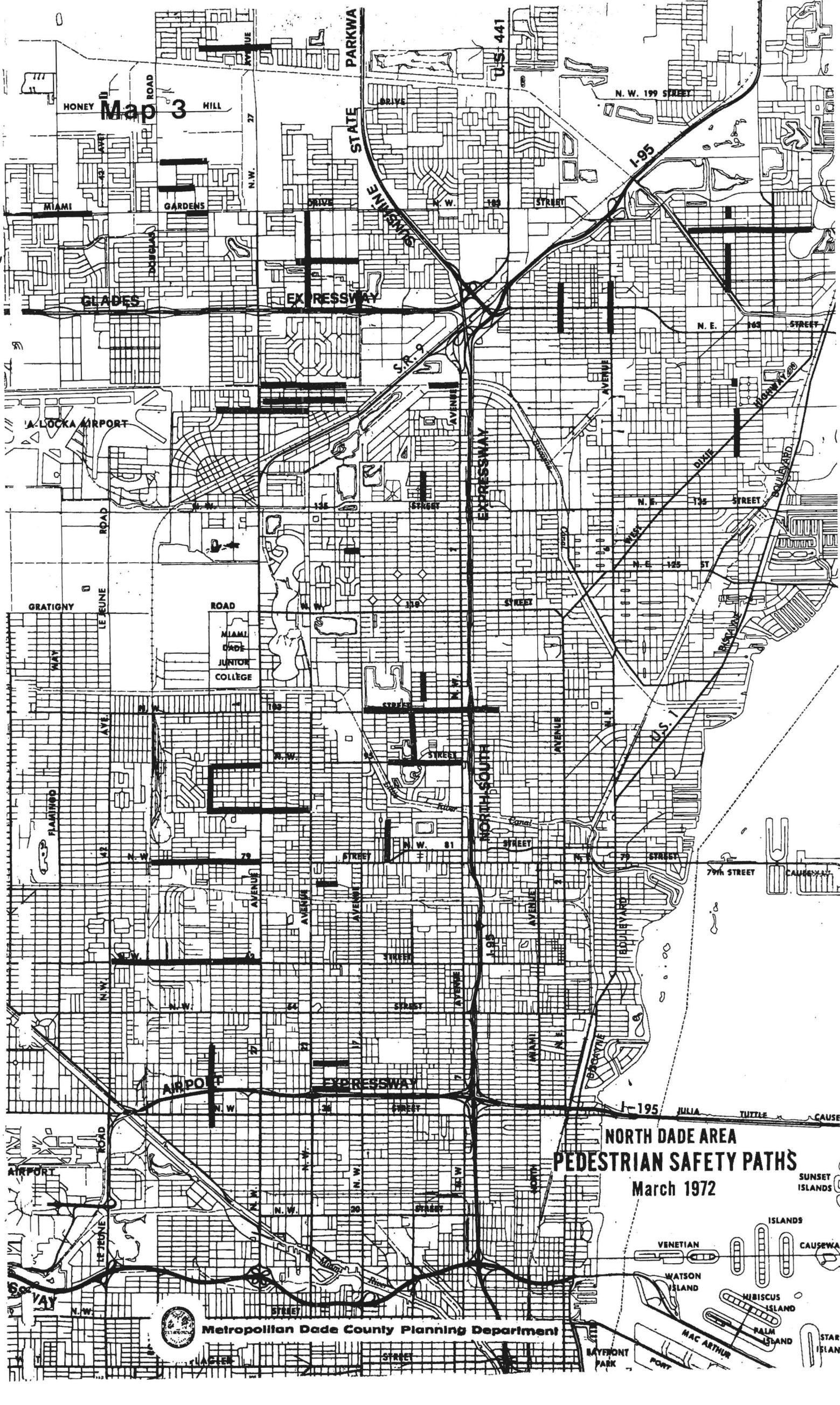
A specific greenway system is graphically proposed, the major components of which are proposed expressways, a bayshore parkway, a Miami River parkway, South Dade Canals, and the Florida Power and Light Company transmission line rights-of-way.

The current inventory of recreation facilities and open space as identified in the plan report as well as all the plan proposals were considered as a major input to the planning process for a bikeway system. In effect, the bikeway plan will serve as both a detailing and extension of the Open Space and Recreation Master Plan.

F. Linear Park

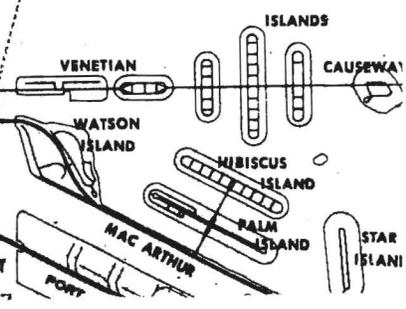
Late in June, 1970, the federal government approved a Title VII Demonstration Grant of over \$400,000 to Dade County--50% of the estimated project cost--to assist the county in the creation of a linear park in a four mile long portion of the Florida Power and Light Company right-of-way from Tamiami Trail and Miller Drive between S.W. 97th to 107th Avenues. The proposed park will provide access to several schools and parks along the way by means of bridle, bicycle, and hiking paths. Crosswalks and/or overpasses are proposed along its route when busy streets are crossed.

Map 3

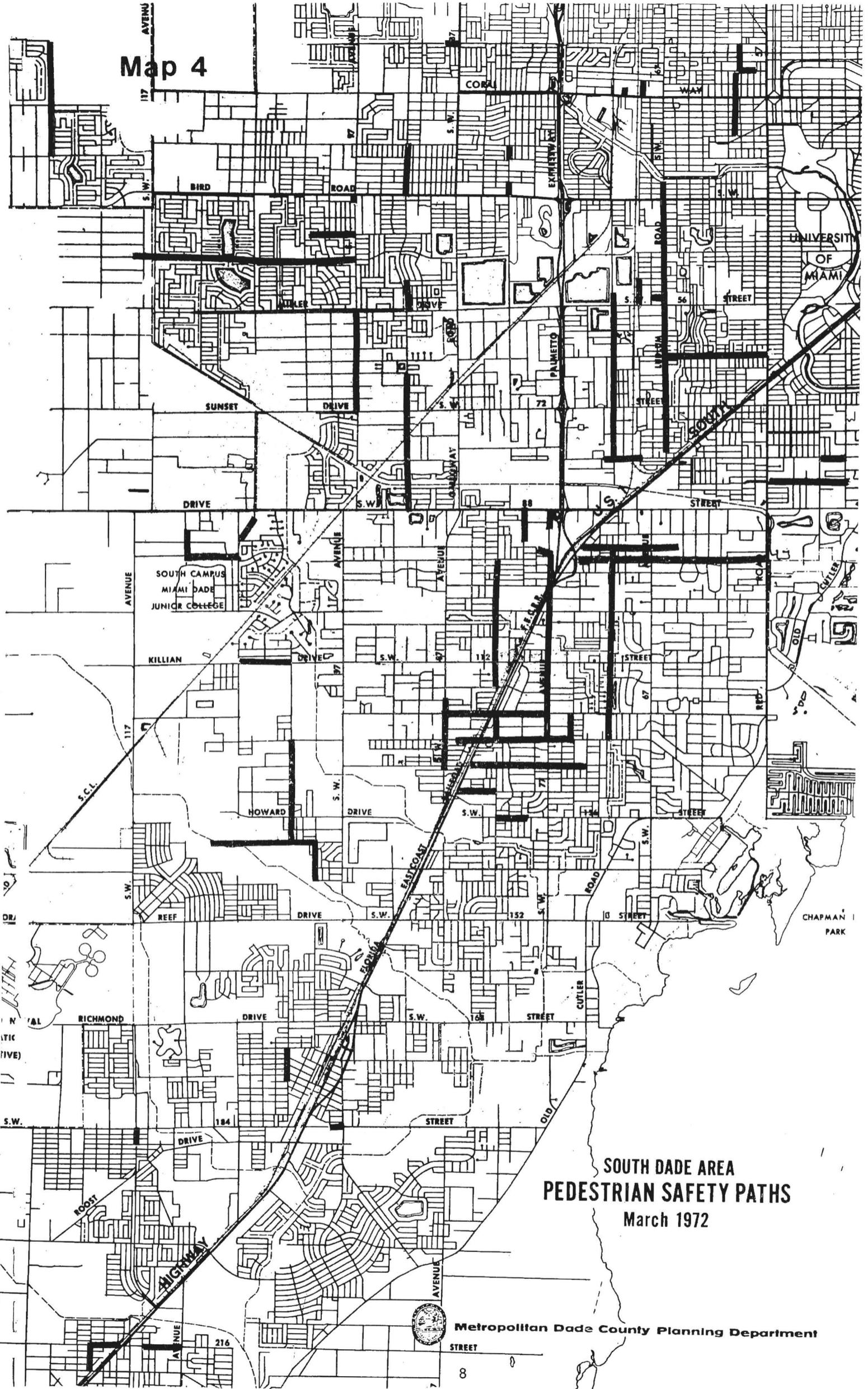


**NORTH DADE AREA
PEDESTRIAN SAFETY PATHS**
March 1972

Metropolitan Dade County Planning Department



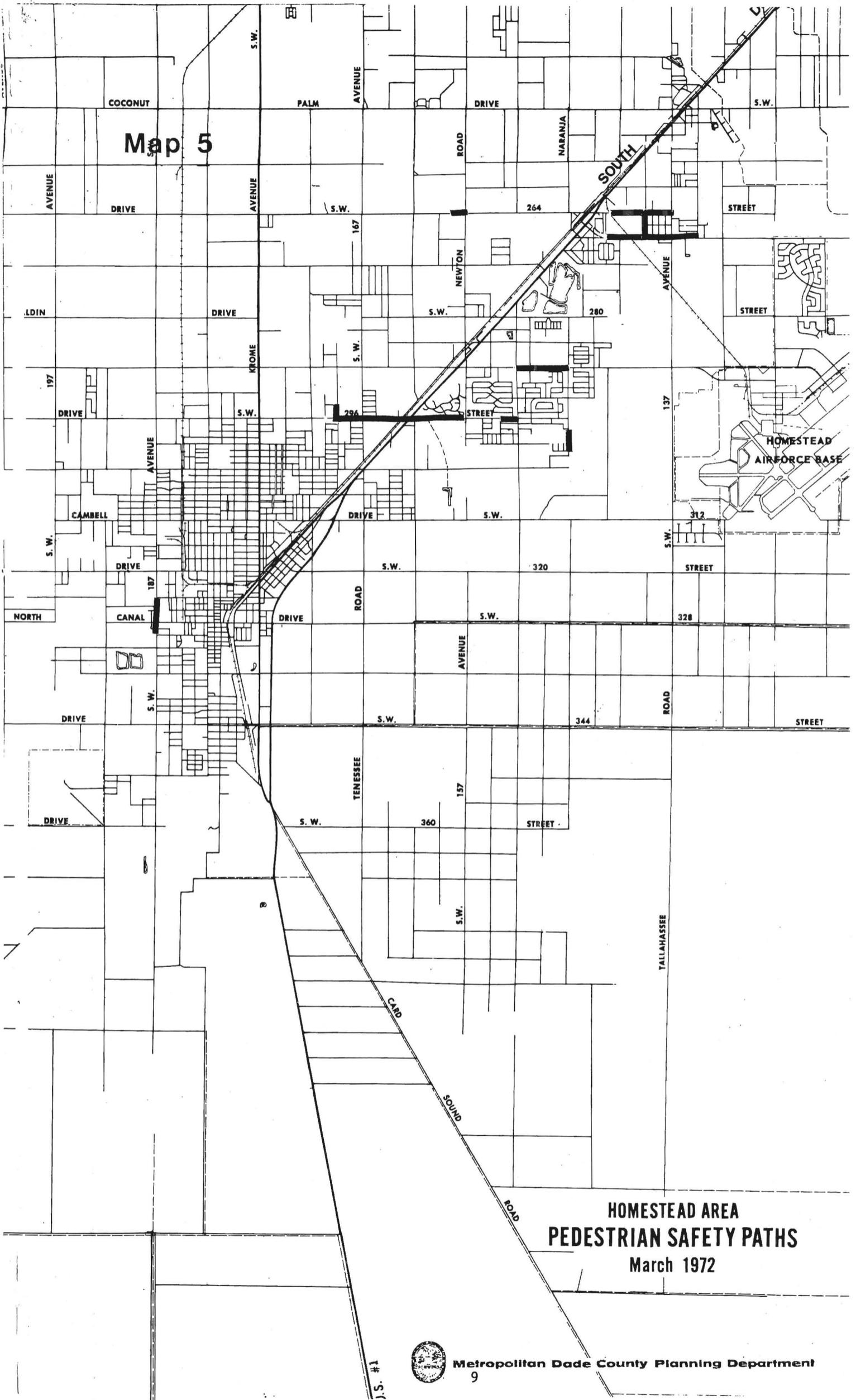
Map 4



**SOUTH DADE AREA
PEDESTRIAN SAFETY PATHS**
March 1972

Metropolitan Dade County Planning Department

Map 5



HOMESTEAD AREA PEDESTRIAN SAFETY PATHS March 1972



J.S. #1

V. Review of Current Practice in Other Communities

A. Case Studies

1. Chicago, Illinois

Over 15 miles of bicycle paths are paved or marked along Lake Michigan, mostly within the lakefront parks. They have been extremely popular, with over 10,000 cyclists using them on a single day. A recent development has been a path constructed along the North Shore Channel of the Chicago River on land leased from the Chicago Sanitary District. The path is also used for access by maintenance trucks.

In March, 1971, the Chicago Department of Development and Planning issued a report entitled "Guidelines for a Comprehensive Bicycle Route System" which proposed a system of designated bikeways linking the existing city bicycle paths. Pamphlets and maps were developed to promote the system.

To provide the bicycle commuters, over 20 garages in downtown Chicago maintain space for bicycle parking, in addition to their regular automobile parking.

2. Cook County, Illinois

A combination bicyclist-pedestrian path has been provided by the Forest Preserve District for 6 miles along a stream and through the forest. No problem has been encountered with two-way traffic, even though parts of the path are no wider than 18 inches, because grassy areas adjacent to the path allow passing.

3. C & O Canal Tow Path

Both cyclists and hikers use this path located along the Chesapeake and Ohio Canal. Bicycle rental facilities are located on both ends of the path.

4. Palm Beach, Florida

A three-mile paved path along Lake Worth was constructed over 40 years ago. It is separated from roadways in the area by about 200 feet. Another bicycle trail is located west of North County Road, separated from the traffic by a row of trees.

5. Concord, Massachusetts

Concord has a city ordinance that requires building of a bicycle path on one side of every new road built or reconstructed in the city.

6. State of Oregon

Legislation has been approved by the Oregon legislature that provides for the expenditure of at least one percent of State highway funds for construction of bicycle and foot paths along roads being constructed, relocated, or rebuilt.

7. Maricopa County, Arizona

Combination horseback riding, hiking, and cycling trails are proposed utilizing the canal banks that are currently used for cycling. The total concept is one of linear parks, tying together neighborhood and community parks.

8. Fremont, California

The Fremont plan calls for a network of interconnecting paths covering a 90 square mile area, connecting the central core to outlying satellite communities and one satellite community to another. The uniqueness of the plan revolves around the concept of separating bicycle paths from streets through the use of cul-de-sacs and under/over passes.

9. Berkeley, California

In 1970 a survey of bicycle use was conducted in the city. Analysis of the data that was gathered led to the eventual publication of a "Berkeley Bikeways Plan" in 1971 and its adoption by the City Council. The plan provides for a bicycle travel circulation system, meant in part to reduce the dependence on the private automobile as a transportation mode in the city.

10. Washington, D.C.

The City Council's Committee on Transportation has encouraged increased bicycle usage, especially for commuting. A census of cyclists was conducted, the results analyzed, routes designated, and a new code of bicycle laws passed.

VI. Review of Laws and Ordinances

A. Traffic

Bicycles are regulated within Dade County by the State of Florida and the Dade County government. The State's bicycle laws were revised recently and the new regulations went into effect on January 1, 1972. These new regulations treat the cyclist in the same manner as a motorist or motorcycle rider, that is, he is subject to all traffic regulations plus several additional ones. The regulations require that cyclists: ride with and not against the flow of traffic as near the right side of the road as practicable; must use bicycle paths when provided in preference to public roads and sidewalks; and must use a light and have a large reflector or taillight when riding after sundown. The State's bicycle laws are reproduced in the Appendixes.

The Dade County Traffic Code regulates bicycles within the unincorporated area as well as the municipalities. These regulations state that a cyclist is to be treated in the same manner as the driver of a motor vehicle, unless dismounted from his bicycle, whereupon he is treated as a pedestrian. As in the State law, cyclists are required to ride as near to the right-hand side of the street as practicable, and to use a bicycle path instead of the roadway, if available. Cyclists are allowed to ride on sidewalks, except within a business district or zone, but must yield the right-of-way to any pedestrian. Dade County's bicycle laws are reproduced in the Appendixes.

Some criticism has been directed toward the existing laws governing the use of bicycles because of the obvious differences between the bicycle and automobile. The bicycle is more vulnerable and maneuverable than the automobile and is much less powerful. Consideration should be given to changing the existing laws to reflect these differences. For example, the regulation requiring the cyclist to ride with the traffic would need changing if a two-way bikeway were established in the parking lane of a roadway or along the shoulder area of a roadway.

B. Public Works

The Dade County Code's subdivision regulations requires the construction of sidewalks in all areas being developed with the exception of the areas zoned for residential estate use over one acre and industrial, agricultural, and general use zones. In areas zoned EU-M (one-half acre residences) and EU-S (three-quarter acre residences) sidewalks are required along section and quarter section line roads only.

In many neighborhoods sidewalks function as bicycle paths, imperfect as they may be. From appearances though, sidewalks tend to be used by children, with teenagers and adults using the street because of the attendant difficulties in riding a bicycle on a sidewalk - potential pedestrian conflict, conflict with automobile driveways, and the difficulty in traversing curbs and swales. In this vein, a policy on pedestrian ramps in public rights-of-way has been proposed by the Dade County Public Works Department. It would require ramps in curbs and swales at the intersection of roads and at mid-block pedestrian crossings. If adopted and implemented, the ramps that would be required would also serve bicycle riders in making the sidewalks more attractive for cycling.

VII. Criteria for the Form, Location and Phasing of Bikeways

- A. Bikeways should link existing bicycle paths and designated bikeways to create a continuous network.
- B. Bikeways should serve recreation and transportation needs by linking parks and other recreation areas, shopping areas, schools, employment centers, public facilities, and points of interest.
- C. Bikeways should be as long as possible to provide for the needs of all types of cyclists.
- D. Bikeways should be as free from conflict with the automobile as possible. Priority among bikeway types should be as follows: a separate path, a lane separated from traffic by a stripe on the roadway, a designated street.
- E. Non-street rights-of-way should be utilized where feasible. Examples are: canal banks, railways, utility easements, parks, and the edges of large area uses such as shorelines, airports, agriculture, expressways.
- F. Existing sidewalks should be used as bikeways where practical. Consideration should be given to potential cyclist/pedestrian conflict and the existence of curbs and driveways. Drop curbs and swales should be modified where necessary to facilitate the use of bicycles.
- G. Where a street must be used, they should be evaluated on the basis of service, traffic control devices, traffic volume, speed limits, the existence of over/underpasses, right-of-way width, parking, and hazards to safe cycling.
- H. Corridors with high incidence of bicycle accidents should be given priority for separate bikeway development.
- I. Large user concentrations should be served by bikeways first.
- J. Where acquisition and use opportunities for bikeways now exist but may not in the future, priority for development to these corridors should be given.
- K. The cost of a bikeways system should be minimized by joint funding and development where possible.
- L. Bikeways should be located in scenic or aesthetically attractive areas wherever possible.
- M. Bikeways should be used as positive tools to improve the environment of the area they traverse through the use of landscaping and other visual treatments where high scenic values do not already exist.
- N. Where feasible, parking lanes could be eliminated to provide bikeways. On some roadways, parking could be prohibited during certain hours (e.g., 7 a.m. - 9 a.m., 4 p.m. - 6 p.m., and on weekends) to allow for safe cycling.

VIII. Potential Bikeway Corridors

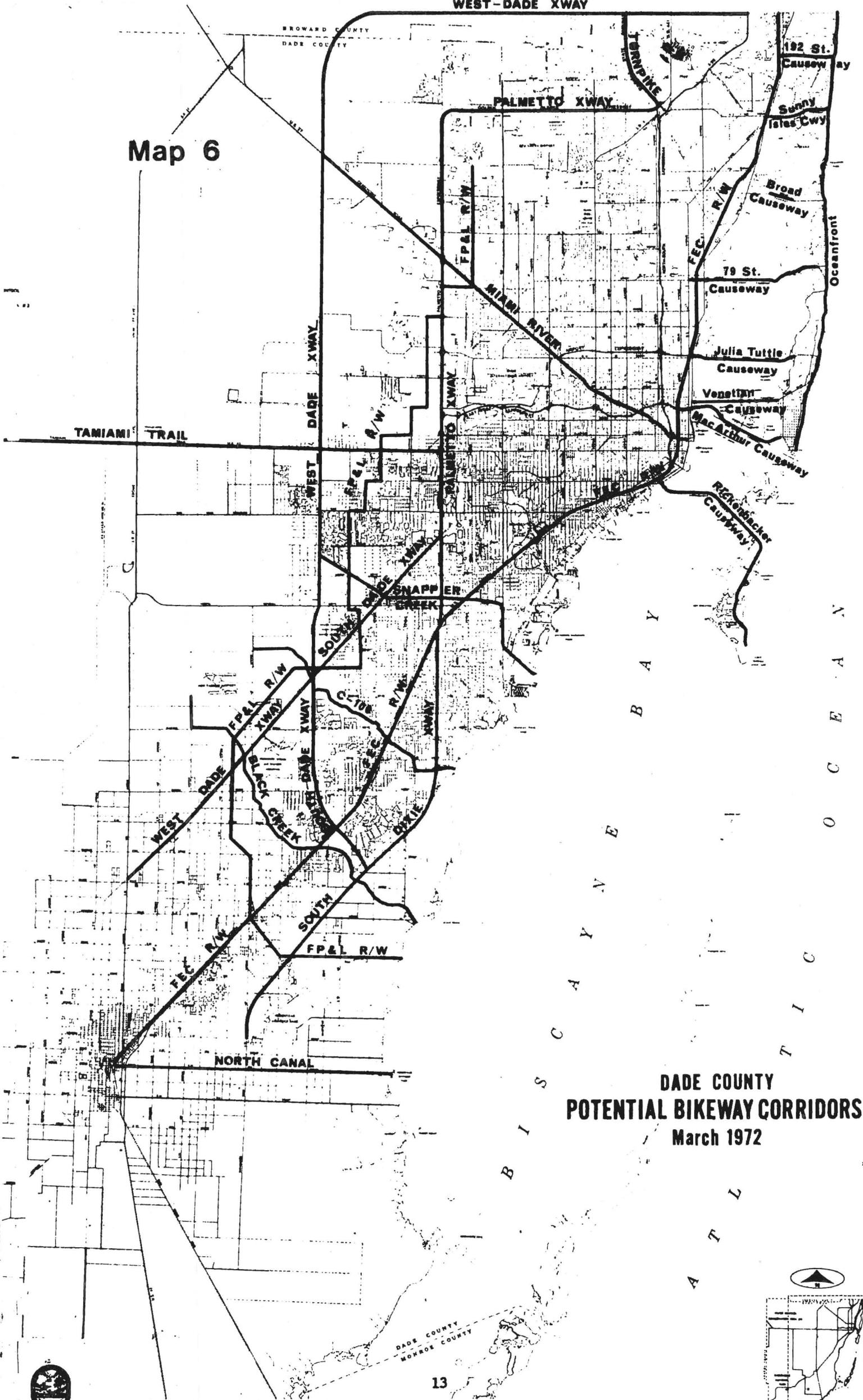
Using the criteria developed during this study, potential bikeway corridors were identified for the Dade County area. Many of the corridors were previously identified in the 1969 Open Space and Recreation Master Plan as "greenways." In general, the potential bikeway corridors utilize canals, streets and highways, rail-lines and utility rights-of-way. The accompanying Map 6 graphically illustrates the potential bikeway corridors of major significance, while leaving out the obvious delineation of section-line and half-section-line roads as potential corridors.

IX. Recommended Bikeways

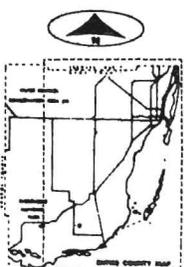
A. Phase One Priorities (Map 7)

Bayshore Bikeway - The Miami area's longest existing bikeway is along Old Cutler Road and Main Highway and the branch from it to Matheson Hammock Park. Bicycle traffic along the path is quite high at all times but especially on weekends when people transport their bicycles to the path and utilize it as a recreation mode. The needed priority extensions

Map 6



**DADE COUNTY
POTENTIAL BIKEWAY CORRIDORS**
March 1972



are in two parts: from Coconut Grove north to downtown Miami and from Fairchild Garden south to Cutler Ridge.

1. At this time, the extension south to Cutler Ridge would probably be the most utilized. Top priority should, therefore, be placed on this segment. Part of this southern segment goes through the City of Coral Gables, therefore, their assistance should be requested in extending the path. Form of bikeway: separate path, utilizing existing sidewalks where feasible.
2. North of Coconut Grove the proposed extension would be within the City of Miami. The City is presently endeavoring to fix the location of a route to downtown from Coconut Grove. Form of bikeway: separate path where possible, utilizing existing sidewalks at times, and a striped lane on the street where a separate path is not possible.

Rickenbacker Causeway - A connection is needed between the entrance to the Causeway at Brickell Avenue (where the proposed major north-south bikeway will connect) to the beginning of the existing path on Key Biscayne. The completed bikeway would traverse over seven miles, be ranked high in scenic value, and would connect many recreation facilities and attractions. Among them are: Cape Florida State Park, Crandon Park beach and Zoo, Virginia Beach, the Seaquarium, fishing catwalks on the Rickenbacker Causeway main span and Bear Cut Bridge, the Marine Stadium, and the Marina. Other traffic generators would be linked also: the Marine Science Complex on Virginia Key, Vizcaya (only a few blocks from the Rickenbacker Causeway entrance), and the residential area on Key Biscayne, long noted for its resident's use of bicycles for transportation on the Island.

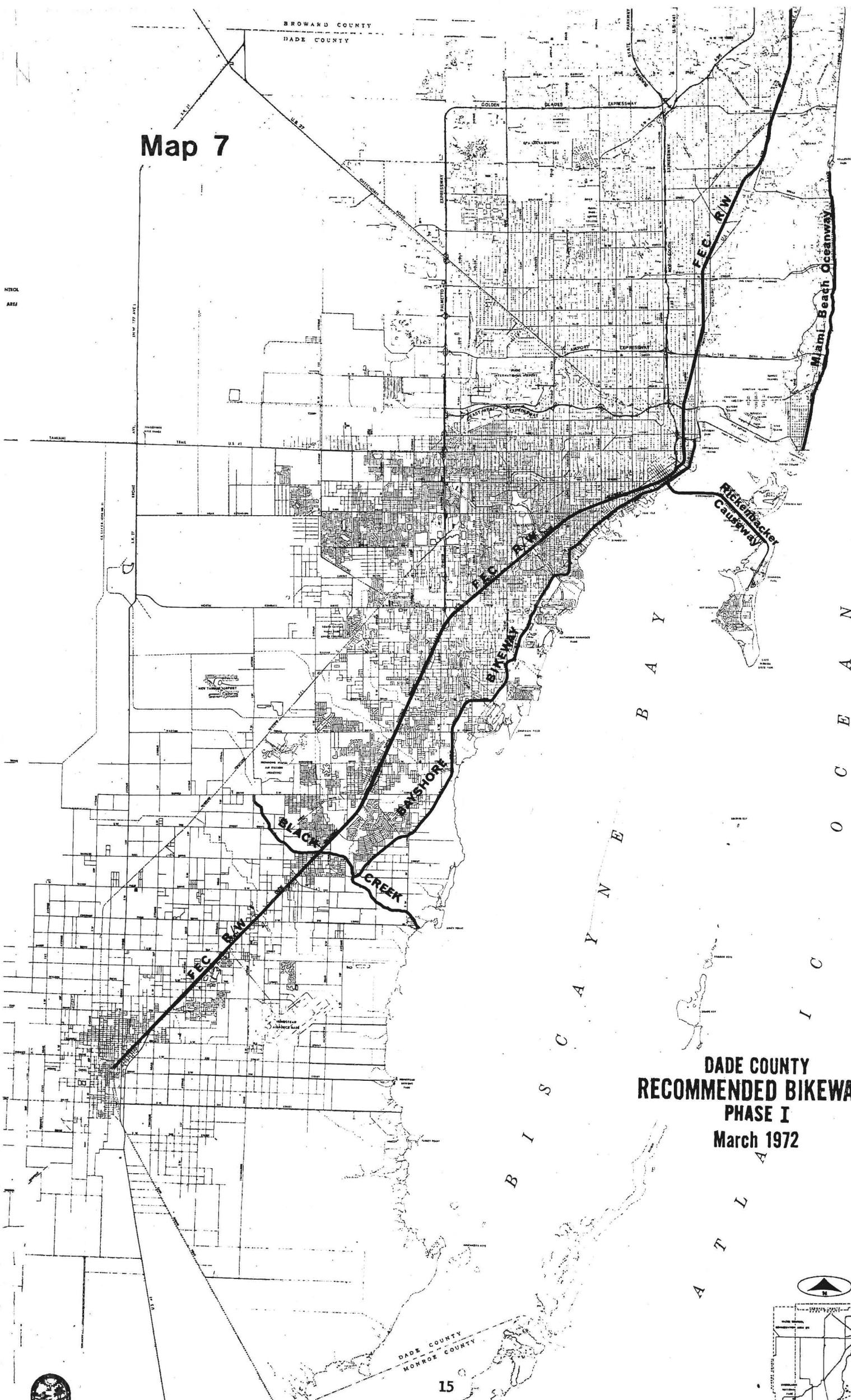
Bicycle traffic on the Causeway is already quite heavy, especially on weekends. Because peak automobile usage of the Causeway corresponds to the peak bicycle usage time, the potential for accidents is high, especially because of the narrow right-of-way across the bridges which forces cyclist to dismount and take their chances or to ride and also take their chances.

There are difficult problems to overcome in creating this bikeway because of the three narrow bridges which must be utilized. It appears that the only feasible solution is the construction of another catwalk structure for bicycles or reserving a bicycle lane on any new bridge construction.

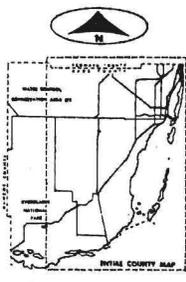
Florida East Coast Railway Right-Of-Way - From Homestead North throughout the length of Dade County this right-of-way remains an appealing place to put non-automobile forms of transportation. Commuter trains, rapid transit, and rail buses have all been proposed for the corridor. It is suggested that a portion of this right-of-way be used now for a bicycle path, especially from downtown Miami south, to accommodate and encourage bicycle commuting along a straight, fast path. This path is not proposed as a recreation mode, as most other bikeways in Dade County would primarily be, but essentially as a means of non-polluting, quiet transportation. Form of bikeway: separate path within the FEC right-of-way.

Miami Beach Oceanway - This bikeway would extend from Haulover Cut through the length of Bal Harbour, Surfside and Miami Beach to Government Cut. The path would be created in conjunction with the beach improvement project as proposed by the Army Corps of Engineers. It would generally be located between the new beach area and east of the existing hotels and motels. Wherever possible the bikeway will be designed exclusively for bicycle traffic, however portions may include pedestrian traffic as well. The Oceanway would serve as the main corridor linking smaller independent bikeways which are being proposed and developed in near-by parks and golf courses. In its ultimate phase the Oceanway could connect with the Rickenbacker Causeway path by utilization of right-of-way within the transportation corridor proposed from Government Cut to Virginia Key. With its close proximity to tourist activities the Oceanway path will have tremendous recreational potential. Not only serving as a transportation mode, it will provide exciting vistas of the famed Atlantic beaches for which Dade County is noted.

Map 7



**DADE COUNTY
RECOMMENDED BIKEWAYS
PHASE I
March 1972**



Black Creek Bikeway - From Black Creek Park on Biscayne Bay to Eureka Drive, following the Black Creek Canal right-of-way. A tentative commitment from the State of Florida has already been received to fund the bikeway within the Park. Along the canal right-of-way, the bikeway would be a separate path situated in such a manner to allow maintenance vehicles from the Central and South Florida Flood Control District access along the waterway. At several points where the canal goes under streets, it may be necessary to install crossing lights at streets or construct a bikeway structure under the roadway, which appears feasible at several locations.

"Supertrail" - The designated bikeway through Dade County which will link up with the State trail from Jonathan Dickinson Park to the Florida Keys. The exact location at all points is still to be determined. Form: part pathway, part designated streets.

B. Phase Two Priorities (Map 8)

C-100 Canal - From Biscayne Bay to S.W. 117 Avenue, this canal right-of-way would offer an excellent recreational opportunity on a separate bikeway along the waterway.

Snake Creek Canal - From Dixie Highway west to the Sunshine State Parkway, a separate right-of-way along the canal.

Snapper Creek Canal - From the Palmetto Expressway to the Village Green subdivision, a separate path within the Central and South Florida Flood Control District right-of-way.

Florida Power & Light Company Transmission Line Right-Of-Way - as indicated previously, the Florida Power & Light Company transmission line right-of-way is being utilized for the linear park now under design in the western part of the urban area, from the Tamiami Trail to Miller Road. The right-of-way could be further utilized most readily and with greatest need from the C-100 Canal to the Fountainebleu Park development. In the future, use could be made of the other segments of the right-of-way (with Florida Power and Light's permission) for bikeways. Form: a separate path with crossing lights at major street intersections.

C. Phase Three Priorities (Map 8)

Sunny Isles Causeway - From Miami Beach to Biscayne Boulevard. Since the Causeway is to be improved, the design might be able to incorporate a bicycle path in the intracoastal waterway span.

Proposed State Road 852 (192nd Street Causeway) - From Biscayne Boulevard to Miami Beach, through the Aventura development which has proposed a system of bikeways within its boundaries.

Miami River - From Miami Springs to Biscayne Bay. When redevelopment occurs along the River provision should be made for pedestrian walkways and bikeways for the length of the River. This could prove to be one of the most pleasant recreational experiences in the City when and if redevelopment occurs.

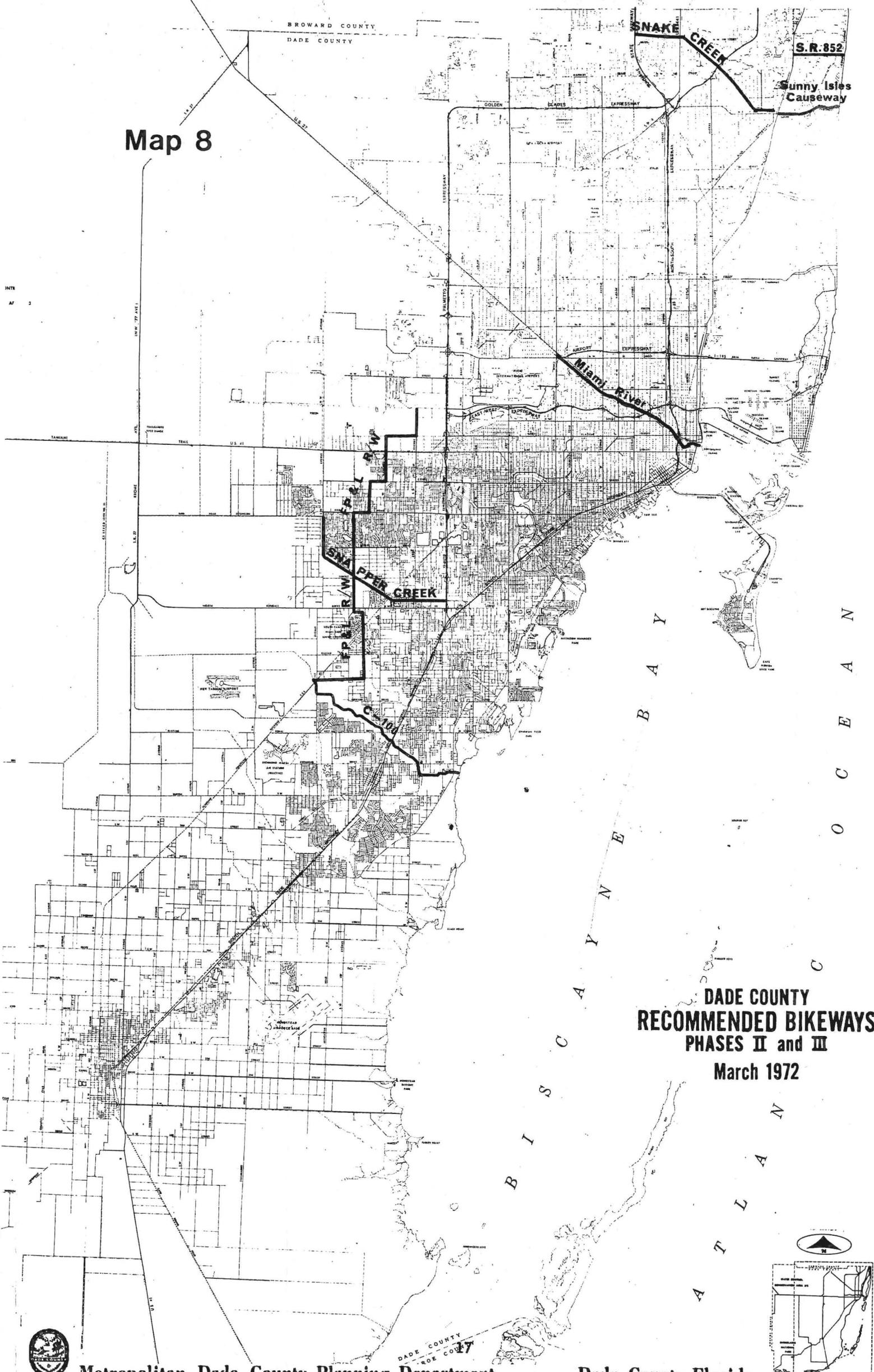
Other Bikeways - Other bikeway development should occur within the framework of the criteria developed in Section 7 of this study, utilizing funding opportunities and available rights-of-way to develop a system of bikeways designed to meet the needs of both commuter cyclists and recreational cyclists.

Certainly there are many other routes that could have been specifically mentioned for bikeways. But it has been this study's purpose to highlight the most immediate priorities, with the realization that bikeway development elsewhere in the County makes good sense toward the achievement of a truly multi-modal transportation system.

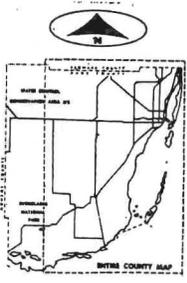
X. Recommended Sources of Funding and Assistance

There are five levels of potential funding sources for the programming, acquisition (where applicable), development, and maintenance of our proposed bikeway system. All funding and assistance levels should be considered because of the complex nature of the urban area through which the proposed system will traverse.

Map 8



**DADE COUNTY
RECOMMENDED BIKEWAYS
PHASES II and III
March 1972**



A. Private Citizenry/Agencies

1. Bicycle Institute of America
 - a. Community support programs
 - b. Technical expertise
 - c. Educational programs
2. League of American Wheelmen
 - a. Community support programs
 - b. Technical expertise
 - c. Educational programs
3. Individuals and groups can donate land and/or money
4. Developers can program bikeways into their developments.

B. Municipalities

Can provide in their capital and operating budgets support for programming, acquisition, development and maintenance of segments of the bikeway system.

C. Dade County

Can provide budgetary support (both capital and operating), planning and coordinative services, right-of-way, easements, construction capability, marking and signing, and maintenance.

D. Regional and State Agencies

1. South Florida Regional Planning Council
 - a. Forum for multi-county action toward state enabling, enforcement, and operation legislation.
 - b. Coordination in compliance with the State Comprehensive Outdoor Recreation Plan.
2. Central and Southern Florida Flood Control District
 - a. Canal right-of-way usage.
 - b. Detailed path locations along canals.
 - c. Construction expertise along canal banks.
 - d. Access to conservation district areas.
 - e. Construction within their jurisdictional areas.
 - f. Budgeted funds for paths within canal right-of-ways.
3. Department of Transportation
 - a. Present and future path inclusion along road right-of-ways.
 - b. Safety techniques assistance.
 - c. Wayside park construction along pathways at primary and secondary arterials.
4. Department of Natural Resources (Division of Recreation and Parks)
 - a. Clearinghouse for federal funds.
 - b. Administration of funds from State 15% - Land Acquisition Trust Fund.
 - c. State-wide registration of trails for touring.

- d. Planning integration with existing State facilities.
- e. Liaison with: Department of Community Affairs
 Division of Cultural Affairs
 Department of Commerce
 Trustees of Internal Improvement Fund
 Coastal Coordinating Council
 Division of Forestry

E. Federal Agencies

1. Department of Housing and Urban Development

- a. 50% matching funds for acquisition and/or development under Title 24 Housing Act (amended Title 7) Part # 4.242 - Park Development - Paragraph C, "Other Development," sub-Paragraph 1 "Transportation and Circulation" (Legacy of Parks).
- b. Funds from Urban renewal programs.
- c. Funds under Title #7, Section 709, "Historic Preservation," where applicable.
- d. Funds under Title #7, Section 706, Urban Beautification and Improvement.

2. Department of the Interior (Bureau of Outdoor Recreation)

- a. Funding for all phases from Land and Water Conservation Fund Act.
- b. Coordination between Federal agencies.
- c. Implementation of HR.9369, "Bike Transportation Act of 1971" when finalized and approved by legislation.

3. Department of Transportation

- a. Funding; applied for by State, from Title #3 - Highway Beautification Act - PL.89-285 - Landscaping and Scenic Enhancement.
- b. Planning - Future and present to incorporate bikeways under Federal Highway Act of 1968 - PL.90-495. Also applied for by State.

4. Department of the Interior (National Park Service and U.S. Forest Service)

- a. Assistance in all phases within their jurisdiction.

5. Corps of Engineers

- a. Construction and planning incorporating bikeways within their areas of water resource development. PL.89-72.

XI. Other Recommendations

Throughout this study we have commented on various aspects of cycling in addition to proposing route locations and the form they ought to take. In this section we will bring together all these other aspects and make recommendations which we feel will be useful to policy-makers in their deliberations on how to create a beneficial environment for safe and sensible cycling. Credit for many of the recommendations must go to the recent Conference on Bicycle Safety Trails in South Florida during which experts on cycling and individuals involved in planning for cycling gathered in sessions aimed at increasing the use of bicycles in South Florida and maximizing their benefits for both users and those who are affected by their use.

A. Transportation

1. Bicycle information brochures should be oriented not only towards children but at the adult commuting cyclist to help increase the ranks of commuters by bicycle.
2. The automobile drivers' manual should include information on bicycle operations and rules of courtesy and safety with reference to bicycles to protect and inform both the cyclist and automobile driver.
3. Bicycle riding as a means of transportation should be encouraged by providing or requiring bicycle parking facilities at shopping centers, public facilities, and apartment complexes. Public parking garages in the downtown areas should be requested to devote a portion of the space to bicycle parking. To discourage theft, these parking facilities should optimally be under surveillance or be in a locked enclosure.
4. Community business establishments should be encouraged to provide facilities for showering and changing clothes to promote there employees' cycling to work.
5. Planning for bicycle facilities should become a part of the urban area transportation planning process, so that transportation planners are vigilant in recognizing the opportunity for inclusion of cycling in future transportation schemes.

B. Recreation

1. Pedestrians and cyclists are quite capable of mixing on the same path for recreation purposes, so that many existing walkways can be feasibly converted to cyclist/pedestrian usage in parks and elsewhere.
2. Consideration should be given to the concept of a "bicycle park" in Dade County, perhaps at Tamiami Park, Gratigny Park and Richmond Park, with designated areas set aside only for bicycles.

C. Law and Safety

1. Consideration should be given to having bicycle licenses for cyclists to promote safety and facilitate new bikeways through the use of license revenues.
2. Elementary schools should add a bicycle education program to their required curriculum, in cooperation with local public safety officials.
3. New road construction and reconstruction of older roads should include bikeways as an integral part of the design.
4. The public works manual should be changed to require ramp-type curbs and sidewalk extensions to the street at most intersections where sidewalks are being constructed, to facilitate cycling, movement of the handicapped in wheelchairs and baby strollers.
5. Consideration should be given to the elimination of parking on selected streets during certain hours of the day in the anticipation of increased safe bicycle usage of that facility. This procedure would be analogous to the rush-hour ban on parking so that automobiles could utilize an extra lane for traffic purposes.
6. As noted in Section VI A, the current State and municipal bicycle laws should be reviewed (e.g., one proposed revision would allow cycling on sidewalks in a business district except where posted; another would require cyclists to dismount and walk across certain streets when making a left turn, while allowing left turns from the left hand lane on other, less busy streets). It is suggested that a bicycle advisory council be formed to meet with public safety officials to review said laws.

7. Consideration should be given to the placement of warning signs at key points in the County to inform motorists of impending heavy bicycle traffic. For example, at the entrance of the Rickenbacker Causeway or in Coconut Grove, signs might be effective in making motorists aware of the need for careful driving ahead because of the number of cyclists using the roadways.
8. Distinctive means of defining space for bicycle usage should be encouraged, such as using colored concrete for paths or using a stencilled bicycle symbol on a street bicycle lane.

APPENDIXES

APPENDIX I
DADE COUNTY BICYCLE LAWS

Article VII. Bicycles*

Sec. 30-142. Effect of article; parents permitting violation; application.

It is a violation of this chapter for any person to do any act forbidden or fail to perform any act required in this article.

*Cross references—Manner of riding motorcycles, § 30-29; clinging to moving vehicles, § 30-30.
Supp. No. 45

No parent of any juvenile and no guardian of a juvenile ward shall authorize or knowingly permit any such juvenile or juvenile ward to violate any of the provisions of this article.

This article shall apply whenever a bicycle is operated upon any street, or upon any public path set aside for the exclusive use of bicycles, subject to those exceptions stated herein. (Ord. No. 57-12, § 11.01, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-143. Application of traffic laws.

Every person riding a bicycle upon the street shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this chapter, except as to special sections of this article and except as to those provisions of this chapter which by their nature have no application. (Ord. No. 57-12, § 11.02, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-144. Obedience to traffic laws.

All persons operating a bicycle shall obey the instructions of official traffic-control signals, signs and other control devices applicable to vehicles, unless otherwise directed by a police officer.

Whenever authorized signs are erected indicating that no right, or left, or U-turn is permitted, no person operating a bicycle shall disobey the direction of any such signs, except where such persons dismount from the bicycle to make any such turn, in which event such person shall then obey the regulations applicable to pedestrians. (Ord. No. 57-12, § 11.03, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-145. Riding on seat only; number of persons; operator to keep one hand on handlebars.

(a) No person propelling a bicycle shall ride other than astride a permanent and regular seat attached thereto.

(b) No bicycle shall be used to carry more persons at one time than the number for which it is designed and equipped.

(c) Persons operating a bicycle shall keep at least one hand upon the handlebars. (Ord. No. 57-12, § 11.04, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-146. Riding on roadways and paths; riding abreast.

Every person operating a bicycle upon a street shall ride as near to the right-hand side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

Persons riding bicycles upon a roadway shall not ride more than two abreast except on paths or roadways, or parts of roadways, set aside for the exclusive use of bicycles.

Whenever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use such path and shall not use the roadway. (Ord. No. 57-12, § 11.05, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-147. Speed.

No person shall operate a bicycle at a speed greater than is reasonable and prudent under the conditions then existing. (Ord. No. 57-12, § 11.06, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-148. Right-of-way upon emerging from alley or driveway.

The operator of a bicycle entering or emerging from an alley, driveway or building, shall, upon approaching a sidewalk or the sidewalk area extending across any alleyway or driveway, yield the right-of-way to all pedestrians approaching on said sidewalk or sidewalk area, and upon entering the roadway, shall yield the right-of-way to all vehicles approaching on said roadway. (Ord. No. 57-12, § 11.07, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-149. Carrying articles.

No person operating a bicycle shall carry any package, bundle, or article which prevents the rider from keeping at least one hand firmly upon the handlebars and in full control of such bicycle. (Ord. No. 57-12, § 11.08, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-150. Parking.

No person shall stand or park a bicycle upon a street other than upon the roadway against the curb, or upon the sidewalk, in a rack to support the bicycle, or against a building, or at the curb, in such a manner as to afford the least obstruction to pedestrian traffic. (Ord. No. 57-12, § 11.09, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Sec. 30-151. Riding on sidewalks.

No person shall ride a bicycle upon a sidewalk within a business district or zone.

When signs are erected on any sidewalk or street which prohibit the riding of bicycles thereon by any person, no person shall disobey such signs.

Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right-of-way to any pedestrian and shall give audible signal before overtaking and passing such pedestrian. (Ord. No. 57-12, § 11.10, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Cross reference—Authority of traffic director to designate sidewalks on which bicycle riding is prohibited, § 30-172(20).

Sec. 30-152. Lamps and brakes.

Every bicycle used or operated between the hours of sunset and sunrise shall be equipped with a lamp on the front exhibiting a white light visible from a distance of at least five hundred feet to the front and with a lamp on the rear exhibiting a red light visible from a distance of five hundred feet to the rear; except that a red reflector meeting the requirements of this section may be used in lieu of the red light.

Every bicycle shall be equipped with a brake which will enable the operator to make a braked wheel skid on dry, level, clean pavement. (Ord. No. 57-12, § 11.11, 9-20-57; Ord. No. 64-36, § 1, 7-21-64)

Supp. No. 86

Sec. 30-152.1. Voluntary registration.

Any person owning a bicycle may register it at the nearest county or participating municipal fire station. Registration shall consist of filling out a registration form and affixing a plastic sticker to the registered bicycle. The public safety department shall furnish the registration forms and plastic stickers to all county fire stations and to the fire stations of any municipality wishing to participate in the county voluntary registration program. (Ord. No. 71-16, § 1, 2-2-71)

Amendment note—Ord. No. 71-16, § 1, added § 30-152.1.

Sec. 30-152.2. Required registration of bicycles sold by retail dealers.

Any dealer who sells bicycles shall fill out a registration form for, and affix a plastic sticker to each bicycle sold. The public safety department shall furnish registration forms and plastic stickers to all retail dealers engaging in the sale of bicycles. The retail dealer shall forward the completed registration form to the public safety department within two weeks of the sale of any bicycle. (Ord. No. 71-16, § 1, 2-2-71)

Amendment note—Ord. No. 71-16, § 1, added § 30-152.2.

Sec. 30-152.3. Defacing or removing serial numbers.

(a) It shall be unlawful for any person to deface or remove from any bicycle the serial number imprinted thereon.

(b) It shall be unlawful to sell or purchase any bicycle on which the serial number has been defaced or removed without first registering same as provided in sections 30-152.1 through 30-152.5.

(c) All violations of this section shall be punishable by fine not to exceed two hundred fifty dollars (\$250.00) or imprisonment not to exceed thirty (30) days in the county jail, or both, in the discretion of the Metropolitan Judge. (Ord. No. 71-16, § 1, 2-2-71)

Amendment note—Ord. No. 71-16, § 1, added § 30-152.3.

Sec. 30-152.4. Reports of stolen or recovered bicycles.

Every police officer, including municipal police officers, who in the regular course of duty, receives a report of a stolen bicycle or recovers an abandoned or stolen bicycle, shall notify the public safety department of such theft or recovery within twenty-four (24) hours therefrom. (Ord. No. 71-16, § 1, 2-2-71)

Amendment note—Ord. No. 71-16, § 1, added § 30-152.4.

Sec. 30-152.5. Registration files to be maintained.

The public safety department shall maintain a suitable record of all bicycles registered pursuant to sections 30-152.1 through 30-152.5. (Ord. No. 71-16, § 1, 2-2-71)

Amendment note—Ord. No. 71-16, § 1, added § 30-152.5.

Sec. 30-153. Penalty for violation of this article.

Every person found guilty of a violation of any of the provisions of this article shall be punishable by a fine of not more than one hundred dollars or by impounding of such person's bicycle for a period not to exceed ninety days, or both unless otherwise provided herein. (Ord. No. 57-12, § 11, 9-20-57; Ord. No. 64-86, § 1, 7-21-64; Ord. No. 71-16, § 2, 2-2-71)

Amendment note—Ord. No. 71-16, § 2, amended § 30-153 by adding the words "unless otherwise provided herein".

APPENDIX II
STATE OF FLORIDA BICYCLE LAWS

***316.111 Bicycle regulations.—**

(1) Every person riding a bicycle upon a roadway shall be granted all of the rights and be subject to all of the duties applicable to the driver of a vehicle by this chapter, except as to special regulations in this chapter, and except as to provisions of this chapter which by their nature can have no application.

(2) A person propelling a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto.

(3) No bicycle shall be used to carry more persons at one time than the number for which it is designed and equipped.

(4) No person riding upon any bicycle, coaster, roller skates, sled, or toy vehicle shall attach the same or himself to any vehicle upon a roadway.

(5) Every person operating a bicycle upon a roadway shall ride with the flow of traffic as near to the right side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

(6) Persons riding bicycles upon a roadway shall not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles.

(7) Wherever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use such path and shall not use the roadway.

(8) Any person operating a bicycle shall keep at least one hand upon the handlebars.

(9) After sundown, every bicycle shall be equipped with a lamp on the front exhibiting a white light visible from a distance of at least five hundred feet to the front and a lamp on the rear exhibiting a red light visible from a distance of five hundred feet to the rear, except that a red reflector meeting the requirements of this section may be used in lieu of the red light. All such lamps and reflectors shall be in place and in operation whenever a bicycle is operated after sundown.

(10) No parent of any minor child and no guardian of any minor ward shall authorize or knowingly permit any such minor child or ward to violate any of the provisions of this section.

(11) This section shall apply whenever a bicycle is operated upon any street, or upon any public path set aside for exclusive use of bicycles, subject to those exceptions stated herein.

(12) No person upon roller skates, or riding in or by means of any coaster, toy vehicle, or similar device, shall go upon any roadway except while crossing a street on a crosswalk, and when so crossing such person shall be granted all rights and shall be subject to all of the duties applicable to pedestrians.

(13) This section shall not apply upon any street while set aside as a play street authorized herein or as designated by state, county, or municipal authority.

History.—§1, ch. 71-135

*Note.—Effective January 1, 1972

Note.—See former §§126-026, 126-056 and 317-026

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ADDENDUMProposed Dade County Bikeways Plan

- I. On May 22, 1972, the proposed Dade County Bikeways Plan was submitted to the County Manager for his consideration. It was recommended that the County Commission receive information copies and that a request for approval of the Plan as an amendment to the Open Space and Recreation Master Plan be deferred until the Plan could be presented to the Planning Advisory Board and distributed to interested individuals, organizations, and agencies for their review and comments.

Since that time, comments have been received and evaluated by staff with an eye towards refinement of the proposed Plan. Amendments to the bicycle laws and other policies related to bicycle usage necessitates changes in the text also. Based on this review of comments and amendments, the following changes in the Plan text are recommended:

Page 6, change IV,C. to read:

In September, 1971, the Governor and Cabinet of the State of Florida approved a proposal providing for a system of bicycle routes throughout the State. Of special interest to our area is the State proposal to assist county and city government in developing local Bicycle Safety Routes based on minimum State standards. These local routes would be coordinated with longer touring routes developed by the State.

The County is continuing to work with the Department of Natural Resources in designating such a system.

Planning Department staff has continued to work with the Florida Department of Transportation in their development of a Bicycle Safety Trails Policy which aims at the minimization of bicycle/automobile conflict through the integration of bike trail systems into the transportation network.

Page 11, change VI,A. to read:

Bicycles are regulated within Dade County by the State of Florida and the Dade County government. The State's bicycle laws were revised recently and the new regulations went into effect on January 1, 1972. These new regulations treat the cyclist in the same manner as a motorist or motorcycle rider, that is, he is subject to all traffic regulations plus several additional ones. The regulations require that cyclists: ride with and not against the flow of traffic as near the right side of the road as practicable; must use bicycle paths when provided in preference to public roads

and sidewalks; and must use a light and have a large reflector or taillight when riding after sundown.

The State's bicycle laws are incorporated within the Dade County Traffic Code, which regulates bicycles in the unincorporated area as well as in the municipalities. The Dade County Traffic Code also requires registration of bicycles sold by retail dealers and provides for penalties for violation of any part of the bicycle regulations. The applicable bicycle laws are reproduced in the Appendix.

Page 11, change VI,B. to read:

The Dade County Code's subdivision regulations requires the construction of sidewalks in all areas being developed with the exception of the areas zoned for residential estate use over one acre and industrial, agricultural, and general use zones. In areas zoned EU-M (one-half acre residences) and EU-S (three-quarter acre residences) sidewalks are required along section and quarter section line roads only.

In many neighborhoods sidewalks function as bicycle paths, imperfect as they may be. From appearances though, sidewalks tend to be used by children, with teenagers and adults using the street because of the attendant difficulties in riding a bicycle on a sidewalk - potential pedestrian conflict, conflict with automobile driveways, and the difficulty in traversing curbs and swales. In this vein, a policy on pedestrian ramps in public rights-of-way has been recently promulgated by the Dade County Public Works Department. It requires ramps in curbs and swales at the intersection of roads and at mid-block pedestrian crossings. The ramps that are required will also serve bicycle riders in making the sidewalks more attractive for cycling.

Page 14, change IX,A., Rickenbacker Causeway to read:

Rickenbacker Causeway - A connection is needed between the entrance to the Causeway at Brickell Avenue (where the proposed major north-south bikeway will connect) to the beginning of the existing path on Key Biscayne. The completed bikeway would traverse over seven miles, be ranked high in scenic value, and would connect many recreation facilities and attractions. Among them are: Cape Florida State Park, Crandon Park Beach and Zoo, Virginia Beach, the Seaquarium, fishing catwalks on the Rickenbacker Causeway main span and Bear Cut Bridge, the Marine Stadium, and the Marina. Other traffic generators would be linked also: the Marine Science Complex on Virginia Key, Vizcaya (only a few blocks from the Rickenbacker Causeway entrance), and the residential area on

Key Biscayne, long noted for its residents' use of bicycles for transportation on the Island.

Bicycle traffic on the Causeway is already quite heavy, especially on weekends. Because peak automobile usage of the Causeway corresponds to the peak bicycle usage time, the potential for accidents is high, especially because of the narrow right-of-way across the bridges which forces cyclists to dismount and take their chances or to ride and also take their chances.

There are difficult problems to overcome in creating this bikeway because of the three existing narrow bridges. It appears that the only feasible solution is the construction of another catwalk structure for bicycles or reserving a bicycle lane on any new bridge construction. The recently-passed "Decade of Progress" bond issue includes funds for construction of a new bridge paralleling the existing west bridge of the Rickenbacker Causeway. When completed, the new bridge will accommodate westbound traffic and the old bridge eastbound traffic with one lane reserved for a bikeway.

Page 14, change IX,A., Florida East Coast Railway Right-Of-Way to read:

Florida East Coast Railway Right-Of-Way - From Homestead north throughout the length of Dade County this right-of-way remains an appealing place to put non-automobile forms of transportation. Commuter trains, rapid transit, and rail buses have all been proposed for the corridor. It is suggested that a portion of this right-of-way be used now for a bicycle path, especially from downtown Miami south, to accommodate and encourage bicycle commuting along a straight, fast path. This path is not proposed as a recreation mode, as most other bikeways in Dade County would primarily be, but essentially as a means of non-polluting, quiet transportation. At some locations along the right-of-way, such as the Miami Shores golf course, it may be necessary to vary the bikeway route. Form of bikeway: separate path within the FEC right-of-way.

Page 14, change IX,A., Miami Beach Oceanway to read:

Miami Beach Oceanway - This bikeway would extend from Haulover Cut through the length of Bal Harbour, Surfside and Miami Beach to Government Cut. The path would be created in conjunction with the beach improvement project as proposed by the Army Corps of Engineers. It would generally be located between the new beach area and east of the existing hotels and motels. Wherever possible, the bikeway will be designed exclusively for bicycle traffic, however portions may include

pedestrian traffic as well. The Oceanway would serve as the main corridor linking smaller independent bikeways which are being proposed and developed in near-by parks and golf courses. In its ultimate phase, the Oceanway could connect with the Rickenbacker Causeway path by utilization of right-of-way within the transportation corridor proposed from Government Cut to Virginia Key. With its close proximity to tourist activities, the Oceanway path will have tremendous recreational potential. Not only serving as a transportation mode, it will provide exciting vistas of the famed Atlantic beaches for which Dade County is noted.

Funds for the County's share of the total beach improvement project were included in the recently-passed "Decade of Progress" bond issue.

Page 16, change IX,B., Florida Power & Light Company Transmission Line Right-Of-Way to read:

Florida Power & Light Company Transmission Line Right-Of-Way -
As indicated previously, the Florida Power & Light Company transmission line right-of-way is being utilized for the linear park now under design in the western part of the urban area, from the Tamiami Trail to Miller Road. The right-of-way could be further utilized most readily and with greatest need from the C-100 Canal to the Fountainebleu Park development. In the future, use could be made of the other segments of the right-of-way (with Florida Power & Light's permission) for bikeways. The "Decade of Progress" bond issue includes \$400,000 for extension of the linear park concept to areas of the right-of-way not now included in the Federally-funded project. Form: a separate path with crossing lights or bridge structures at major street intersections.

Page 18, change X,C. to read:

C. Dade County

Can provide budgetary support (both capital and operating) planning and coordinative services, right-of-way, easements, construction capability, marking and signing, and maintenance.

The "Decade of Progress" bond issue that was recently approved in Dade County includes \$1,500,000 to "construct bicycle pathways within neighborhoods to meet future needs." These funds will be allocated through the detailed planning process used by the Dade County Park and Recreation Department utilizing this Bikeways Plan as a guide for location, form, and phasing.

Pages 19-21, change XI to read:

XI. Other Recommendations

Throughout this study we have commented on various aspects of cycling in addition to proposing route locations and the form they ought to take. In this section we will bring together all these other aspects and make recommendations which we feel will be useful to policy-makers in their deliberations on how to create a beneficial environment for safe and sensible cycling. Credit for many of the recommendations must go to the recent Conference on Bicycle Safety Trails in South Florida during which experts on cycling and individuals involved in planning for cycling gathered in sessions aimed at increasing the use of bicycles in South Florida and maximizing their benefits for both users and those who are affected by their use.

Within groupings, the recommendations are listed in order of priority.

A. Transportation

1. Planning for bicycle facilities should become a part of the urban area transportation planning process, so that transportation planners are vigilant in recognizing the opportunity for inclusion of cycling in future transportation schemes.
2. Bicycle riding as a means of transportation should be encouraged by providing or requiring bicycle parking facilities at shopping centers, public facilities, and apartment complexes. Public parking garages in the downtown area should be requested to devote a portion of the space to bicycle parking. To discourage theft, these parking facilities should optimally be under surveillance or be in a locked enclosure.
3. New road construction and reconstruction of older roads should include bikeways as an integral part of the design. As a minimum, new or reconstructed roads should have a one-foot wide striped shoulder to accommodate cyclists.
4. The automobile drivers' manual should include information on bicycle operations and rules of courtesy and safety with reference to bicycles to protect and inform both the cyclist and automobile driver.

5. Bicycle information brochures should be oriented not only towards children but at the adult commuting cyclist to help increase the ranks of commuters by bicycle. Such brochures should provide usable maps of existing and proposed bikeways. The brochure could be widely distributed through schools and cycle shops.
6. Community business establishments should be encouraged to provide facilities for showering and changing clothes to promote their employees' cycling to work.

B. Recreation

1. Pedestrians and cyclists are quite capable of mixing on the same path for recreation purposes, so that many existing walkways can be feasibly converted to cyclist/pedestrian usage in parks and elsewhere.
2. Consideration should be given to the concept of a "bicycle park" in Dade County, perhaps at Tamiami Park, Gratigny Park and Richmond Park, with designated areas set aside only for bicycles.

C. Law and Safety

1. Elementary schools should add a bicycle education program to their required curriculum, in cooperation with local public safety officials.
2. Consideration should be given to the placement of warning signs at key points in the County to inform motorists of impending heavy bicycle traffic. For example, at the entrance of the Rickenbacker Causeway or in Coconut Grove, signs might be effective in making motorists aware of the need for careful driving ahead because of the number of cyclists using the roadways.
3. Distinctive means of defining space for bicycle usage should be encouraged, such as using colored concrete for paths or using a stencilled bicycle symbol on a street bicycle lane.
4. As noted in Section VI A, the current State and municipal bicycle laws should be reviewed (e.g., one proposed revision would require cyclists to dismount and walk across certain streets when making a left turn, while allowing left turns

from the left hand lane on other, less busy streets; another might restrict the use of bicycles during inclement weather in those areas where the bikeway is part of a roadway). It is suggested that a bicycle advisory council be formed to meet with public safety officials to review said laws.

5. Bikeway usage should be restricted to non-motorized vehicles.
6. Expressway exit/entrance ramps at arterial street underpasses should be provided with a bicycle path and drop curbs to facilitate safer passage of pedestrians and cyclists.
7. Consideration should be given to the elimination of parking on selected streets during certain hours of the day in the anticipation of increased safe bicycle usage of that facility. This procedure would be analogous to the rush-hour ban on parking so that automobiles could utilize an extra lane for traffic purposes.
8. Consideration should be given to having bicycle licenses for cyclists to promote safety and facilitate new bikeways through the use of license revenues.

Pages 23-26, replace Appendixes I and II with:

APPENDIX
DADE COUNTY BICYCLE LAWS

Sec. 30-263. Bicycle regulations.

(1) Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this chapter, except as to special regulations in this chapter and except as to provisions of this chapter which by their nature can have no application.

(2) A person propelling a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto.

(3) No bicycle shall be used to carry more persons at one (1) time than the number for which it is designed and equipped.

(4) No person riding upon any bicycle, coaster, roller skates, sled or toy vehicle shall attach the same or himself to any vehicle upon a roadway.

(5) Every person operating a bicycle upon a roadway shall ride with the flow of traffic as near to the right side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

(6) Persons riding bicycles upon roadway shall not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles.

(7) Wherever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use such path and shall not use the roadway.

(8) Any person operating a bicycle shall keep at least one (1) hand upon the handlebars.

(9) After sundown, every bicycle shall be equipped with a lamp on the front exhibiting a white light visible from a distance of five hundred (500) feet to the rear; except that with a lamp on the rear exhibiting a red light visible from a distance of five hundred (500) feet to the rear; except that a red reflector meeting the requirements of this section may be used in lieu of the red light. All such lamps and reflectors shall be in place and in operation whenever a bicycle is operated after sundown.

(10) No parent of any minor child and no guardian of any minor ward shall authorize or knowingly permit any such minor child or ward to violate any of the provisions of this section.

(11) This section shall apply whenever a bicycle is operated upon any street, or upon any public path set aside for exclusive use of bicycles subject to those exceptions stated herein.

(12) No person upon roller skates, or riding in or by means of any coaster, toy vehicle, or similar device, shall go upon any roadway except while crossing a street on a crosswalk and when so crossing such person shall be granted all rights and shall be subject to all of the duties applicable to pedestrians.

(13) This section shall not apply upon any street while set aside as a play street authorized herein or as designated by state, county, or municipal authority. (Ord. No. 71-94, § 1, 12-21-71)

Sec. 30-264. Penalties.

Any person not a juvenile, as such is defined by the laws of this state, found guilty of a violation of any provisions found in section 30-263 shall be punished by a fine of not more than twenty-five dollars (\$25) or by impounding of such person's bicycle for a period not to exceed ninety (90) days. Upon the recommendation of a judge of a juvenile court or a competent court having jurisdiction over the person of a minor, the state, county or municipal authority may impound such minor's bicycle for such period as the court may determine. (Ord. No. 71-94, § 1, 12-21-71)

Sec. 30-264.1. Voluntary registration.

Any person owning a bicycle may register it at the nearest county or participating municipal fire station. Registration shall consist of filling out a registration form and affixing a plastic sticker to the registered bicycle. The public safety department shall furnish the registration forms and plastic stickers to all county fire stations and to the fire stations of any municipality wishing to participate in the county voluntary registration program. (Ord. No. 72-10, § 1, 2-15-72)

Amendment note - Ord. No. 72-10, § 1, amended Ch. 30 by adding § 30-264.1.

Sec. 30-264.2. Required registration of bicycles sold by retail dealers.

Any dealer who sells bicycles shall fill out a registration form for, and affix a plastic sticker to each bicycle sold. The public safety department shall furnish registration forms and plastic stickers to all retail dealers engaging in the sale of bicycles. The retail dealer shall forward the completed registration form to the public safety department within two (2) weeks of the sale of any bicycle. (Ord. No. 72-10, § 1, 2-15-72)

Amendment note - Ord. No. 72-10, § 1, amended Ch. 30 by adding § 30-264.2.

Sec. 30-264.3. Defacing or removing serial numbers.

(a) It shall be unlawful for any person to deface or remove from any bicycle the serial number imprinted thereon.

(b) It shall be unlawful to sell or purchase any bicycle on which the serial number has been defaced or removed without first registering same as provided in Sections 30-264.1 through 30-264.5.

(c) All violations of this section shall be punishable by fine not to exceed two hundred fifty dollars (\$250.00) or imprisonment not to exceed thirty (30) days in the county jail, or both, in the discretion of the metropolitan judge. Ord. No. 72-10, § 1, 2-15-72)

Amendment note - Ord. No. 72-10, § 1, amended Ch. 30 by adding § 30-264.3.

Sec. 30-264.4. Reports of stolen or recovered bicycles.

Every police officer, including municipal police officers, who in the regular course of duty, receives a report of a stolen bicycle or recovers an abandoned or stolen bicycle, shall notify the public safety department of such theft or recovery within twenty-four (24) hours therefrom. (Ord. No. 72-10, § 1, 2-15-72)

Amendment note - Ord. No. 72-10, § 1, amended Ch. 30 by adding § 30-264.4.

Sec. 30-264.5. Registration files to be maintained.

The public safety department shall maintain a suitable record of all bicycles registered pursuant to Sections 30-264.1 through 30-264.5. (Ord. No. 72-10, § 1, 2-15-72)

Amendment note - Ord. No. 72-10, § 1, amended Ch. 30 by adding § 30-264.5.

Sec. 30-264.6. Penalty.

Every person found guilty of a violation of any of the provisions of Sections 30-264.1 through 30-264.5 shall be punishable by a fine of not more than one hundred dollars (\$100.00) or by impounding of such person's bicycle for a period not to exceed ninety (90) days, or both unless otherwise provided herein. (Ord. No. 72-10, § 1, 2-15-72)

Amendment note - Ord. No. 72-10, § 1, amended Ch. 30 by adding § 30-264.6.

II. Cost estimates were not included in the development of the proposed Dade County Bikeways Plan. Since that time the potential for funding bikeways from local, state, and federal sources has increased greatly, so cost estimates have been developed for priority bikeway proposals as indicated in the Plan.

The cost estimates are derived from the current cost of asphalt pavement construction of pedestrian safety paths in Dade County as reported by the Public Works Department. The unit cost of \$6.00 per linear foot (six foot minimum width) includes \$3.00 per linear foot for the basic path materials and construction and \$3.00 per linear foot for signing, landscaping, signalization, rest stops, water fountains, and other amenities. Possible right-of-way acquisition costs are not included in the estimates.

In many cases the bikeway's cost could be considerably less because a new separate path would not be required; that is, existing sidewalks might be modified by the addition of drop curbs or a portion of the street right-of-way could be utilized for a striped path. Where cost estimates differ from the unit cost basis, the revised cost is indicated.

The following cost estimates are recommended for inclusion in the Plan text for each of the recommended bikeways in Section IX:

A. Phase One Priorities

Bayshore Bikeway

1. Fairchild Gardens south to Cutler Ridge - approximately 10 miles at \$10,000 per mile - \$100,000 (Project funded in current fiscal year capital operating reserve fund; federal funding application on file)

2. Coconut Grove north to downtown Miami - funds estimated by the City of Miami - \$36,400

Rickenbacker Causeway

Approximately 7 miles at \$6.00 per linear foot - \$220,000
(additional costs would be required to widen the existing bridges)

Florida East Coast Railway Right-of-Way

1. From Homestead to south city limits of Miami - approximately 26 miles at \$6.00 per linear foot - \$820,000
2. Within the City of Miami - approximately 11 miles at \$6.00 per linear foot - \$350,000
3. North City limits of Miami to Broward County line - approximately 8 miles at \$6.00 per linear foot - \$250,000

Miami Beach Oceanway

Approximately 12 miles at \$6.00 per linear foot - \$380,000

Black Creek Bikeway

Approximately 9 miles at \$6.00 per linear foot - \$285,000
(Cooperative funding anticipated with Federal Bureau of Outdoor Recreation and Central and Southern Florida Flood Control District)

"Supertrail"

Route to be designated (no funding contemplated)

B. Phase Two Priorities

C-100 Canal

Approximately 6 miles at \$6.00 per linear foot - \$190,000
(Cooperative funding with the Flood Control District and local funds - Flood Control District to \$50,000 limit)

Snake Creek Canal

Approximately 6 miles at \$6.00 per linear foot - \$190,000
(same as C-100 Canal)

Snapper Creek Canal

Approximately 6.5 miles at \$6.00 per linear foot - \$205,000
(same as C-100 Canal)

Florida Power and Light Company Transmission Line Right-of-Way

Approximately 8 miles at \$6.00 per linear foot - \$250,000
(Land acquisition and right-of-way to property may require separate funding)

C. Phase Three Priorities

Sunny Isles Causeway

Approximately 2 miles at \$6.00 per linear foot - \$60,000
(May qualify for State Department of Transportation funds)

Proposed State Road 852 (192nd Street Causeway)

Approximately 1.75 miles at \$6.00 per linear foot - \$55,000
(May be incorporated in State Department of Transportation construction program)

Miami River

Approximately 5.5 miles at \$6.00 per linear foot - \$175,000

Other Bikeways

Undesignated mileage: recommend at \$6.00 per linear foot - \$30,000 per mile