
# MASTER PLAN

Adopted by the Village Council (Ordinance 95-8) on September 12, 1995
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Amended through December 9, 2008

For additional information:

Building, Zoning and Planning Department
Village of Key Biscayne
85 West McIntyre Street
Key Biscayne, Florida 33149
(305) 365-5511
Fax: (305) 365-5556
Internet: http://www.keybiscayne.fl.gov

MISSION STATEMENT: "TO PROVIDE A SAFE, QUALITY ENVIRONMENT FOR ALL ISLANDERS THROUGH RESPONSIBLE GOVERNMENT"

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Enrique Garcia, Vice Mayor

Michael W. Davey

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Jud Kurlancheek, AICP, Building, Zoning and Planning Director
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February 2010

# Village of Key Biscayne

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Loren Matthews, *Program Coordinator*
*Recreation Department*

# Village of Key Biscayne

1994-1996

*Local Planning Agency*

Betty Sime, *Chairman*
John F. Festa
Raul Llorente
Hugh T. O'Reilly
Michele Padovan
Raymond P. Sullivan
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1993-1994

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Mortimer Fried
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1992-1993

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Mortimer Fried
Michael Hill
Raymond P. Sullivan

Robert K. Swarthout, Incorporated
*Master Plan Consultant*
City Planning Consultants
400 South Dixie Highway
Suite 121
Boca Raton, Florida 33432

# KEY BISCAYNE MASTER PLAN

## Part I

## Data and Analysis

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## INTRODUCTION

Part I of the Master Plan document reflects the background data and its analysis on which the Part II plan policies are based. Unlike Part II, Part I is not formally adopted by the Village Council. Since some of this background data is constantly changing, it is important to periodically update certain sections of Part I.

# I. FUTURE LAND USE ELEMENT

**LAND USE DATA**

**EXISTING LAND USE**

**Table I-1**
**Existing Land Use - 1993**

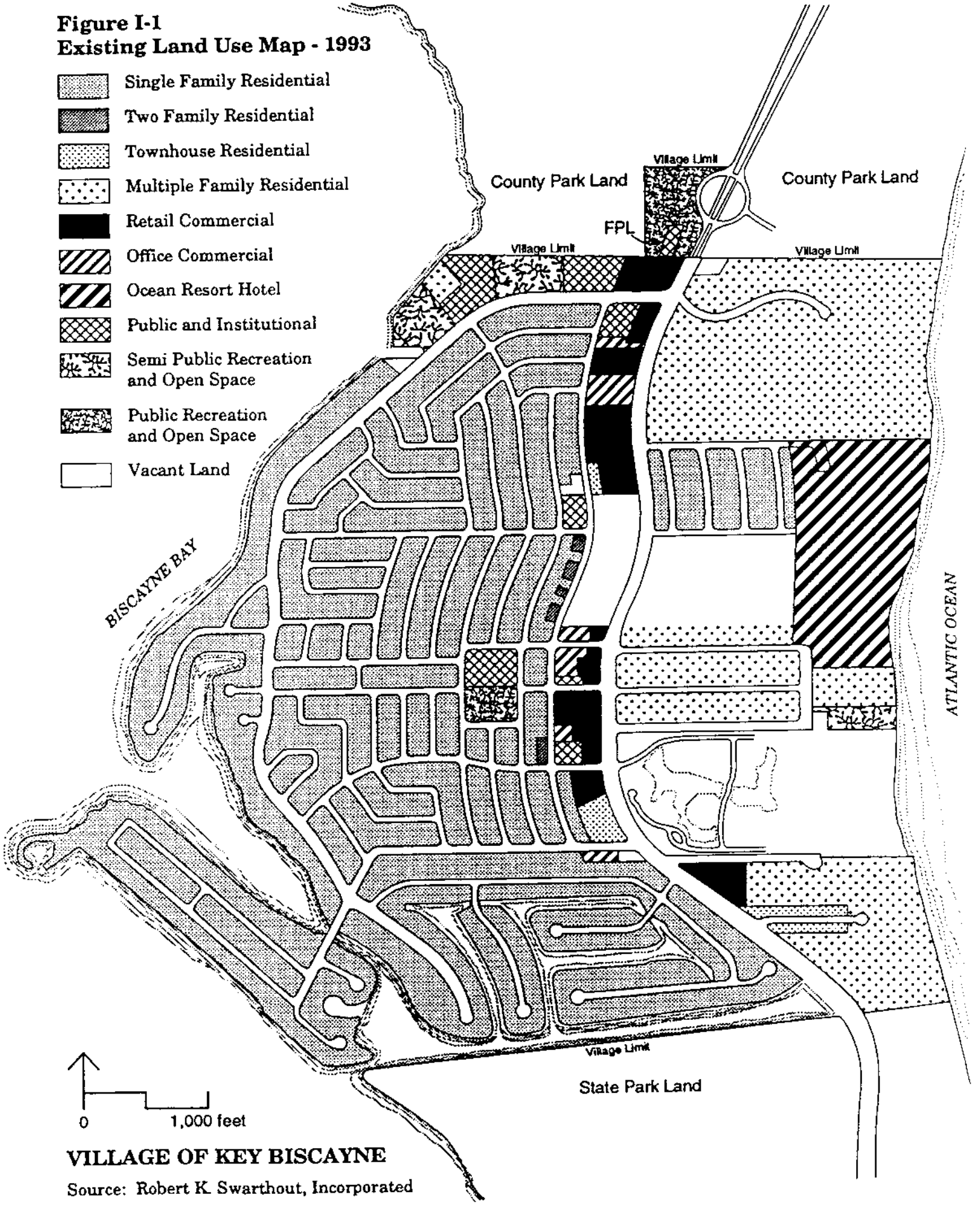
| | Acres |
|---|---|
| Single Family Residential: 2-6 units per acre | 310 |
| Two Family and Townhouse Residential: 5-13 units per acre | 12 |
| Multiple Family Residential: up to 70 units per acre | 130 |
| Ocean Resort Hotel | 28 |
| Office Commercial | 6 |
| Retail Commercial | 24 |
| Public and Institutional | 18 |
| Public Recreation and Open Space | 10 |
| Semi Public Recreation and Open Space | 11 |
| Roads and Canals | 210 |
| Vacant | 86 |
| TOTAL | 845 |

**Source:** Robert K. Swarthout, Incorporated, 1993

Table I-1 and Figure I-1 show the existing land use pattern for the Village. By far, the largest category is single-family residential. See Section A for examples of specific existing development densities and intensities. The land uses abutting the Village are park, both to the north and south. Although there are no land use conflicts with Dade County at the Village line, just to the north is the tennis center which the Village does regard as incompatible because of its growing size and intensity of use and thus traffic generation.

Since the Village was developed after 1943, there are no "historic" structures. However, now is the time to begin thinking about those earliest structures that soon might be eligible for the official State list, e.g., the oldest building at the Silver Sands Motel. There are no commercially valuable minerals or wellfields and this is not specified as an Area of Critical State Concern by State statute.

**Figure I-1**
**Existing Land Use Map - 1993**




**VILLAGE OF KEY BISCAYNE**

Source: Robert K. Swarthout, Incorporated

The existing land use map shows the beach area and waterbodies adjacent to the Village plus the recently created ponds south of East Enid Drive. The only upland wetlands (mangroves) are along the edge of Calusa Park; see Figure I-2 tidal muck designation.

Figures I-2 (Soils) and I-3 (Floodplains) round out the existing land use map series. The predominant soil type is "urban land" reflecting fill and grading for urban development. The two large vacant tracts are classified as Canaveral Sand although the southern tract soil has been disturbed by grading. The beach is simply classified as beach sand. Calusa Park is largely Canaveral Sand but its western edge and the land to the north is tidal Kesson Muck which is a hydric soil conducive to mangroves.

## POPULATION

The Village of Key Biscayne is a very desirable place to live and visit and it will remain so for the foreseeable future. The Village is small in comparison to the metropolitan Dade County area. Therefore, Key Biscayne will attract as many residents and seasonal visitors as it has housing units and hotel rooms to accommodate. The future permanent population will vary according to the number of housing, the number of people per household and the rate of occupancy.

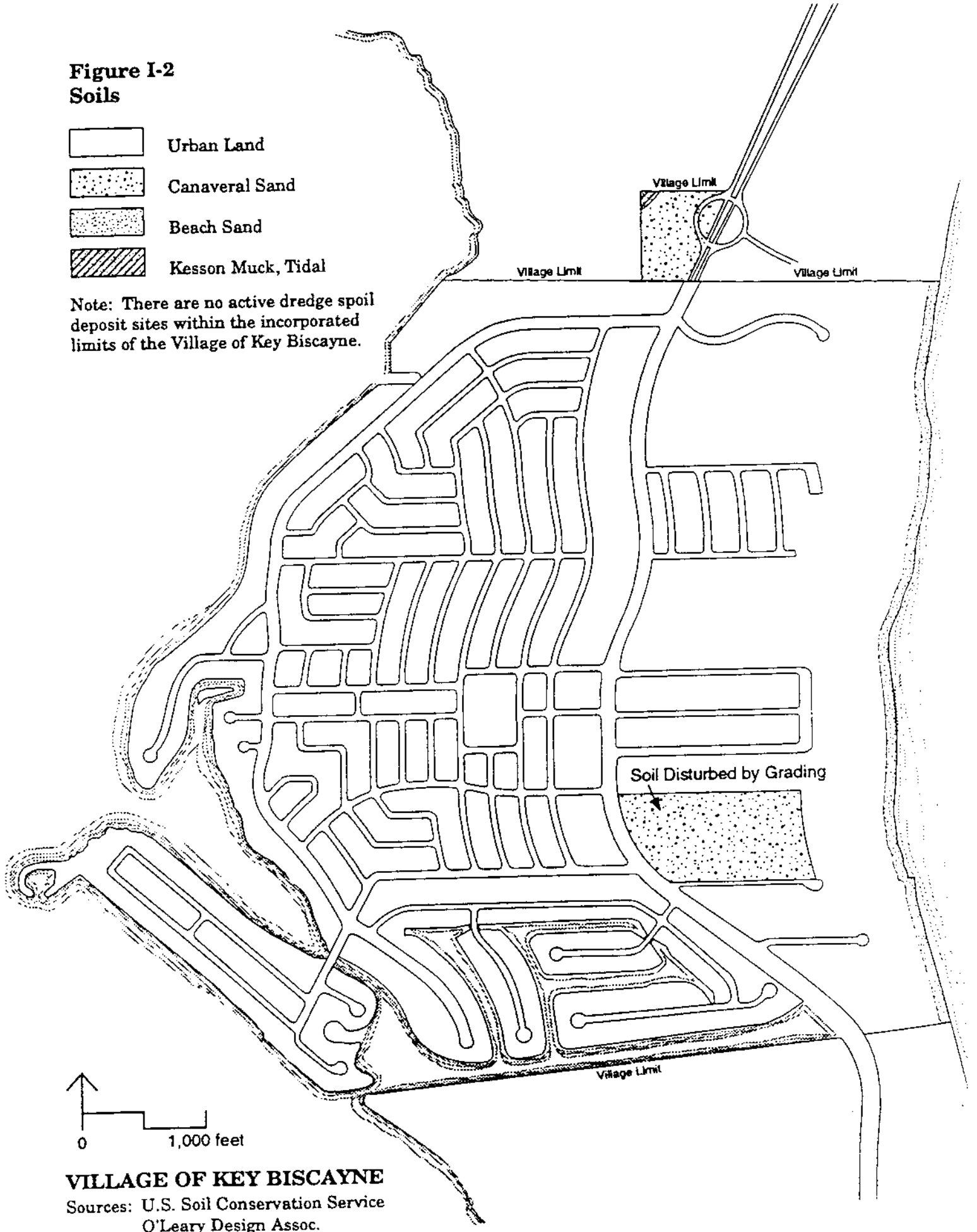
Projections for the permanent population for the years 1998 and 2003 are shown in Table I-2. These projections are based on applying the 1990 population per household, 2.3 people, to a projected number of housing units. The projected number of housing units over the planning period to 2003 is 500 housing units plus the number of housing units existing in 1990. Five hundred additional housing units over the planning period is not a particularly optimistic assumption based on the increase in demand for housing units evidenced in the rise in Key Biscayne housing prices over the past several years and the construction and marketing plans set forth by the developers of the two large Developments of Regional Impact in the Village. More than 500 additional housing units will be built if and when the two existing Developments of Regional Impact on the island are built to the maximum densities now permitted or even to the somewhat lower densities now envisioned by their owners. A total of 1.174 additional housing units are envisioned at build-out by the developers of the two large development-of-regional impact sites in the Village.

**Table I-2**
**Population Projection (Permanent)**

| | **1980**[(1)] | **1990-1993**[(1)] | **1993**[(2)] | **1998**[(2)] | **2003**[(2)] |
|---|---|---|---|---|---|
| Population | 6,337 | 8,854 | 8,854 | 9,700 | 9,960 |
| Households | 2,619 | 3,831 | 3,831 | 4,220 | 4,330 |
| Population Per Household | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 |

**Sources:** [(1)] U.S. Census Bureau.
[(2)] Robert K. Swarthout, Incorporated

## Figure I-2
## Soils




Note: There are no active dredge spoil deposit sites within the incorporated limits of the Village of Key Biscayne.

**VILLAGE OF KEY BISCAYNE**

Sources: U.S. Soil Conservation Service
O'Leary Design Assoc.

Table I-3 provides a preliminary projection of the seasonal population and the resulting total population. The seasonal projections are premised upon the following four assumptions: 1) be some continuing conversion of seasonal housing units to permanent occupancy, 2) the addition of 400 hotel rooms and some 500 housing units between the two Development of Regional Impact (DRI) sites over the 10 year planning period, 3) the reopening of the Sonesta and Silver Sands hotels, and 4) an average seasonal occupancy per hotel room and per seasonal housing unit of 1.5 persons. Although only two minor buildings have been constructed as yet, it should be noted that the DRI development orders now in effect permit the following:

- Continental (former Sheraton tract):

  600 residential units
  800 hotel rooms

- Key Biscayne Hotel and Villas:

  585 residential units
  475 hotel rooms

However, both developers have during 1993 submitted applications for revised development orders which would downsize the projects to include:

- Continental/Grand Bay Towers and Resort:

  57 single family units
  412 condo units
  200 "apartment-hotel" units
  250 hotel rooms

- Key Biscayne Hotel and Villas:

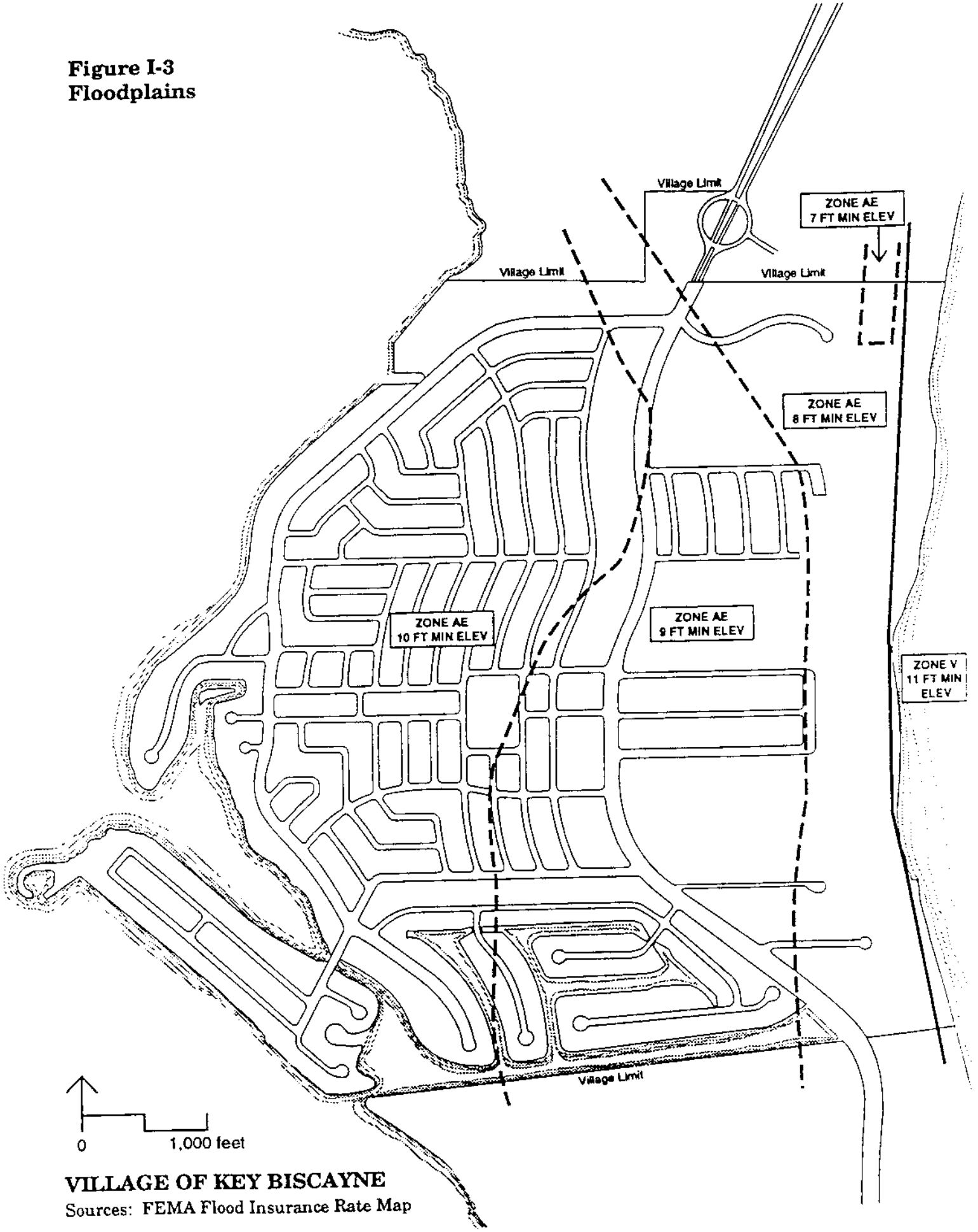
  505 residential units
  300 hotel rooms

**Table I-3**
**Seasonal and Total Population Projections**

| | 1990[1] | 1993[1] | 1998[2] | 2003[2] |
|---|---|---|---|---|
| Seasonal Population: | | | | |
| In Housing Units | 1,934 | 1,934 | 1,800 | 1,800 |
| With Family and Friends | 460 | 460 | 480 | 536 |
| In Hotels | 624 | 624 | 1,150 | 1,236 |
| Total Seasonal | 3,018 | 3,018 | 3,430 | 3,566 |
| Permanent Population | 8,854 | 8,854 | 9,700 | 9,960 |
| Total Population for Planning Purposes | 11,872 | 11,872 | 13,130 | 13,526 |

**Sources:** [1] 1990 U.S. Census and Metro-Dade County Planning Department.
[2] Robert K. Swarthout, Incorporated, 1993.

**Figure I-3**
**Floodplains**




**VILLAGE OF KEY BISCAYNE**

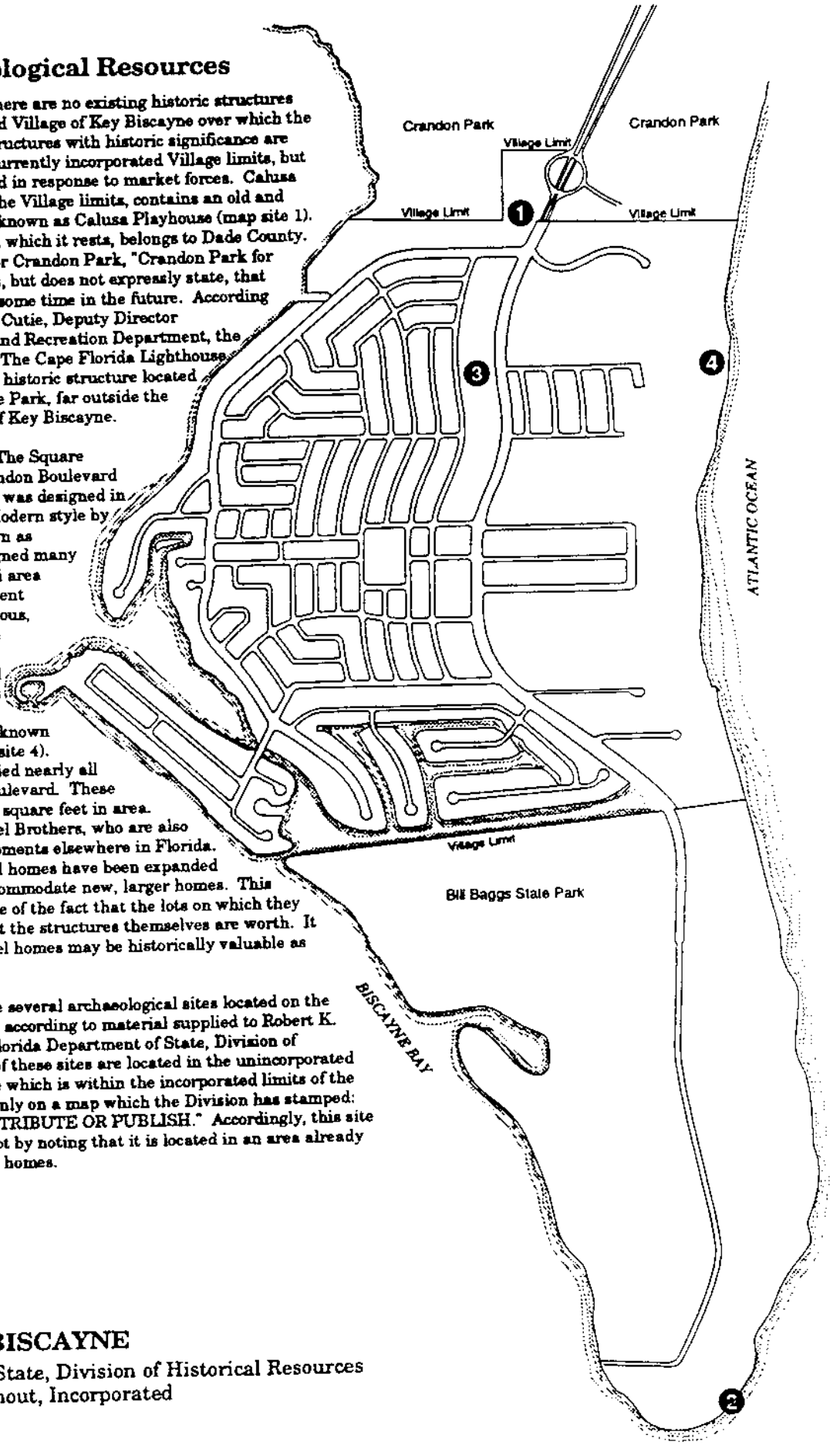
Sources: FEMA Flood Insurance Rate Map

# Figure I-4
# Historic and Archaeological Resources

***Existing Historic Structures:*** There are no existing historic structures within the limits of the incorporated Village of Key Biscayne over which the Village has jurisdiction. Private structures with historic significance are known to have existed within the currently incorporated Village limits, but these structures have all been razed in response to market forces. Caluса Park, a Dade County park within the Village limits, contains an old and possibly historic wooden structure known as Caluса Playhouse (map site 1). This structure, like the property on which it rests, belongs to Dade County. Dade County's draft master plan for Crandon Park, "Crandon Park for the Twenty-First Century," implies, but does not expressly state, that the playhouse may be relocated at some time in the future. According to a June 24, 1994 letter from C.A. Cutie, Deputy Director Metropolitan Dade County Parks and Recreation Department, the draft plan was subject to revision. The Cape Florida Lighthouse Tower (map site 2) is a well known historic structure located at the south end of Bill Baggs State Park, far outside the incorporated limits of the Village of Key Biscayne.

***Potential Historic Structures:*** The Square Shopping Center is located on Crandon Boulevard (map site 3). This shopping center was designed in something like an incipient Post Modern style by the Miami architectural firm known as Architonica. Architonica has designed many well-known buildings in the Miami area and elsewhere. Two of its apart-ment towers on Brickell Avenue are famous, or nearly so. It is possible that the Square Shopping Center may one day be deemed worthy of historical designation. The Silver Sands has the oldest known building in the incorporated Village. It is not yet known to be historically significant (map site 4). "Mackel homes" at one time occupied nearly all of the dry lots west of Crandon Boulevard. These homes are typically 1,100 to 1,200 square feet in area. They were developed by the Mackel Brothers, who are also responsible for other large developments elsewhere in Florida. During recent years, many Mackel homes have been expanded beyond recognition or razed to accommodate new, larger homes. This trend is the inevitable consequence of the fact that the lots on which they sit are worth five to six times what the structures themselves are worth. It is possible that one or more Mackel homes may be historically valuable as an example of their type.

***Archaeological Sites:*** There are several archaeological sites located on the island of Key Biscayne. However, according to material supplied to Robert K. Swarthout, Incorporated by the Florida Department of State, Division of Historical Resources, all but one of these sites are located in the unincorporated portion of the island. The one site which is within the incorporated limits of the Village of Key Biscayne appears only on a map which the Division has stamped: "CONFIDENTIAL: DO NOT DISTRIBUTE OR PUBLISH." Accordingly, this site is not identified on this map except by noting that it is located in an area already fully developed with single family homes.




0 1,000 feet

## VILLAGE OF KEY BISCAYNE

Sources: Florida Dept. of State, Division of Historical Resources
Robert K. Swarthout, Incorporated

# LAND USE ANALYSIS

## PUBLIC FACILITIES ANALYSIS

The Infrastructure and Traffic Elements provide detailed data and analysis on the facilities serving the existing land use pattern and two approved DRI areas. The following is a summary.

### Water

Distribution lines serve the entire Village and are fed by two Metro-Dade Water and Sewer Department (WASD) mains which enter via Crandon Boulevard.

### Sewage

WASD sewer force mains entering the Village via Crandon Boulevard serve a collection system that covers about two-thirds of the Village area. Almost 90 percent of the housing units are served but an extensive part of the single-family area is not served. Sewer lines are available to the two vacant DRI tracts. See Figure IV-1 in the Infrastructure Element.

As noted in the soils section below, most of the developed and vacant land in the Village has sandy soils. Specifically, it is Canaveral Sand. It is not particularly permeable because of its high silt content. It has been adequate for septic tank and drain field sewage disposal, although it may sometimes become saturated during periods with extremely heavy rain; at such times, stormwater with small amounts of drain field effluent may percolate to the surface. Such percolation is believed to occur based on antidotal testimony, but there is no evidence that such percolation occurs with sufficient frequency or in such magnitude as to constitute an environmental or health problem. Percolation of effluent to the surface during extremely heavy rain can be minimized or eliminated by backfilling drain fields with appropriate materials and by requiring that the layer of marl below drain fields be broken through to facilitate percolation.

Although septic tank and drainfield sewage disposal does not now present a serious environmental or health problem, at least some Village residents and officials wish to extend sanitary sewers to as much of the presently unserved area as is technically and financially possible.

### Solid Waste

The County is responsible for the collection and disposal of solid waste from the single-family residential areas. Various private haulers serve the commercial and multifamily housing.

### Drainage

The Village drainage systems were installed on a piecemeal basis to address localized flooding problems. A system of positive storm drains serves Crandon Boulevard and the immediate vicinity of Hurricane Harbor. A scattered pattern of trench drains and similar catch basins with structural drains serve portions of the Village. However, on-site detention/retention is critical for adequate drainage in most of the Village. It is not working well now in part due to the filling of swales.

Positive drainage systems are systems that consist basically of catch basins and drainage pipes connected to outfalls in the ocean. The elevations characteristics of much of the Village limit the effectiveness of the existing positive drains. The high water table and low "head" (difference in elevation between surface and water table elevations) result in the catch basins filling up with water and draining very slowly. This is due to the lack of elevations change that is necessary to force water to drain.

### Traffic

Crandon Boulevard, a Minor County Arterial, provides a level of service of B. The various Village streets have an adequate level of service but some of them face other problems including speeding, lack of sidewalks, problems caused by off-island bicyclists, etc. Some streets such as West Mashta have structural problems.

### Dredge Spoil Deposit Sites

There are no active dredge spoil deposit sites in the incorporated limits of the Village of Key Biscayne. The Village has no responsibility for dredging adjacent waterways.

### Land Needed for Infrastructure

It is not anticipated that land will be needed for storm sewer, sanitary sewer, potable water or traffic. Sewer and water plants which serve Key Biscayne are located outside of the Village Limits. Distribution lines and related pump and other facilities for storm sewers, sanitary sewers and potable water can be accommodated within existing rights-of-way and easements. Existing rights-of-way are also adequate for traffic.

## VACANT LAND ANALYSIS

### Location

Most of the 86 acres of vacant land is located east of Crandon Boulevard, primarily in two tracts that are the subject of approved Development of Regional Impact (DRI) development orders. Except for the ocean beach, virtually all of the vacant land is suitable for development.

### Soils

Most of the developed and vacant land in the Village has sandy soils with a high silt content. Silt is prevalent to a depth of approximately 25 feet. Consequently, percolation rates are slow (0.00001 cubic feet per second per square foot per foot of head). (See Figure I-2.)

### Topography

The average topography of the vacant land is slightly less than five feet above mean sea level. Only along Crandon Boulevard the elevation of eight feet is reached in some places.

### Natural and Historic Resources

The principal natural resource is the ocean beach. The developer of the Key Biscayne Hotel and Villas DRI tract has created some lakes farther west on the tract. There are no known historic resources on the vacant land.

## LAND NEED FOR PROEJCTED POPULATION

Given the location and real estate market realities of Key Biscayne, the land use policy of the Village will determine the future population. Currently, sound existing houses are being demolished in order to build larger, more contemporary houses. This strong market demand suggests that whatever residential intensity is finalized for the two DRI tracts will ultimately be constructed and occupied thereby determining the "build-out" population of the Village. The unknown factor at this time is densities and thus number of dwelling units that will ultimately be constructed. As noted in the population section, an additional 1,185 units are authorized by the two vested development orders; as of 1993, tentative developer plans would reduce this to

1,174 if "apartment-hotel" units are counted as residential. The Future Land Use Map authorizes only some 300 units on the northern tract and some 865 multiple-family units on the southern tract should either of the development orders expire. The likelihood of such expirations occurring is unknown at this time but it is not beyond the realm of possibility. This land use analysis assumes that 500 units will be financed, constructed and occupied during the 10-year planning period. However, this projection will have to be reassessed as the status of the two DRI projects is clarified. The plan designates several areas for redevelopment from commercial to townhouse but some of this is not expected to occur during the planning period. In summary, there is adequate land to accommodate the projected population.

## REDEVELOPMENT AND USE INCOMPATIBILITY

Damage from Hurricane Andrew has complicated this analysis. Prior to the hurricane, there were no blighted conditions in the Village. As of early November, 236 housing units were officially determined to be unsafe for occupancy until repairs are made. Still to be determined is the number of these units that will have to be demolished and rebuilt to current FEMA floodplain standards due to the extent of damage although the number is expected to be small.

In addition to housing, all three resort facilities are closed due to hurricane damage although the Sonesta has a projected reopening date.

In terms of use compatibility, the problem is not that the existing land uses per se are incompatible with adjacent development but rather the way in which the uses are developed. In other words, the development is not compatible with the character of the Village and/or adjacent development. Prime examples include:

- outdoor automobile lifts and thus repairs,
- the L'Esplanade commercial building with parking, noise and access problems,
- poor commercial site planning including excessive signage, insufficient landscaping, poorly designed or inadequate parking, poor relationship to adjacent housing (particularly noise from loading docks), etc.
- lack of safe and convenient pedestrian/bicycle accessibility.

The other kind of site design incompatibility is the bulk characteristics of many new single-family houses. The size, setback, coverage and height in relation to the lot size and adequate existing housing is excessive. The implications of this analysis are three-fold:

Crandon Boulevard: The 1994 amendments to the land development code should build in incentives and design review procedures to foster quality private redevelopment of the problem parcels; this redevelopment may or may not involve demolition of existing structures.

Commercial Site Design Standards: The Village recently adopted a new sign code; a new landscape code is now going through the approval process; a revised parking code should then follow.

Single-Family Area: The 1994 amendments to the land development code must contain setback, height, minimum pervious area and other bulk controls to make certain that new houses are compatible with the lot size and adjacent housing; a design review process may also be desirable here as well.

## FLOODPLAIN

As shown on Figure I-3, the entire Village is within the 100 floodplain which means this entire data and analysis component relates to the floodplain. The most significant implications are as follows:

- Any new construction must have its first floor elevated at or above the base flood elevation. Most of the Village has an elevation of 4 to 6.5 feet above sea level; the base flood elevation shown on the FEMA map ranges from 7 to 11 feet above sea level.

- Due to the V zone storm surge hazard, all new major construction must be west of the oceanfront Coastal Construction Line.

## FUTURE LAND USE ANALYSIS

### Introduction

This section outlines a number of the foundations for the Future Land Use Map, objectives and policies found in Part II. Other analytical considerations are included in the adopted land use category descriptions found in Part II.

### Existing Land Use Intensities

One important consideration in establishing future land use densities and intensities is the existing general pattern, particularly the larger developments. However, this is not to say that the future land use intensities should be set to allow all such projects to be conforming thereto. A special "grandfather" provision is included in Part II to deal with non-conforming densities if impacted by a natural disaster. The existing densities of all multifamily developments and the intensities of selected non-residential buildings are shown in Section A.

### Citizen Survey

As explained in the introduction to supplemental Section B, 962 usable responses were received form some 5,000 survey questionnaires mailed to local residents. This response rate of almost 20 percent is unusually high. The results were an important consideration in establishing policies for all of the plan elements but among these results particularly important to the Future Land Use map and policies are the following:

- 84 percent want residential development to be at the lowest density possible, consistent with the protection of reasonable property rights.

- 84 percent also said either no more retail development or only "a very limited amount;" 85 percent say the same about additional office development.

- 58 percent want public beach access although most want it limited to Village residents; the majority of those stating an opinion want a bay-front park.

- 61 percent oppose developments which place apartments above retail uses.

- 74 percent favor some kind of architectural review process.

See Section B for the complete results.

**Retail Analysis**

As a basis for preparing the Future Land Use Map, a generalized retail needs analysis was performed as outlined in Section C. Although two analytical techniques were used, the incremental approach seems to be the more appropriate. It suggests that by buildout an additional approximately 55,000 square feet of retail could be supported by the population densities shown on the Future Land Use Map. This is a 22 percent increase over the current square footage of 252,000. The supportable increase would be 73,000 square feet if the latest DRI project densities are developed. Therefore, the Future Land Use Map does not show any significant contraction in the amount of land allocated to retail use. It is important to keep in mind that (1) retail uses are permitted in the Village Center, and (2) several major parcels now designated for retail use are largely vacant.

**Future Land Use Map Concepts**

The Future Land Use Map contained in Part II reflects the following land use plan concepts:

1. Recognize that most of the existing higher density condominium buildings are on the beach and this general concept should be continued.

2. Recognize the existing ocean resort hotels and encourage new modestly scaled hotels on the vacant ocean frontage land.

3. Recognize the existing medium density multiple family housing between Ocean Drive and Crandon Boulevard and provide for some expansion although not at the prevailing densities.

4. Recognize the Holiday Colony single family neighborhood and provide for its expansion.

5. Recognize that the waterfront single family lots tend to be in excess of 15,000 square feet and should be precluded from further subdivision.

6. Continue to push for the northern expansion of Calusa Park for playfields while looking for alternatives.

7. Use new land use designations to encourage the redevelopment of problem properties such as L'Esplanade and the housing behind Woolley's.

8. Use Fernwood Road two family development (west side) as a transition from park and retail to single family detached.

9. Recognize that although the Village intends to purchase a number of parcels for public open space, they cannot be so designated until the funds are in place to pay for them.

A comparison of the existing development densities and intensities (Section A) to the Future Land Use Map and related Policy 1.5.1 shows a reduction in permitted intensities. This together with the contraction of authorized retail commercial acreage reflects the very strong 1993 resident survey results on these subjects. See Section B.

## SECTION A

## EXISTING DEVELOPMENT DENSITIES AND INTENSITIES

### Multifamily Residential Densities

See maps on following pages. The basic source for these maps was a list of buildings and units prepared by the Key Biscayne Council prior to incorporation. Some field checking and the density calculations were done by Robert K. Swarthout, Incorporated.

### Non-Residential Building Intensities

| | Floor Area Ratio (FAR) | Height In Stories | % Lot Coverage By Building |
|---|---|---|---|
| Retail: | | | |
| Harbor Shopping Center | .30 | 1 | 30 |
| Galleria Shopping Center | .66 | 2 | 33 |
| Square Shopping Center | .37 | mostly 1 | 35 |
| Woolley's Shopping Center | .54 | 1 | 54 |
| Office: | | | |
| Pankey | .51* | 2** | 51 |
| Key Executive | 1.00* | 4** | 40 |
| Mashta frontage | .49* | 2** | 49 |
| L'Esplanade | .63* | 2** | 63 |
| Waterfront: | | | |
| Yacht Club | .08 | 1 | 8 |
| Beach Club | .04 | 1 | 4 |
| Churches: | | | |
| Fernwood at Heather | .09 | 1 | 9 |
| Harbor at Fernwood | .07 | 1 | 7 |
| Hotels: | | | |
| Sonesta | .69 | 9 | 22 |
| Silver Sands | .16 | 1 | 16 |

* Excludes parking level from floor area
** Includes parking level as one of the stories

Source: Robert K. Swarthout, Incorporated

Figure Section A-1

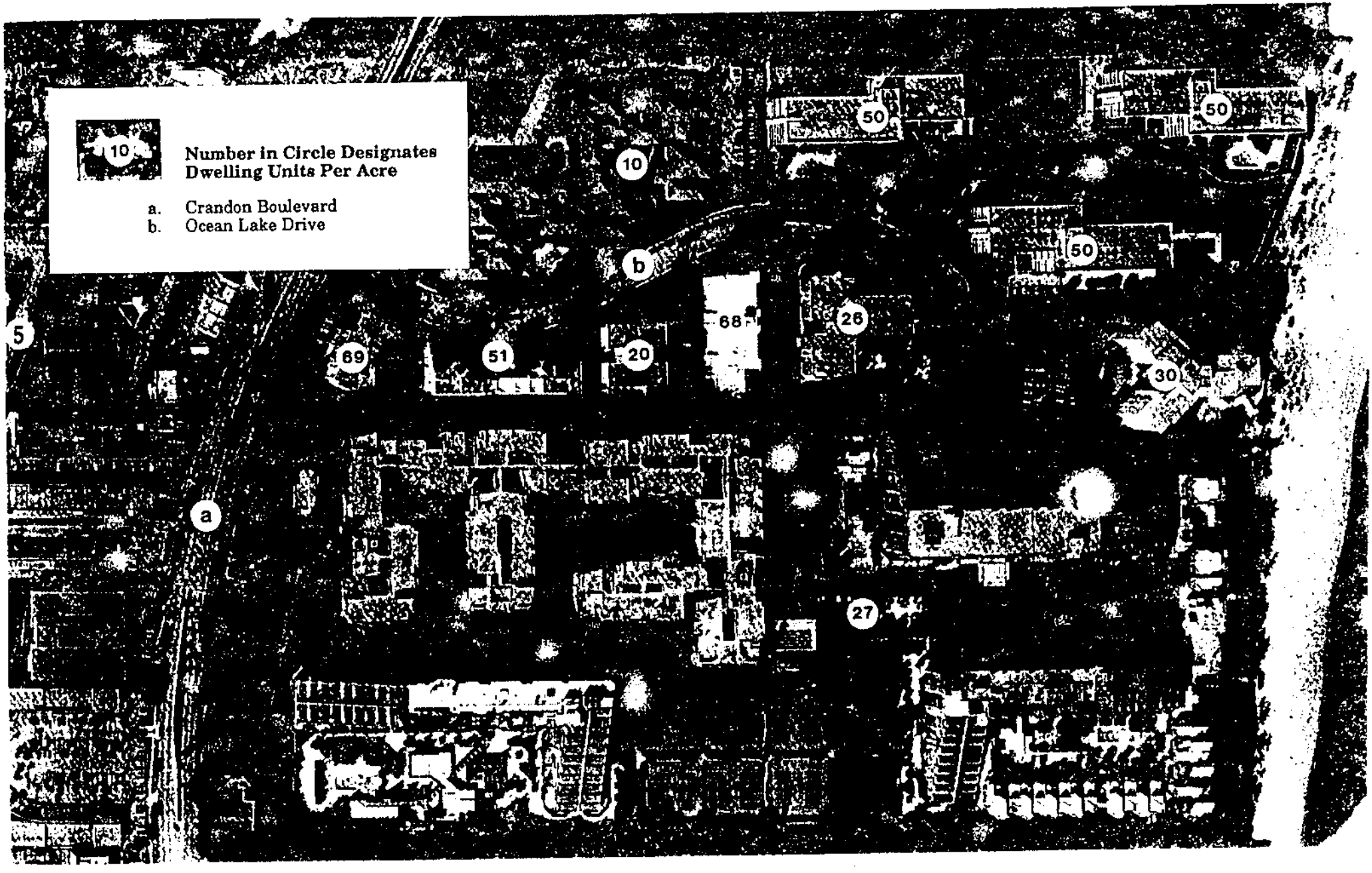


Figure Section A-2

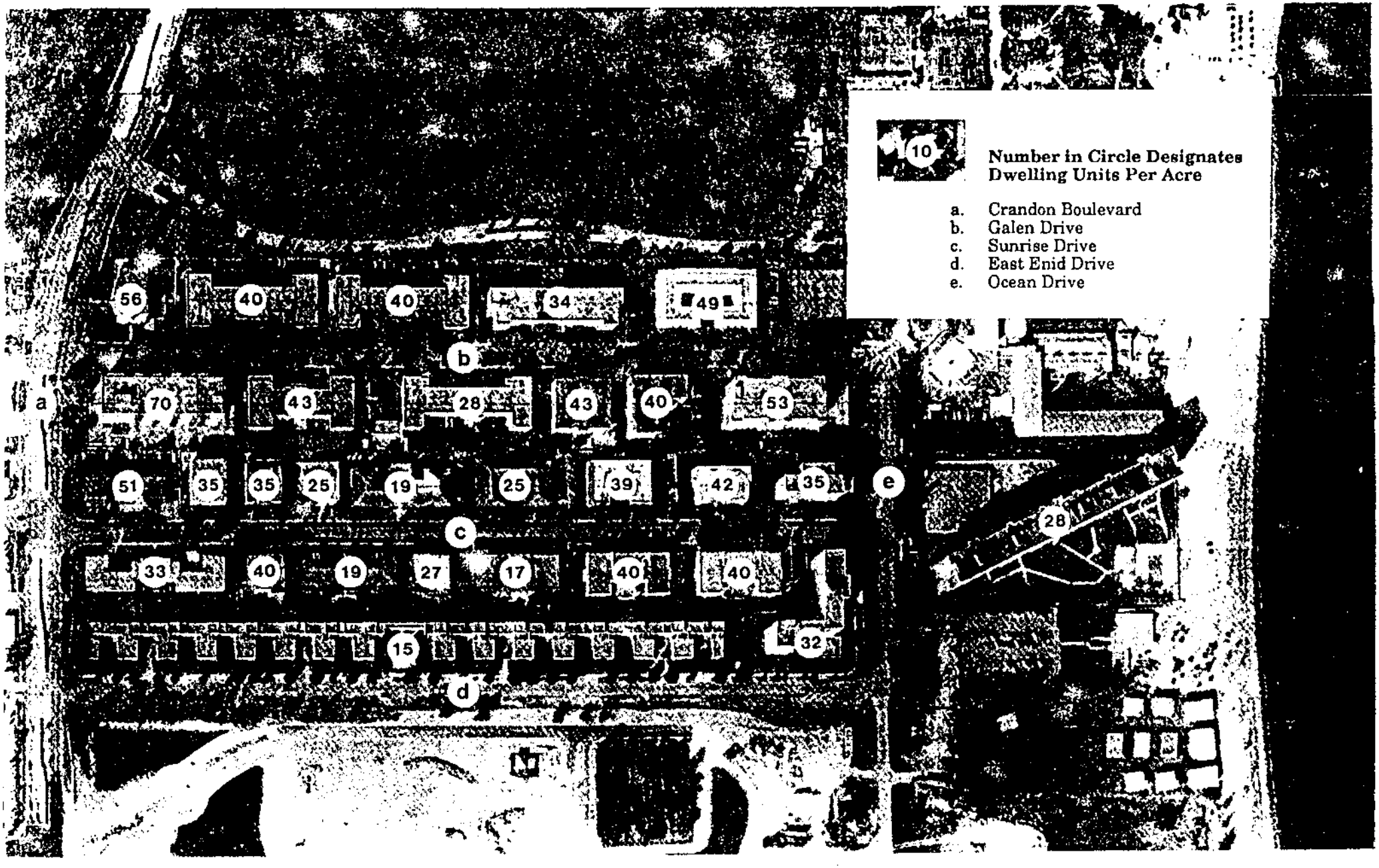
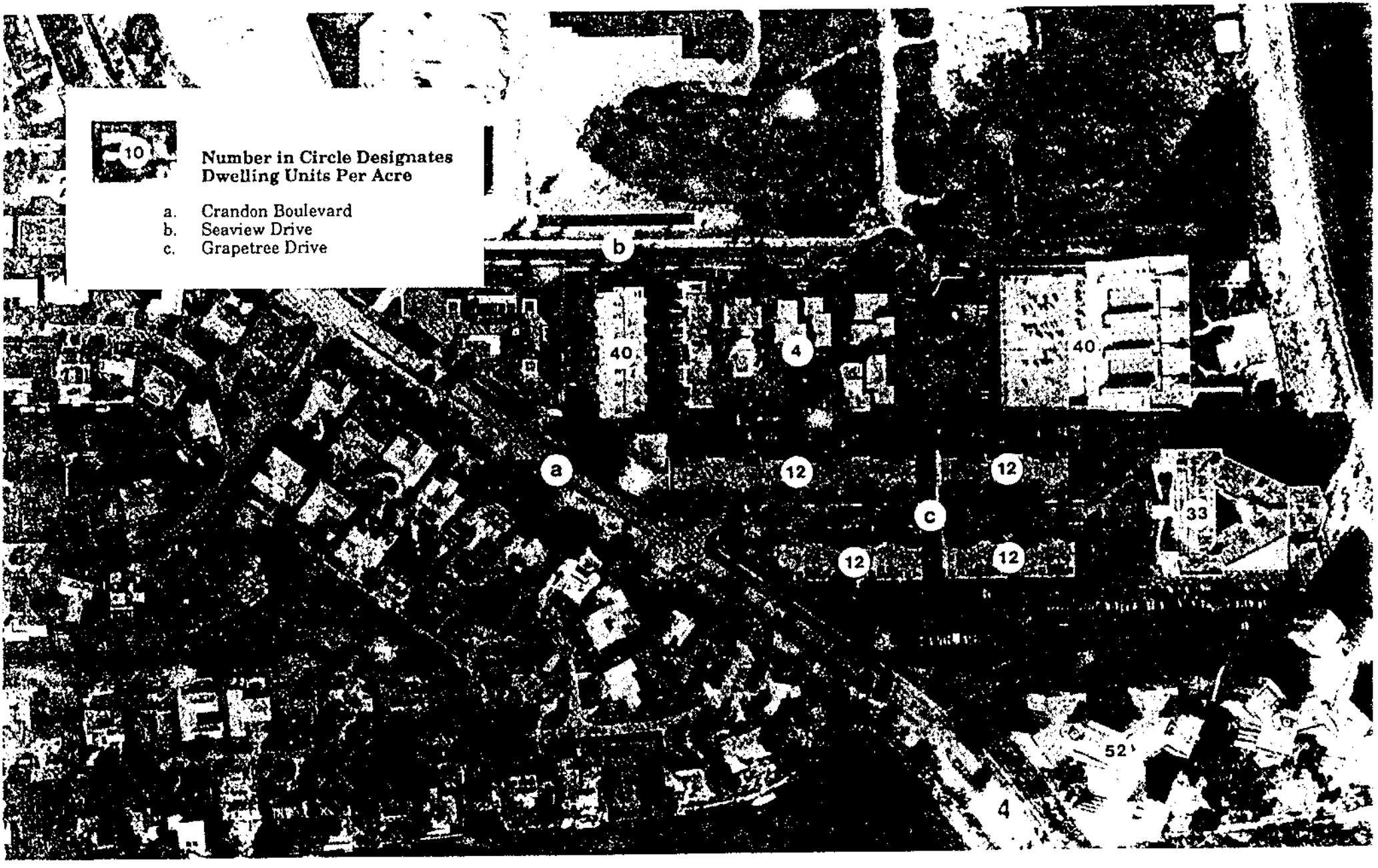


Figure Section A-3



## SECTION B

## Village of Key Biscayne

## Master Plan Opinion Survey Results

The following tables document the responses of Key Biscayne residents to the Key Biscayne Master Plan survey. The survey questionnaire was designed by Robert K. Swarthout, Incorporated with the participation of the Key Biscayne Village Council in its role as Local Planning Agency. The survey provided pre-coded answer boxes which respondents could check as appropriate to their views. The pre-coded answers were developed based on a pilot survey that allowed open-ended responses. The pre-coded survey was sent to all Village residents based on a special consultant's work using tax rolls as a starting point. In all, approximately 5,000 forms were mailed out. A total of 962 usable forms were returned for a response rate of 19.2 percent, a high rate for a survey of this magnitude. Responses are cross tabulated according to whether respondents live in a single-family home, multifamily home or other housing. A total of 520 forms or 54.1 percent of the 962 responses came from multifamily households. A total of 328 forms or 34.1 percent of the 962 responses came from single-family households. Multifamily housing units represented 72.6 percent of the Village's 1990 housing stock; single family detached units represented 22.5 percent. Thus single family responses exceed in proportion the proportion of single family housing units in the entire Village. The principal income earner was 65 years or older for 29.2 percent of the responding households and between 50 and 64 years old for 28.4 percent. Unpublished 1990 Census data indicate that the "householder" was 65 or older in 27.2 percent of the households and between 50 and 64 years in approximately 25.4 percent of the households (1990 CPH Summary Tape File 3A for Tracks 46.01 and 46.02). Thus responding households are just slightly older on average than households in the entire community.

### 1. What do you LIKE most about Key Biscayne?

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| Parks | 161 | 296 | 52 | 509 | 52.9 |
| Beaches | 242 | 422 | 83 | 747 | 77.7 |
| Friendly residents | 172 | 244 | 49 | 465 | 48.3 |
| Small village character | 257 | 410 | 84 | 751 | 78.1 |
| Isolated island character | 195 | 305 | 59 | 559 | 58.2 |
| close to metropolitan Miami | 204 | 353 | 68 | 625 | 65.0 |
| Safety and security | 267 | 383 | 82 | 732 | 76.1 |
| Good place to walk | 172 | 304 | 62 | 538 | 55.9 |
| Good place to bicycle | 166 | 225 | 57 | 448 | 46.6 |
| Other | 44 | 42 | 10 | 96 | 10.0 |

### 2. What do you DISLIKE most about Key Biscayne?

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| Inadequate storm drainage | 253 | 359 | 71 | 683 | 71.0 |
| Unattractive commercial buildings | 145 | 267 | 56 | 468 | 48.6 |
| Unattractive commercial parking lots | 116 | 211 | 48 | 375 | 39.0 |
| Unattractive commercial signs | 126 | 235 | 52 | 413 | 42.9 |
| High taxes | 219 | 225 | 59 | 503 | 52.3 |

| | | | | | |
|---|---|---|---|---|---|
| Excessive residential or other development | 96 | 170 | 33 | 299 | 31.1 |
| Tourism | 23 | 50 | 16 | 89 | 9.3 |
| Traffic | 65 | 112 | 19 | 196 | 20.4 |
| Other | 84 | 95 | 29 | 208 | 21.6 |

**3. Do you think RESIDENTIAL development on Key Biscayne should be completed at the LOWEST DENSITY that would be legally consistent with protection of reasonable private property rights?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| Yes | 277 | 438 | 93 | 808 | 84.0 |
| No | 24 | 28 | 9 | 61 | 6.3 |
| No opinion | 18 | 45 | 9 | 72 | 7.5 |

**4. Do you think Key Biscayne should allow MORE RETAIL SHOPPING development than has been built so far?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| At least one "Yes" answer | 154 | 252 | 48 | 454 | 47.2 |
| Yes only | 24 | 42 | 7 | 73 | 7.6 |
| Yes, more would increase the tax base | 23 | 30 | 5 | 58 | 6.0 |
| Yes, more is need to serve residents | 27 | 53 | 15 | 95 | 9.9 |
| Yes, but only a very limited amount more | 114 | 184 | 30 | 328 | 34.1 |
| No | 165 | 256 | 61 | 482 | 50.1 |
| No opinion | 7 | 7 | 3 | 17 | 1.8 |

**5. Do you think Key Biscayne should allow MORE OFFICE development than has been built so far?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| At least one "Yes" answer | 125 | 191 | 39 | 355 | 36.9 |
| Yes only | 22 | 29 | 8 | 59 | 6.1 |
| Yes, more would increase the tax base | 26 | 34 | 8 | 68 | 7.1 |
| Yes, but only a very limited amount | 89 | 148 | 27 | 264 | 27.4 |
| No | 189 | 303 | 68 | 560 | 58.2 |
| No opinion | 15 | 20 | 4 | 39 | 4.1 |

**6. What, if any, ADDITIONAL RETAIL SALES and services are needed on Key Biscayne?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| Full service auto repair | 87 | 123 | 28 | 238 | 24.7 |
| Clothing store | 32 | 50 | 10 | 92 | 9.6 |
| Better supermarket or grocery store | 171 | 278 | 62 | 511 | 53.1 |
| Produce market | 100 | 155 | 27 | 282 | 29.3 |
| Quality restaurant | 64 | 112 | 21 | 197 | 20.5 |
| Family restaurant | 183 | 236 | 52 | 471 | 49.0 |
| Outdoor cafe and/or restaurant | 142 | 224 | 56 | 422 | 43.9 |
| Facilities for tradesmen such as electricians and plumbers | 55 | 52 | 17 | 124 | 12.9 |
| *Other | 55 | 57 | 7 | 119 | 12.4 |
| Improve existing, but do not add new | 91 | 148 | 34 | 273 | 28.4 |
| None | 10 | 24 | 5 | 39 | 4.1 |

*The most frequently mentioned item in this category was movie theaters which were named by 47 or 4.9 percent of all respondents.

**7. Do you think Key Biscayne should acquire Atlantic beach access?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| At least one "Yes" answer | 194 | 301 | 62 | 557 | 57.9 |
| Yes only | 42 | 41 | 9 | 92 | 9.6 |
| Yes, if open only to Key Biscayne residents with no parking for visitors from the mainland | 140 | 203 | 45 | 388 | 40.3 |
| Yes, if open to the general public so that Key Biscayne may receive State and Federal funds for beach and dune renourishment | 39 | 76 | 16 | 131 | 13.6 |
| No | 109 | 171 | 39 | 319 | 33.2 |
| No opinion | 24 | 50 | 10 | 84 | 8.7 |

**8. Do you think Key Biscayne should acquire Biscayne Bay access?**

| | **Single Family** | **Multi-Family** | **Other** | **TOTAL #** | **%** |
|---|---|---|---|---|---|
| At least one "Yes" answer | 163 | 225 | 55 | 443 | 46.0 |
| Yes only | 36 | 38 | 10 | 84 | 8.7 |
| Yes, if a boat ramp is provided | 26 | 33 | 9 | 68 | 7.1 |
| Yes, if a boat ramp is NOT provided | 14 | 15 | 3 | 32 | 3.3 |
| Yes, if open only to Key Biscayne residents with no parking for visitors from the mainland | 127 | 172 | 43 | 342 | 35.6 |
| No | 133 | 186 | 41 | 360 | 37.4 |
| No opinion | 31 | 94 | 15 | 140 | 14.6 |

**9. There is a planning theory that says that all authentic communities have main streets with SHOPS close to the sidewalk and OFFICES or APARTMENTS above the shops. Does this theory make sense for Key Biscayne?**

| | Single Family | Multi-Family | Other | TOTAL # | % |
|---|---|---|---|---|---|
| Yes | 104 | 121 | 40 | 265 | 27.5 |
| No | 183 | 339 | 62 | 584 | 60.7 |
| No opinion | 35 | 51 | 9 | 95 | 9.9 |

**10. Should Key Biscayne regulate the ARCHITECTURAL STYLE, materials or colors of buildings?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| **Architecture** | | | | | |
| Yes | 105 | 245 | 51 | 401 | 41.7 |
| Yes, for commercial and office | 157 | 258 | 38 | 453 | 47.1 |
| Yes, for apartment buildings | 114 | 168 | 25 | 307 | 31.9 |
| Yes, for single family homes | 59 | 76 | 16 | 151 | 15.7 |
| No | 101 | 92 | 34 | 227 | 23.6 |
| No opinion | 6 | 20 | 0 | 26 | 2.7 |
| **Materials and Colors** | | | | | |
| Yes | 89 | 208 | 40 | 337 | 35.0 |
| Yes, for commercial and office | 146 | 245 | 37 | 428 | 44.5 |
| Yes, for apartment buildings | 104 | 146 | 27 | 277 | 28.8 |
| Yes, for single family homes | 47 | 62 | 17 | 127 | 13.2 |
| No | 117 | 95 | 36 | 248 | 25.8 |
| No opinion | 7 | 27 | 2 | 36 | 3.7 |

**11. Does anyone in your household regularly walk or bicycle for recreation and/or exercise?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| Yes, walk | 44 | 195 | 28 | 267 | 27.8 |
| Yes, bicycle | 22 | 28 | 9 | 59 | 6.1 |
| Yes, both | 249 | 251 | 66 | 566 | 58.8 |
| No | 17 | 44 | 8 | 69 | 7.2 |

**12. How many people live in your household?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| 1 or 2 | 119 | 426 | 69 | 614 | 63.8 |
| 3 or more | 208 | 89 | 41 | 338 | 35.1 |

**13. How old is the principal income earner of your household?**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| 24 or younger | 1 | 4 | 1 | 6 | 0.6 |
| 25 - 49 years | 167 | 169 | 58 | 394 | 41.0 |
| 50 - 64 years | 91 | 150 | 32 | 273 | 28.4 |
| 65 or older | 68 | 194 | 19 | 281 | 29.2 |

**14. Where do you live?**

| | TOTAL # | TOTAL % |
|---|---|---|
| **Single family** | 328 | 34.1 |
| East of Crandon | 15 | 1.6 |
| West of Crandon | 264 | 27.4 |
| Did not check east or west of Crandon | 49 | 5.1 |
| **Condominium or apartment home** | 520 | 54.1 |
| East of Crandon | 413 | 42.9 |
| West of Crandon | 8 | 0.8 |
| Did not check east or west of Crandon | 99 | 10.3 |
| **Other type of housing** | 114 | 11.9 |
| East of Crandon | 78 | 8.1 |
| West of Crandon | 23 | 2.4 |
| Did not check east or west of Crandon | 13 | 1.4 |

**15. Below is a list of improvements which could be made to the Village. Please rate how desirable each is in your judgment. Assume your priorities can be accomplished without a tax increase.**

| | Single Family | Multi-Family | Other | TOTAL # | TOTAL % |
|---|---|---|---|---|---|
| a. Acquire land in heart of Village for open space and/or other public purposes | | | | | |
| Rated Desirable or Higher | 193 | 325 | 66 | 584 | 60.7 |
| *First Priority* | 33 | 50 | 11 | 94 | 9.8 |
| *Second Priority* | 21 | 33 | 12 | 66 | 6.9 |
| *High Priority* | 57 | 103 | 16 | 176 | 18.3 |
| *Desirable* | 82 | 139 | 27 | 248 | 25.8 |
| Rated Not Desirable | 81 | 99 | 27 | 207 | 21.5 |
| b. Develop Village Center with Village Hall and small public green or plaza | | | | | |
| Rated Desirable or Higher | 177 | 302 | 65 | 544 | 56.6 |
| *First Priority* | 4 | 31 | 6 | 42 | 4.4 |
| *Second Priority* | 32 | 38 | 8 | 78 | 8.1 |
| *High Priority* | 43 | 93 | 18 | 154 | 16.0 |
| *Desirable* | 98 | 140 | 33 | 271 | 28.2 |
| Rated Not Desirable | 88 | 108 | 31 | 227 | 23.6 |
| c. Extend sanitary sewers to all areas of Village | | | | | |
| Rated Desirable or Higher | 254 | 402 | 83 | 739 | 76.9 |
| *First Priority* | 20 | 17 | 3 | 40 | 4.2 |
| *Second Priority* | 32 | 59 | 13 | 104 | 10.8 |
| *High Priority* | 118 | 209 | 42 | 369 | 38.4 |
| *Desirable* | 84 | 117 | 25 | 226 | 23.5 |
| Rated Not Desirable | 25 | 20 | 3 | 48 | 5.0 |
| d. Improve storm drainage throughout Village | | | | | |
| Rated Desirable or Higher | 324 | 485 | 103 | 912 | 94.8 |
| *First Priority* | 122 | 157 | 32 | 311 | 32.3 |
| *Second Priority* | 37 | 53 | 8 | 98 | 10.2 |
| *High Priority* | 121 | 216 | 51 | 388 | 40.3 |
| *Desirable* | 44 | 59 | 12 | 115 | 12.0 |
| Rated Not Desirable | 4 | 11 | 0 | 15 | 2.0 |
| e. Install street lights | | | | | |
| Rated Desirable or Higher | 214 | 277 | 62 | 553 | 57.5 |
| *First Priority* | 4 | 7 | 2 | 13 | 1.4 |
| *Second Priority* | 25 | 27 | 4 | 56 | 5.8 |
| *High Priority* | 89 | 121 | 37 | 247 | 25.7 |
| *Desirable* | 96 | 122 | 19 | 237 | 24.6 |
| Rated Not Desirable | 59 | 71 | 23 | 153 | 15.9 |

| | | | | | |
|---|---|---|---|---|---|
| f. Install curbs | | | | | |
| Rated Desirable or Higher | 120 | 229 | 42 | 391 | 40.7 |
| *First Priority* | 1 | 2 | 0 | 3 | 0.3 |
| *Second Priority* | 3 | 5 | 1 | 9 | 0.9 |
| *High Priority* | 44 | 76 | 16 | 136 | 14.1 |
| *Desirable* | 72 | 146 | 25 | 243 | 25.3 |
| Rated Not Desirable | 125 | 128 | 30 | 283 | 29.4 |
| g. Install special pavements and other devices to slow traffic on busy streets | | | | | |
| Rated Desirable or Higher | 160 | 226 | 56 | 442 | 46.0 |
| *First Priority* | 6 | 6 | 4 | 16 | 1.7 |
| *Second Priority* | 11 | 6 | 1 | 18 | 1.9 |
| *High Priority* | 76 | 90 | 22 | 188 | 19.5 |
| *Desirable* | 67 | 124 | 29 | 220 | 22.9 |
| Rated Not Desirable | 97 | 152 | 27 | 276 | 28.7 |
| h. Plant trees along streets | | | | | |
| Rated Desirable or Higher | 277 | 477 | 108 | 862 | 89.6 |
| *First Priority* | 24 | 46 | 9 | 79 | 8.2 |
| *Second Priority* | 21 | 55 | 18 | 94 | 9.8 |
| *High Priority* | 140 | 239 | 50 | 429 | 44.6 |
| *Desirable* | 92 | 137 | 31 | 260 | 27.0 |
| Rated Not Desirable | 22 | 8 | 1 | 31 | 3.2 |
| i. Open Ocean Drive from East Drive to Seaview | | | | | |
| Rated Desirable or Higher | 141 | 249 | 43 | 433 | 45.1 |
| *First Priority* | 5 | 15 | 3 | 23 | 2.4 |
| *Second Priority* | 4 | 16 | 5 | 25 | 2.6 |
| *High Priority* | 51 | 95 | 16 | 162 | 16.8 |
| *Desirable* | 81 | 123 | 19 | 223 | 23.2 |
| Rated Not Desirable | 88 | 125 | 38 | 251 | 26.1 |
| j. Develop recreation facilities (see question 16) | | | | | |
| Rated Desirable or Higher | 217 | 302 | 63 | 582 | 60.5 |
| *First Priority* | 8 | 5 | 6 | 19 | 2.0 |
| *Second Priority* | 19 | 15 | 3 | 37 | 3.8 |
| *High Priority* | 84 | 119 | 21 | 224 | 23.3 |
| *Desirable* | 106 | 163 | 33 | 302 | 31.4 |
| Rated Not Desirable | 22 | 64 | 10 | 96 | 10.0 |
| k. Improve streets and sidewalks for walkers and children on bicycles | | | | | |
| Rated Desirable or Higher | 247 | 405 | 89 | 741 | 77.1 |
| *First Priority* | 17 | 15 | 1 | 33 | 3.4 |
| *Second Priority* | 24 | 31 | 10 | 65 | 6.8 |
| *High Priority* | 133 | 202 | 44 | 379 | 39.4 |
| *Desirable* | 73 | 157 | 34 | 264 | 27.4 |
| Rated Not Desirable | 37 | 30 | 5 | 72 | 7.5 |

| | | | | | |
|---|---|---|---|---|---|
| l. Improve streets for serious bicycling | | | | | |
| Rated Desirable or Higher | 101 | 207 | 46 | 354 | 36.8 |
| *First Priority* | 0 | 3 | 1 | 4 | 0.4 |
| *Second Priority* | 2 | 6 | 1 | 9 | 0.9 |
| *High Priority* | 36 | 87 | 19 | 142 | 14.8 |
| *Desirable* | 63 | 111 | 25 | 199 | 20.7 |
| Rated Not Desirable | 153 | 166 | 36 | 355 | 36.9 |
| m. Other | | | | | |
| Rated Desirable or Higher | 33 | 39 | 7 | 79 | 8.3 |
| *First Priority* | 6 | 8 | 2 | 16 | 1.7 |
| *Second Priority* | 6 | 5 | 1 | 12 | 1.2 |
| *High Priority* | 19 | 25 | 4 | 48 | 5.0 |
| *Desirable* | 2 | 1 | 0 | 3 | 0.3 |
| Rated Not Desirable | 1 | 2 | 0 | 3 | 0.3 |

**16. Below is a list of recreation facilities which could be made to the Village. Please rate how desirable each is in your judgment. Assume your priorities can be accomplished without a tax increase.**

| | **Single Family** | **Multi-Family** | **Other** | **TOTAL #** | **%** |
|---|---|---|---|---|---|
| a. Softball | | | | | |
| Rated Desirable or Higher | 164 | 212 | 52 | 428 | 44.5 |
| *First Priority* | 5 | 6 | 2 | 13 | 1.4 |
| *Second Priority* | 7 | 8 | 0 | 15 | 1.6 |
| *High Priority* | 46 | 59 | 19 | 124 | 12.9 |
| *Desirable* | 106 | 139 | 31 | 276 | 28.7 |
| Rated Not Desirable | 46 | 84 | 18 | 148 | 15.4 |
| b. Baseball | | | | | |
| Rated Desirable or Higher | 156 | 207 | 59 | 422 | 43.9 |
| *First Priority* | 5 | 6 | 4 | 15 | 1.6 |
| *Second Priority* | 9 | 7 | 3 | 19 | 2.0 |
| *High Priority* | 53 | 61 | 19 | 133 | 13.8 |
| *Desirable* | 89 | 133 | 33 | 255 | 26.5 |
| Rated Not Desirable | 50 | 95 | 16 | 161 | 16.7 |
| c. Basketball | | | | | |
| Rated Desirable or Higher | 171 | 236 | 55 | 462 | 48.1 |
| *First Priority* | 4 | 3 | 1 | 8 | 0.8 |
| *Second Priority* | 15 | 7 | 3 | 25 | 2.6 |
| *High Priority* | 53 | 69 | 18 | 140 | 14.6 |
| *Desirable* | 99 | 157 | 33 | 289 | 30.0 |
| Rated Not Desirable | 38 | 76 | 14 | 128 | 13.3 |
| d. Volleyball | | | | | |
| Rated Desirable or Higher | 158 | 224 | 53 | 435 | 45.3 |
| *First Priority* | 0 | 4 | 0 | 4 | 0.4 |
| *Second Priority* | 0 | 5 | 1 | 6 | 0.6 |
| *High Priority* | 44 | 60 | 16 | 120 | 12.5 |
| *Desirable* | 114 | 155 | 36 | 305 | 31.7 |
| Rated Not Desirable | 35 | 75 | 13 | 123 | 12.8 |

| | | | | | |
|---|---|---|---|---|---|
| e. Soccer/football | | | | | |
| Rated Desirable or Higher | 191 | 219 | 55 | 465 | 48.4 |
| *First Priority* | 21 | 15 | 6 | 42 | 4.4 |
| *Second Priority* | 22 | 13 | 9 | 44 | 4.6 |
| *High Priority* | 58 | 70 | 15 | 143 | 14.9 |
| *Desirable* | 90 | 121 | 25 | 236 | 24.5 |
| Rated Not Desirable | 39 | 95 | 14 | 148 | 15.4 |
| f. Tennis | | | | | |
| Rated Desirable or Higher | 172 | 242 | 57 | 471 | 49.0 |
| *First Priority* | 22 | 58 | 8 | 88 | 9.1 |
| *Second Priority* | 18 | 24 | 5 | 47 | 4.9 |
| *High Priority* | 65 | 69 | 18 | 152 | 15.8 |
| *Desirable* | 67 | 91 | 26 | 184 | 19.1 |
| Rated Not Desirable | 63 | 89 | 19 | 171 | 17.8 |
| g. Central playground/tot lot for small children | | | | | |
| Rated Desirable or Higher | 216 | 284 | 74 | 574 | 59.7 |
| *First Priority* | 63 | 54 | 26 | 143 | 14.9 |
| *Second Priority* | 35 | 51 | 11 | 97 | 10.1 |
| *High Priority* | 68 | 89 | 18 | 175 | 18.2 |
| *Desirable* | 50 | 90 | 19 | 159 | 16.5 |
| Rated Not Desirable | 38 | 64 | 10 | 112 | 11.6 |
| h. Scattered playgrounds/tot lots for small children | | | | | |
| Rated Desirable or Higher | 177 | 262 | 64 | 503 | 52.3 |
| *First Priority* | 31 | 43 | 5 | 79 | 8.2 |
| *Second Priority* | 31 | 49 | 8 | 88 | 9.1 |
| *High Priority* | 65 | 82 | 23 | 170 | 17.7 |
| *Desirable* | 50 | 88 | 28 | 166 | 17.3 |
| Rated Not Desirable | 64 | 85 | 12 | 161 | 16.7 |
| i. Indoor recreation center for all ages | | | | | |
| Rated Desirable or Higher | 208 | 290 | 74 | 572 | 59.5 |
| *First Priority* | 56 | 73 | 13 | 142 | 14.8 |
| *Second Priority* | 37 | 51 | 16 | 104 | 10.8 |
| *High Priority* | 59 | 79 | 24 | 162 | 16.8 |
| *Desirable* | 56 | 87 | 21 | 164 | 17.0 |
| Rated Not Desirable | 51 | 99 | 15 | 165 | 17.2 |
| j. Other | | | | | |
| Rated Desirable or Higher | 43 | 45 | 7 | 95 | 9.9 |
| *First Priority* | 12 | 13 | 3 | 28 | 2.9 |
| *Second Priority* | 7 | 9 | 2 | 18 | 1.9 |
| *High Priority* | 22 | 17 | 1 | 40 | 4.2 |
| *Desirable* | 2 | 6 | 1 | 9 | 0.9 |
| Rated Not Desirable | 3 | 5 | 0 | 8 | 0.8 |

## SECTION C

## KEY BISCAYNE RETAIL ANALYSIS

### Use of Theoretical and Incremental Analytical Approaches

Commercial development potential in Key Biscayne is analyzed herein in two ways, the "theoretical potential approach" and the "incremental potential approach." These two are described below:

> *Theoretical Potential Analysis:* The amount of building square footage which would be needed to capture the retail expenditures that might be made by Key Biscayne permanent and seasonal residents in Key Biscayne is computed for 1990, 2003 and 2013. Different computations are made for 2003 and 2013 based on different residential development scenarios. This method is most appropriate in situations where there is no or little existing population in comparison to the expected future population and in situations where there is reason to believe that existing retail facilities are out of balance with the existing market and out of balance by exceeding or falling short of existing market potential. The larger an area being considered, the less likely this is to be the case. Once the total facilities' potential is determined, it is compared with existing facilities to determine the surplus or additional need.
>
> *Incremental Potential Analysis:* The amount of building square footage which would be needed to capture the growth in expenditures which will occur as a result of future permanent and seasonal population growth is computed for 2003 and 2013 based on different residential development scenarios. The "incremental" potential is then added to existing facilities to determine future facility potentials. This method is most appropriate in situations where there is a much larger existing population than future growth potential or where the existing retail facilities are in reasonable balance with the existing retail market.

The incremental analysis approach is believed to be most appropriate for Key Biscayne for two reasons. First, there is no reason known to the planners to conclude that current retail development is substantially out of balance with actual demand, if demand which is generated from the mainland is considered rather than just that which emanates strictly from the local population. Second, the build-out population will not be substantially larger than the existing population, provided a "moderate" rather than a "high" residential development scenario is enacted by the comprehensive plan. The build-out permanent plus adjusted seasonal population (includes hotel guests) is envisioned to be 13 percent higher than 1990 population in the "moderate" scenario and 23 percent higher than 1990 population in the "high" scenario. The high scenario is based on build-out of the latest developer plans for the Village's two Development of Regional Impact projects as of April 1993. The moderate scenario is based on the densities proposed in the Preliminary Future Land Use Plan dated April 1993, which is subject to revision. The incremental approach may even be more appropriate if the community enacts a future land use map that permits population to grow in accordance with the "high" growth scenario, but it would be a closer question.

Despite the fact that the incremental approach may be the more appropriate, this analysis considers and reports on both approaches. Summary findings are reported in the following two sections which report overall space potentials in terms of retail building square footage and the number of food store, drug store and gas station establishments needed. A description of the methodology and detailed findings are reported in subsequent sections.

**Summary of Retail Space Potentials Based on Theoretical and Incremental Analytic Approaches**

As shown in Table 1 (following page), the theoretical approach finds a surplus of 56,000 square feet of retail building area in 1990. This surplus suggests that development has outpaced the market which Key Biscayne residents can support. The surplus over and above the retail square footage that Key Biscayne residents can support is partially supported by residents of the mainland. The existing retail square footage includes nearly 19,000 square feet distributed among three freestanding restaurants which probably receive a very large portion, if not most, of their patronage from the mainland. A portion of the existing surplus also is occupied by art galleries which are probably supported by residents of the mainland. Finally, the surplus is also supported by office uses, for which the analysis does not account, but which do occupy a portion of the existing building area classified as retail for the purpose of this analysis.

The theoretical approach finds that no additional retail development would be needed to capture the retail spending of Key Biscayne residents, if Key Biscayne enacts a "moderate" growth scenario (which will have a 2003 build-out date). This approach finds that only 17,000 square feet of additional space will be needed if Key Biscayne enacts a "high" growth scenario (which will have a 2013 build-out). Of course, more space can be absorbed to the extent that it accommodates needs generated by populations residing on the mainland. Quality restaurants and entertainment uses are among the most promising possibilities, if desired by the community. Office uses are also possibilities.

Since the incremental approach starts with the assumption that the existing retail space is in balance with the market, Table 1 necessarily reports "0" incremental potential for 1990. Then all additional population and spending growth must by definition be accommodated by additional facilities. The additional incremental potential is 37,000 square feet for 2003, for both "moderate" and "high" growth scenarios. Both "moderate" and "high" scenarios produce the same 2003 potential because the absorption rate is anticipated to be about the same under both. Thus, if the "moderate" scenario is followed, the analysis assumes that Key Biscayne will be fully built-out by 2003; if the "high" growth scenario is followed, the analysis assumes that the community will be only partially built out by 2003. The additional incremental potential is 55,000 square feet for 2013, if a "moderate" growth scenario is enacted. Note that the moderate growth scenario envisions the same total build-out population for both 2003 and 2013, but a different amount of retail potential, 37,000 square feet for 2003 and 55,000 square feet for 2013. This difference reflects the fact that the analysis assumes a real increase in per capita income and retail spending.

**Table Section C-1**
**Summary of Retail Analysis Results**

| | 1990 | moderate residential growth scenario 2003 | high residential growth scenario 2003 | moderate residential growth scenario 2013 | high residential growth scenario 2013 |
|---|---|---|---|---|---|
| ***Results of Theoretical Analysis*** | | | | | |
| Existing Retail Development in square feet of floor space | 252,000 | 252,000 | 252,000 | 252,000 | 252,000 |
| Theoretical Retail Potential in square feet of floor space | 196,000 | 233,000 | 233,000 | 251,000 | 269,000 |
| Net Increase (Decrease) from Existing to Theoretical in square feet of floor space | (56,000) | (19,000) | (19,000) | (1,000) | 17,000 |
| ***Results of Incremental Analysis*** | | | | | |
| Existing Retail Development in square feet of floor space | 252,000 | 252,000 | 252,000 | 252,000 | 252,000 |
| Incremental Retail Potential Measured from Existing Base in square feet of floor space | 0 | 37,000 | 37,000 | 55,000 | 73,000 |
| Total of Existing Retail Plus Incremental Potential in square feet of floor space | 252,000 | 289,000 | 289,000 | 307,000 | 325,000 |

**Note:** The existing retail development figure does not include dedicated office buildings such as the Pankey Institute Building, but does include office space in retail buildings such as the Square Shopping Center and the Key Biscayne Galleria. Theoretical and incremental retail potential figures do not include office potential, or gasoline service station potential. The office space and gasoline service stations that are needed to support Key Biscayne residents are evaluated separately.

**Source:** Robert K. Swarthout, Incorporated based on methodology and data set forth in Tables 2 through 15.

**Number of Food Store and Drug Store Establishments Needed**

Table 14 shows that approximately 47,000 square feet of building area was needed for food stores on Key Biscayne in 1990. The existing Woolley's and the new Winn Dixie have between them approximately 59,000 square feet. This does not necessarily mean that they have between themselves too much square feet of food store retail area. The 47,000 square foot figure was computed by assuming that supermarkets on Key Biscayne could have sales near the top ten percent of the national experience. If two facilities have to share the market, they may have sales per square foot nearer to the median of the national sales per square foot experience. Table 14 shows that approximately 56,000 square feet of building area will be needed for food stores in

2003 and 58,000 square feet will be needed in 2013 under a "moderate" population growth scenario. These square footages are sufficient to support two establishments. It is strongly recommended that the future land use map of the comprehensive plan provide opportunities for at least two major food store establishments, since two establishments will ensure a greater measure of competitive choice for residents.

Table 14 indicates that 23,000 square feet of drug store space was needed in 1990 and that 29,000 square feet will be needed in 2013 under the moderate population growth scenario. These figures will support two facilities and it would be desirable to have two facilities.

**Number of Gasoline Stations Needed**

There should be one and preferably two filling stations in Key Biscayne. It is possible that three stations would be desirable. The need for stations is based on the isolation of the island from the mainland and on the population of the island.

Filling stations are a necessity of modern life. The 1990 US Census enumerated 5,474 "gasoline service stations" in the State of Florida (1990 CBP-90-11) to serve a population of 12,937,926 (1990 CPH-1-11). This works out to a ratio of one gas station for every 2,363 people. By this ratio, there should be at least three gas stations to serve the 1990 Key Biscayne population of 8,854. The 1990 US Census enumerated 737 gasoline service stations in Dade County. This works out to a ratio of one gas station for every 2,628 people. By this ratio, too, there should be at least three gas stations to serve the 1990 population of Key Biscayne.

The population of Key Biscayne is separated from the mainland by a causeway road and a continuation of that road through Crandon Park. It is about seven miles from the north border of the Village to a major thoroughfare on the mainland. At present, there are no filling stations between the Village and the mainland. Furthermore, there are no obvious opportunities to develop filling stations and the planning now under way for Crandon Park makes development of a filling station in the future even less likely. The nearest filling station to the Village is south on US 1 about eight miles from the north Village limits. This would be very inconvenient for residents who might wish to head south on US 1 from the west end of the causeway and even more inconvenient for those who might wish to head north on I-95.

**Why Retailers Should Favor "High" Growth Scenario**

In the long run, it is in the best interest of Key Biscayne retail operators to support a high population growth scenario rather than a moderate population growth scenario, at least insofar as those two scenarios are conceived for the purpose of this analysis. This is because, in most cases, the high population growth scenario will produce a potential customer base which is significantly larger than the moderate scenario, but not so much larger that it will engender competition from additional establishments. This is particularly true with respect to food stores, drug stores and gasoline stations.

**Detailed Four-Step Analytic Methodology**

Both the theoretical and incremental methods involve the following steps:

1. Determination of trade area.

2. Determination of future trade area sales potential.

3. Determination of locally captured portion of future sales potential.

4. Determination of floor area requirements.

Each of these steps is discussed in detail in the following narrative.

**Determination of Trade Area**

The most important determinants of the trade area of retail facilities is their accessibility and the location of competing facilities. Shoppers will travel longer distances if they can travel over high-speed, uncongested thoroughfares. Shoppers will rarely travel very far past one shopping area to get to another which offers essentially the same goods and services.

The trade area for convenience goods (hardware, food, drugs) is generally limited to immediately surrounding residential areas. Because convenience goods purchases are made frequently, people are not usually willing to travel great distances. Convenience goods stores in Key Biscayne could expect to capture most of the convenience goods trade generated by Village permanent and seasonal residents but virtually nothing from the mainland.

The trade area for comparison goods usually encompasses a broader area. Since comparison goods purchases are costly and made infrequently, people are willing to travel longer distances to find what they judge to be the best combination of quality, selection, service and price. The primary trade area for comparison facilities could typically encompass the area within a 25 to 30 minute driving distance. The secondary trade area, which includes customers who shop occasionally at a given shopping area, may encompass an area within 45 to 60 minutes driving distance. Based on these standards, the primary trade area for comparison goods in Key Biscayne could include all of the Village itself, but virtually nothing from mainland communities since to get to the Village, potential customers face a $1.00 toll and about a 12 minute drive over the causeway and through Crandon Park.

The trade area for certain restaurants and entertainment facilities can be very broad if they offer a unique service. People may come quite a distance to see a performance at the Calusa Playhouse or for an evening of entertainment at Stefano's restaurant and nightclub. The same is true for certain specialty retail uses such as art galleries.

**Determination of Future Trade Area Sales Potential**

Future trade area sales potential is based on population, per capita income and trade area retail expenditure patterns.

1990 and projected populations for the Key Biscayne trade area is shown in Table 2.

**Table Section C-2**
**1990 and Projected Permanent and Seasonal Population for Key Biscayne**

| | permanent | seasonal | adjusted seasonal | permanent plus adjusted seasonal |
|---|---|---|---|---|
| 1990 | 8,854 | 3,018 | 453 | 9,307 |
| 2003 moderate | 9,960 | 3,566 | 535 | 10,495 |
| 2003 high | 9,960 | 3,566 | 535 | 10,495 |
| 2013 moderate | 9,960 | 3,566 | 535 | 10,495 |
| 2013 high | 10,860 | 4,073 | 611 | 11,471 |

**Sources:** 1990 CPH-5-11, Table 2 for 1990 permanent. Robert K. Swarthout, Incorporated prepared the 1990, 2003 and 2013 seasonal figure. These are explained in the population component of the data and analysis for the Land Use Element. Robert K. Swarthout, Incorporated prepared the "adjusted seasonal projections." "Adjusted seasonal" population is a concept that reflects the potential expenditures of a seasonal resident as a ratio to the potential expenditures of a permanent resident. A 15 percent ratio is assumed. This means that each person in the seasonal population will spend 15 percent as much as will a permanent resident on an annualized basis. For 2003 and 2013, moderate and high projections are given. The moderate projections are based on the Preliminary Future Land Use Map under consideration as of April 24, 1993. The high projections are based on the Development of Regional Impact (DRI) development order changes proposed by the DRI property owners as of April 24, 1993. For 2003, the moderate and high projections are identical to each other and to the 2013 moderate projection because it is assumed that the permitted moderate build-out population will be achieved by 2003 whether or not greater densities are allowed.

Per capita income for Key Biscayne was enumerated by the 1990 Census at $37,629.00. This figure is reported in 1990 CPH-5-11, Table 10. The 5,307 residents in Census Track 46.01 (west side) had a per capita income of $41,324 and the 3,457 residents in Census Track 46.02 (east side) had a per capita income of $31,860. This figure was supplied by the US Census Customer Service Center from unpublished computer tapes. For the purposes of this analysis, a per capita income growth of 0.5 percent per year compounded is assumed. This growth is intended to reflect both growth in nation-wide productivity and growth in the relative affluence of Key Biscayne residents. Based on this assumption, per capita income for Key Biscayne is shown in Table 3.

**Table Section C-3**
**1990 and Projected Per Capita Income for Key Biscayne**

| | |
|---|---|
| 1990 | $37,629 |
| 2003 | $40,150 |
| 2013 | $42,202 |

**Sources:** 1990 CPH-5-11 for 1990. Robert K. Swarthout, Incorporated for 2003 and 2013. A real per capita income growth of 0.5 percent per year is assumed. This assumption incorporates both growth in productivity and growth in the relative affluence of Key Biscayne residents.

Total Key Biscayne personal income is per capita income multiplied by population. Total personal income is shown in Table 4 based on the population figures shown in Table 2 and the per capita income figures shown in Table 3.

**Table Section C-4**
**1990 and Projected Total Personal Income for Key Biscayne**

| | |
|---|---|
| 1990 | $350,213,103 |
| 2003 moderate and high | $421,374,250 |
| 2013 moderate | $442,909,990 |
| 2013 high | $484,099,142 |

**Source:** Population given in Table 2 times per capita income given in Table 3.

Total retail expenditures can be expressed as a percentage of total personal income. In selecting the percentage figure to use, consideration is normally given to a county or regional figure. For the purpose of this analysis, figures for Dade and Palm Beach Counties in Florida and Marin County in California are computed. Dade County was chosen because Key Biscayne is in Dade County. However, Dade County is a poor model since its per capita income ($13,686) is only about one-third that of Key Biscayne ($37,629). Palm Beach County was chosen because it is a nearby county with a per capita income ($19,937) that is closer to that of Key Biscayne than is the Dade County per capita income. Marin County in California was chosen because it is the county with the highest per capita income in the country. The computations for each are as follows:

> *DADE COUNTY:* The 1990 Census reports that Dade County had a 1990 population of 1,937,094 and a 1989 per capita income of $13,686 (*1990 Census of Population and Housing Summary of Social, Economic and Housing Characteristics*, CPH 5-11 Tables 1 and 10, respectively). Thus, total income for 1990 can be taken at 1,937,094 × $13,686 = $26,511,068,484 without adjustment for any growth in income from 1989 to 1990. Total Dade County retail sales were reported by *Editor & Publisher* to be a Census enumerated $13,047,272,000 in 1987 and *an Editor & Publisher* estimated $17,037,003,000 in 1992. From these figures a 1990 total retail sales of $15,441,110,000 was interpolated. Thus, total

1990 Dade County retail sales amounted to approximately 58 percent of personal income, a ratio derived by $15,441,110,000/$26,511,068,484 = 0.5824.

*PALM BEACH COUNTY:* The 1990 Census reports that Palm Beach County had a 1990 population of 863,518 and a 1989 per capita income of $19,937 (*1990 Census of Population and Housing Summary of Social, Economic and Housing Characteristics*, CPH 5-11 Tables 1 and 10, respectively). Thus, total income can be taken at 863,518 × $19,937 = $17,215,958,366, without adjustment for any growth in income from 1989 to 1990. Total Palm Beach County retail sales were reported by *Editor & Publisher* to be a Census enumerated $6,622,066,000 in 1987 and an *Editor & Publisher* estimated $8,647,646,000 in 1992. From these figures a 1990 total retail sales of $11,483,458,000 was interpolated. Thus, total 1990 Palm Beach County retail sales amounted to approximately 50 percent of personal income, a ratio derived by $8,647,646,000/$17,215,958,366 = 0.5023.

MERIN [sic] COUNTY: The 1990 Census reports that Marin County, California had a 1990 population of 230,096 and a 1989 per capita income of $28,381, the highest for any county in the country (*1990 Census of Population and Housing Summary of Social, Economic and Housing Characteristics*, CPH 5-6 Tables 1 and 10, respectively). Thus, total income can be taken at 230,096 × $28,381 = $6,530,354,576, without adjustment for any growth in income from 1989 to 1990. Total Marin County retail sales were reported by *Editor & Publisher* to be a Census enumerated $1,919,770,000 in 1987 and an *Editor & Publisher* estimated $2,590,559,000 in 1992. From these figures a 1990 total retail sales of $2,322,243,000 was interpolated. Thus, total 1990 Marin County retail sales amounted to approximately 36 percent of personal income, a ratio derived by $2,322,243/$6,530,354,576 = 0.3556.

The comparison of Dade, Palm Beach and Marin Counties' total retail sales as a percent of total personal income demonstrates the tendency of retail sales as a percent of total personal income to decline as per capita income increases. Robert K. Swarthout, Incorporated recently completed a retail analysis for a community in a Michigan County with a per capita income of $21,125. The same methodology rendered total retail sales at 47.6 percent of total personal income, suggesting that a big drop in the percentage occurs for communities with per capita income between $21,125 and $28,381. It is not possible to use the methodology herein employed to determine the percentage of total personal income devoted to retail expenditures by counties with per capita incomes as high as Key Biscayne because such counties do not exist. Application of the methodology to smaller jurisdictions with high per capita income is not appropriate because the likelihood that total sales and total personal income will not achieve a natural balance in a small jurisdiction. For example, the above methodology applied to the Town of Palm Beach (per capita income $71,106) results in a finding that total retail sales amount to 41 percent of total personal income. This is an unreliable estimate for a variety of reasons including the fact that many types of retail goods are not available in Palm Beach, many Palm Beach residents shop elsewhere, including Paris and London, and many people from elsewhere come to Palm Beach expressly to shop its exclusive Worth Avenue. The above methodology applied to the Town of Ocean Ridge (per capita income $41,411) results in a finding that total retail sales amount to zero percent of total personal income. This only means that all the residents of Ocean Ridge leave town to make retail purchases, a fact necessitated by the town's total exclusion through zoning of commercial land uses.

In consideration of the foregoing analysis of Dade, Palm Beach and Merin Counties, it will be assumed for further analysis that Key Biscayne residents will spend 35 percent of their total personal income on retail goods and services. Total retail expenditures by Key Biscayne residents are given in Table 5 as based on population times per capita income times 0.35. For 1990, this figure is 8,854 times $37,629.00 times 0.35 equals $116,608,504.

**Table Section C-5**
**1990 and Projected Total Retail Expenditures by Key Biscayne Residents**
to nearest thousand dollars

| | |
|---|---|
| 1990 | $122,575,000 |
| 2003 moderate and high | $147,481,000 |
| 2013 moderate | $155,018,000 |
| 2013 high | $169,435,000 |

**Source:** Robert K. Swarthout, Incorporated based on total personal income in Table 4 times 0.35.

**Table Section C-6**
**Distribution of Retail Expenditures to Various Categories for Selected Communities as Estimated for 1992 by *Editor and Publisher***

| | Dade County | City of Miami | Martin County | Beach County | Palm Boca Raton | Palm Beach |
|---|---|---|---|---|---|---|
| Lumber and hardware | 4.0 | 3.0 | 11.8 | 5.1 | 5.1 | 3.3 |
| General merchandise | 11.8 | 10.2 | 7.7 | 11.2 | 6.8 | 5.6 |
| Food | 16.3 | 14.1 | 20.6 | 18.9 | 22.1 | 15.2 |
| Auto | 24.9 | 21.4 | 23.1 | 24.7 | 2.8 | 16.1 |
| Gasoline | 5.4 | 7.6 | 5.9 | 5.1 | 7.4 | 1.2 |
| Apparel | 7.7 | 9.4 | 4.4 | 6.0 | 9.2 | 33.3 |
| Furniture | 5.7 | 5.4 | 6.6 | 6.7 | 8.9 | 4.4 |
| Eating and drinking | 9.9 | 9.6 | 7.7 | 10.3 | 14.7 | 14.9 |
| Drugs | 4.4 | 4.1 | 3.6 | 3.9 | 5.8 | 4.6 |
| Other | 11.5 | 15.1 | 8.6 | 8.2 | 17.3 | 4.6 |

**Source:** *Editor and Publisher*.

**Table Section C-7**
**Distribution of Retail Expenditures to Various Categories for Dade County as Reported by US Census for 1987**

| | **percent** |
|---|---|
| Building materials and garden supplies | 3.4 |
| General merchandise | 12.1 |
| Food store | 17.5 |
| Automotive dealers | 25.9 |
| Gasoline service stations | 5.8 |
| Apparel and accessory stores | 7.1 |
| Furniture and home furnishings stores | 5.9 |
| Eating and drinking places | 10.1 |
| Drug and proprietary stores | 4.5 |
| Miscellaneous retail stores | 8.7 |

**Source:** 1987 Census of Retail Trade (RC87-A-10), Table 5.

**Table Section C-8**
**Detailed Distribution of Retail Expenditures to Various Categories as Estimated by Goodkin Research a South Florida Market Analyst**

| | percent 1990 |
|---|---|
| General merchandise | 11.60 |
| Department store | 9.80 |
| Variety store | 0.40 |
| Miscellaneous | 1.40 |
| Apparel and Accessories | 5.05 |
| Men's and boys clothing | 0.60 |
| Women's ready to wear | 1.93 |
| Other women's clothing | 0.20 |
| Family clothing | 1.33 |
| Shoes | 0.80 |
| Other apparel | 0.19 |
| Furniture and home equipment | 4.90 |
| Furniture stores | 1.63 |
| Home furnishings | 0.64 |
| Household appliances | 0.55 |
| Radio and TV | 1.48 |
| Music stores | 0.40 |
| Hardware | 0.75 |
| Miscellaneous Shopper Goods | 4.50 |
| Used merchandise | 0.36 |
| Sporting goods, bicycle | 0.57 |
| Book stores | 0.28 |
| Stationary stores | 0.10 |
| Jewelry stores | 0.68 |
| Hobby, toys, games | 0.30 |
| Camera, photo supplies | 0.20 |
| Gift, novelties | 0.39 |
| Luggage, leather | 0.04 |
| Sewing, needlework | 0.20 |
| Florist | 0.30 |
| Cigar stores | 0.04 |
| News dealers | 0.04 |
| Miscellaneous necessities | 1.00 |
| ***Shopper Goods/Subtotal*** | ***26.80*** |

continued on next page

**Table Section C-8 (Continued)**
**Detailed Distribution of Retail Expenditures to Various Categories as Estimated by Goodkin Research a South Florida Market Analyst**

| | **percent 1990** |
|---|---|
| Food stores | 20.55 |
| Grocery stores | 19.35 |
| Retail bakeries | 0.30 |
| Other food necessities | 0.90 |
| Eating and drinking establishments | 9.62 |
| Restaurant, lunch, cafeteria | 5.22 |
| Fast food | 3.53 |
| Other eating places | 0.01 |
| Drinking places | 0.86 |
| Drug | 3.34 |
| Liquor | 1.29 |
| ***Convenience Goods/Subtotal*** | ***34.80*** |
| Automotive dealers | 22.80 |
| Motor vehicles, miscellaneous | 21.00 |
| Auto and home supply | 1.80 |
| Gasoline stations | 7.32 |
| Building materials | 5.28 |
| Building material, paint, etc. | 4.48 |
| Nurseries, mobile homes | 0.08 |
| Non store retailers | 1.80 |
| Fuel and ice dealers | 1.20 |
| ***Other Retail/Subtotal*** | ***38.40*** |

**Source:** Data developed by south Florida market analysis firm for use in retail studies in south Florida. Data supplied to Robert K. Swarthout, Incorporated as a courtesy.

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Total retail expenditures are distributed over a variety of different categories. Tables 7 and 8 give the percentage distribution in various localities for various classes of retail expenditures. In consideration of the data in Tables 6, 7 and 8, it will be assumed that the retail expenditures of Key Biscayne residents will be distributed among the various classes of retail expenditures as shown in Table 9.

**Table Section C-9**
**Assumed Distribution of the Retail Expenditures by Key Biscayne Residents to Various Retail Categories**

| retail category | percent of total retail expenditures |
|---|---|
| Lumber and hardware | 5.0 |
| General merchandise | 11.0 |
| Food | 19.0 |
| Automobile | 23.0 |
| Gasoline | 5.0 |
| Apparel | 7.0 |
| Furniture and home furnishings | 7.0 |
| Eating and drinking | 11.0 |
| Drugs | 4.0 |
| Other | 8.0 |

**Source:** Robert K. Swarthout, Incorporated based on Tables 6, 7 and 8.

**Determination of Locally Captured Portion of Future Sales Potential**

Not all of the retail expenditures generated by residents of Key Biscayne will actually go to businesses in Key Biscayne. It is likely that the Key Biscayne retail establishments can capture a high proportion, but not all, of locally generated expenditures in the food, drugs and hardware categories. It is estimated that Key Biscayne establishments can capture only a very small proportion of locally generated expenditures for other goods such as general merchandise, apparel, furniture and home furnishings. The percentage capture rates are shown in Table 10 and explained in the source note for Table 10.

**Table Section C-10**
**Assumed Capture of Various Retail Expenditures by Key BiscayneBusinesses**

| retail category | percent of total retail expenditures | percent of total expenditures captured by Key Biscayne businesses |
|---|---|---|
| Lumber and hardware | 5.0 | 1.0 |
| General merchandise | 11.0 | 1.1 |
| Food | 19.0 | 15.2 |
| Automobile | 23.0 | 0.0 |
| Gasoline | 5.0 | na |
| Apparel | 7.0 | 1.4 |
| Furniture and home furnishings | 7.0 | 1.4 |
| Eating and drinking | 11.0 | 2.2 |
| Drugs | 4.0 | 3.4 |
| Other | 8.0 | 1.6 |

**Note:** Gasoline denoted "na" for "not applicable." Gasoline retail needs are analyzed by a separate methodology.

**Source:** Robert K. Swarthout, Incorporated. The table reflects the assumptions that Key Biscayne establishments can capture 80 percent of expenditures generated by Key Biscayne residents in the food and drug categories and 20 percent of the expenditures generated in the lumber and hardware category. It is assumed that Key Biscayne establishments can capture only 10 percent of the expenditures generated by Key Biscayne residents in the general merchandise category. This category is dominated by department store sales (see Table 8) and there is no possibility that such facilities will locate on Key Biscayne because of its small population and isolation. It is assumed that Key Biscayne establishments can capture 20 percent of expenditures in the apparel, furniture and home furnishings, eating and drinking categories and 20 percent in the other category. The bulk of the expenditures generated in these categories will go to super stores and stores in regional shopping centers and shopping clusters on the mainland. Such shopping centers and shopping clusters include Dadeland, The Falls, Bal Harbor, Coral Gables and Coconut Grove. Such specialty shopping as may be established on Key Biscayne will have limited potential to capture mainland dollars against established mainland competitors. It is assumed that no auto dealers will be located on the island. Gasoline stations are analyzed elsewhere.

## Determination of Total Locally Captured Retail Sales Potential

Total locally captured retail sales are determined by multiplying the percent of total expenditures captured by Key Biscayne businesses (Table 10) by the total retail expenditures projected to be made by Key Biscayne residents (Table 5). The results of this calculation are given in Table 11.

**Table Section C-11**
**Total Locally Captured Retail Sales for Key Biscayne**
**in thousands of dollars**

| retail category | 1990 | moderate residential growth scenario 2003 | high residential growth scenario 2003 | moderate residential growth scenario 2013 | high residential growth scenario 2013 |
|---|---|---|---|---|---|
| Lumber and hardware | $1,226 | $1,475 | $1,475 | $1,550 | $1,694 |
| General merchandise | 1,348 | 1,623 | 1,623 | 1,705 | 1,864 |
| Food | 18,631 | 22,417 | 22,417 | 23,563 | 25,754 |
| Automobile | 0 | 0 | 0 | 0 | 0 |
| Gasoline | na | na | na | na | na |
| Apparel | 1,716 | 2,065 | 2,065 | 2,170 | 2,372 |
| Furniture/home furnishings | 1,716 | 2,065 | 2,065 | 2,170 | 2,372 |
| Eating and drinking | 2,697 | 3,245 | 3,245 | 3,410 | 3,728 |
| Drugs | 4,168 | 5,014 | 5,014 | 5,271 | 5,761 |
| Other | 1,961 | 2,360 | 2,360 | 2,480 | 2,711 |

**Note:** Gasoline denoted "na" for "not applicable." Gasoline retail needs are analyzed by a separate methodology.

**Source:** Robert K. Swarthout, Incorporated based on Table 5 and Table 10.

## Determination of Retail Floor Area Requirements

Sales volume estimates can be converted into floor space needs with sales per square foot data. The Urban Land Institute's *1990 Dollars and Cents of Shopping Centers* sets forth sales per square foot for various retail uses in various types of shopping centers. Data is given for median, top ten percent, and top two percent of facilities. For the purpose of this analysis, median sales per square foot figures were given greatest weight in determining Key Biscayne potential, except in the case of the supermarket figure for which the top ten percent figure was also considered along with median figures. Estimated sales per square foot potential for Key Biscayne and the selected Urban Land Institute source figures are set forth in Table 10.

**Table Section C-12**
**Estimated Sales Per Square Foot Potential for Key Biscayne Businesses**

| retail category | estimated sales per square foot potential for Key Biscayne | Urban Land Institute *Dollars and Cents of Shopping Centers* US Community Shopping Centers relevant source figures |
|---|---|---|
| Lumber and hardware | $110 | $120 median for paint and hardware, $91 median for hardware, $114 median for home improvements |
| General merchandise | $100 | $110 median for junior department store, $76 median for variety store |
| Food | $400 | $479 top ten percent for supermarket, $267 median for supermarket, $242 median for specialty food |
| Apparel | $140 | $154 median for women's specialty, $125 median for women's ready-to-wear, $118 median for children's apparel, $147 men's wear |
| Furniture/home furnishings | $130 | $103 median for furniture, $175 median for floor coverings, $103 median for china and glassware, $164 median for home accessories |
| Eating and drinking | $140 | $135 and $138 medians for restaurants with and without liquor, $200 median for fast food, $141 median for ice cream parlor, $119 for sandwich shop |
| Drugs | $182 | $182 median for drugs |
| Other | $120 | $88 median for art gallery, $176 median for cameras, $141 median for toys, $140 median for bike shops, $85 median for arts and crafts, $145 median for luggage, $101 median for cards, $145 median for books |

**Source:** Robert K. Swarthout, Incorporated based on ULI source cited.

Since the Table 12 sales per square foot potentials were derived primarily from Urban Land Institute median figures, they will result in a computation of a larger total retail development potential than if top ten percent figures were used. Exclusive use of the top ten percent figures for food stores rather than the blend of top ten percent plus median figures would result in about a 20 percent greater sales per square foot potential and a corresponding reduction in the total

food store development potential. Exclusive use of the top ten percent figures for other stores rather than the exclusive use of median figures would result in about a 100 percent greater sales per square foot potential and a corresponding reduction in the total development potential for stores other than supermarkets.

**Determination of Retail Sales Facility Potentials**

Retail facility potentials are determined by dividing total sales by sales per square foot. These potentials are set forth in Table 11. Note that two totals are given. The "TOTAL" reflects the sales per square foot figures given in Table 10, which are based on the median experience of existing facilities around the country, except for the food category which more closely reflects the top ten percent experience as reported by the Urban Land Institute. The "ADJUSTED TOTAL" reflects the potential if all facilities operate closer to the top ten percent in sales per square foot.

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**Table Section C-13**
**Square Feet of Retail Space Supportable by Projected Retail Sales for Key Biscayne**

| retail category | 1990 | moderate residential growth scenario 2003 | high residential growth scenario 2003 | moderate residential growth scenario 2013 | high residential growth scenario 2013 |
|---|---|---|---|---|---|
| Lumber and hardware | 11,145 | 13,409 | 13,409 | 14,090 | 15,400 |
| General merchandise | 13,480 | 16,230 | 16,230 | 17,050 | 18,640 |
| Food | 46,577 | 56,042 | 56,042 | 58,907 | 64,385 |
| Automobile | 0 | 0 | 0 | 0 | 0 |
| Gasoline | na | na | na | na | na |
| Apparel | 12,257 | 14,750 | 14,750 | 15,500 | 16,942 |
| Furniture/home furnishings | 13,200 | 15,884 | 15,884 | 16,692 | 18,246 |
| Eating and drinking | 19,264 | 23,178 | 23,178 | 24,357 | 26,628 |
| Drugs | 22,901 | 27,549 | 27,549 | 28,961 | 31,653 |
| Other | 16,341 | 19,666 | 19,666 | 20,666 | 22,591 |
| TOTAL<br>Based on sales per square foot near top ten percent of stores for food and near median for other goods. | 155,165 | 186,708 | 186,708 | 196,223 | 214,485 |
| ADJUSTED TOTAL<br>Taken at 70 percent of TOTAL based on sales per square foot near top ten percent of stores for both food and other goods. | 108,616 | 130,696 | 130,696 | 137,356 | 150,140 |

**Source:** Robert K. Swarthout, Incorporated based on Table 11 and Table 12.

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**Determination of Local Service Facility Floor Area Potentials**

Projections of local service facility floor space potentials are based on the ratio of workers to the overall population and on the facility space required on average per worker. These determinants are presented in Table 12 for the 1990 and projected 2003 and 2013 populations of Key Biscayne.

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**Table Section C-14**
**Local Service Facility Floor Area Potentials**

| | Generalized 1990 Workers per 1,000 Population | Key Biscayne Adjustment Factor | **1990** Potential Workers & Space | **2003** Moderate and High Residential Growth Scenario Potential Workers & Space | **2013** Moderate Residential Growth Scenario Potential Workers & Space | **2013** High Residential Growth Scenario Potential Workers & Space |
|---|---|---|---|---|---|---|
| Personal Services | 6 | 0.80 | 46 | 53 | 53 | 62 |
| Amusement, Recreation & Motion Picture | 6 | 0.60 | 35 | 40 | 40 | 47 |
| Auto & Miscellaneous Repair Services | 7 | 0.80 | 54 | 62 | 62 | 74 |
| TOTAL EMPLOYMENT | | | 135 | 155 | 155 | 183 |
| Space Required per Employee in square feet | | | 300 | 300 | 300 | 300 |
| Total Facility Space Need in square feet | | | 40,500 | 46,500 | 46,500 | 54,900 |

**Source:** Robert K. Swarthout, Incorporated. The column entitled "1990 Workers per 1,000 Population" can be developed by dividing county population and county employment from a US Census report entitled *1989 County Business Patterns*. A county with higher per capita income than Dade County was used for this analysis because of Key Biscayne's relatively high per capita income. A column entitled "Key Biscayne Adjustment Factor" is included in the table. The adjustment factor reflects the expectation that some of the service needs will be met off the island.

---

**Existing Retail Facilities**

The building square footage in existing retail facilities on Key Biscayne is documented in Table 15 below. These square footages are compared with projected need in Table 2.

**Table Section C-15**
**Existing Retail and Service Floor Area in Key Biscayne**

***Existing Shopping Centers and Other Major Shopping Facilities***

| | |
|---|---|
| Harbor Square Shopping Center | 21,500 |
| Key Biscayne Arcade Center (Deli/Subway) | 15,500 |
| Square Shopping Center | 47,000 |
| Key Biscayne Galleria | 45,000 |
| Vernon's Shopping Center (Vernons) | 40,757 |
| Winn Dixie Supermarket/Bank/Office | 39,000 |
| Woolley's Shopping Center | 23,925 |
| TOTAL | 232,682 |

***Freestanding Restaurants***

| | |
|---|---|
| Torino Restaurant | 3,657 |
| Stefano's Restaurant | 10,174 |
| English Pub | 5,100 |
| TOTAL | 18,949 |

**Source:** Robert K. Swarthout, Incorporated based on Dade County tax records.

## SECTION D

## VILLAGE CENTER

### What is the Village Center?

The following is extracted from the Public Land Focus Group report coming out of the February 27, 1993 Citizen Forum:

> "A Village Center, by definition, is central. It is further defined as the 'heart' of a community: a place of activity where residents go frequently to take care of errands in shops, municipal offices, the post office, the bank, etc.; to have a meal in a restaurant, (preferably with outdoor seating) or simply an ice cream cone enjoyed on a bench under a tree, or walking along looking in the shop windows.
>
> A Village Center is also a place where people not only run into one another and enjoy a few minutes catching up, but a formal and central place where community activities such as the Key Biscayne Festival, the Art Festival, the awards for the 4th of July Parade, etc., are scheduled.
>
> There was unanimous agreement that the Village of Key Biscayne needs a Village Center."

In other words, the Village Center is a combination of the Village Hall, other public buildings (post office, library and/or community center), shops and restaurants all oriented around a public plaza. Each of these basic components is needed to be a successful central place. Housing over the shops is also a possibility.

### Implementation

Although the Village will have to play a role in the development of the center, some kind of public-private partnership will be required. Mizner Park in Boca Raton is one variation of such a public-private partnership. In the case of Key Biscayne, the partnership might involve Village construction of the central plaza with private development of the buildings, portions of which might be leased to the Village.

### Recommended Location

One good location for such a center would be on both sides of McIntyre Street along the west side of Crandon Boulevard. An analysis of alternative sites is set forth on the on next page.

### The Alternatives

Two basic options were discussed by the focus group (McIntyre Street and the "tree farm") although at least four other sites have been mentioned.

#### 1. McIntyre Street

- Components: The village center could be developed in a linear fashion along both sides of McIntyre Street from Crandon Boulevard west to Fernwood. A village center at this location could connect with an expanded Key Biscayne Elementary School.

- Advantages:

    1. This is the geographic center of the Village.

    2. It could potentially be implemented without public acquisition if the Village Hall is leased space.

    3. A visual tie to the school can be provided from Crandon thereby achieving a strong urban design statement; if a new school is constructed, it can form the western edge of the Village Center.

    4. This would achieve redevelopment of some unsightly properties.

    5. The police station is already in public ownership and other land is for sale.

    6. There would be no significant net increase in commercial floor area.

- Disadvantages:

    1. If not constructed primarily by a private developer, this will require Village acquisition and development.

**2. Rebozo Tree Farm**

- Components: Use the northern part of the tract. A plan presented to the focus group extended Heather to Crandon in a modified traffic circle which would be part of the plaza.

- Advantages:

    1. Can tie into an expanded Galleria to the north and a park to the south.

    2. Adds a tax-generating component to the Rebozo tract.

    3. Is close to the geographic center of the Village.

- Disadvantages:

    1. Would result in a net increase in commercial land area and thus floor area.

    2. Reduces the public open space acreage of the Rebozo tract; the Village's recreation and open space Level of Service standard counts on public open space use of most of this tract.

**3. Other Sites**

- *Crandon frontage of Sheraton or Continental DRI tract:*

    Comment: The advantage is that it could be developed as a part of a revised DRI master plan but the disadvantage is its location on the eastern side of Crandon, i.e., all other retail uses are on the west side.

- *Southern end of Rebozo "tree farm" tract:*

    Comment: Lacks most of the advantages of either 1 or 2 above which are adjacent to it.

- *The northwest corner of Harbor Drive and Crandon:*

Comment: This site is less than four acres in size; at least five acres are needed. Also, the location is not central. Finally, a number of viable businesses would have to be acquired and relocated.

- *An area south of Winn Dixie:*

  Comment: This is also less of a central location but more significantly, this is a fully developed established retail area that would appear to make implementation difficult.

# II. TRAFFIC CIRCULATION ELEMENT

# TRAFFIC DATA INVENTORY

## EXISTING TRAFFIC CIRCULATION MAP

Figure II-1 shows the functional classification of the roadways within the Village.

The functional classification system establishes criteria for designating roadway types and their respective function on the traffic circulation system of the Village, or, in a larger sense, of the County. However, it does not describe the existing conditions of the facilities within the Village, nor does it show its relative importance to the system within the Village.

There are three functionally classified streets within the Village limits according to the Florida Department of Transportation (FDOT):

**Crandon Boulevard (CR 254)** is a four lane, divided, County Minor Arterial, which extends from the northern Village limits to the southern Village limits. This facility represents the only external access route for the Village, connecting to the mainland via the Rickenbacker Causeway. Abutting land uses on the east are predominantly multifamily residential uses, while commercial (predominantly retail) uses dominate the western side.

**Harbor Drive** is a two-lane Village Collector street which extends (as a Collector) from West Mashta Drive to Crandon Boulevard. Abutting uses are predominantly residential, with the exception of the link between Fernwood Road and Crandon Boulevard at which commercial uses are present. The intersection of Harbor Drive with Crandon Boulevard is signalized. Four-way stop control is provided at the intersection with West Mashta Drive.

**West Mashta Drive** is a two-lane Village Collector street which extends (as a Collector) from Harbor Drive to Crandon Boulevard. Mashta Drive has a four-way stop controlled intersection with Harbor Drive and a signalized intersection with Crandon Boulevard. All of the land uses abutting this roadway are residential, except for the link between Fernwood Drive and Crandon Boulevard, which are commercial in nature.

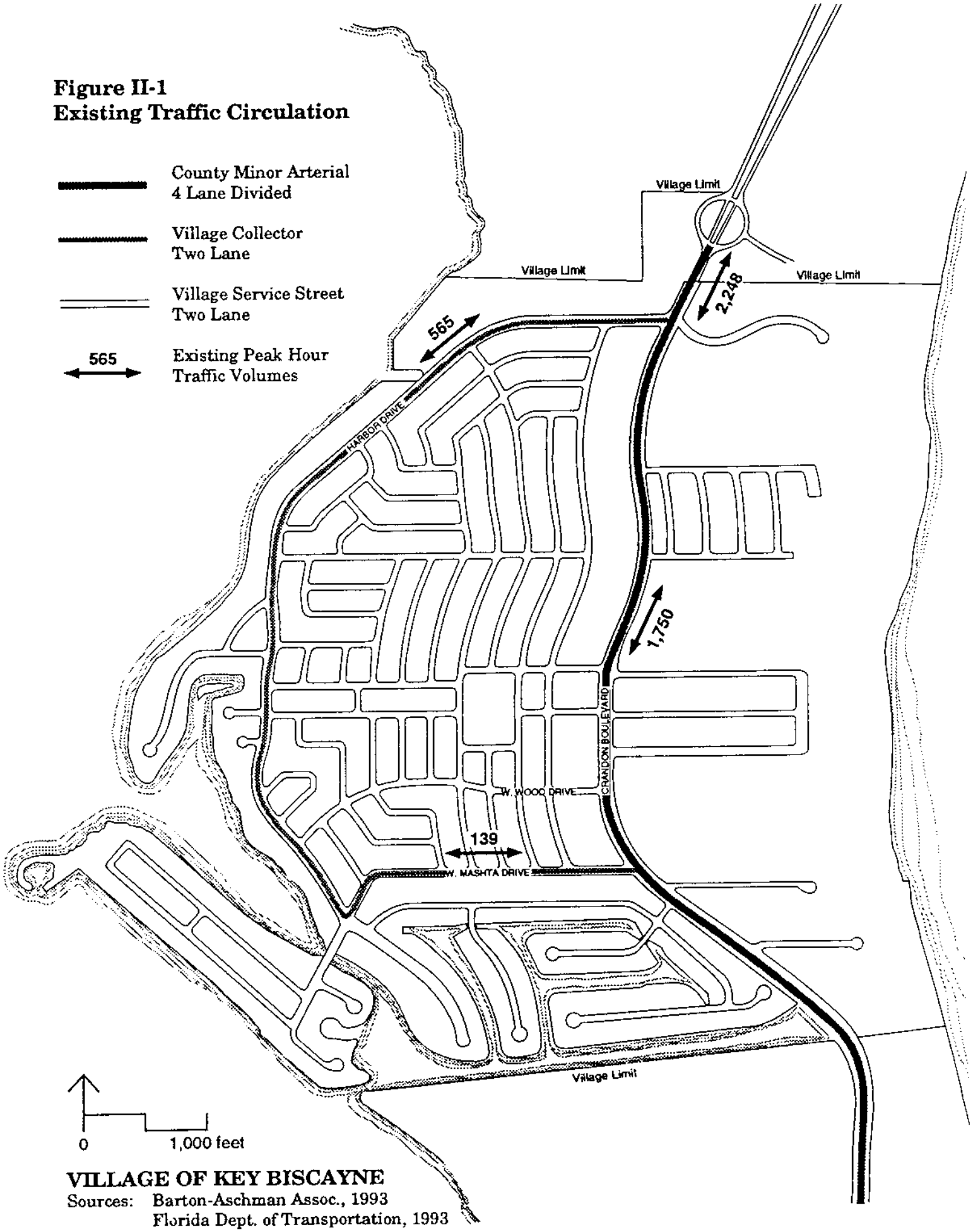
Other significant roadways within the Village:

**West Wood Drive and McIntyre Street** are two-lane, east-west residential streets. Their importance to the traffic system is a function of their continuity and their signalized intersections which provide access onto Crandon Boulevard from residential neighborhoods. West Wood Drive also is used as a route for the Metrobus.

**Fernwood Road** is a two-lane north/south residential street which parallels Crandon Boulevard from Harbor Drive to Mashta Drive. Its continuity and its position as a western boundary to the commercial uses along Crandon Boulevard increases its attractiveness for local access and circulation.

The posted speed limit on all the streets within the Village is 30 mph. School speed limits of 15 mph are posted in the vicinity of the elementary school.

## Figure II-1
## Existing Traffic Circulation




**VILLAGE OF KEY BISCAYNE**

Sources: Barton-Aschman Assoc., 1993
Florida Dept. of Transportation, 1993

# TRAFFIC ANALYSIS

## ROADWAY CAPACITY ANALYSIS

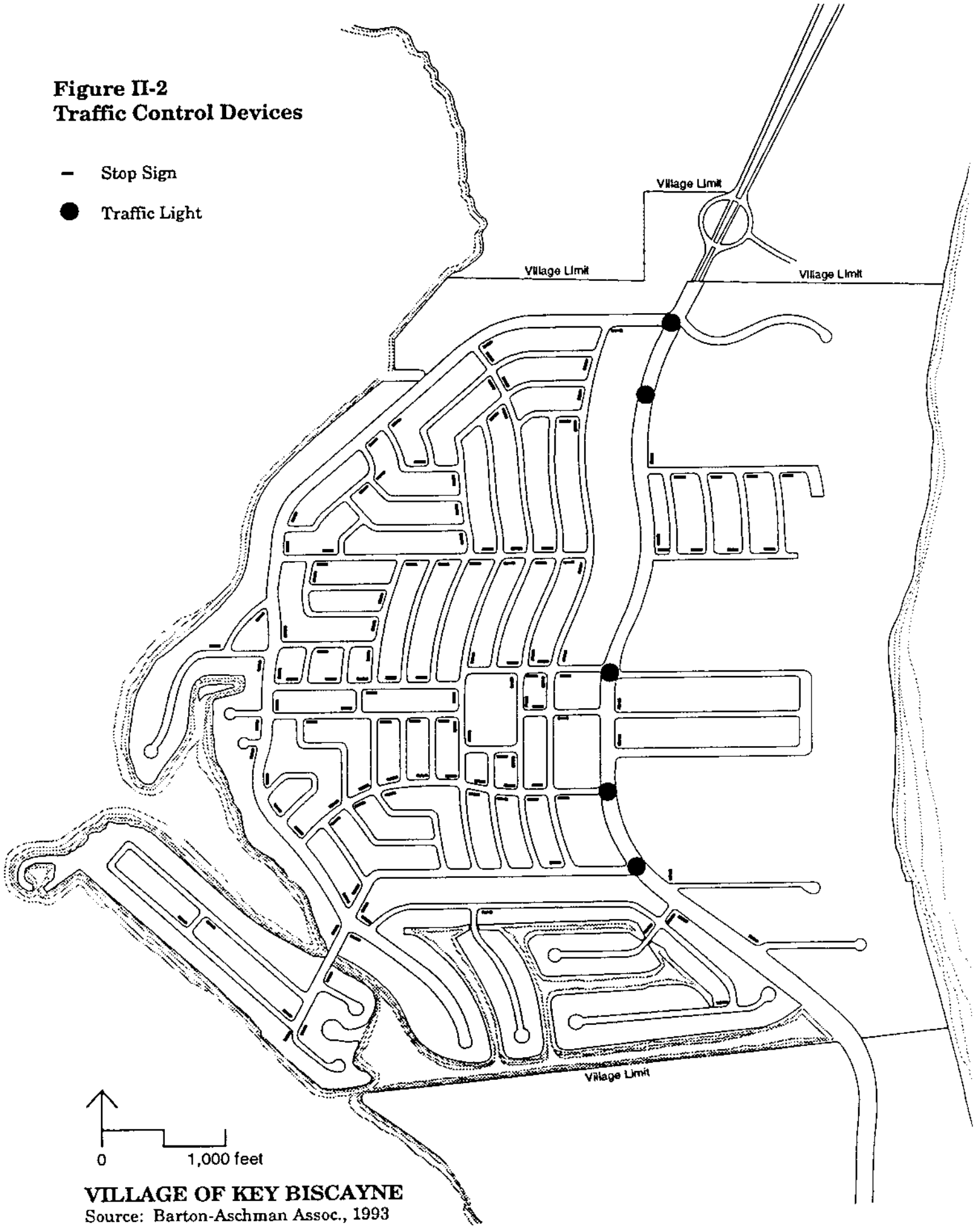
The existing Village roadway network was analyzed to determine the levels of service. To accomplish this, peak-hour volumes, roadway geometrics and signal spacing were collected for each of the roadways involved. Traffic volumes are shown on Figure II-1 while traffic lights and stop signs are shown on Figure II-2.

As part of the data collection for the analysis, existing peak-hour roadway volumes were collected for the facilities being analyzed. This data was collected from various sources including FDOT, Dade County Public Works Department and other available sources.

Level of Service (LOS) is defined in the *1985 Highway Capacity Manual* as "a qualitative measure describing operational conditions within a traffic stream, or their perception by motorists and/or passengers." Level of Service is usually expressed in the form of a letter grade from A through F, with A being a very lightly used facility and F being a facility operating over its capacity. With this in mind, roadway levels of service are used as a basis of summarizing facility conditions.

The sufficiency of the major segments of existing traffic circulation system were determined by comparing the existing flows to the *Generalized Level of Service Maximum Volumes* for arterial and collector streets as developed by FDOT. Table II-1 summarizes the results. In other words, currently all four roadways are operating at a peak-hour weekday LOS of D or better. In its Traffic Circulation Element, Dade County considers LOS D at the peak-hour to be the minimum acceptable standards for arterials and collector roads within is jurisdiction, with exceptions for arterials east of the Palmetto Expressway, and roadways with mass transit service available. This is the reason for showing the LOS C column, *i.e.*, if flows exceed the numbers in this column, the roadway is in the D category. The FDOT has also adopted standards for the State Highway System, which allows LOS E for minor arterials and other streets in existing urbanized areas. The D column shows the volumes that can not be exceeded if an LOS of E is to be avoided and D maintained. The data indicates, based on these criteria only, there are no existing deficiencies with respect to the Key Biscayne quality of traffic flow. Because of this, no roadway improvements are scheduled for the Key in the latest Dade County Transportation Improvement Program (TIP).

**Figure II-2**
**Traffic Control Devices**




**VILLAGE OF KEY BISCAYNE**
Source: Barton-Aschman Assoc., 1993

**Table II-1**
**Peak-Hour Level of Service Evaluation**

| Roadway/Segment Limits | 1992 Peak-Hour Weekday Volume (Two-Way) | Maximum LOS C Service Volume[1] | Maximum LOS D Service Volume[1] | Maximum LOS E Service Volume[1] |
|---|---|---|---|---|
| Crandon Blvd./North of Harbor Dr. | 2,248 | 2,900[2] | 3,110[2] | 3,110[2] |
| Crandon Blvd./Harbor Drive to Village Limits | 1,750 | 2,160[3] | 2,680[3] | 2,900[2] |
| Harbor Dr./Crandon Blvd. to Mashta Dr. | 565 | 480[4] | 930[4] | 1,060[4] |
| Mashta Drive/Harbor Dr. to Crandon Blvd. | 139 | 480[4] | 930[4] | 1,060[4] |

**Notes:**
(1) FDOT Generalized Peak-Hour Level of Service Maximum Volume for Florida's Urban/Urbanized (5,000+) Areas
(2) Group B Arterial (0.50 to 2.49 Signalized intersections/mile)
(3) Non-State Major Roadways
(4) Two-Way Collectors and Local Streets

**Source:** Barton-Aschman Associates, Inc.

Maximum service volumes for C, D and E levels-of-service were developed by Barton-Aschman Associates, Inc., traffic engineering consultants for this plan, based on applicable FDOT tables, the experience of Barton-Ashman and the knowledge of Barton-Aschman of Key Biscayne.

## HIGH ACCIDENT LOCATIONS

A key traffic problem indicator is the identification of high accident locations within the Village. The Dade County Sheriff's Department collects and archives this data for the Village.

The data analyzed for this report was compiled by the Metro-Dade Department of Public Safety for accidents occurring during 1992. The data showed that within the Village, a total of 173 accidents occurred during 1992. Not surprisingly, the majority of the accidents occurred on Crandon Boulevard. Table II-2 summarizes the accident data by roadway facility.

**Table II-2**
**1992 Accident Summary**

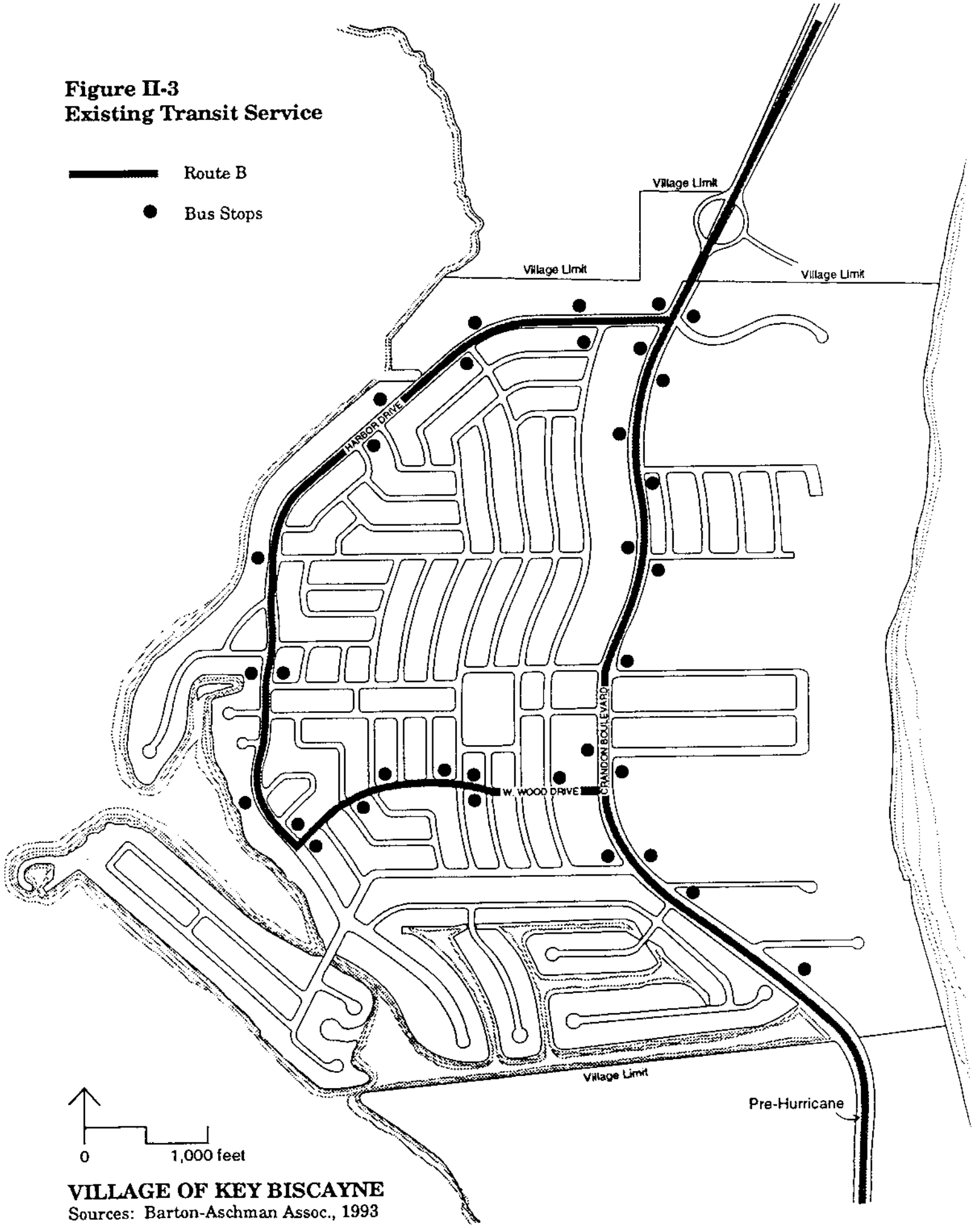
| Roadway Facility | 1992 Accidents | Percent of Total |
|---|---|---|
| Crandon Boulevard | 111 | 64.16 |
| Harbor Drive | 15 | 8.67 |
| Ocean Drive | 8 | 4.62 |
| Ocean Lane Drive | 7 | 4.05 |
| Galen Drive | 4 | 2.31 |
| South Mashta Drive | 4 | 2.31 |
| Sunrise Drive | 4 | 2.31 |
| West Mashta Drive | 4 | 2.31 |
| Buttonwood Drive | 2 | 1.16 |
| Grapetree Drive | 2 | 1.16 |
| Island Drive | 2 | 1.16 |
| Knollwood Drive | 2 | 1.16 |
| Seaview Drive | 2 | 1.16 |
| West Enid Drive | 2 | 1.16 |
| Cape Florida Drive | 1 | 0.58 |
| Fernwood Road | 1 | 0.58 |
| Hampton Lane | 1 | 0.58 |
| West McIntyre Street | 1 | 0.58 |
| TOTAL | 173 | 100.00 |

**Source:** Metro-Dade Department of Public Safety, 1992

## TRANSIT SERVICES

Bus service to Village of Key Biscayne is provided by Metro-Dade Transit. Route B connects the Village to the downtown Miami and the Metrorail system. The route also provides service to Crandon Park, Miami Seaquarium, and once reopened, Bill Baggs State Park. The service operates from 6:20 a.m. to 7:30 p.m. on weekdays and weekends. Headways are generally five to fifteen minutes during the peak-hours. Within the Village, the route follows Harbor Drive, West Wood Drive and Crandon Boulevard. Figure II-3 shows this route plus the bus stops.

**Figure II-3**
**Existing Transit Service**




**VILLAGE OF KEY BISCAYNE**
Sources: Barton-Aschman Assoc., 1993

## NON-MOTORIZED FACILITIES

Another component of the Village's transportation system are the non-motorized facilities such as bikeways and pedestrianways. There are over 100 miles of separated bikeways within urbanized Dade County which are part of a total of 275 miles of on-road, off-road bikeways linking residential areas, places of work, schools, shopping and parks. This system extends to Key Biscayne via a bike path along the Rickenbacker Causeway and Crandon Boulevard. Part of the efforts to promote bicycle usage in Dade County is publication of the Bike-Miami Suitability Map. The map rates specific roadways according to their suitability for cyclists based upon speed limits, road widths, amount of traffic, desirability and relationship with other roads in the area. Within the Village of Key Biscayne the following roadway segments have been rated as "suitable":

- Crandon Boulevard from the north Village limits to the State Park.
- Harbor Drive from Crandon Boulevard to Mashta Drive.
- West Mashta Drive for its entire length.

There are no separate right-of-way bicycle facilities currently within the Village limits.

## ANALYSIS OF PROJECTED NEEDS

Pursuant to the requirements of Chapter 9J-5, FAC, traffic volume projections were prepared in order to analyze the future conditions of the traffic circulation system of the Village. These projections served as the basis for the future needs analysis, which was developed to maintain the minimum acceptable level of service on the Village's roadway facilities.

### Traffic Volume Projections

Projections of traffic volumes were developed based on full build-out (sometime after the Year 2003) of the two DRI tracts based on the latest plans submitted by the developers plus a modest amount of infill development and private redevelopment. The densities and intensities are based on the Future Land Use Map. The projection of additional traffic is documented in Table II-3 and shown on Figure II-4.

### Capacity Analysis

The procedure used for analyzing the projected system needs was similar to that utilized for the existing conditions. The build-out year traffic volumes-the sum of existing (Table II-2) and projected (Table II-3) traffic volumes-were assigned to the Village's traffic circulation system, and an analysis based on capacity and level of service was conducted. Table II-4 summarizes the capacity analysis undertaken for the future traffic volumes on the Village's traffic circulation system and indicates that Crandon Boulevard will reach LOS E by buildout.

It is important to keep in mind that the acute capacity problems on this County Arterial are not in the Village but occur northwest of Virginia Key on the Causeway due to the traffic generators between the Village and these congestion points, particularly on weekends.

### Planned Capacity Improvements

The *Metro-Dade Transportation Plan and Improvement Priorities, Long Range Element*, summarizes the transportation improvement projects and their priorities for Dade County through the Year 2010. The document is based on an analysis conducted by the Metropolitan

Planning Organization (MPO) using the travel forecast techniques similar to those used in this Element. The MPO shows no proposed improvements within the Village.

**Table II-3**
**Projected Traffic Increase at Build-Out**

| Map Location | Additional Development | Projected Development[1] | Daily Trip Rates[2] | Gross Weekday Trips | Net Weekday Trips[3] |
|---|---|---|---|---|---|
| 1 | Continental/Grand Bay Towers | 57 sfdu | 9.55/sfdu | 544 | 435 |
| | | 412 mfdu | 5.85/mfdu | 2,410 | 1,928 |
| | | 450 hotel rooms | 10.16/rm | 4,572 | 3,658 |
| 2 | Key Biscayne Hotel & Villas | 505 mfdu | 5.85/mfdu | 2,954 | 2,363 |
| | | 300 hotel rooms | 10.16/rm | 3,048 | 2,438 |
| 3 | New Residential in South Crandon Blvd. Corridor | 30 mfdu | 5.85/mfdu | 176 | 141 |
| 4 | Village Center | 20,000 sf retail | 148.61/ksf | 2,972 | 1,486 |
| | | 20,000 sf office | 21.34/ksf | 427 | 299 |
| 5 | Crandon Blvd. retail | 10,000 sf retail | 167.59/ksf | 1,676 | 838 |
| Total Projected Additional Weekday Trips | | | | | 13,586 |
| Total Projected Additional Peak Hour Trips (based on 0.084 of daily) | | | | | 1,141 |

**Notes:**
[1] For locations 1 and 2 (the DRIs), the intensities of projected development reflect the latest (May 1993) developer proposals to the Village. Location 3 reflects private redevelopment recommended on the Future Land Use Map and location 5 is infill new development on underutilized parcels.
[2] Based on the Institute of Transportation Engineer's Trip Generation, 5th ed.
[3] Internal and pass-by trip reduction: 0.80 for residential and hotel; 0.70 for office; and 0.50 for retail.

**Sources:** Barton-Aschman Associates, Inc.
Robert K. Swarthout, Incorporated

**Table II-4**
**Future Peak Hour Traffic Volume Level of Service Evaluation**

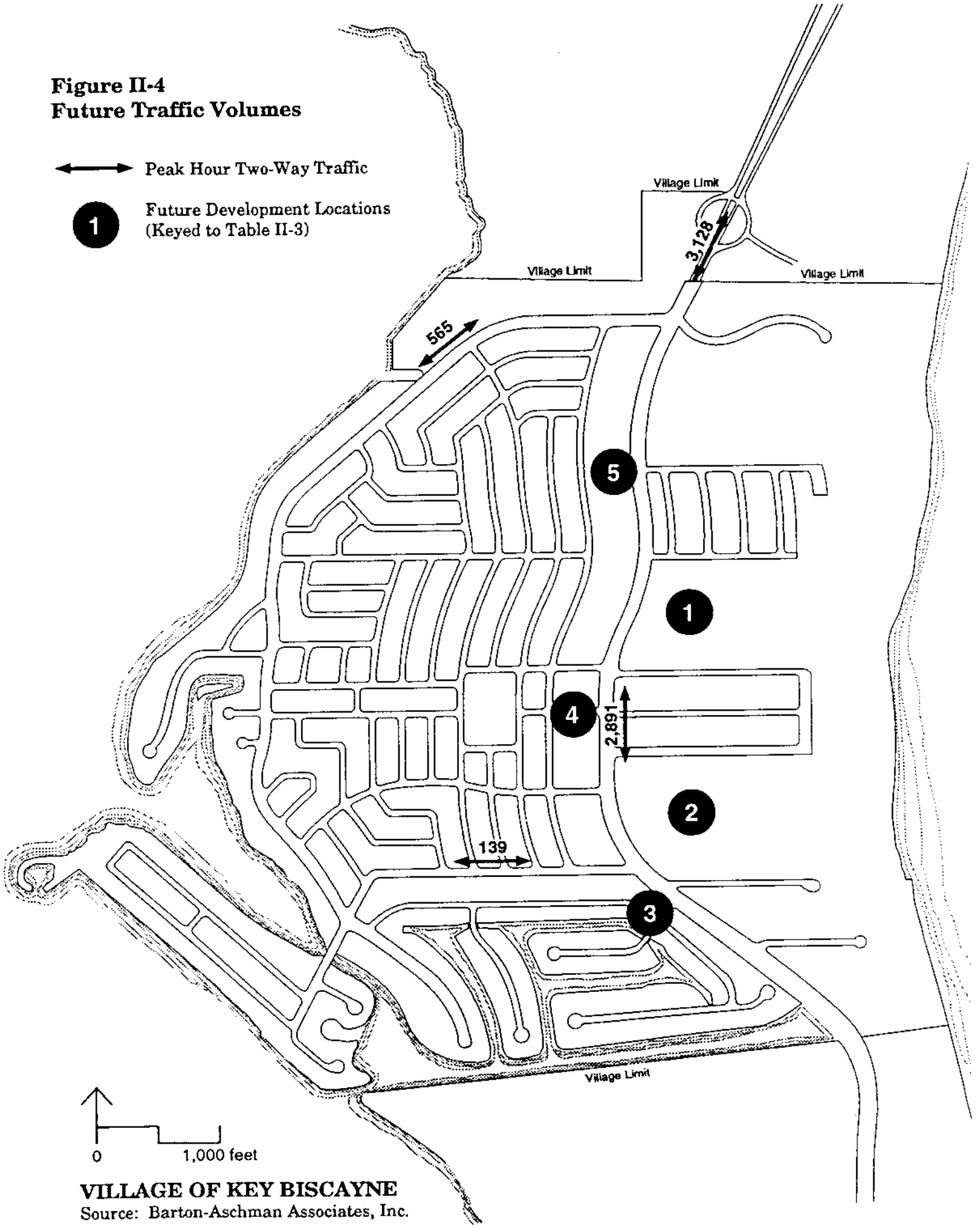
| Roadway/Segment Limits | Projected Volume At Buildout[1] | Maximum LOS C Service Volume[2] | Maximum LOS D Service Volume[2] | Maximum LOS E Service Volume[2] |
|---|---|---|---|---|
| Crandon Blvd., North of Harbor Dr. | 3,128 | 2,900[3] | 3,110[3] | 3,110[3] |
| Crandon Blvd., Harbor Dr. to S. Village Limits | 2,891 | 2,160[4] | 2,680[4] | 2,900[3] |
| Harbor Dr., Crandon Blvd. to Mashta Dr. | 565 | 480[5] | 930[5] | 1,060[5] |
| Mashta Dr., Harbor Dr. to Crandon Blvd. | 139 | 480[5] | 930[5] | 1,060[5] |

**Notes:**
[1] Trip assignments based on Table II-3 and then added to Table II-1 existing volumes.
[2] FDOT Generalized Peak-Hour Peak-Level of Service Maximum Volume for Florida's Urban/Urbanized (5,000+) Areas.
[3] Class B Arterial (0.50 to 2.49 Signalized intersections/mile).
[4] Non-State Major Highways.
[5] Two-Way Collectors and Local Streets.

**Source:** Barton-Aschman Associates, Inc.

Maximum service volumes for C, D and E levels-of-service were developed by Barton-Aschman Associates, Inc., traffic engineering consultants for this plan, based on applicable FDOT tables, the experience of Barton-Aschman and the knowledge of Barton-Aschman of Key Biscayne.

**Figure II-4**
**Future Traffic Volumes**




**VILLAGE OF KEY BISCAYNE**
Source: Barton-Aschman Associates, Inc.

**Future Roadway Needs: Crandon Boulevard**

As can be seen in Table II-4, the projected peak hour build-out traffic volumes will slightly exceed the maximum limit service volume for LOS D on Crandon Boulevard thereby reaching LOS E. Since the Village does not desire to widen this roadway, it should strive to better manage the capacity that it has available through implementation of congestion management techniques such as:

- improved timing (or outright removal of some) of the signals along Crandon Boulevard;
- improved bicycle facilities; and
- full implementation of transportation demand management actions in new and existing developments as described in Dade County's *Congestion Management Plan*.

These projections reflect the development plans for the two DRI tracts as submitted to the Village in the Spring of 1993. On the other hand, if the two DRI parcels are developed according to the development orders currently approved (on file with the Regional Planning Council as of June 1993), the Crandon Boulevard peak hour trips would be about 1,000 greater than what is shown on Table II-4. And if the retail area along the west side of Crandon Boulevard is allowed to develop at the intensities suggested by some at the citizen forums, at build-out this traffic alone would add a net increase of some 600 vehicles per hour to Crandon Boulevard over what the Master Plan permits. Either one of these scenarios would reach deep into LOS F thereby requiring a widening of Crandon Boulevard.

The rate at which the two DRI parcels are developed and occupied will primarily determine the rate at which traffic volumes increase. Although a peak-hour Level of Service of D on Crandon may adequately serve the 1993-1998 planning period, the LOS should be set at E to give adequate flexibility so that such desired projects as the Village Center will not be jeopardized. Since the other roadway facilities within the Village are operating at a good level of service, major capital improvements should not be required. However, a number of safety and access issues need to be addressed. These are discussed below.

**Other Transportation Needs**

*Control of Access onto Crandon Boulevard:* The existing curb cuts along Crandon Boulevard are excessive in both number and in many cases width; some serve lots that are undeveloped. Excessive access along an arterial contributes to increased accidents (as shown in Table II-3) and reduced roadway capacity. A comprehensive analysis of Crandon Boulevard within the Village limits should be conducted to identify locations where access points may be removed and/or consolidated. The study and ultimate recommendations should be conducted consistent with FDOT's Access Management Rules 14-96 and 14-97, FAC. The prime opportunity to correct such problems is when site plans are submitted for specific parcels.

*Speed Control on Residential Streets:* Speeding problems on the Village's residential streets should be identified and mitigated wherever necessary. Options for speed and traffic controls are varied. They may take the form of stricter enforcement of speed limits by the Village Police Department, the erection of traffic control devices, or the construction of roadway geometric features. In all but the enforcement option, a certain amount of analysis and planning must be undertaken prior to construction, and implementation of these options is typically met with some controversy.

*Diversion of Traffic to Collectors:* An easier, less controversial method of slowing traffic on local streets is to strategically locate stop signs within the Village. If traffic is forced to stop every other block, for example, it will naturally find its way to the road with less resistance (Collectors). This method does not call for four-way stop signs, but rather traditional two-way

stop signs at regular intervals within the local street system. An additional method is the location and timing of signalized intersections. Where ever possible, signalized intersections should be limited to those intersections where a Collector meets the Arterial, or, major generators fronting on an Arterial such as Key Colony. At signalized intersections where local streets intersect the Arterial (Crandon), the signal timing should strongly favor the Arterial so as to deter the use of the local street by through traffic.

*Speed Control on Harbor Drive:* Since more traffic will be steered to the two Collectors, strategies for controlling the speed on these facilities must also be addressed. Methods that will require traffic to stop on a regular basis (such as four-way stop signs) should be avoided, since these will work against what the Collector street is meant to do. Instead strategies such as medians, pavement reduction, or the provision of shrubbery and trees close to the roadway will serve as deterrents to speeding on Collector roads. An example of this type of treatment for Harbor Drive and its proposed locations are illustrated in Figure II-5.

*Intersection Improvements:* Three intersections warrant improvement as follows:

- Harbor Drive and Crandon Boulevard: Improved channelization on Harbor.
- McIntyre Street and Galen Drive with Crandon: Realign McIntyre to be opposite Galen at Crandon in conjunction with Village Center project.
- Seaview Drive at Crandon: If Ocean Drive is extended to Seaview, an improved relationship to West Mashta must be achieved. The existence of East Mashta within the DRI property complicates this.

*Transit Service:* Given the designation of West Mashta as a Collector, bus service should be rerouted from Wood Drive to West Mashta. This relocation will further emphasize West Mashta as the Collector and Wood as a residential street.

## PEDESTRIAN AND BICYCLE PLAN

### Arterials and Collectors

The principal bicycle problem on Crandon and Harbor are the large packs of cyclists that ride down from Miami or parking lots to the north. Since there is no State law that requires them to stay within a bike lane along the edge of the roadway, the Village deems it a questionable expenditure of money to construct bike lanes at this time, particularly since such lanes on Crandon may require relocation of the storm sewer catch basins even if the automobile lanes are slightly reduced in width. If these cyclists begin to adversely impact the Crandon Boulevard Level of Service, this issue will be reassessed. In the meantime, a sidewalk should be constructed on the west side of Harbor Drive and one side of West Mashta Drive; children on bicycles can use these facilities. See Figure II-7 for cross-section.

### Local Streets

Most residents-especially children-will choose to ride their bicycles throughout the Village streets. To maintain the safety of these bicyclists, local streets such as those which are direct routes to the school should be given priority for speed control, thus providing a safer bicycling environment. However, constructing bicycle and pedestrian facilities on local streets should be avoided wherever possible, since the commingling of these various modes of transportation serves to create a safe environment for all than if the modes are segregated. The exceptions are

Fernwood Road which is almost a minor collector and therefore should have a sidewalk on the east side, and the streets linking the resort hotels to the Crandon Boulevard retail areas.

**NEXT STEPS**

The specific implementation or action steps coming out of this analysis are as follows:

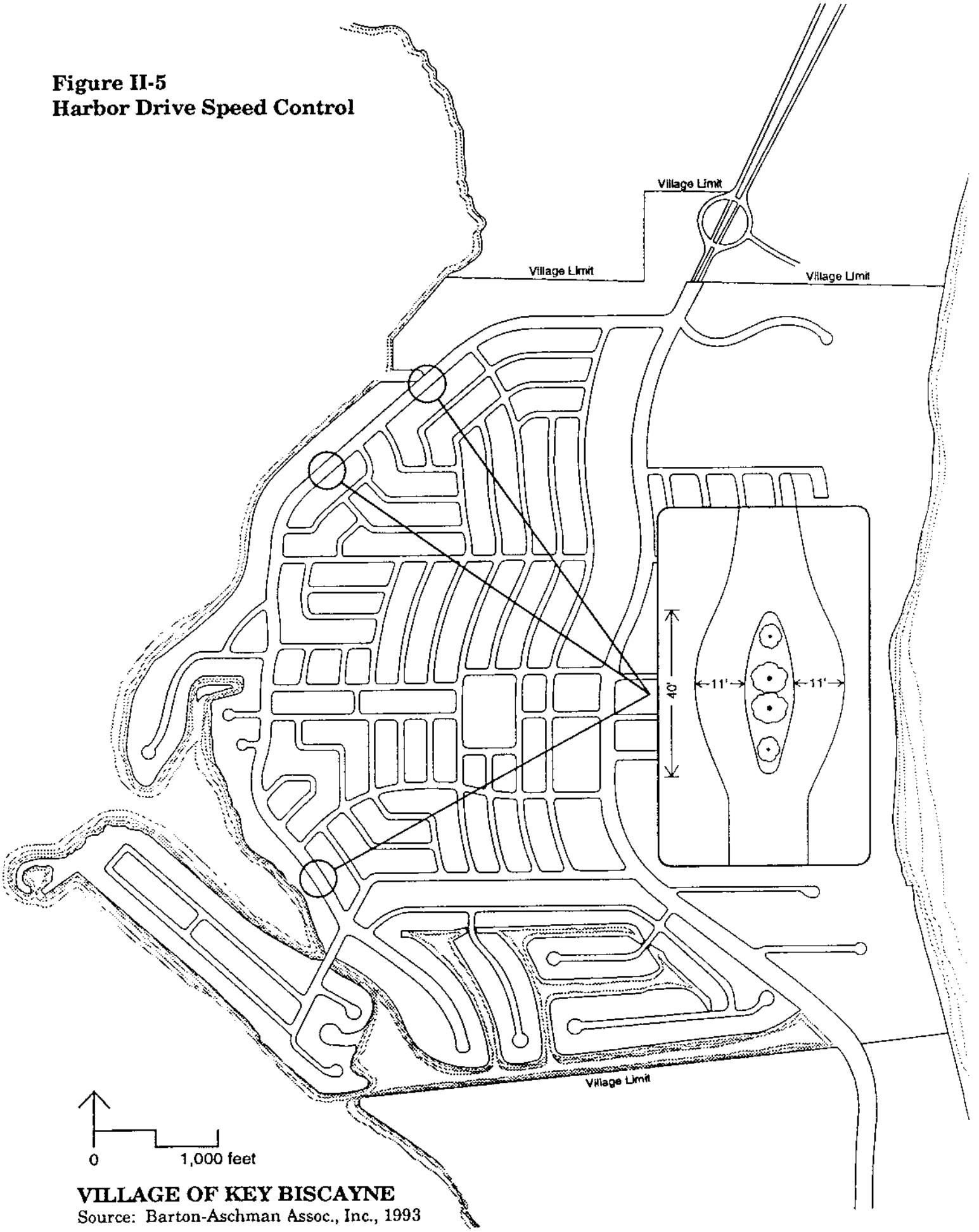
a. Prepare the detailed streetscape improvement plans and speed control techniques for the following streets:

    - Harbor Drive
    - Fernwood Road
    - West Mashta Drive

    Include West Wood Drive in the speed control plan. Begin phased implementation in concert with the Village street tree planting program.

b. Review and revise as necessary, the Land Development Code provisions on curb cuts, on-site traffic flow, etc.

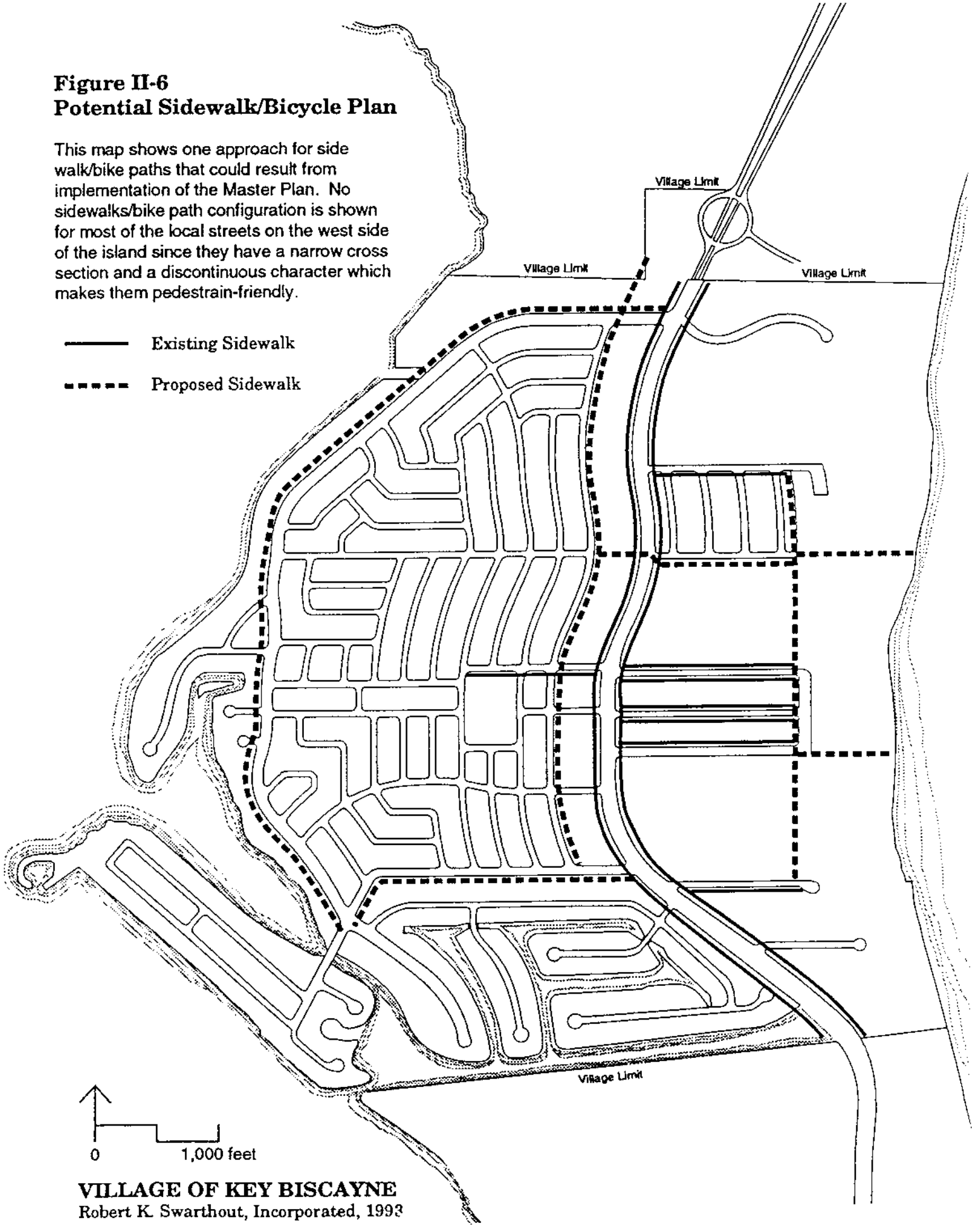
**Figure II-5**
**Harbor Drive Speed Control**




**VILLAGE OF KEY BISCAYNE**
Source: Barton-Aschman Assoc., Inc., 1993

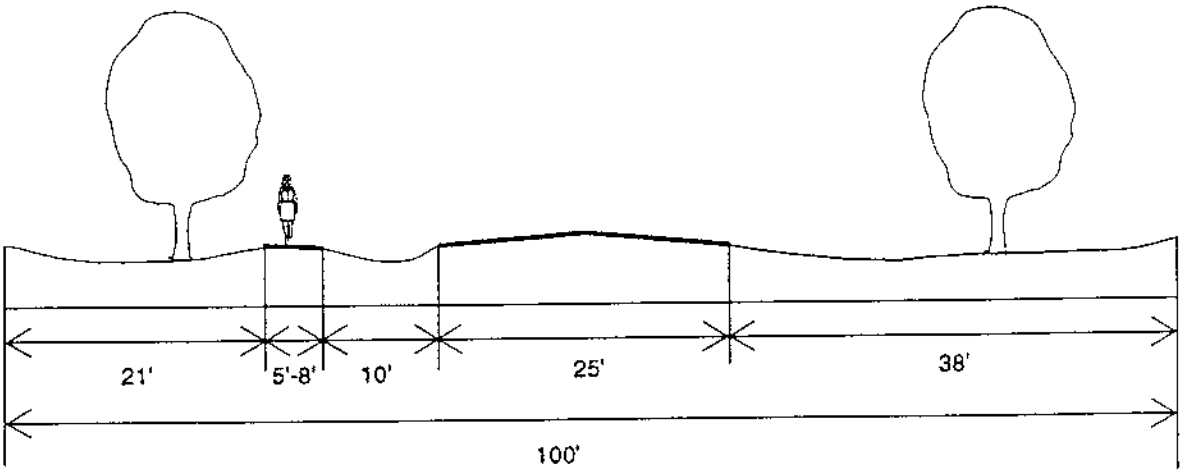
## Figure II-6
## Potential Sidewalk/Bicycle Plan

This map shows one approach for side walk/bike paths that could result from implementation of the Master Plan. No sidewalks/bike path configuration is shown for most of the local streets on the west side of the island since they have a narrow cross section and a discontinuous character which makes them pedestrain-friendly.




**VILLAGE OF KEY BISCAYNE**
Robert K. Swarthout, Incorporated, 1993

**Figure II-7**
**Harbor Drive and West Mashta Drive**
**Cross Section**




Note: West Mashta Drive right of way is only 70 feet but above plan can still work.

Source: Barton-Aschman Assoc., 1993.

# III. HOUSING ELEMENT

## HOUSING INVENTORY

### Housing Stock Characteristics

Table III-1 shows the basic housing data for the Village in comparison to Dade County (the Metropolitan Area).

The most striking fact is that 23 percent of the housing units are occupied by seasonal or winter residents-a high ratio even for South Florida. However, these 1,289 seasonal units is a reduction from the 1980 figure of 1,793 which suggests that there is a shift from seasonal to permanent residents. The total number of housing units increased by 1,079 during the 1980-1990 decade.

**Table III-1**
**Housing Unit Count, 1990**

| | Key Biscayne | Dade County |
|---|---|---|
| Total Number of Units | 5,724 | 771,288 |
| Vacant Seasonal | 1,289 | 19,062 |
| Year Round Housing Units | 4,435 | 752,226 |
| Vacant Year Round Housing Units (for Rent or Sale) | 604 | 59,871 |
| Occupied Housing Units | 3,831 | 692,355 |

**Source:** U.S. Bureau of the Census

Table III-2 contains the distribution among housing types and shows the predominance of multifamily (structure with three or more) units. Over 72 percent of the Village's units are in multifamily structures as compared to less than half in the County as a whole. In fact, 3,260 of these multifamily units are in structures with 50 or more units, *i.e.*, high rise.

**Table III-2**
**Type of Housing Units, 1990**

| | Key Biscayne | Dade County |
|---|---|---|
| Single Family Detached | 1,289 | 311,519 |
| Single Family Attached (Townhouse) | 222 | 74,453 |
| Duplex | 7 | 22,444 |
| Multifamily: Less than 50 units | 897 | 333,598 |
| 50 or more units | 3,260 | |
| Mobile Home or Trailer | 9 | 18,543 |
| Other | 40 | 10,731 |
| TOTAL | 5,724 | 771,288 |

**Source:** U.S. Bureau of the Census

Table III-3 shows the age of the Village's housing stock. The Village is unusual when compared to other eastern Dade County municipalities in that little of its housing stock is more than 50 years old, *i.e.*, of potential historic significance.

**Table III-3**
**Age of Housing Stock, 1990**
**Village of Key Biscayne**

| Year Structure Was Built | Housing Units |
|---|---|
| 1989 to March 1990 | 47 |
| 1985 to 1988 | 171 |
| 1980 to 1984 | 932 |
| 1970 to 1979 | 2,413 |
| 1960 to 1969 | 1,092 |
| 1950 to 1959 | 965 |
| 1940 to 1949 | 104 |
| 1939 or earlier | 0 |

**Source:** U.S. Bureau of the Census

Table III-4 shows the value of the City's owner-occupied housing stock. The median value of Key Biscayne's owner-occupied housing stock is $312,500. This component of the housing stock is relatively high in value; for example the County-wide median value is only $86,500. The 1990 U.S. Census reported that 3,961 (69.2 percent) of the Village's units were in condominium ownership but this figure must be used carefully since some of these units are rented and many are seasonal.

**Table III-4**
**Value of Owner-Occupied Housing Units, 1990**

| | Key Biscayne | | Dade County | |
|---|---|---|---|---|
| | Number of Units | Percent | Number of Units | Percent |
| Less than $50,000 | 0 | 1.2 | 23,870 | 8.7 |
| $50,000 – 99,000 | 3 | 13.3 | 154,195 | 56.0 |
| $100,000 – 149,000 | 34 | 19.8 | 52,723 | 19.2 |
| $150,000 – 199,000 | 68 | 18.7 | 18,764 | 6.8 |
| $200,000 – 299,000 | 369 | 20.2 | 13,841 | 5.0 |
| $300,000 or more | 532 | 26.8 | 11,905 | 4.3 |
| Total Reporting | 2,562 | 100.0 | 275,298 | 100.0 |

**Source:** U.S. Bureau of the Census

## Financial Characteristics

Table III-5 outlines the monthly housing costs and income characteristics of households living in the Village's owner-occupied units and Table III-6 does the same for rental units. The usual pattern emerges whereby two-thirds of the homeowners pay less than 30 percent of their income on housing-the generally regarded maximum acceptable percentage.

**Table III-5**
**Financial Characteristics of Households in Owner-Occupied Units**

| | Key Biscayne | Dade County |
|---|---|---|
| Owner-Occupied Housing Units, 1990:[1] | 1,070 | 376,006 |
| Number With a Mortgage | 804 | 223,902 |
| Median Monthly Cost | $1,774 | $796 |
| Number Not Mortgaged | 266 | 57,811 |
| Median Monthly Cost | $401 | $241 |
| Monthly Owner-Occupied Housing Costs as a Percentage of Income, 1990: | | |
| Less than 20 Percent | 394 | 132,179 |
| 20 - 29 Percent | 179 | 40,404 |
| 30 - 34 Percent | 72 | 28,328 |
| 35 Percent or More | 311 | 19,063 |
| Not Computed | 29 | 59,059 |

[1]Data not available for all such households.

**Source:** U.S. Bureau of the Census

Just as value of owner-occupied housing in the Village is significantly higher than the County as a whole, on the rental side a similar spread exists with a Village median rent of over $1,000 and a County median of $422.

Table III-6 shows that 537 households (or almost half of those renters reporting such data) pay more than 30 percent of their income on rent which is considered excessive.

**Table III-6**
**Financial Characteristics of Households**
**in Renter-Occupied Housing, 1990**

| Gross Rent | Households Key Biscayne | Households Dade County |
|---|---|---|
| Renter-Occupied Units Reporting | 1,269 | 305,935 |
| Less than $250 Per Month | 3 | 45,729 |
| $250 - 499 | 33 | 161,174 |
| $500 - 749 | 277 | 79,694 |
| $750 - 999 | 202 | 11,757 |
| $1,000 or More | 658 | 7,581 |
| Median Rent = $1,000+ | | |
| **Gross Rent as Percent of Income** | | |
| Less than 20 Percent | 316 | 65,707 |
| 20 - 24 Percent | 191 | 39,843 |
| 25 - 29 Percent | 99 | 35,962 |
| 30 - 34 Percent | 109 | 28,636 |
| 35 Percent or More | 428 | 127,383 |
| Not Computed | 126 | -- |

**Source:** 1990 Bureau of the Census

**Housing Conditions**

The 1990 U.S. Census reported that almost all of the Village housing units had a complete kitchen and complete plumbing facilities. However, 224 units contained more than one person per room, a indication of overcrowding. This presumably reflects the smaller Mackle houses initially built on Key Biscayne; many of these are being replaced by larger houses.

As noted in the Future Land Use analysis, prior to Hurricane Andrew, all of the Village's housing stock was rated "standard" based upon the County minimum housing standards code. For the purposes of this plan and to fulfill the requirements of Rule 9J-5.010 (1) (c), the locally determined definition of substandard housing shall be all housing which falls below the standards established by the Dade County minimum housing code. As of early November 1993, 236 housing units were still classified as "substandard" as a result of hurricane damage. This is based upon field inspections by the Village Building Official who rated housing units as standard or substandard based on the Dade County minimum housing code. However, every week this number was reduced as repair work is completed. As of August 1994, there were no known substandard units.

Still in the review process, is the number of residential structures that will have to be demolished and rebuilt at FEMA elevation standards due to the fact that damage exceeds 50 percent of the house's replacement value.

### Special Housing Characteristics

There are no publicly subsidized housing units, no HRS licensed group homes, no mobile home parks and no historically significant houses in Key Biscayne.

### Housing Construction Activity

Due to the workload generated by Hurricane Andrew, the Metro-Dade County Building Department has been unable to provide data on the number of housing units constructed and demolished since the 1990 U.S. Census. However, Village officials feel there has been very little net change, not more than a five unit increase; the University of Florida 1992 estimate confirms this. Instead, the pattern is a new house replacing a smaller house that is demolished.

## ANALYSIS

### Housing Projections

Table III-7 provides a projection of the Village's housing units based upon Tables I-2 and I-3. As noted in the Future Land Use Element, it is assumed that some 500 houses will be constructed and occupied on the two DRI sites by 2003. It also assumes that these new units will have some appeal to "snowbirds" thereby slowing down the marked 1980-1990 decline in seasonal housing units. All new units will be provided by the private sector.

**Table III-7**
**Housing Unit Projections**

| | 1990-1993 | 1998 | 2003 |
|---|---|---|---|
| Total Housing Units | 5,724 | 6,020 | 6,224 |
| Units Occupied by Permanent Residents | 3,831 | 4,220 | 4,390 |
| Units Occupied by Seasonal Residents | 1,289 | 1,200 | 1,200 |
| Vacant Units | 604 | 600 | 634 |

**Source:** Robert K. Swarthout, Incorporated, 1992

Due to the 98 acres of DRI land that is vacant or slated for redevelopment, there is adequate land to accommodate this projected housing. Both the Future Land Use Map and the latest DRI developer plans provide for both multifamily and single family housing types in addition to small scale resort hotels.

Table III-8 (at the end of this element) shows a breakdown of the above projections of permanent units by housing type, household size, income tenure (owner-occupied or rental) and housing type.

**Private Sector Delivery System**

The private sector will continue to be the sole provider of housing. This market has continued to add new houses to the Village's single-family stock primarily by demolishing existing houses and replacing them with larger structures. There do not appear to be any governmental or private sector constraints on this process other than those related to FEMA and the hurricane recovery. The Village administration includes a Department of Community Development which is responsible for all plan review and code enforcement.

The start of housing construction on the two vacant DRI tracts has been delayed by a number of factors but in the Spring of 1993 both developers submitted revised site plans. Therefore, at least one of these projects is expected to begin construction during 1994.

**Special Housing Needs**

*Low and Moderate Income Housing:* Land values in Key Biscayne preclude the provision of housing that would reach households with incomes below 80 percent of the Miami area median (HUD's definition of low and moderate income housing) even with subsidies according to Miami Attorney Martin Fine. Mr. Fine is an expert on affordable housing; he proposed and prepared the State Documentary Stamp Tax program that subsidizes low and moderate income housing. In addition, an October 1990 State Department of Community Affairs Technical Memo points out that "the provision of affordable housing within a built-out barrier island community" is not required if the municipality "can demonstrate that construction of affordable housing is not financially feasible and conflicts with the requirement to locate population concentrations away from high hazard areas." With the principal vacant tract assessed at over $725,000 an acre (market value is probably over $1,000,000), the facts seem self-evident. Therefore, this provision of 9J-5.010 is not applicable. This is not to preclude Village cooperation with any developer that should opt to use the County Surtax or Housing Finance Agency mechanisms.

*Other Special Needs:* With the possible exception of the block east of the elementary school building, the Village does not anticipate any public acquisition of housing such that a relocation policy is needed. The combination of location and land values mean that farm worker housing is not realistic.

*Substandard Housing:* As noted in the Future Land Use analysis, prior to Hurricane Andrew, all of the Village's housing stock was rated "standard" based upon the County minimum housing standards code. For the purposes of this plan and to fulfill the requirements of Rule 9J-5.010 (1) (c), the locally determined definition of substandard housing shall be all housing which falls below the standards established by the Dade County minimum housing code. As of early November 1993, 236 housing units were still classified as "substandard" as a result of hurricane damage. This is based upon field inspections by the Village Building Official who rated housing units as standard or substandard based on the Dade County minimum housing code. However, every week this number was reduced as repair work is completed. As of August 1994, there were no known substandard units.

*Housing Aesthetics:* The Village intends to initiate a design review process for commercial and at least multifamily residential development. Still under consideration is whether or not to include single-family detached houses. The principal problem with recent house construction has been that of bulk and setbacks rather than architectural aesthetics; new zoning provisions will deal with these issues.

*Mobile Homes:* Because of real estate values, mobile homes are not expected. This is not to preclude manufactured housing that meets HUD structural criteria and 1994 land development code criteria for exterior design.

*Group Homes:* The Village's new land development code will reflect the requirements of Chapter 419 FS relative to permitting "group homes" and "community residential homes" (including ACLFs) that meet these State HRS standards.

*Housing Conservation:* Once the hurricane damage is corrected, the Village will resume its normal code enforcement program to assure that all housing units meet the County housing minimum standards code.

*Historic Housing:* No housing is included on the Florida Master Site File or otherwise officially designated. Some structures once identified by Dade County has historically significance have been razed. The Village intends to compile a list of potentially significant buildings that may be approaching eligibility. "Mackel homes" at one time occupied nearly all of the dry lots west of Crandon Boulevard. These homes are typically 1,100 to 1,200 square feet in area. They were developed by the Mackel Brothers, who are also responsible for other large developments elsewhere in Florida. During recent years, many Mackel homes have been expanded beyond recognition or razed to accommodate new, larger homes. This trend is the inevitable consequence of the fact that the lots on which they sit are worth five to six times what the houses themselves are worth. It is possible that one or more Mackel homes may be historically valuable as an example of their type. Additional information on historic structures other than houses can be found on Figure I-4 in the Land Use Element Data and Analysis.

**Table III-8**
**Household Projections by Income, Size, Tenure and Housing Type**

**1990/1993**

| | Owner-Occupied | | Renter-Occupied | |
|---|---|---|---|---|
| **Income Group** | **Single Family** | **Multi-Family** | **Single Family** | **Multi-Family** |
| Very Low Income: | | | | |
| 1 Person | 0 | 0 | 0 | 164 |
| 2 Persons | 0 | 0 | 0 | 164 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 328 | 0 | 0 | 0 | 328 |
| Low Income: | | | | |
| 1 Person | 0 | 0 | 0 | 106 |
| 2 Persons | 0 | 0 | 0 | 105 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 211 | 0 | 0 | 0 | 211 |
| Moderate Income: | | | | |
| 1 Person | 0 | 25 | 12 | 25 |
| 2 Persons | 0 | 25 | 13 | 25 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 125 | 0 | 50 | 25 | 50 |
| Middle Income: | | | | |
| 1 Person | 0 | 40 | 20 | 49 |
| 2 Persons | 0 | 50 | 15 | 77 |
| 3 and 4 Persons | 0 | 30 | 10 | 47 |
| 5 or More Persons | 10 | 0 | 16 | 0 |
| Total 364 | 10 | 120 | 61 | 173 |
| High Income: | | | | |
| 1 Person | 238 | 476 | 69 | 57 |
| 2 Persons | 310 | 639 | 90 | 74 |
| 3 and 4 Persons | 191 | 433 | 55 | 46 |
| 5 or More Persons | 55 | 40 | 16 | 13 |
| Total 2,803 | 794 | 1,588 | 230 | 191 |

Total Households 3,831

*continued next page*

**Table III-8 (Continued)**
**Household Projections by Income, Size, Tenure and Housing Type**

**1998**

| Income Group | Owner-Occupied Single Family | Owner-Occupied Multi-Family | Renter-Occupied Single Family | Renter-Occupied Multi-Family |
|---|---|---|---|---|
| Very Low Income: | | | | |
| 1 Person | 0 | 0 | 0 | 180 |
| 2 Persons | 0 | 0 | 0 | 180 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 361 | 0 | 0 | 0 | 361 |
| Low Income: | | | | |
| 1 Person | 0 | 0 | 0 | 117 |
| 2 Persons | 0 | 0 | 0 | 115 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 232 | 0 | 0 | 0 | 232 |
| Moderate Income: | | | | |
| 1 Person | 0 | 27 | 13 | 28 |
| 2 Persons | 0 | 27 | 14 | 28 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 137 | 0 | 54 | 27 | 56 |
| Middle Income: | | | | |
| 1 Person | 0 | 44 | 22 | 55 |
| 2 Persons | 0 | 55 | 23 | 91 |
| 3 and 4 Persons | 0 | 33 | 11 | 52 |
| 5 or More Persons | 10 | 0 | 18 | 0 |
| Total 402 | 10 | 120 | 74 | 198 |
| High Income: | | | | |
| 1 Person | 262 | 524 | 76 | 63 |
| 2 Persons | 341 | 704 | 99 | 82 |
| 3 and 4 Persons | 111 | 477 | 61 | 51 |
| 5 or More Persons | 61 | 44 | 18 | 14 |
| Total 3,088 | 875 | 1,749 | 254 | 210 |

Total Households 4,220

**Table III-8 (Continued)**
**Household Projections by Income, Size, Tenure and Housing Type**

**2003**

| Income Group | Owner-Occupied Single Family | Owner-Occupied Multi-Family | Renter-Occupied Single Family | Renter-Occupied Multi-Family |
|---|---|---|---|---|
| Very Low Income: | | | | |
| 1 Person | 0 | 0 | 0 | 188 |
| 2 Persons | 0 | 0 | 0 | 188 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 376 | 0 | 0 | 0 | 376 |
| Low Income: | | | | |
| 1 Person | 0 | 0 | 0 | 122 |
| 2 Persons | 0 | 0 | 0 | 120 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 242 | 0 | 0 | 0 | 242 |
| Moderate Income: | | | | |
| 1 Person | 0 | 28 | 13 | 29 |
| 2 Persons | 0 | 29 | 15 | 29 |
| 3 and 4 Persons | 0 | 0 | 0 | 0 |
| 5 or More Persons | 0 | 0 | 0 | 0 |
| Total 143 | 0 | 57 | 28 | 58 |
| Middle Income: | | | | |
| 1 Person | 0 | 46 | 23 | 56 |
| 2 Persons | 0 | 58 | 17 | 88 |
| 3 and 4 Persons | 0 | 34 | 12 | 54 |
| 5 or More Persons | 11 | 0 | 18 | 0 |
| Total 417 | 11 | 138 | 70 | 198 |
| High Income: | | | | |
| 1 Person | 273 | 545 | 79 | 66 |
| 2 Persons | 355 | 732 | 103 | 85 |
| 3 and 4 Persons | 219 | 496 | 63 | 53 |
| 5 or More Persons | 63 | 46 | 19 | 15 |
| Total 3,212 | 910 | 1,819 | 264 | 219 |

Total Households 4,390

**Source:** Robert K. Swarthout, Incorporated

## Methodology

(1) 1990 Census data on Key Biscayne households was distributed by HUD income categories as related to 1990 median Dade County household income of $26,909. The HUD categories are as follows:

| | |
|---|---|
| Very Low Income | 0-50 % of median |
| Low Income | 51-80 |
| Moderate Income | 81-95 |
| Middle Income | 96-120 |
| High Income | 121 and over |

The 1990 household income distribution for Key Biscayne was as follows:

| | |
|---|---|
| Less than $5,000 | 186 |
| $5,000-$9,999 | 52 |
| $10,000-$14,999 | 177 |
| $15,000-$24,999 | 249 |
| $25,000-$34,999 | 364 |
| $35,000 and over | 2,811 |
| | |
| Total households | 3,389 |

(2) The 1990 U.S. Census data on number of persons per household or unit (table below) was simply distributed proportionately among the higher income categories. All of the very low and low income households are assumed to live in the smaller rental units since real estate costs on the Key tend to preclude them from homeownership. Other inputs into the distribution are the owner-renter and single family-multifamily ratios discussed earlier in the Housing Element.

| Persons Per Household | Household |
|---|---|
| 1 | 1,149 |
| 2 | 1,483 |
| 3 and 4 | 916 |
| 5 or more | 283 |
| | |
| Total | 3,831 |

# IV. INFRASTRUCTURE ELEMENT

## SEWAGE

### Service Area

[Changes to this section respond to Recommendation 1, page 10 of the Notice of Intent. This recommendation pertains to sewer and storm water infrastructure.]

Approximately two-thirds of the Village area is served by sanitary sewers. As Figure IV-1 shows, the principal unserved area is the west central single-family residential area. The unserved Holiday Colony neighborhood and DRI vacant land east of Crandon Boulevard has adjacent lines. This system in the Village is fed by two force mains, one 12 inch and one 24 inch, which follow the eastern right of way of Crandon Boulevard through Crandon Park. One of the force mains follows the Boulevard to the southern Village line.

However, almost 90 percent of the housing units and all of the retail and office commercial development are served by sanitary sewers. The balance of the uses are served by septic tanks or package plants.

As noted in the soils section below, most of the developed and vacant land in the Village has sandy soils. Specifically, it is Canaveral Sand. It is not particularly permeable because of its high silt content. It has been adequate for septic tank and drain field sewage disposal, although it may sometimes become saturated during periods with extremely heavy rain; at such times, stormwater with small amounts of drain field effluent may percolate to the surface. Such percolation is believed to occur based on antidotal testimony, but there is no evidence that such percolation occurs with sufficient frequency or in such magnitude as to constitute an environmental or health problem. Percolation of effluent to the surface during extremely heavy rain can be minimized or eliminated by backfilling drain fields with appropriate materials and by requiring that the layer of marl below drain fields be broken through to facilitate percolation.

Although septic tank and drainfield sewage disposal does not now present a serious environmental or health problem, at least some Village residents and officials wish to extend sanitary sewers to as much of the presently unserved area as is technically and financially possible.

### Operational Responsibility

The Metro-Dade Water and Sewer Department (WASD) is responsible for the collection and treatment of the sewage from the lines in the Village.

### Existing County Plant Capacity and Demand

The WASD Virginia Key treatment plant has a design capacity of 133,000,000 gallons per day. The 1991 average daily flow into the plant was 128,870,000 gallons per day which is 96.9 percent of capacity. However, a new transmission line is being constructed that will link some of the current service area of this plant to the south plant which is being expanded. All three County plants are interconnected by the trunk line system. The Village is not affected by the sewer trunk line problem and related moratorium facing Miami and adjacent areas.

### Existing Village Demand

Since incorporation is so recent, there is no master meter that enables WASD to calculate average Village sewage generation or the percent of the total system flow coming from Key Biscayne. The County estimates that the Village is currently generating about 1,187,000 gallons per day into the WASD collection system.

## Existing Level of Service

This works out to an existing level of service of 100 gallons per person per day (permanent plus seasonal population).

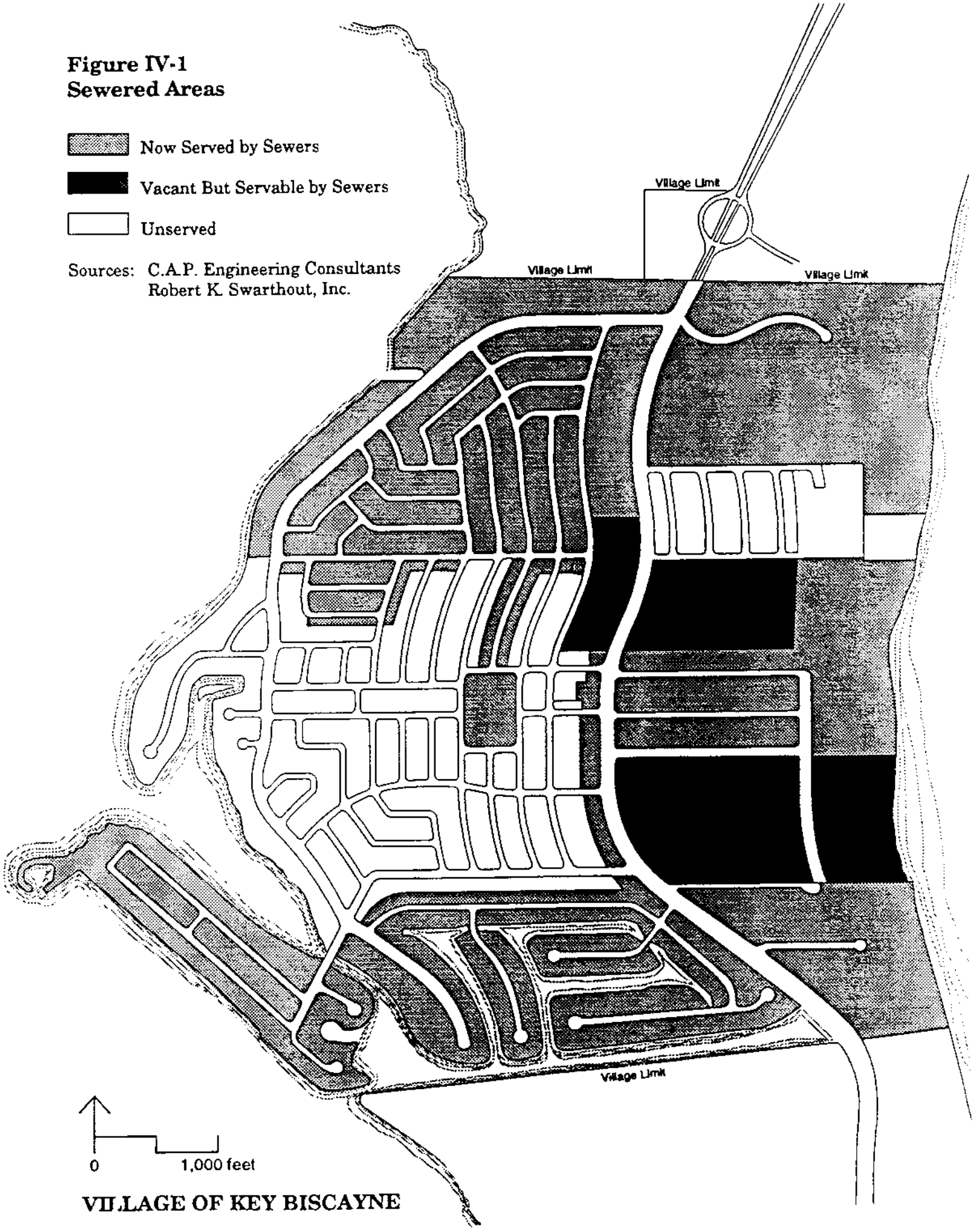
## Current Performance and Future Needs

Although there are no acute problems, from time to time there is evidence of septic tank effluent percolating to the surface. The large footprint of some houses vis a vis the lot size increases this possibility. However, there is no known septic tank drainage into the Bay; fortunately the lots fronting on the Bay tend to be larger than the inland lots. But ultimately the entire Village should be served with sanitary sewers. First priority should be residential streets adjacent to Biscayne Bay such as southern Harbor Drive. In terms of treatment capability, only some 300,000 additional gallons per day will be generated by the Village's 2003 permanent plus seasonal population after the sewers are extended; the 1998 figure will be 120,000; this compares to an existing county-wide system treatment capacity of 298,000,000 gallons per day and the system is about to be expanded.

## Financing Sewer Extensions

The alternative methods of achieving a sewer extension program are complex. The most commonly used option is for a municipality to work with the County. The Village Council could initiate a petition among the property owners to be served. Such a petition must be approved by the County Manager and then the Board of County Commissioners before the formal property owner vote takes place. After approval, WASD engineering and then installation, both an assessment and a tie-in fee are levied; hook-ups will probably be mandatory in the case of Key Biscayne. The other basic option is for the Village to set up its own special taxing district and sewer collection system under State statute although the sewage would still have to be received by the WASD trunk lines. A third option is to use the general fund to pay for the entire project.

**Figure IV-1**
**Sewered Areas**



## WATER

### Service Area and Operational Responsibility

The entire Village is served by the WASD distribution system. A pair of mains (one 12 inch and one 24 inch) follow Crandon Boulevard into the City. Therefore, the existing land uses outlined in Table I-1 are served by the system.

### Existing County Plant Capacity and Flow

The WASD treatment and distribution system is inter-connected so even though the Orr treatment plant is closest to Key Biscayne, all three treatment plants are considered a single system. The combined capacity of this system is 403,000,000 gallons per day with a maximum daily flow of 306,000,000 gallons in 1991.

### Village Distribution System Flow and Level of Service

As in the case of sewage, there is no master water meter. The County estimates that the Village consumes an average of 2,374,000 gallons per day. This results in an existing level of service of 200 gallons per person per day.

### Existing Performance and Future Needs

There are no current problems or projected needs relative to potable water in Key Biscayne. The projected permanent plus seasonal population increase will increase water consumption by some 470,000 gallons per day by 2003 and half that amount by 1998. As indicated above, the current County system now has a surplus capacity of almost 100,000,000 gallons.

### Water Conservation

Because there is no master water meter, the Village is unable to monitor water conservation. However, the Village will continue to use both its street tree planting program and Land Development Code to maximize native/xeriscape species and limit irrigation.

## SOLID WASTE

### Service Area and Operational Responsibility

The Dade County Solid Waste Management Department is responsible for the collection of solid waste from the single-family residential area. A number of private firms serve the multifamily and non-residential uses.

### Existing County Facility Capacity and Demand

The County's resource recovery facility on N.W. 58th Street near the Turnpike is the disposal facility for Key Biscayne. The limiting capacity factor is the amount of landfill capacity remaining, even with a resource recovery plant. The County has projected that there will be adequate landfill capacity remaining at this facility until the Year 2009. The capacity of the other landfills will be reached several years earlier, particularly in view of Hurricane Andrew. The

daily capacity of the Central transfer station is 4,000 tons with an average daily demand of only 900 tons.

### Existing Village Solid Waste Generation

Again, there is no precise data available from the County. They estimate that the Village is generating about 31 tons per day.

### Existing Level of Service

This works out to an existing Level of Service of 5.2 pounds of solid waste per person per day.

### Existing Performance and Future Needs

The County is about to undertake an examination of their future disposal system needs. At the local level, the new Village will soon determine the extent to which they wish to regulate the private haulers and whether or not the Village will undertake some collection itself using its own trunks or private contractors. The 1998 Village generation is projected to be 6,240 pounds (3.1 tons) per day greater than the current level and the 2003 increase would be a similar increase over 1998.

## DRAINAGE

### Service Area and Operational Responsibility

The Village Public Works Department is responsible for the structural drainage system within the Village. This system includes the following:

- A system of short storm sewers and Bay outfalls in the Hurricane Harbor-Harbor Drive area. This system of direct, unfiltered outfalls inevitably has some adverse impact on the Bay and subsidiary canals. There are also some ocean outfalls.

- A storm drain system along Crandon Boulevard with a subsidiary system around the Key Biscayne Elementary School.

- Scattered catch basins tied to trench drains and auger wells on various residential streets west of Fernwood.

The Village Director of Building, Zoning and Planning is responsible for coordinating the review of on-site drainage plans with the Building Official (and in some cases, the Village Engineer) providing the technical reviews. There are no natural drainage features within the Village other than the adjacent Bay and Ocean.

### Existing Performance and Future Needs

The 1993 resident survey results indicate drainage to be the most acute problem facing the Village. See Future Land Use Section B for survey results. Drainage problems exist in the single-family residential area in part because so many homeowners have filled their swales and/or bermed-up their lots to meet FEMA regulations. This means runoff flows into the street and ponds at the low points. In addition, the system of catch basins with various kinds of wells and trench drains is inadequate in terms of number, location and capacity/maintenance. In recognition of this, the Village has initiated preparation of a master drainage plan. Among the

purposes of this study are to determine the current and projected demand vis a vis existing capacity thereby enabling the engineers to calculate the design capacity of the new system.

**Note:** There are no prime aquifer recharge areas within the Village.

# V. CONSERVATION and COASTAL MANAGEMENT ELEMENT

## NATURAL RESOURCES INVENTORY

### Water Bodies and Wetlands

Figure I-1, the Existing Land Use map, shows the significant water bodies, i.e., the Atlantic Ocean, Biscayne Bay and other estuarine waterways.

There is some minor mangrove vegetation along the edge of at least one Biscayne Bayfront lot. This lot does not have a seawall. Almost all other lots along the bay do have seawalls and consequently no mangrove vegetation.

Significant mangrove wetlands are located adjacent to the Calusa Park area in Crandon Park. Figure V-1 shows those mangrove and hammock (former dune line) areas that can be mitigated and those that must be avoided (the County DERM jurisdictional areas) if the active use area of Calusa Park is expanded, as the Village would like to see happen. The resulting playfield plan is included in the Recreation and Open Space data and analysis. The 1993 studies of mangroves and other vegetation in this area were made by Lewis Environmental Services, Environmental Mitigation Planning Associates (EMPA), DERM and O'Leary Design Associates. DERM performed its own assessment based on the Lewis study and drew its wetland jurisdictional boundary as shown on Figure V-1. The EMPA study spells out the mitigation approach and the kind of dredge and fill permits they feel are needed and obtainable.

According to the September 1986 draft of Metro Dade County's Biscayne Bay Aquatic Preserve Management Plan, estuarine waters adjacent to the Village were barren of any seagrass due to historic dredging. The only exception way ~~is~~ just southwest of the Hurricane Bay mouth where there is a bed of Manatee Grass (Syringodium filiforme). Otherwise the seagrass beds tended to be about 1,000 feet off shore, from Hurricane Bay north. During most of the past decade conditions have been improving and seagrass may now be found closer to shore. Any development along the western shoreline must be sensitive to these seagrass beds and their critical importance to the ecosystem of Biscayne Bay.

### Soils

Most of the Village's soil is classified as "made" or Urban Land; see Figure I-2. The unfilled vacant tracts have sandy soils except for the tidal muck underlying the mangroves on the edge of Calusa Park. Although soil erosion is not a problem, beach erosion is a continuing concern. Most of the waterfront is sea walled although there is some unwalled residential frontage.

### Wildlife and Fish

Table A in the Appendix lists the known or dominant species of fish in Biscayne Bay and nearby ocean waters. Table B lists the predominant bird species of the Bay and ocean beach environments. The principal wildlife habitats are the bay and ocean waterfronts plus the mangroves on the edge of Calusa Park.

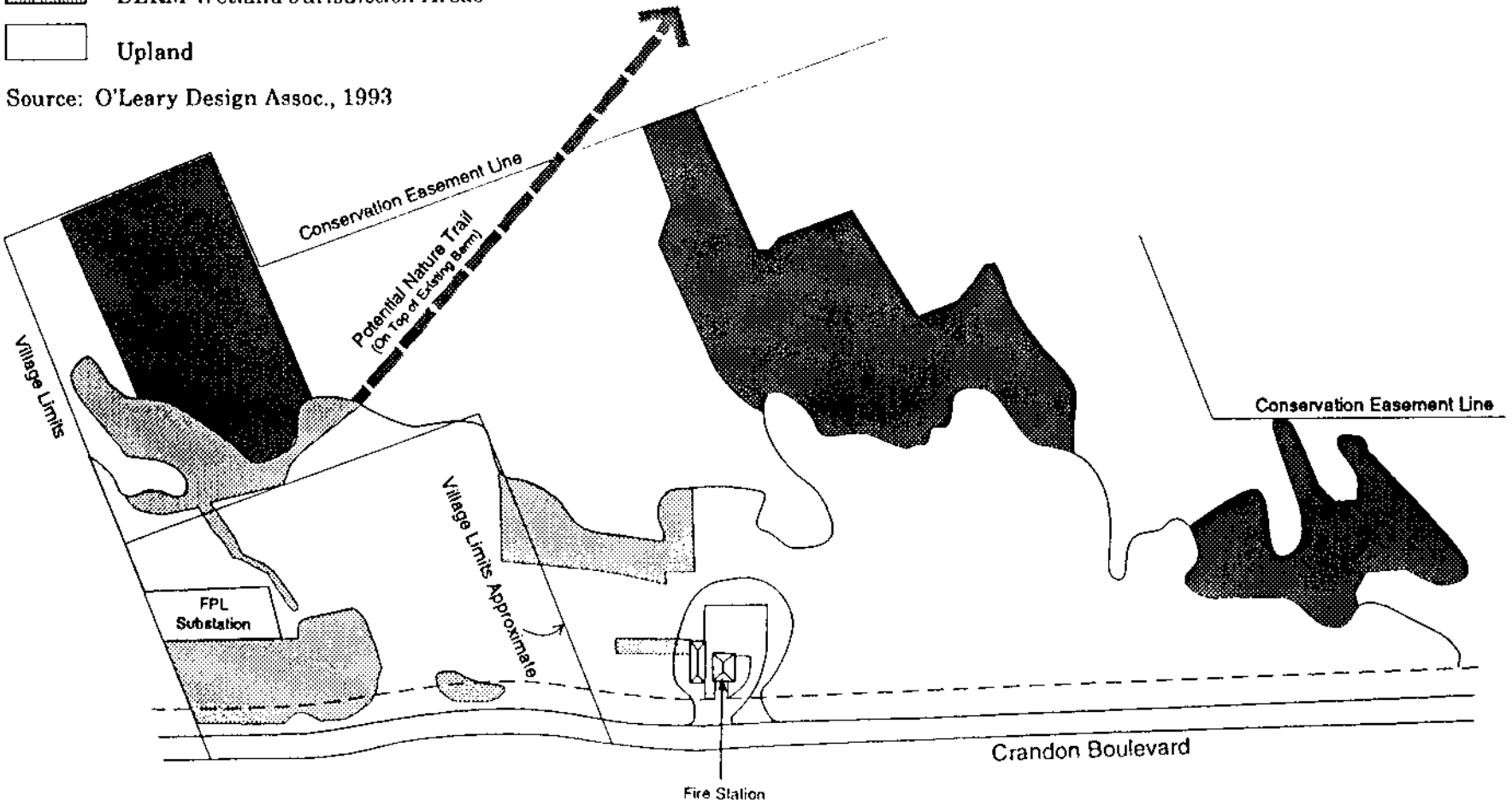
## Figure V-1
## Calusa Park Mangrove Study

Potential Mangrove Mitigation Areas

DERM Wetland Jurisdiction Areas

Upland

Source: O'Leary Design Assoc., 1993




Most of the area shown in this map is located north of the north boundary of the Village of Key Biscayne in Crandon Park in unincorporated Dade County.

**Endangered Species**

Appendix Table C lists those bird, mammal and reptile species that are listed on the Dade County list of endangered, threatened and rare species and might be found within the Village. Loggerhead turtles have been known to nest on the beach in Key Biscayne while manatees are found in Biscayne Bay and adjacent canals on the Key.

**Vegetative Cover**

The only natural vegetative cover are the mangroves and specimen trees on the edges of Calusa Park; see Waterbodies and Wetlands section above. Between the man-made soil of the island and the almost full development pattern, there is little significant natural vegetative cover, particularly after the storm surge and wind damage from Hurricane Andrew. Vegetation is limited to the landscaping planted in conjunction with development and mangroves along some of the limited non-walled Bay frontage in addition to the Calusa Park area.

**Minerals**

The man-made and sandy nature of the island's subsoil means there are no commercially significant minerals.

**Air Quality**

There is no air quality measuring station in or near Key Biscayne. Given the unique location of the Key plus the prevailing easterly winds, Key Biscayne is normally going to have the cleanest air in central Dade County. Table V-1 shows the County-wide trends for carbon monoxide, ozone and total suspended particulates. It shows the extent to which air quality is improving, *i.e.*, the percentage of days with "good" air quality is increasing while the percentage with "unhealthy" is decreasing.

**Table V-1**
**Air Quality Trends**

| | **1989** | **1990** | **1991** |
|---|---|---|---|
| Percent of Days Good | 61.09 | 58.90 | 73.97 |
| Percent of Days Moderate | 37.81 | 40.83 | 25.48 |
| Percent of Days Unhealthful | 1.10 | 0.27 | 0.55 |
| TOTAL | 100.00 | 100.00 | 100.00 |

Source: Metro-Dade County Department of Environmental Resources Management, 1992.

**Floodplains**

Figure I-2 shows the so-called V zones which is where the storm surge wave action is particularly damaging. The V zones are limited to the ocean beach.

The balance of Key Biscayne is in the 100 year flood plain. This means that given the predominant elevation (4-6.5 feet above mean sea level) all new buildings must have their first floor elevated above the flood elevation which varies from 7 to 11 feet above sea level with 9-10 most prevalent.

## CONSERVATION ANALYSIS

**Biscayne Bay**

The Bay and its tributaries are an important recreational asset (particularly boating and fishing). Commercial fishing plays a lesser role in the immediate vicinity of Key Biscayne.

The 1986 Biscayne Bay Aquatic Preserve Management Plan was intended to achieve conservation of the Bay and its immediate tributaries. To assure compliance with this plan the Biscayne Bay Shoreline Development Review Committee was established to review all development permits (except single family and duplex houses), for tracts fronting the Bay. See Figure V-2 on next page. The data in the Biscayne Bay Aquatic Preserve Management Plan is now being updated by DERM. One of the new findings is that the environmental quality of the Bay has been improving over the past decade.

See the coastal management section on estuarine pollution.

**Other Conservation Issues**

*Wetlands and Vegetation:* There is some minor mangrove vegetation along the edge of at least one Biscayne Bayfront lot. This lot does not have a seawall. Almost all other lots along the bay do have seawalls and consequently no mangrove vegetation. There are mangrove wetlands to the north of the Village in the Calusa Park portion of Crandon Park. These are shown in Figure V-1.

*Air:* The principal means of reducing air pollution is to keep traffic volumes from exceeding roadway capacities. The most practical means of doing that is to limit the development intensity on the two vacant DRI tracts should either development order expire and to make certain that additional major traffic generating uses are not authorized along Crandon Boulevard.

*Floodplains:* Enforcement of the requirement for new construction to have its first floor elevated is the most practical means of floodplain conservation.

*Manatees:* The West Indian Manatee (Trichechus manatus) is a herbivorous marine mammal that is found in shallow coastal waters bays, lagoons, estuaries, rivers and inland lakes. Within Florida waters, manatees are found extending from Dade County northward to Sebastian River in the winter and further north to the St. John River in the summer on the east coast of the State. During the cold winter months, they congregate in warm springs and artificially warmed water such as power plant cooling waters. The original population levels of manatees in Florida are unknown. A report written in 1824 stated that manatees "are found in considerable numbers about the mouths of rivers near the capes of east Florida," Lat. 25º (Key Biscayne). Since the 1600's, the population of manatees has gradually been reduced to very low levels due to the exploitation of their habitats by man. On July 1, 1978, the Florida Manatee Sanctuary Act became law. The Act increased the State's ability to protect the Manatee. Manatees are also protected by the Federal Endangered Species and the Marine Mammal Acts. The total manatee population in Florida is estimated to range between 800 and 1,000. Manatees feed on aquatic

plants. In brackish waters, their diet consists primarily of Halodule wrightii and Ruppia maritima; and in coastal marine areas, their diet consists of seagrasses (Thalassia testidinum, Syringodium filiforme and Halodule wrightii). Manatees are not physically affected by turbidity but extreme turbidity (such as that caused by dredge and fill operations) can kill the submerged plants that manatees feed on. The most serious human threat to manatees are propellers, the skegs of motorboats and barge collisions. Flood control structures are another threat because they can crush or drown manatees when the gates open and close. Manatees can be accidentally tangled in fishing gear and consequently be drowned or injured. Poaching is another cause of manatee deaths. The manatee's critical habitat is protected under federal law. There are only two critical habitats in Florida. These are Lake Worth and Biscayne Bay. Manatees frequent Biscayne Bay, particularly along north Harbor Drive. The entire western shore of Key Biscayne has been designated a Manatee Protection Area which means boat speeds above seven miles an hour and water skiing are prohibited.

*Sea Turtles:* The sea turtle has existed for approximately 150 million years. Within the past few centuries, the turtle population is believed to have dwindled to near extinction due to over-exploitation by man. Five of the seven existing species of sea turtles live in waters of Florida and are protected by the Federal Endangered Species Act. The five threatened species are Kemp's (Atlantic) Ridley, Green, Hawks Bill, Leatherback and Loggerhead Sea Turtles. Male sea turtles spend their entire life at sea, while the female only comes ashore to nest in South Florida. Mature females nest every 2 to 3 years from April to August. Two species of sea turtles nest on Dade County's beaches. These are the endangered Green Sea Turtle (Dermochelys coriacea), and the threatened Loggerhead Sea Turtle (Caretta caretta). The ability for beach hatchlings to survive to maturity depends much on their ability to survive the trip from the nest to the sea. If left in place, sea turtles nests can be destroyed by natural or human activity. The major adverse effect on the hatchlings' trip from the nest to the sea is artificial lighting (especially directly visible light) along the beach. The artificial lighting disorients the hatchlings and encourages them to head toward the light (roads, cars, buildings) instead of to the ocean. Once this disorientation occurs, the hatchlings will likely perish. The best way to ensure sea turtle survival is to place the nests in a hatchery facility. Tens of thousands of turtles have made it successfully to the ocean from hatcheries. The hatchlings from the hatchery are released directly into the ocean. Although a hatchery program is best, a "Lights Out" program could be implemented to return Key Biscayne's beach to a more natural state to reduce unneeded light pollution. As many lights as possible should be eliminated and remaining lights should be shielded on the beach side of buildings, lowered in elevation or reduced in intensity. Reducing the intensity of the light might allow a better chance for the survival of hatchlings from undetected nests and might also allow more nests to remain in their natural state. Reduction in light on the beach can be accomplished by attaching screening onto lights. Floodlights should be prohibited. Pole lighting should be shielded so that the light is contained within from three to seventy-three degrees on the seaward side of the pole. Low profile luminaries should be used in parking lots so that no light reaches the beach. Dune crosswalks should (if lighted) have low profile shielded luminaries. The use of tinted glass should be encouraged in all windows above the first floor of buildings facing the ocean. Turtles, including the threatened Loggerhead Turtle, lay their eggs on the ocean beaches of Key Biscayne, including the beachfront within the incorporated Village. The presence of sea turtle nests suggests the need for some beach light controls and nest protections and hatchery programs of the kinds that have been used by other ocean front communities. However, it may be most practical to concentrate sea turtle protection efforts along that part of the ocean front which lies adjacent to residential and/or park uses rather than where water dependent and water related hotels are located on the beach. Key Biscayne officials are concerned that light controls and nest protections may not be feasible or effective in areas where there are hotels in close proximity to the beach. Conservation of the limited residential waterfront mangroves should be the other principal objective.

*Nonresidential Hazardous Waste Sources:* In general, most nonresidential hazardous wastes are by-products of industrial or commercial processes. These processes result in the desired goods and services and chemical wastes. If the chemical wastes are discarded they degrade the environment and can be dangerous to people. In Dade County, hazardous wastes are defined

to include interim products that would threaten public health if introduced into the water supply. There are no industrial land uses within incorporated Key Biscayne. The only commercial uses that potentially pose a hazardous waste problem are the four gasoline station sites on Crandon Boulevard. One of these four sites has a gas station building which is vacant. This is the site at Crandon and Mashta. It has been designated for office use in the Future Land Use Map. It may need to be inspected and cleaned up before it can be redeveloped or otherwise reused. The three operating gas stations have been inspected and certified by the Dade County underground tank program. This program provides ongoing monitoring of these sites.

*Residential Hazardous Waste Sources:* Improper disposal of domestic hazardous waste contributes substantially to environmental degradation and is a potential serious threat to public health. Common household contaminants such as pesticides, paints and solvents are frequently dumped on the ground. Local governments have instituted special household hazardous waste disposal programs, including special pick-ups, to address the problem of household hazardous waste.

*Water Conservation:* Urban water demand accounted for 75 percent of the county's total demand in 1990, and is projected to increase to 78 percent by 2010. The magnitude of urban water use underscores the need for urban conservation in Dade County. The population in Dade County has grown from 1,626,000 in 1980 to 1,937,000 in 1990 (U.S. Bureau of the Census, 1990), and is forecasted to reach 2,556,000 by 2010 SFWMD, 1992b). Although the projected population growth rate is not as high as in other areas in south Florida, there is still an opportunity for significant conservation through the adoption and enforcement of building and landscape codes for future construction. Urban conservation efforts should also incorporate existing residents as current urban demands make up the bulk of demand in Dade County. Dade County has a public education conservation program. The county also requires conservation through ordinances. Lawn irrigation hours are limited, and a county landscape code was passed in 1991. A conservation rate structure was adopted by WASAD in December 1990, and this PWS and several others within the county are carrying out leak detection programs to reduce leakage levels (SFWMD 1991b). Demand (excluding environmental demands) is projected to grow by 35 percent, from 206,700 mgy in 1990 to 279,700 mgy in 2010. Urban use is projected to grow at a higher rate than agricultural demands through the year 2010. In order to limit impacts on water resources, supply augmentation and conservation should be encouraged. Urban conservation should be emphasized, as this outweighs agricultural demand. Water reuse, desalination of Floridan water, and ASR technology all offer options for supply augmentation. There is a possibility of constructing additional wellfields in the Biscayne Aquifer. The Surficial Aquifer provides all the potable water needs for Dade County, and is recharged by rainfall and the regional conveyance system from Lake Okeechobee. The canal system is dependent on rainfall both locally and in the Kissimmee Basin. There is no guarantee that this canal system well always be able to supply water in adequate amounts during severe droughts. Saltwater intrusion in Dade County is a significant problem, and will continue to be, as withdrawal increases in the coastal areas. This is partially caused by the low topography and low potentiometric heads in the surficial aquifer. Dade County, public utilities and the District are presently working to correct deficiencies in the saltwater intrusion monitoring network in the county. Another problem in the past has been groundwater contamination from industrial and landfill sites. This has led Dade County to implement a wellfield protection plan to prevent further contamination of its PWS wellfields.

*Water Supply and Demand:* The wellfields and related aquifer recharge areas for the Village's water supply are located on the mainland. However, water conservation should be an important Village policy objective, particularly during water emergencies. There is no industrial or agricultural water demand in the Village. The County potable water supply is analyzed in the Infrastructure Element. The following is the projected Village potable water demand:

| | |
|---|---|
| 1993 | 2,374,000 gallons per day |
| 1998 | 2,609,000 gallons per day |
| 2003 | 2,844,000 gallons per day |

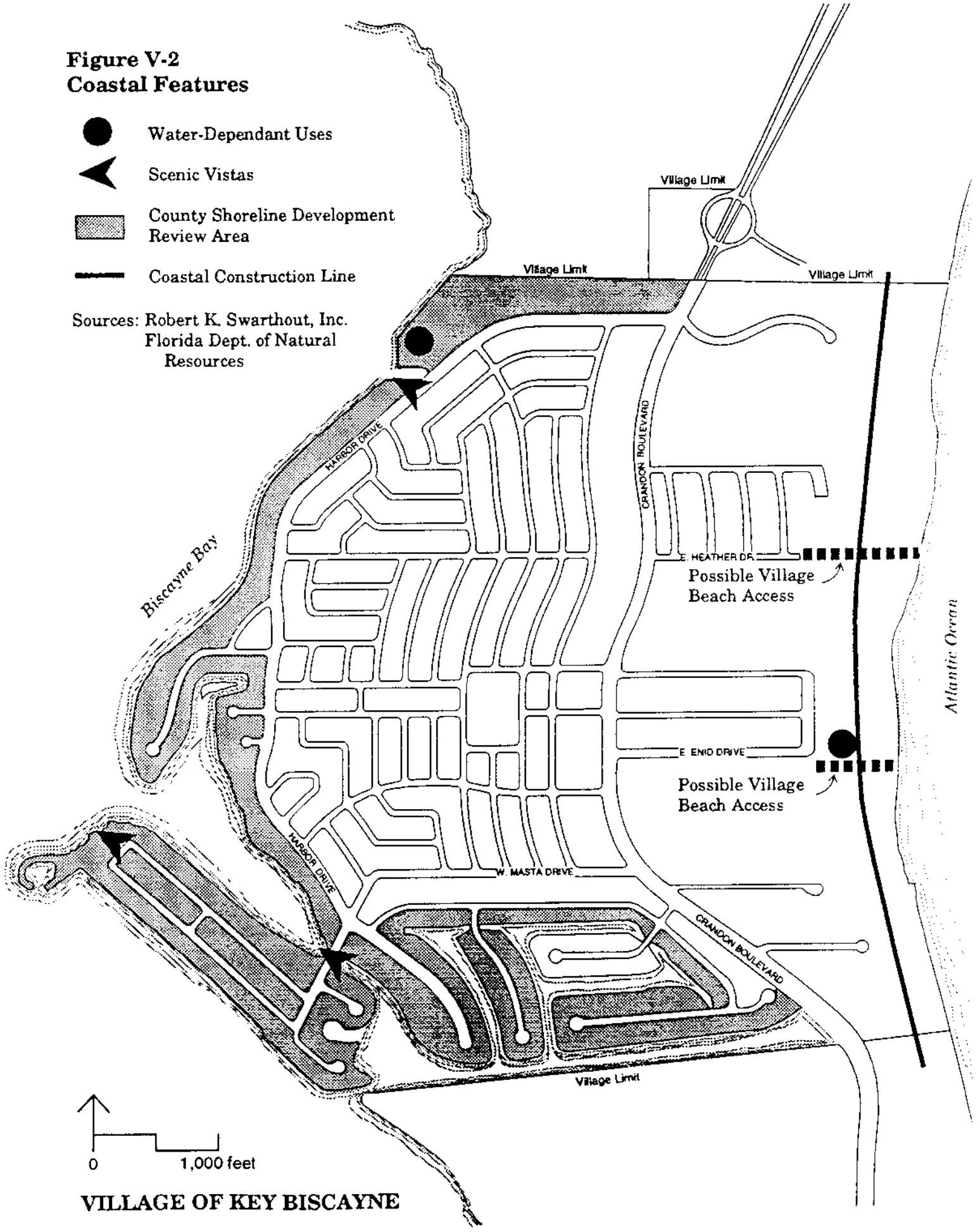


Figure V-2
Coastal Features
Water-Dependant Uses
Scenic Vistas
County Shoreline Development Review Area
Coastal Construction Line
Sources: Robert K. Swarthout, Inc.
Florida Dept. of Natural Resources
Village Limit
Village Limit
Village Limit
HARBOR DRIVE
CRANDON BOULEVARD
E. HEATHER DR.
Possible Village Beach Access
Biscayne Bay
Atlantic Ocean
E. ENID DRIVE
Possible Village Beach Access
HARBOR DRIVE
W. MASTA DRIVE
CRANDON BOULEVARD
Village Limit
0
1,000 feet
VILLAGE OF KEY BISCAYNE

## BISCAYNE BAY POLLUTION

### Water Quality

1991 water quality data is available from the Metro-Dade County Department of Environmental Resources Management. They have monitoring stations at Bear Cut (#28) and just west of Hurricane Harbor (#32). The following are some conclusions from the analysis of this data.

*Fecal Coliform:* This is a key measure of human sewage contamination. The average (mean) measurements were 5.6 per 100 ML at Bear Cut and 5.0 off Hurricane Harbor. The range for Biscayne Bay is 0 to 950. This suggests there is no major sewage effluent problem adjacent to Key Biscayne.

*Total Coliform:* The averages of 22.9 per 100 ML at Bear Cut and 35.9 off Hurricane Harbor are also low when compared to the 4,800 per 100 ML found near some canal mouths on the west side of the Bay.

*Turbidity:* The averages for Bear Cut and Hurricane Harbor were 2.67 NTU and 3.93 NTU respectively. These are high because the Bay-wide range is only 1 to 4 NTU. This is due to the barren muddy bottom resulting from the old dredge and fill activity.

*Dissolved Oxygen:* The average of 5.94 mg/L at Bear Cut and 5.71 off Hurricane Harbor are mid-range in the 4 to 7 Bay-wide spectrum.

### Storm Water Outfall Mitigation

As noted in the Infrastructure Element, the Village is preparing a master drainage plan. Part of that plan will be recommendations on how to mitigate the eight or more direct storm water outfalls into Hurricane Harbor and along Harbor Drive. It should be noted that there are also direct storm sewer outfalls into the Atlantic Ocean as well.

### Impacts of Development, Redevelopment and Facilities on Estuarine Conditions

No development or redevelopment proposed in the Future Land Use Element will adversely impact estuarine conditions, including the circulation and sedimentation of Biscayne Bay. No infrastructure or other projects proposed in any other portion of this plan will negatively impact estuarine conditions, including the circulation and sedimentation of Biscayne Bay. Implementation of the master drainage plan and long range extension of sanitary sewers to all or most of the Village should directly benefit the water quality of the Bay. The master drainage plan should include improvements such as catch basins, manholes and pipes for collecting stormwater and routing it to pollution control structures and drainage wells with emergency overflows. Pollution control devices (grease and oil separators) should be employed at each drainage well to prevent contamination from entering. Emergency overflow structures will be needed at existing outfalls so that discharge occurs only when storm events generate more than one inch of runoff.

### Regulatory Programs

The single most effective program to combat estuarine pollution is the Biscayne Bay Shoreline Development Review Committee's role in reviewing almost all waterfront development permit applications. All other development permits are reviewed by DERM from the standpoint of stormwater runoff controls.

## COASTAL ZONE MANAGEMENT

### Existing Land Use

Since the entire Village is within the coastal zone, Figure I-1 provides the existing land use picture. There are no land use conflicts along the extensive shore line in terms of uses that are incompatible with the waterfront location. However, because the hotels and condos cut off direct access to the ocean beach, some improved form of public access is needed. Also, most of these oceanfront buildings are too close to the water as evidenced by their relationship to the Coastal Construction Line.

### Redevelopment

An exterior survey by a structural engineer (Nicholas Dracos PE) indicates that if Hurricane Andrew had passed directly over Key Biscayne, only four commercial buildings in the Crandon Boulevard corridor would have escaped significant damage (50 percent). This together with the problems cited in the redevelopment section of the Future Land Use Element emphasizes the need for private redevelopment along portions of the Crandon corridor. See the urban design analysis in the Future Land Use Element for specifies.

### Water-Dependent and Water-Oriented Uses

The Key Biscayne Yacht Club and the Key Biscayne Beach Club are the only water-dependent uses. There are no water-related uses. Although not considered water-dependent by the 9J-5 FAC definition, clearly the ocean front resort hotels exist there because of the adjacent ocean and they do provide semi-public access to the ocean by virtue of their restaurants.

### Public Beach and Other Waterfront Access

There is no full public access point to the beach within the Village. Some apartment and condo residents such as those living along Ocean Lane Drive and the Sunrise Drive area have gated accessways.

However, full public access is available immediately to the north of the Village line in the County park and immediately to the south in the State park. There is a public boat ramp and marina in the County Park. As noted, the restaurants in the resort hotels are open to the general public.

Keeping in mind that any Key Biscayne resident can now drive to an ocean beach in five minutes, the Village intends to develop at least one public access point where residents can bike or walk, and maybe park with a Village beach sticker. Provisions for such an access is a requirement of the Key Biscayne Hotel and Village development order; see Figure V-2 for location near East Enid Drive. However, from an urban design standpoint, the eastern end of Heather Drive would be a better access point. The Enid Drive access should be developed first and the experience monitored as the basis for a decision on the Heather Drive access.

In addition to at least one public beach access for Village residents, ocean view corridors at the end of three other streets should be preserved through the Future Land Use Map and land development code. No structures other than security fences should be constructed in these vista corridors.

There is no public access to the bay within the Village although there are some scenic vista points along the roads as shown on Figure V-2. Response to the questionnaire supports such a

public vista area along Harbor Drive. The Key Biscayne Yacht Club provides a private 100-slip marina on the bay.

**Economic Base and Historic Resources**

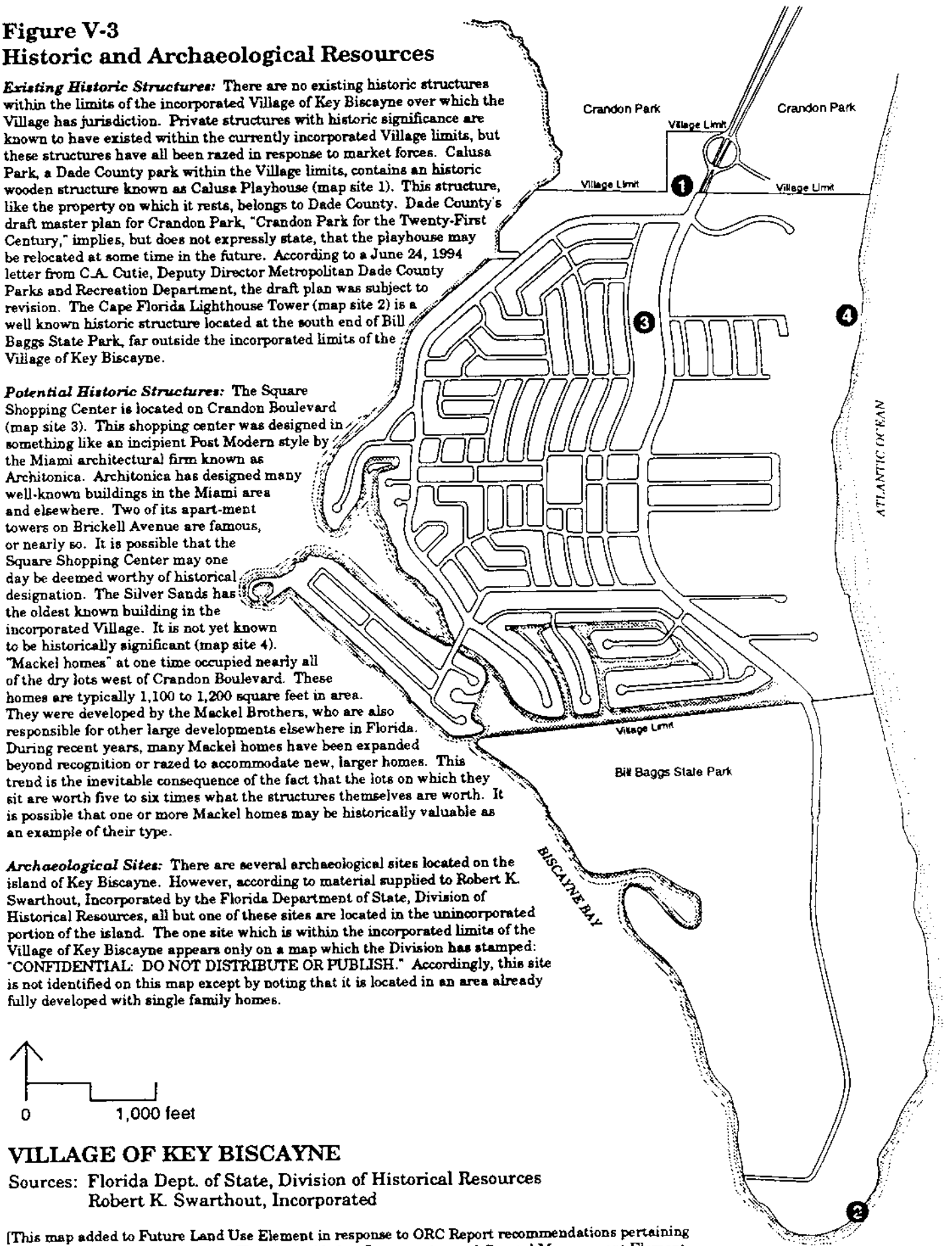
The economic base of the Key (and thus the coastal zone) has two principal components. The stores, offices and restaurants serve the residents. The other component is the resort hotels which is also served by the stores and restaurants. See the retail economic analysis in the Future Land Use Element for more details. There are no historic resources (sites on the State Master Site File) but an inventory is planned as development approaches the age threshold. Development and redevelopment proposed in the Future Land Use Element will not have any impact on historic resources and sites in the coastal area. A map of historic resources in included in the Future Land Use Element and reproduced in this element.

## Figure V-3
## Historic and Archaeological Resources

***Existing Historic Structures:*** There are no existing historic structures within the limits of the incorporated Village of Key Biscayne over which the Village has jurisdiction. Private structures with historic significance are known to have existed within the currently incorporated Village limits, but these structures have all been razed in response to market forces. Calusa Park, a Dade County park within the Village limits, contains an historic wooden structure known as Calusa Playhouse (map site 1). This structure, like the property on which it rests, belongs to Dade County. Dade County's draft master plan for Crandon Park, "Crandon Park for the Twenty-First Century," implies, but does not expressly state, that the playhouse may be relocated at some time in the future. According to a June 24, 1994 letter from C.A. Cutie, Deputy Director Metropolitan Dade County Parks and Recreation Department, the draft plan was subject to revision. The Cape Florida Lighthouse Tower (map site 2) is a well known historic structure located at the south end of Bill Baggs State Park, far outside the incorporated limits of the Village of Key Biscayne.

***Potential Historic Structures:*** The Square Shopping Center is located on Crandon Boulevard (map site 3). This shopping center was designed in something like an incipient Post Modern style by the Miami architectural firm known as Architonica. Architonica has designed many well-known buildings in the Miami area and elsewhere. Two of its apart-ment towers on Brickell Avenue are famous, or nearly so. It is possible that the Square Shopping Center may one day be deemed worthy of historical designation. The Silver Sands has the oldest known building in the incorporated Village. It is not yet known to be historically significant (map site 4). "Mackel homes" at one time occupied nearly all of the dry lots west of Crandon Boulevard. These homes are typically 1,100 to 1,200 square feet in area. They were developed by the Mackel Brothers, who are also responsible for other large developments elsewhere in Florida. During recent years, many Mackel homes have been expanded beyond recognition or razed to accommodate new, larger homes. This trend is the inevitable consequence of the fact that the lots on which they sit are worth five to six times what the structures themselves are worth. It is possible that one or more Mackel homes may be historically valuable as an example of their type.

***Archaeological Sites:*** There are several archaeological sites located on the island of Key Biscayne. However, according to material supplied to Robert K. Swarthout, Incorporated by the Florida Department of State, Division of Historical Resources, all but one of these sites are located in the unincorporated portion of the island. The one site which is within the incorporated limits of the Village of Key Biscayne appears only on a map which the Division has stamped: "CONFIDENTIAL: DO NOT DISTRIBUTE OR PUBLISH." Accordingly, this site is not identified on this map except by noting that it is located in an area already fully developed with single family homes.




## VILLAGE OF KEY BISCAYNE

Sources: Florida Dept. of State, Division of Historical Resources
Robert K. Swarthout, Incorporated

[This map added to Future Land Use Element in response to ORC Report recommendations pertaining to 9J-006 (1) (a) 5 and 11, page 2. This map added to Conservation and Coastal Management Element in response to ORC Report recommendations pertaining to 9J-5.012 (2) (c), page 11.]

### Infrastructure

The Infrastructure and Traffic Elements provide an inventory and analysis of the existing public infrastructure, all of which is in the coastal zone. No capacity increases are planned for any of these facilities other than storm drainage facility improvements to solve problems caused by existing uses. There are no public seawalls but the Village is responsible for several small bridges. The Capital Improvement Element provides an analysis of these project needs and costs.

### Coastal High Hazard Area

The entire Village is in the Coastal High Hazard Area because (1) full evacuation is required in the case of any hurricane, and (2) major hurricane damage has been experienced. See definition in Chapter 9J-5 FAC. Realistically, none of the infrastructure can be relocated because some 12,000 people are dependent upon that infrastructure. However, none is located within the storm surge V zone.

### Beach and Dune Systems

A $1,800,000 beach renourishment project was completed in 1987 using private funds. Public funds were spent on a groin to protect the Cape Florida lighthouse. This was to be followed by a publicly funded dune creation and vegetation project; there are no true existing dunes. This has not occurred due to the lack of the required public access points (with public parking) at least every half mile. However, some additional private funds for dune vegetation have been raised and the County has prepared a dune plan. The Village will investigate establishment of a municipal sinking fund to pay for future beach renourishment and possibly dune enhancement. Based upon the experience of the 1980's, an agreement should be worked out with the National Park Service to assure an adequate sand supply from Biscayne National Park if still feasible. A long term goal should be to replace some of the ocean seawalls with dune systems.

### Coastal Control Regulations

In 1989 the Metro-Dade County Board of Commissioners adopted an ordinance designating an Erosion Control Line (ECL) and establishing development controls relative to this line and the State Coastal Construction Control Line (SCCCL). In summary, restaurants and non-habitable structures are permitted between the SCCCL and the ECL under certain restrictions. The Village has the right to adopt more restrictive controls than the 1989 ordinance. Such suggestions include not allowing new restaurant structures seaward of the SCCCL line, requirements for dune crossovers and possibly moving the SCCCL some 100 feet landward.

## HURRICANE PLANNING

### Sources of Hurricane Evacuation Analysis

Three key documents from the basis for this analysis of evacuation planning for the Village:

- Metro-Dade County Planning Department, Coastal Management Element of the Comprehensive Plan, 1989 and 1992.
- Metro-Dade County Office of Emergency Management, Emergency Operations Plan Section I Hurricane Procedures, 1991.
- U.S. Corps of Engineers, Lower Southeast Florida Hurricane Evacuation Study, 1991.

All three of these documents were published prior to Hurricane Andrew and therefore are certain to be reviewed and revised based upon that experience. As of July 1994, no revisions had been made to the Metro-Dade County Coastal Management Element of the Comprehensive Plan in response to Hurricane Andrew; at that time, work on revisions pursuant to the Evaluation and Appraisal Report was underway. As of July 1994, no revisions had been completed to these documents based on Hurricane Andrew. As of July 1994, the Metro-Dade County Office of Emergency Management was in the process of reviewing and revising the Section I, Hurricane Procedures portion of the Dade County Emergency Operations Plan. Mr. Fred Murphy, Emergency Management Coordinator for the Office of Emergency Management, expressed the preference to not provide the Village with a copy of the draft revisions. He indicated that a draft will be made available to the Village when it is ready for public review. As of July 1994, the Army Corps of Engineers had not updated and was not in the process of updating the 1991 Lower South Florida Hurricane Evacuation Study according to Mr. Ted Newsome, a civil engineer with the Corps.

**Evacuation Status**

The Metro-Dade County Coastal Management Element indicates that Key Biscayne is subject to total evacuation in the case of any hurricane. The County Office of Emergency Management breaks this down into five categories, the first two of which apply to the Key:

Level A All electricity-dependent individuals living at home are to be evacuated.

Level B All residents of Key Biscayne are to be evacuated.

If even a Category 1 hurricane is expected to land fall in Dade County, Levels A and B are triggered for Key Biscayne.

**Hurricane Shelters**

Under the 1991 policy, the County no longer lists hurricane shelters in their plan and procedures due to its constant state of flux. Instead, the shelters are announced at the time of the evacuation order.

**Number Requiring Evacuation**

Table V-2 shows the population that must be evacuated. It also shows the likely destination of these evacuees and therefore the number of people potentially requiring public shelter.

**Table V-2**
**Key Biscayne Hurricane Evacuation Needs**

| | |
|---|---|
| Evacuating Population | 9,611 |
| Public Shelter | 710 |
| Friend's Home | 4,133 |
| Hotel/Motel | 960 |
| Out of County | 3,805 |

**Source:** Lower Southeast Florida Hurricane Evacuation Study, U.S. Corps of Engineers, 1991.

Since the County and U.S. Corps of Engineers no longer publish a list of shelters for Key Biscayne residents, it is not possible to assess the number of spaces available. In previous years, the Coral Gables High School on Bird Road was the designated shelter for the Key; its rated capacity was 1,100 persons. It should be added that based upon the Hurricane Andrew experience, experts feel that the percentage leaving the County as opposed to seeking public shelter may increase over the 1991 assumptions.

**Evacuation Routes**

The Rickenbacker Causeway provides the evacuation route for Key Biscayne. The County Office of Emergency Management has noted concern about all northbound ramps to I-95 which would include the Rickenbacker Causeway ramp.

They recommend special precautions for such links including:

- Police directing traffic
- Redirecting flow with barriers
- Modifying lane use

**Evacuation Times**

The Corps of Engineers emergency planners estimate that it will take 11 1/2 to 13 hours to evacuate Key Biscayne if a storm hits prior to November and 14-15 3/4 hours after the seasonal population begins to arrive. There were no evacuation problems associated with Hurricane Andrew in spite of the full evacuation of the Key.

**Special Needs Population**

There are no facilities in Key Biscayne that will require special evacuation attention due to the medical condition or age of the occupants, *e.g.*, hospitals, ACLFs or nursing homes.

**Village Residential Density Policy**

The most direct way to maintain or reduce hurricane evacuation times is to control the density of residential development. By adopting residential densities as low as reasonably possible consistent with the protection of private property rights, the Village can be assured that the permanent population will not increase significantly due to private development. Most hurricanes have occurred prior to the influx of seasonal residents so the existing and proposed hotels are less of a concern.

**Post Disaster Redevelopment**

Since the entire Village is within the Coastal High Hazard Area, significant public acquisition and relocation of structures or infrastructure is not feasible. See the redevelopment analysis earlier in this section. Although the three oceanfront hotels did suffer major damage, the majority of the buildings in the Village did not sustain significant structural damage from Hurricane Andrew in spite of the storm surge. Damage to signs, traffic lights, landscaping, roofing materials and some condo walls were the most widespread pattern in addition to wet floors.

Nevertheless, based on the experience of Hurricane Andrew, the Village will prepare a post-disaster redevelopment plan. The plans to develop a vegetated beach dune system and the related examination of coastal setback policies will be pertinent to this effort. Most of the developed waterfront properties have seawalls; long term replacement of oceanfront seawalls with dunes should be part of the plan.

## APPENDIX A

## INVERTEBRATE AND FISH SPECIES OF BISCAYNE BAY

| | Spawning Ground | Nursery | Commercial Harvesting | Adult Concentration | Sport Fishing |
|---|---|---|---|---|---|
| **Invertebrates** | | | | | |
| Blue Crab | X | X | X | X | X |
| White Shrimp | | X | | | |
| Brown Shrimp | | X | | | |
| Pink Shrimp | | X | | | |
| Spiny Lobster | | | X | X | X |
| **Fish** | | | | | |
| Tarpon | | X | | | |
| Sea Catfish | | X | | | X |
| Sheepshead | | | | | X |
| Spotted Seatrout | X | X | X | X | X |
| Weakfish | X | | X | X | X |
| Spot | | X | | | |
| Atlantic Croaker | | X | X | X | X |
| Southern Kingfish | | X | | | |
| Northern Kingfish | | X | | | |
| Gulf Kingfish | | X | | | |
| Red Drum | | X | | | |
| Star Drum | | X | | | |
| Black Drum | X | | | | |
| Florida Pompano | | | X | X | X |
| Bluefish | | X | X | X | X |
| Cobia | | | | | X |
| Mullet | X | X | X | X | X |
| Atlantic Spadefish | | X | | | X |
| Pinfish | | X | | | X |
| Pigfish | | X | | | X |
| White Grunt | | X | | X | X |
| Ladyfish | | X | | | X |
| Snook | | | | | X |
| Jack | | | | | X |
| Snapper | | X | | | |
| Grouper | | X | | | |

**Source:** Atlantic Coast Ecological Survey, U.S. Fish and Wildlife Service, Miami, Florida, 1980.

## APPENDIX B

## BIRDS OF BISCAYNE BAY AQUATIC PRESERVE MANAGEMENT AREA

| | Open Waters | Beaches & Flats | Mangroves | Comments |
|---|---|---|---|---|
| WADING BIRDS | | | | |
| Herons: | | | | |
| Great Blue | | F | N, R | (p, w) |
| Great White | | F | color phase of Great Blue | |
| Green-backed | | F | N, F, R | (p, w) |
| Little Blue | | F | N | (p, w) |
| Tricolored | | F | N | (p, w) |
| Yellow-Crowned Night | | F | N, R | (p, w) |
| Black-Crowned Night | | F | F, R | (w, r) |
| Egrets: | | | | |
| Great | | F | R | (p, w) |
| Snowy | | F | R | (p, w) |
| Cattle | | F | R | (p, w) |
| Reddish | | F | R | (p, r) |
| Ibis: | | | | |
| White | | F | N, R | (p, w) |
| Glossy | | | | (r) |
| Clapper Rail | | F | N, F, R | (p) |
| Roseate Spoonbill | | F | R | (p)uncom |
| SHORE BIRDS | | | | |
| Plovers: | | | | |
| Semipalmated | | F, R | | (m, w) |
| Wilson's | | F, N | R | (p) |
| Black-bellied | | F, R | | (m, w) |
| Piping | | F | | (m) |
| Killdeer | | F, R | | (m, w) |
| Sandpipers: | | | | |
| Spotted | | F, R | | (m, w) |
| Solitary | | F, R | | (r, m) |
| Pectoral | | F, R | | (m) |
| Least | | F, R | | (m, w) |
| Stilt | | F, R | | (m) |
| Semipalmated | | F, R | | (m) |
| Western | | F, R | | (m) |
| Yellow-legs: | | | | |
| Greater | | F, R | | (m, w) |

| | | Open Waters | Beaches & Flats | Mangroves |
|---|---|---|---|---|
| SHORE BIRDS (continued) | | | | |
| Lesser | | F, R | | (m, w) |
| Ruddy Turnstone | | F, R | | (m, w, s) |
| Common Snipe | | | | (w) |
| Whimbrel | | F | | (r, w) |
| Willet | | F, R | | (p, m, w) |
| Red Knot | | F | | (m, w) |
| Dunlin | | F | | (w) |
| Dowitchers: | | | | |
| Short-billed | | F | | (w) |
| Long-billed | | | | (r, w) |
| Marbled Godwit | | F, R | | (r, m, w) |
| Sanderling | | F, R | | (m, w) |
| Black-necked Stilt | | N, F, R | | (s) |
| RAPTORS | | | | |
| Bald Eagle | F | | N | (r) |
| Osprey | F | N, F, R | N, R | (p, w) |
| Hawks: | | | | |
| Red-shouldered | | F | N, F, R | |
| Red-tailed | | F | | (r) |
| Broad-winged | | F | F, R | (m, w) |
| Sharp-shinned | | F | F, R | (m, w) |
| Cooper's | | F, R | | (r, m) |
| Turkey Vulture | | F | R | (p, w) |
| Northern Harrier | | F | | (w) |
| Peregrine Falcon | | F, R | | (r, m) |
| Merlin | | F | F, R | (m, w) |
| American Kestrel | | F | F, R | (m, w) |
| Eastern Screech-Owl | | F, N | | (p, w) |
| WATERFOWL (Ducks, Geese, and Swans only) | | | | |
| Red-breasted Merganser | | F | R | (w) |
| Northern Shoveler | | R | | (r, w) |
| American Coot | F, R | | | (m, w) |
| Blue-winged Teal | F | F, R | | (m, w) |
| SWIMMING BIRDS | | | | |
| Brown Pelican | R | R | N, R | (p, w) |
| Magnificent Frigatebird | F | | R | (p, s) |
| Double-crested Cormorant | F | R | N, R | (p, w) |
| Coomon Loon | F, R | | | (w) |

| | Open Waters | Beaches & Flats | Mangroves | Open Waters |
|---|---|---|---|---|
| SWIMMING BIRDS (continued) | | | | |
| Gulls: | | | | |
| Laughing | F, R | N, F, R | | (p, w) |
| Ring-billed | F, R | F, R | | (w) |
| Herring | F, R | F, R | | (w) |
| Great Black-backed | F, R | F, R | | (r, w) |
| Bonaparte's | F, R | F, R | | (r, w) |
| Terns: | | | | |
| Least | F | N, F, R | | (s) |
| Royal | F | F, R | | (p, w) |
| Forster's | F | F, R | | (w) |
| Caspian | F | F, R | | (w) |
| Sandwich | F | F, R | | (w) |
| Gull-billed | F | F, R | | (r) |
| Common | F | F, R | | (r) |
| Black Skimmer | F | F, R | | (w) |
| Pied-billed Grebe | F, R | | | (m, w) |
| PERCHING BIRDS, SONGBIRDS, AND OTHERS | | | | |
| Warblers: | | | | |
| Prairie | | N, F, R | N, F, R | (p, m, s) |
| (Cuban) Yellow | | | N, F | (s) |
| Black-and-White | | F | F | (w) |
| Northern Parula | | F | F | (w) |
| Yellow-rumped | | F | F | (w) |
| Yellow-throated | | F | F | (w) |
| Palm | | F | | (w) |
| Common Yellow-throat | | F | | |
| Cape May | | F | | (m) |
| Black-throated Blue | | F | | (m) |
| Blackpoll | | F | | (m) |
| Northern Waterthrush | | F | | (m, w) |
| American Redstart | | F | | (m, w) |
| Black-whiskered Vireo | | N, F | N, F | (s) |
| Belted Kingfisher | F | F, R | F, R | (w) |
| Mangrove Cuckoo | | N, F, R | N, F, R | (r, s) |
| Red-bellied Woodpecker | | N, F, R | F | (p) |
| Yellow-bellied Sapsucker | | F | F, R | (w) |
| Rock Dove | | F | | common pigeon |
| White-crowned Pigeon | | F | | (r) |
| Mourning Dove | | F | | |
| Common Ground-Dove | | F, N | | |
| Yellow-billed Cuckoo | | F | F | (s) |
| Smooth-billed Ani | | F | | |
| Common Nighthawk | | F | | (s) |

| | Open Waters | Beaches & Flats | Mangroves | Open Waters |
|---|---|---|---|---|
| PERCHING BIRDS, SONGBIRDS AND OTHERS (continued) | | | | |
| Ruby-throated Hummingbird | | F | | (r) |
| Pileated Woodpecker | | F | | (r) |
| Gray Kingbird | | F | F | (s) |
| Tree Swallow | F | F | F | (w) |
| Barn Swallow | F | F | F | (m) |
| Fish Crow | | F | | |
| Northern Mockingbird | | F | | |
| Thrushes: | | | | |
| Swainson's | | F | | (m) |
| Gray-cheeked | | F | | (m) |
| Veery | | F | | (m) |
| Blue-Gray Gnatcatcher | | F | F | (w) |
| European Starling | | F | | |
| White-eyed Vireo | | F | F | |
| House Sparrow | | F | | |
| Bobolink | | F | | (m) |
| Red-winged Blackbird | | F | | |
| Grackles: | | | | |
| Boat-tailed | | F | | |
| Common | | F | | |
| Northern Cardinal | | F, N | F, N | |
| Savannah Sparrow | | F | | (w) |

Key: F = Feeding Habitat, N = Nesting Habitat, R = Roosting Habitat
- (r) Rarely seen, but known to be in APM Area
- (m) Migrates through the APM Area
- (w) Winters in the APM Area
- (s) Summers in the APM Area
- (p) Permanent residents (Many species that are here year round are joined by same species for the winter thus enlarging the winter population over the permanent)

**Source:** This list of representative birds of the Aquatic Preserve Management Area was prepared by Bruck D. Neville and A. Morton Cooper, Jr., Board Members of the Tropical Audubon Society. This list of birds includes those species that live and/or migrate to the islands and waters of Biscayne Bay.

## APPENDIX C

## ENDANGERED AND THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

| **Atlantic Marine Turtles** | **Status** | **Agency** |
|---|---|---|
| Loggerhead (Carretta caretta) | T | FWS |
| Green (Chelonia mydas) | E | FWS |
| Leatherback (Dermodhelys coriacea) | E | FWS |
| Hawksbill (Eretmochelys imbricata | E | FWS |
| Kemp's ridley (Lepidochelys kempii) | E | FWS |
| **Intracoastal Marine Mammals** | | |
| Florida Manatee (Trichecus manatus) | E | FWS |
| **Coastal Wading and Shore Birds** | | |
| Peregrine falcon (Falco peregrinus) | E | FWFC |
| Least tern (Sterna albifrons) | T | FWFC |
| Brown pelican (Pelecanus occidentalis) | T | FWFC |
| American oystercatcher (Haematopus palliatus) | T | FWFC |
| Osprey (Pandion haliaetus) | T | FWFC |
| Great white heron (Ardea herodias occidentalis) | SSC | FWFC |
| Royal tern (Sterna maxima) | SSC | FWFC |
| Great (common) egret (Casmerodius albus) | SSC | FWFC |
| Black skimmer (Rynchops niger) | SSC | FWFC |
| **Vascular Plants** | | |
| Suriana maritima (bay cedar) | E | RHB |
| Tournefortia gnaphalodes (sea lavender) | E | RHB |

**E = Endangered:** A species, subspecies, or isolated population so limited or depleted in number, or so restricted in range or habitat due to any man-made or natural factors, that it is in imminent danger of extinction or extirpation from the state, or may attain such a status within the immediate future.

**T = Threatened:** A species, subspecies, or isolated population that is so acutely vulnerable to environmental alteration, or declining in number at a rapid rate, or whose range or habitat is declining in area at a rapid rate, that as a consequence it is destined or very likely to become an endangered species within the foreseeable future.

**SSC = Species of Special Concern:** A species, subspecies, or isolated population that: warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation that may, in the foreseeable future, result in its becoming a threatened species; may already meet certain criteria for designation as a threatened species but for which conclusive data are limited or lacking; may occupy such an unusually vital and essential ecological niche that should it decline significantly in numbers or distribution other species would be adversely affected to a significant degree; or has not sufficiently recovered from past population depletion.

**Sources:** U.S. Fish and Wildlife Service (FWS)
Florida Game and Freshwater Fish Commission (FWFC)
Robert H. Barron, Coastal Management and Consulting (RHB)

# VI. RECREATION and OPEN SPACE ELEMENT

## RECREATION INVENTORY

### Existing Public Facilities in the Village

The following are recreational facilities on public land and accessible to the general population of the Village:

- Crandon Boulevard "Tree Farm" Site

  Size: 9.2 acres of usable land
  Facilities: Undeveloped
  Status: Recently purchased by the Village; design and development pending

- Calusa Park

  Size: 3.0 acres of usable playfield plus 4.5 acres of mangroves and other vegetation

  Facilities: 4 tennis courts and a playground

  Status: Activity-based municipal facility. Calusa Park is owned by Dade County and located within the incorporated limits of the Village of Key Biacayne. Calusa Park is adjacent to Dade County's Crandon Park. It is the desire of the Village to expand Calusa Park at the Village's own expense to provide additional space suitable for active recreation use. The Village contracted the preparation of landscape and environmental studies by competent experts; the studies show how expansion could be done in an environmentally responsible way. Figure V-1 of the Conservation and Coastal Management Element shows fill and mitigation potentials. Figure VI-2 of the Recreation and Open Space Element shows recreation use potentials.

- Key Biscayne Elementary School

  Size: 2.3 acres of recreation area
  Facilities: 2 ball fields and 2 basketball courts
  Status: Activity-based but no joint-use agreement

### Other Facilities in or Adjacent to the Village

The following facilities serve the Village but are either privately owned or not accessible to all of the residents.

- St. Agnes Church and School

  A playground, basketball court and ballfield are used by many Village residents.

- Key Biscayne Beach Club

  A private club which provides ocean beach facilities. Automatic membership rights accompany title to many houses in the Village.

- Key Biscayne Yacht Club

  A private club which provides a swimming pool and tennis courts in addition to wet and dry boat slips.

- Hotel and Condominium Facilities

  The one resort hotel and the largest condo complex provide swimming pools, tennis courts and beach access. Most of the larger condo buildings also have swimming pools and beach access.

- Beach Access

  In addition to the above private access points, several other residential areas have private beach accessways. There is some two miles of State ocean beach within the Village.

The following are adjacent public parks:

- Bill Baggs State Park

  The State park adjacent to the Village's southern boundary provides access to one of Florida's most beautiful beaches. A master plan prepared for Bill Baggs State Park envisions beach use and related passive recreation use.

- Crandon County Park

  The County facility adjacent to the north provides beach access, public boat slips and ramps, a golf course, playfields, and other facilities Crandon Park includes 28 tennis courts available to Village residents. A draft plan was prepared for Crandon Park in 1993. As of June 24, 1994, this draft plan had not been adopted by the County.

## ANALYSIS

### Existing Level of Service

As indicated on page 2 under the heading "Existing Public Facilities in the Village," there are now 14.5 acres of recreation and open space in public ownership within the Village. Setting aside the seasonal population since they tend to be well served by private facilities, the permanent population has only 1.64 acres of usable public recreation and open space per 1,000. This contrasts with the most commonly used level of service (LOS) standard which is 3.0 acres per 1,000 population which is not achievable in Key Biscayne. The shortfall is mitigated by the extensive recreation facilities in Dade County's Crandon Park to the north and the State of Florida's Bill Baggs Park to the south.

### Existing and Future Land Needs

Using two alternative level of service standards of 2.5 and 3.0 acres per 1,000 people, the park land implications of the population projection in the Future Land Use Element are shown in Figure VI-1.

**Table VI-1**
**Recreation and Open Space Land Needs**

| Year | Projected Permanent Population | At 3.0 acres/1,000 | At 2.5 acres/1,000 |
|---|---|---|---|
| 1993 | 8,854 | 26.4 | 22.2 |
| 1998 | 9,700 | 29.1 | 24.2 |
| 2003 | 9,960 | 29.7 | 24.7 |
| Buildout Population A* | 10,860 | 32.7 | 27.2 |
| Buildout Population B** | 9,960 | 29.7 | 24.7 |

* Assumes full development of latest DRI residential components.
** Assumes DRIs expire and densities authorized by Master Plan are fully developed

**Source:** Robert K. Swarthout, Incorporated, 1993

Figure VI-1 shows sites which are or could become components of a Village recreation and open space plan. The "tree farm" site, Location 1, was purchased by the Village with the intent of using it for recreation. The Key Biscayne Elementary School playfield, Location 2, and Calusa Park, Location 3, are now used by the Village. Ongoing use of these two sites and Locations 4 through 11, will require the Village to make appropriate purchase, lease or other arrangements. The sites shown in Figure VI-1 are listed below with their respective acreages:

| | |
|---|---|
| 1. Crandon Boulevard "tree farm" (Location 1, Figure VI-1) | 9.2 acres |
| 2. Elementary school playfield (Location 2, Figure VI-1) | 2.3 |
| 3. Calusa Park and mangroves (Location 3, Figure VI-1) | 7.5 |
| 4. Calusa Park expansion (Location 4, Figure VI-1) | 15.0 |
| 5. Crandon/McIntyre/Fernwood/Enid Block (Location 5, Figure VI-1) | 2.9 |
| 6. Fernwood/McIntyre/Glenridge/Enid Block (Location 6, Figure VI-1) | 1.4 |
| 7. Fernwood/McIntyre/Glenridge and Enid R.O.W.'s (Location 7, Figure VI-1) | 2.4 |
| 8. Enid/Crandon/Seaview parcel (Location 8, Figure VI-1) | 10.2 |
| 9. Dade County sites on Virginia Key (Location 9, Figure VI-1) | 20.0 |
| 10. Bill Baggs State Park (Location 10, Figure VI-1) | 20.0 |
| 11. St. Agnes Field (Location 11, Figure VI-1) | 3.0 |
| Total | 93.9 acres |

Approximately 35 percent of the above 93.9 acres would have to be acquired by purchase, lease or otherwise for the Village to have enough land to meet the standard of 3.0 acres per 1,000 population for buildout population A shown on Table VI-1. Of the above facilities, the only one which the Village can be certain of controlling is the Crandon tree farm site, which the Village owns. If the Village allocated all of this site but no other sites to public recreation use, then the maximum recreation level of service which the Village could achieve for buildout population A is given by 9.2 acres divided by a projected buildout population of 10,860 divided by 1,000 people equals 0.85 acres per 1,000 people.

**Need Identified by Dade County**

Dade County has recognized the need for substantial additional acreage to serve the local recreation needs of Key Biscayne. This recognition is recorded in numerous county documents. Two are reproduced as facsimiles on page VI-10 through VI-13 of this element. The reader should note the portion of these documents with bold italics. The current (as of August 1994) recreation and open space level of service (LOS) standard as stated in Policy 1A of the CDMP Recreation and Open Space Element is "2.75 acres of local recreation and open space per 1,000 permanent residents and....a space 5 acres or larger must exist within a 3.5 mile distance from residential development." This latest LOS standard will allow credit for 50 percent of private recreational acreage within a residential development, space which seldom addresses playfield needs. Although the 2.75 acre measure is now calculated for large "park benefit districts," the intent seems clear, i.e., there should be a local park of at least 5 acres within 3.5 miles of all major residential areas and the actual size should be about 2.75 per 1,000 persons served or 24 acres if this standard was applied to the Village of Key Biscayne.

Table 5 of the CDMP Recreation and Open Space Element lists "local park" acreage and 1990 population figures for all of the Dade County Minor Statistical Areas (MSA). The following list contains the "local park" acreage in those MSAs (all or largely unincorporated Dade) that would be considered urban (east of the Turnpike) like Key Biscayne as opposed to suburban fringe:

| MSA | Local Park Acres |
|---|---|
| 2.1 | 492 |
| 2.2 | 113 |
| 2.3 | 276 |
| 2.4 | 255 |
| 4.2 | 319 |
| 5.4 | 589 |
| 5.5 | 307 |
| 5.6 | 135 |
| 5.7 | 85 |
| 5.8 | 217 |

None of these areas exceeds 18 square miles in size; all are more or less rectangular in size. This means that there are "local parks" within four miles of all residential developments and each of the 10 planning areas listed has 85 acres or more of local park land.

During recent years prior to incorporation of the Village of Key Biscayne, Dade County approved developments, including two significant Developments of Regional Impact, which has major significance for local park levels-of-service. The following is a chronological account of events relevant to the concurrency reviews of the two DRI projects proposed for Key Biscayne:

- December 1988: Adoption of Metro-Dade Comprehensive Plan including park level of service standard. Protracted compliance negotiations with DCA ensued including LOS standards.
- July 1989: DCA Stipulated Settlement Agreement signed.
- July 1989: Metro-Dade Concurrency Management Ordinance adopted.
- September 1989: County Commission public hearing on Key Biscayne Hotel and Villas (KBHV) Development Order; DRI process had been underway for many months and thus no apparent concurrency review. County DIC report cites adequate on-site recreation facilities.

- December 1989: Similar public hearing on Hemmeter-Continental DO; concurrency review performed and approval.

- July 1991: Amendment to 1989 KBHV DO; concurrency review cites 28 acres of "local park" in Crandon Park as basis for LOS approval, further noting that only .98 acre of excess park capacity remains.

The Key Biscayne Hotel and Villas (KBHV) project was not reviewed for concurrency when its original 1989 Development Order (DO) was approved. When the revised DO was approved in 1991, the County considered 28 acres of Crandon Park as "local park" for purposes of approving the project since the 2.75 per 1,000 had to be met within Park Benefit District 2 which was then only Virginia Key (incorporated Miami) plus Key Biscayne. This 28 acres presumably included the two unlit athletic fields plus the tennis courts. If the proposed master plan for Crandon Park continues to call for these athletic fields to be removed, without authorizing playfields at an expanded Calusa Park, the intent of this concurrency approval would be violated.

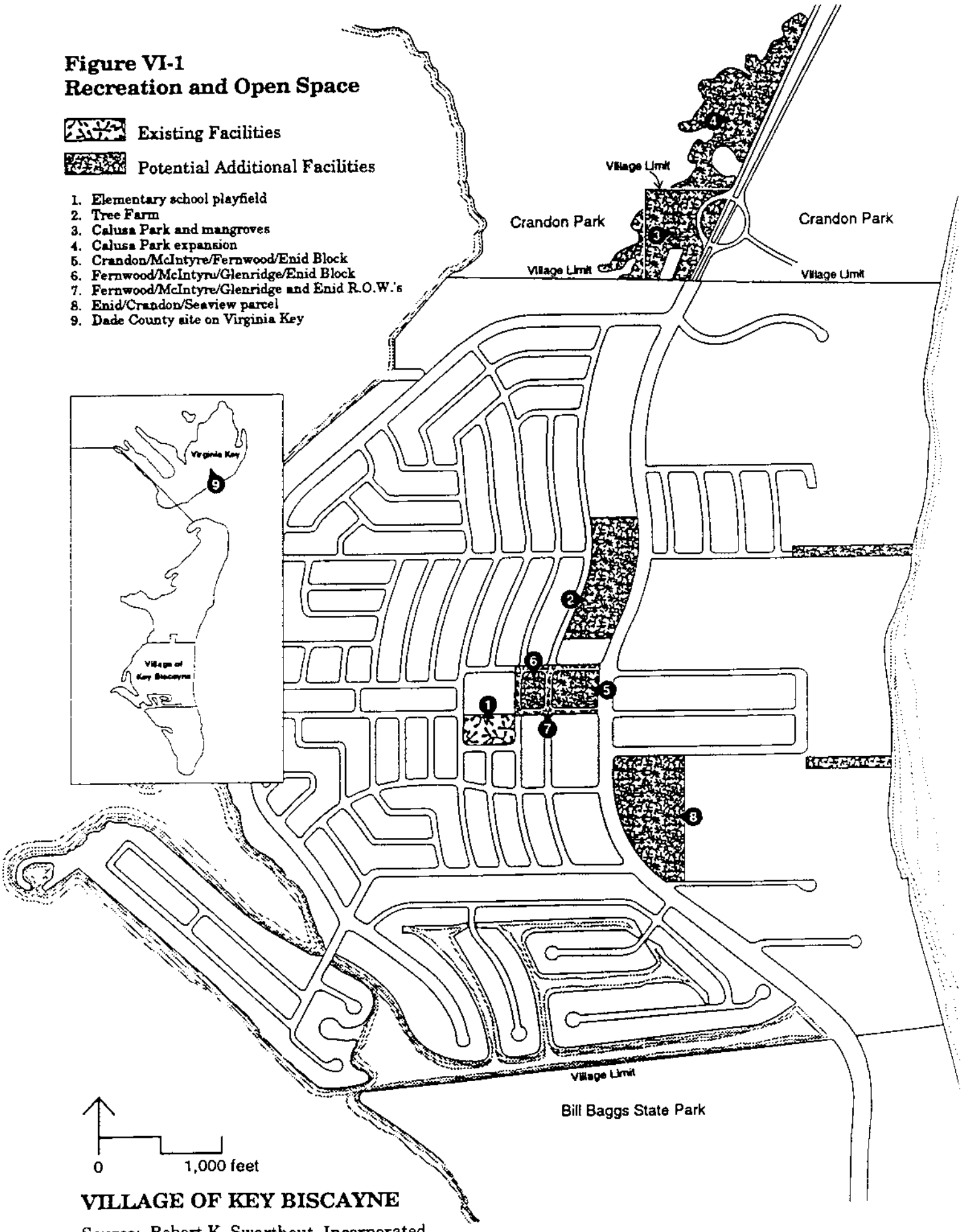
The Hemmeter-Continental project did receive a concurrency review and approval because its DO was approved later in 1989.

The Dade County Board of Commissioners has incurred a moral obligation to allow the area around Calusa Park for local active recreation use or to help provide reasonable alternatives nearby. The Board incurred this obligation by designating the area as "local park" land in the Dade County Comprehensive Plan and then approving within what are now the corporate limits of Key Biscayne two DRI projects that could not have been approved were it not for the "local park" designation. The two DRI's could not have been approved without the local park designation because they would have resulted in a failure to meet the County's own dual level of service standard which is 2.75 acres of local recreation per 1,000 population and at least five acres of local recreation within 3.5 miles of residential development. Thus, unless a substantial site is made available, Key Biscayne residents will be, by action of the Board of County Commissioners, deprived of useful access to land previously set aside by the Dade County Comprehensive Plan for their active recreation use.

The previous Dade County designation of the wetlands around Calusa Park as local park land could have no meaning without the intent to fill for active use. This former intent should not be voided now just because the population for whose active recreation use the area was plan-designated local park is now living within an incorporated municipality.

The moral obligation incurred by the Board of Commissioners may also be a legal obligation. It is entirely possible that the failure to continue to make available the local park land upon which previous development approvals were granted constitutes a violation of the Florida Comprehensive Planning statute, a violation that can be remedied by litigation brought against the Board of Commissioners. If requirements to maintain necessary facilities by the incorporation or reincorporation of portions of any county. It is unlikely that the statute intended this possibility.

## Figure VI-1
## Recreation and Open Space




**VILLAGE OF KEY BISCAYNE**

Source: Robert K. Swarthout, Incorporated

## Figure VI-2
## Calusa Park Expansion Plan

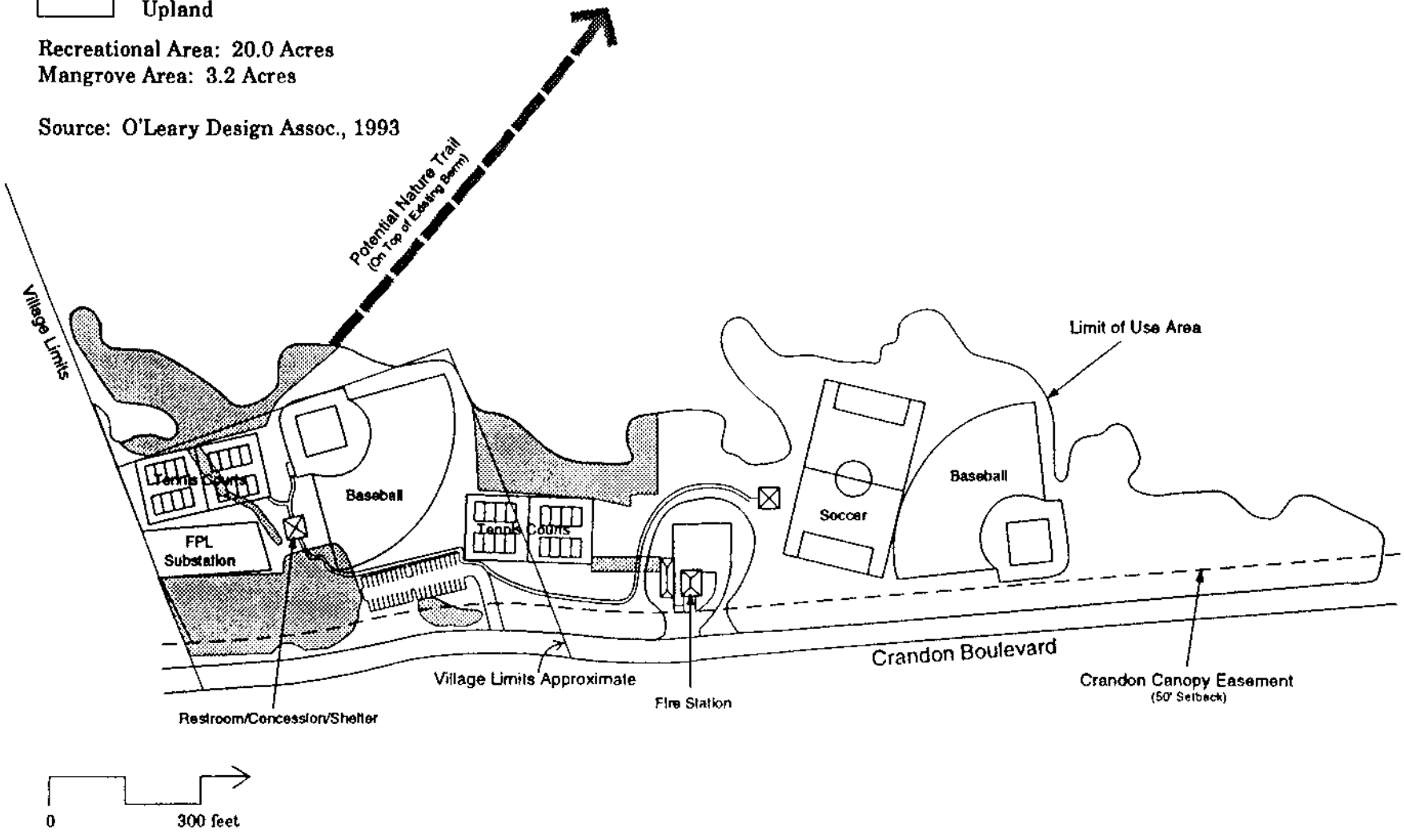
*These changes to Calusa Park, though desired by the Village, are adamantly resisted by Dade County whose master plan for Crandon Park calls for the phasing out of the limited recreation facilities at Calusa Center and the return of the site to natural vegetation.*

Jurisdictional Mangrove Areas (DERM)

Upland

Recreational Area: 20.0 Acres
Mangrove Area: 3.2 Acres

Source: O'Leary Design Assoc., 1993




**Most of the area shown in this map is located north of the north boundary of the Village of Key Biscayne in Crandon Park in unincorporated Dade County.**

**Existing and Future Facility Needs**

Florida and national standards for various kinds of play facilities in parks were analyzed. The implications for Key Biscayne's existing and projected permanent population are shown in Table VI-2 below. However, these standards are not responsive to the needs of a community such as Key Biscayne which has over 300 children enrolled in its organized athletic association team programs and had more enrolled before a recent fee increase.

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**Table VI-2**
**Implications of State Recreation Facility Standards for Village**

| Year | Permanent Population | Tennis Courts | Basketball Courts | Soccer/ Football Fields | Baseball/ Softball Fields |
|---|---|---|---|---|---|
| 1993[(1)] | 8,854 | 4 | 1 | 2 | 2 |
| 1998[(1)] | 9,700 | 4 | 1 | 2 | 3 |
| 2003[(1)] | 10,100 | 5 | 2 | 2 | 3 |
| Existing Key Biscayne Public Facilities[(2)] | | 4* | 2 | 1 | 1 |

Does not include the semi-public St. Agnes facilities.

* 4 courts within Village; an additional 32 public courts are within one mile.

**Sources:** [(1)] Florida Department of Natural Resources, 1987
[(2)] Robert K. Swarthout, Incorporated, 1993

---

The following kinds of facilities should ultimately be located on each of the public recreation and open space sites. The Key Biscayne Athletic Association programs will require use of the St. Agnes fields in addition to the Calusa Park fields to adequately meet the ballfield needs of the residents:

*Calusa Park*

Figure VI-2 is a schematic to show how the major facilities can be accommodated vis a vis the mangroves. The park size and thus the final facilities plan will be dependent upon the final mangrove preservation/mitigation plan:

- new playground
- basketball court
- volleyball area
- 4 additional tennis courts (an alternative to the above two facilities)
- 2 baseball fields
- soccer field
- recreation building expansion
- passive park

*Crandon Boulevard Central Park*

The southern portion of this 9.2 acre tract would be tied into the Village Center but most of the land would be used for the following:

- passive park
- tot-lot
- picnic facilities
- informal soccer/football field
- nature center and trails
- pavilion

*Recreation and Community Center*

A longer term project that could be located in the Village Center or elsewhere; the building would include:

- 5 classrooms of various sizes and floor surfaces
- mini-theater/assembly room
- fitness center
- game room
- offices
- sports/pro shop
- storage facilities

*Key Biscayne Elementary School*

Complete the formal joint-use agreement with the School Board to assure public access and use of the following facilities:

- playfield
- 1 basketball court

*Beach and Bay Access*

At least one Village controlled access to the beach is desirable as part of the Key Biscayne Comprehensive Plan. A site at the end of Enid Drive would be the most feasible location if access were to become a possibility. A bayfront mini-park is also considered desirable although no site has been selected. See the analysis of this subject in the Coastal Zone Management section of Element V for details.

Figure VI-3

FACSIMILE OF
METROPOLITAN DADE COUNTY PARK & RECREATION DEPARTMENT
MEMORANDUM

TO: Distribution DATE: February 6, 1991

FROM: Kevin Asher, Supervisor SUBJECT: Change in Designation of ITC
Planning Section

At the request of the County Attorney's office the designation of the International Tennis Center as Local Open Space will change. As of February 5, 1991, Local Open Space in Crandon Park and the remainder of the Key will include:

| Area | Total |
|---|---|
| Crandon Park Concurrency<br>Ballfield (5.33)<br>Soccer Field (4.48)<br>Area S. of Gardens (5.10) | 14.91 AC |
| Calusa Park | 5.00 |
| K.B. Elementary | 4.00 |
| Private Open Space (1/2) | 4.35 |
| | 28.26 AC |

The change in designation reflects a more accurate characterization of the property. The change will not, however, affect concurrency since ***Key Biscayne requires 27.46 acres [Emphasis added]*** and 28.26 acres of open space are provided. Any questions should be directed to myself at 595-1460.

cc: Bill Bird
Church Pezoldt
J. R. Perkins
W. Howard Gregg
Marty Washington
Debra Mastin, Assistant County Attorney
Rebecca Osterman, Concurrency Adm.
Howard Williams, Planning

Figure VI-4

FACSIMILE OF
METROPOLITAN DADE COUNTY PARK & RECREATION DEPARTMENT
LETTER TO BETTY SIME

March 13, 1989

Ms. Betty Sime
The Key Biscayne Council, Inc.
P.O. Box 272
Key Biscayne, FL 33149

Dear Betty:

We have completed our review of the need for additional local park land on Key Biscayne. As you may know, the Recreation and Open Space Element of the Dade County Comprehensive Development Master Plan (CDMP) shows no current need for additional local park land. (See Exhibits 1-4). However, this is somewhat misleading and it is important to understand why.

The level of service (l.o.s.) standard in the CDMP reflects the minimum acreage required by a residential community. It is essentially a starting point in determining what acreage is really needed. Currently, local park needs on Key Biscayne are being accommodated through Crandon and Calusa parks, the community school, and recreation complexes in planned developments such as condominiums, townhouses, apartments, etc. (See Table 1).

From the minimum acreage l.o.s., we then must look at the community's exhibited demand and desires for recreation programs to determine if the existing parks' function, configuration, and size are appropriate. Often, we find a need for additional park land to adequately service the community. As for Key Biscayne, the need for athletic fields, multi-purpose courts, and a community center cannot be properly serviced by existing park or school acreage. ***In our opinion, an additional 20 acre community park for Key Biscayne is needed (See Tables 2 & 3). [Emphasis added]***

Finally, it is important to make a point about Crandon Park's role in providing for local recreation programs. We are accommodating these programs by allocating eleven (11) acres for athletic fields. This is necessary because insufficient public open space exists on Key Biscayne to meet the current demand for such recreational facilities. As a rule, however, we do not allow such use of a Metropolitan Park unless the need is urgent. Besides being an inappropriate use of Crandon Park, these programs may eventually be forced out of the Park as other, more appropriate uses are demanded of the beach resource. If this happens, the need for additional community park acreage is further exacerbated.

Sincerely,

Bill Bird
Director

BB: WHG: mr

Enclosures

Figure VI-5

FACSIMILE OF
TABLE 1
Key Biscayne
Total Local Park Acreage

| Park Acreage | Public School Acreage | Planned Development Acreage | TOTAL |
|---|---|---|---|
| * 15.70 | 4.00 | 8.70 | 28.40 |

* Includes 10.7 acres in Crandon Park and 5.0 acres in Calusa Park

TABLE 2
Appropriateness to Meet Exhibited Demand
for Athletic Fields and Courts and Community Center

| Property | Comments |
|---|---|
| Crandon Park | Functionally inappropriate use of Metropolitan Park. Competes with utilization of beach and other natural resources. |
| Calusa Park | Cannot accommodate athletic fields and courts due to small size. Could, perhaps, accommodate a community center if existing facilities are razed. |
| Community School | Cannot accommodate athletic fields and courts due to small size. Future school expansion will further reduce available open space. |
| Planned Development | Cannot accommodate community recreation facilities designed for use by development residents. |

Figure VI-6

FACSIMILE OF
TABLE 3

Acreage Required to Accommodate Suggested
Community Park Facilities

| Recreation Facility | Quantity | Acreage Required | Comments |
|---|---|---|---|
| Community Center | 1 | 2.4 | Parking included |
| Baseball Fields (60-75) | 3 | 12.0 | |
| Football/Soccer Fields | 3 | | Included in Baseball Field Acreage |
| Multipurpose Courts | 3 | 0.3 | |
| Tot Lot | 1 | 0.2 | |
| Informal Open Space | N/A | 3.0 | |
| Picnic Shelter | 1 | 0.5 | |

# VII. INTERGOVERNMENTAL COORDINATION ELEMENT

## INVENTORY

The following provides a list of the entities with which Key Biscayne coordinates in implementing this plan. The Analysis section of this Element outlines the nature of the intergovernmental relationship and the Village office with prime responsibility for the coordination.

### Adjacent Communities:

Dade County

### Dade County:

Planning Department
Department of Environmental Resources Management (DERM)
Water and Sewer Department (WASD)
Office of Emergency Management
Transit Agency
Public Works Department
Metropolitan Planning Organization (MPO)
Parks Department
Solid Waste Management Department

### Regional:

South Florida Regional Planning Council (SFRPC)
South Florida Water Management District (SFWMD)

### State:

Department of Community Affairs (DCA)
Department of Environmental Protection (DEP; formerly DNR and DER)
Department of State, Division of Historical Resources

### Other:

Dade County School Board
Army Corps of Engineers
Federal Emergency Management Administration (FEMA)
Southern Bell
Florida Power and Light

## ANALYSIS

### Key Issues

The following are the most important issues that will require intergovernmental coordination. The Village Manager is ultimately responsible for all such coordination from the Village standpoint. Since the Village is newly incorporated, it is rather early to fully assess the "effectiveness" of such coordination.

**Issue I: Uses Located to the North of the Village**

- *Description:* The Village has been concerned about the expansion plans of such high intensity uses as the tennis center stadium and Seaquarium because of the traffic impact upon the Rickenbacker Causeway, Crandon Boulevard and the Village.

- *Coordination Mechanisms and Effectiveness:* The Village and other concerned parties were unable to reach an agreement with the County on either of these issues so both ended up in court. A negotiated settlement has been reached relative to the tennis center and nearby park concession/lease holders; the Seaquarium issue is still in litigation.

- *Recommendations*: The Village should seek some kind of memorandum of understanding with the Metro-Dade Planning Department and other relevant County agencies such as the Park Department in order to agree upon the long term development intensity pattern along the Causeway and Crandon Boulevard.

**Issue 2: Crandon Boulevard Streetscape**

- *Description:* The Village plans to make various streetscape improvements within this County right of way.

- *Coordination Mechanisms and Effectiveness:* Thus far the County Public Works Department has been agreeable to the first phase of the Village's median landscaping plans. There is no reason to think that this process will not continue to work.

- *Recommendations:* None.

**Issue 3: Sewage**

- *Description:* Only about half of the principal single family area is served with sanitary sewers; occasionally sewage seeps to the surface.

- *Coordination Mechanisms and Effectiveness:* It is important for DERM to rigorously review septic tank and drainfield permit applications for this area and to monitor existing systems. Ultimately, the Village will have to work with the Metro-Dade Water and Sewer Department Authority and other County officials in the preparation of a financial and engineering plan to extend sewers to the balance of the Village; another option is for the Village to establish its own assessment district.

- *Recommendations:* Periodic communication between the Village Manager and DERM on the septic tank issue. Ultimately, a formal Village-County agreement will be needed on the sewer extension project whether a County assessment district, a Village assessment district or some other mechanism is used.

**Issue 4: Solid Waste**

- *Description:* Currently the County collects solid waste in the single family areas and an array of private haulers serve the balance of the uses.

- *Coordination Mechanisms and Effectiveness:* Thus far the Village has not initiated any solid waste studies and therefore there is no formal coordination.

- *Recommendation:* The Village will examine the cost-effectiveness of collecting at least the single family residential solid waste either directly or through a private contractor.

If they opt to do so, an intergovernmental agreement would be signed with the Metro-Dade Solid Waste Management Department for disposal. A decision to regulate and permit private haulers would not be truly intergovernmental but may be desirable.

**Issue 5: Beach Enhancement**

- *Description:* First priority is a need for dune creation and dune vegetation planting. Ultimately, beach renourishment may be needed. The issue is funding which is related to the kind of public access to be used.

- *Coordination Mechanism and Effectiveness:* Thus far the Village has had only exploratory contacts with DERM and DNR.

- *Recommendations:* Current plans call for only Village and private funds to be used, so the coordination would be only the technical plans; DERM in the case of the dunes and State DEP in the case of beach renourishment.

**Issue 6: Hurricane Evacuation**

- *Description:* Smooth hurricane evacuation procedures are critical to the safety of the residents.

- *Coordination Mechanism and Effectiveness:* The evacuation for Hurricane Andrew went smoothly, including coordination with the Metro-Dade Office of Emergency Management.

- *Recommendations:* Once Metro-Dade has finished their critique of the Hurricane Andrew evacuation, prepare a Village hurricane plan in consultation with the Office of Emergency Management but also using the 1991 Corps of Engineers documents.

**Issue 7: Parks**

- *Description:* The Village needs additional park acreage and some nearby County land may offer a partial solution.

- *Coordination and Effectiveness:* The Village has sought from the Metro-Dade Parks Department a lease for the Village's right to use Calusa Park, and/or other suitable County land on Key Biscayne and/or Virginia Key. The Village has expressed the willingness to expend such funds as may be necessary to install, maintain and operate playfields and other recreation facilities.

- *Recommendations:* Continue negotiations with the goal of signing a lease agreement for the additional acreage possible under the mangrove mitigation plan constraints. Supplement with discussions with the State DEP relative to the use of Bill Baggs Park for ballfields if this proves necessary.

**Issue 8: Elementary School**

- *Description:* The Village currently has an agreement with the School Board to use the playfield. The school building itself is overcrowded and about to be expanded.

- *Coordination and Effectiveness:* The School Board staff has maintained only limited

contacts with the Village Council relative to their planning process. The Village has been pressing the Village for better playfield space.

- *Recommendations:* A formal joint planning process should be established as the Village addresses its Village Center plans and the School Board finalizes its plans for the Elementary School campus. In the meantime, a playfield joint use agreement with the Village is about to be finalized.

## Other Agencies

### 1. Other County Agencies

a. *Description:* The Metro-Dade Transit Agency provides bus service to the island while the MPO plans road and transit projects. The Village would like the bus route moved from West Wood Drive to West Mashta Drive. The Village will also coordinate with the Biscayne Bay Shoreline Development Review Committee on the review of any bayfront development project under their jurisdiction.

b. *Coordination Mechanism:* The Village has received a planning grant from the MPO; also, the Village will work with the Transit Agency on bus stop designs and bus route relocation.

c. *Recommendations*: None

### 2. Other State Agencies

a. *Description:* The Department of Environmental Protection operates Bill Baggs Park. The most recent plan for the park was approved by the governor and cabinet July 21, 1993. It calls for swimming, fishing, nature trail, bicycle use of the site. All access to the site is through the incorporated Village of Key Biscayne. The Department of Community Affairs is a source of technical assistance, reviews comprehensive plans and DRIs, and plays a role in post-hurricane activities. The former Department of Environmental Regulation largely delegated their permitting powers to South Florida agencies.

b. *Coordination Mechanism and Effectiveness:* Limited coordination thus far.

c. *Recommendations:* As the plan for Bill Baggs State Park evolves, Village coordination with DEP is critical due to the traffic impacts and possible need for ballfields.

### 3. Regional Agencies

a. *Description:* The South Florida Regional Planning Council reviews municipal comprehensive plans and DRIs. They also have special expertise in post-disaster redevelopment planning. The South Florida Water Management District issues water use permits and emergency water conservation directives.

b. *Coordination Mechanisms:* Limited coordination thus far.

c. *Recommendations:* None

### 4. Utilities

a. *Description:* Telephone (Southern Bell) and electric (Florida Power and Light) service are provided.

b. *Coordination Mechanisms:* Routine procedures on part of Building Official for new construction and service line extensions. Village requires a permit for any work within their right of way.

c. *Recommendations:* None.

**Comprehensive Plans**

*County*

The 1988/1992 Metro-Dade County Comprehensive Development Master Plan was used extensively in the preparation of this Village Master Plan. Work on their data and analysis update and related Evaluation and Appraisal Report has just been initiated.

*Regional*

The South Florida Regional Planning Commission's Policy Plan was reviewed as a background for the Key Biscayne plan. The regional plan emphasizes six growth management concepts as follows:

1. compact urban development
2. concurrency
3. intergovernmental coordination
4. financial feasibility
5. implementation feasibility
6. internal consistency

The Key Biscayne plan has attempted to include all six concepts as integral parts of this plan.

Among the more relevant specific issues or "cluster titles" emphasized in the regional policy plan are the following; all have been addressed in the Village plan:

1. Balanced and Planned Development
2. Protection of Coastal Resources
3. Protection of Marine Resources
4. Public Safety and Access in Coastal Areas
5. Land Management and Use
6. Parks and Recreation
7. Transportation (Level-of-Service D or Better)

Although by no means exhaustive, this shows the basic conformance to the regional plan and suggests that there is no need for special coordination other than possibly in the area of post-hurricane redevelopment planning.

# VIII. CAPITAL IMPROVEMENT ELEMENT

## INTRODUCTION

The purpose of this element is to determine the cost of any major Village public facility improvements recommended in the various elements for implementation during the five years following adoption of this plan and demonstrate the ability to fund those improvements. These projects are needed to address existing "deficiencies," achieve facility "replacement" or address a "need" determined to be necessary for the general improvement of Key Biscayne. Since no significant growth is expected other than from the two vested DRI projects, no projects are really prompted by future "growth needs."

A capital improvement is defined here as a non-recurring Village-financed physical improvement project at least $25,000 in magnitude.

## DATA INVENTORY

### Public Facility Needs

The following capital projects contained in Table VIII-1 are based on the existing "deficiencies," "replacements" or "needs" as contained in the other plan elements; cost estimates are listed. Specific drainage projects will result from the drainage master plan now in preparation.

---

**Table VIII-I**
**Capital Projects**

*Streetscape:*

1. Crandon Boulevard
   - Cost: $450,000 (O'Leary Design Assoc.)
   - Status: Replacement
   - Timing: 1993-1994
   - Comments: Landscaping median

2. Harbor Drive
   - Cost: $1,500,000 (Robert K. Swarthout, Incorporated)
   - Status: Need
   - Timing: FY 1995-1999 period
   - Comments: Landscaping, medians and sidewalk

3. Fernwood Drive
   - Cost: $200,000 (Robert K. Swarthout, Incorporated)
   - Status: Need
   - Timing: FY 1995-1999 period
   - Comments: Landscaping and sidewalk

4. West Mashta Drive
   - Cost: $90,000 (Robert K. Swarthout, Incorporated)
   - Status: Need
   - Timing: After 1999
   - Comments: Street trees and sidewalks

5. Street Trees Elsewhere

| | |
|---|---|
| Cost: | $400,000 (O'Leary Design Assoc.) |
| Status: | Replacement/Need |
| Timing: | FY 1993 and 1994 |

6. Cul-de-Sacs and Medians

| | |
|---|---|
| Cost: | $600,000 (O'Leary Design Assoc.) |
| Status: | Replacement/Need |
| Timing: | FY 1994 and 1995 |

*Parks:*

1. Tree Farm (Central Park) Acquisition

| | |
|---|---|
| Cost: | $9,200,000 (Village staff) |
| Status: | Deficiency |
| Timing: | FY 1994-1999 period |
| Comments: | Improvement costs dependent upon success of other acquisitions (determines facility needs) and then a schematic site plan; see 3 below. |

2. McIntyre Street Open Space

| | |
|---|---|
| Cost: | $2,100,000 (Robert K. Swarthout, Incorporated) |
| Status: | Deficiency |
| Timing: | FY 1995-1999 period |
| Comments: | Improvement costs dependent upon facility decisions starting with Dade County School Board decision on adjacent school; see 3 below. |

3. Park Improvements

| | |
|---|---|
| Cost: | $1,000,000 (Robert K. Swarthout, Incorporated) |
| Status: | Deficiency |
| Timing: | FY 1995-1999 period |
| Comments: | For Central Park and McIntyre Street Park; precise costs dependent upon success in acquiring the first two parks which in turn determines needed facilities. Estimate based upon facilities outlined in Recreation and Open Space Element. |

4. Beach Access

| | |
|---|---|
| Cost: | $35,000 (Robert K. Swarthout, Incorporated) |
| Status: | Deficiency |
| Timing: | FY 1995-1999 period |
| Comments: | Landscaped parking lot and sidewalk at end of East Enid Drive. |

5. Bay Access

| | |
|---|---|
| Cost: | $1,700,000 (Robert K. Swarthout, Incorporated) |
| Status: | Deficiency |
| Timing: | After 1999 |
| Comments: | Acquisition and modest improvements; precise cost dependent upon site selected. |

Drainage to be inserted after completion of the drainage master plan.

*Other Projects:*

1. Village Center

   Cost: $9,000,000 (Robert K. Swarthout, Incorporated)
   Status: Need
   Timing: After 1999
   Comments: Precise role of Village in development and financing yet to be determined. Above figure assumes public acquisition, demolition and streetscape-Village square construction; private sector would buy site and construct buildings.

2. Community Center

   Cost: $1,250,000 (Robert K. Swarthout, Incorporated)
   Status: Need
   Timing: After 1999
   Comments: See Recreation and Open Space Element for components. Site yet to be determined; this will affect the cost.

3. Sanitary Sewer Extensions

   Cost: Can not be determined until engineering and feasibility studies are completed
   Status: Deficiency
   Timing: After 1999

4. Beach Renourishment and Dune Development

   Cost: No cost estimates available
   Status: Beach - possible future deficiency Dunes - current need
   Timing: After 1999

**Source:** Robert K. Swarthout, Incorporated, 1993. Cost estimates prepared by Robert K. Swarthout, Incorporated based on the general experience of the firm and unit cost data obtained from Dade County, Barton-Aschman and Associates and other sources. Cost estimates by O'Leary Design Associates based on experience of a firm in landscape design and construction in Dade County.

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**Educational and Public Health Facilities**

The Key Biscayne Elementary School serves the entire Village. It is served by public water and sewer lines. There are no public health facilities in the Village.

**Existing Revenue Sources and Funding Mechanisms**

The following is a list of revenue sources which can potentially be used to pay for capital improvements:

*General Fund:*

- Ad valorem taxes
- Franchise taxes on utilities

- Utility taxes
- Permits and license fees
- Cigarette tax
- Local option gas tax
- State revenue sharing
- Liquor licenses
- 1/2 cent sales tax
- Charges for services/user fees
- Fines
- Interest earnings
- Impact fees

*Enterprise Funds:*

- Stormwater fund

*Assessment Districts:*

- Sewers, for example

*Bonds:*

- General obligation
- Revenue

*County, State and Federal Grants*

## ANALYSIS

### Current Public Facility Planning Practice

Being so new, the Village has not prepared a five year capital improvement program prior to this one. The process will involve annual department head submittal of proposed capital projects to the Village Manager for compilation in the capital program which will be forwarded to the Village Council for approval. The program will include project descriptions, justification, cost estimates and the year the project is needed.

The following considerations will continue to be used by the Manager and Council to select projects for placement in the five-year capital program:

1. Provide infrastructure and park system improvements to meet deficiencies.

2. Provide park acreage concurrent with the impact of development.

3. Enhance the quality of life and safety of residents through streetscape improvements including the Village Center.

### Fiscal Implications of Facility Needs and the Land Use Plan

The needs, deficiencies and replacements identified in each of the plan elements when examined in the context of the Future Land Use Plan, suggest the following issues and priorities; the projects themselves are found in the preceding Data section.

1. *Stormwater Utility*

   Revenues from this enterprise fund are important because of the need to improve the drainage system and thus the livability of the single-family residential areas - a high priority. The utility will be established by ordinance and the assessment rate will be determined once the stormwater master plan is completed, i.e. when the capital costs and thus revenue bond amounts are known.

2. *Park Impact Fee*

   Because of the acreage deficiency, an impact fee should be considered to help pay for land acquisition and improvements - a high priority.

3. *Public-Private Partnerships*

   The Village Center, beach access, dune and beach enhancement and possibly some public park land can most effectively be provided by a partnership between the Village and a private developer or owner.

4. *Assessment Districts*

   This will probably prove to be the most equitable way to fund the proposed sewer extensions.

5. *Property Tax Base*

   Because the General Fund is a prime source of funds for many of the planned community improvement projects, the Future Land Use Plan rightly emphasizes the need to protect and enhance the tax base since ad valorem taxes are the largest revenue source for this fund even if it is to make general obligation bond payments. Not only are the ocean resort hotels a tax base asset but in the base of Key Biscayne, the housing stock has an unusually high assessed value.

**Public Health and Education Plans**

No public health facilities are planned. Although this Master Plan addresses the elementary school, it is already served by public water and sewer.

**Timing and Location of Capital Projects**

Since the Village is almost fully developed or in the case of the two prime vacant tracts, subject to approved DRI development orders, the timing and location of capital projects is not critical to land development decisions based on the Future Land Use Element. Rather, the timing and location is prompted by the need for:

1. Improvements based on deficiencies

2. Replacement of existing facilities
3. Quality of life objectives

Improvement examples include the park system additions and development, sanitary sewer extensions, etc.

Examples of replacement are alterations to the existing drainage system to better accommodate stormwater runoff and replacement of street trees destroyed by Hurricane Andrew.

Quality of life issues include streetscape improvements, beach access, the Village Center, etc.

There are no State or Water Management District plans to provide facilities within the Village.

**Projections**

*Revenues and Expenditures:* Table VIII-2 shows a summary projection of the Village's revenues and expenditures for the next five fiscal years; the current fiscal year is also shown. A more detailed breakdown is available. These projections do not reflect the recent Village decision to provide fire services but County fire tax revenues will offset these capital and operating costs which will average $2,600,000 per year.

This analysis shows a total of $1,731,681 accumulating for capital improvements plus debt service on an $11,000,000 capital improvement bond.

*Tax Base:* The ad valorem tax base is currently $1,617,141,088. Prior to Hurricane Andrew this tax base had been increasing. However, it is impossible to provide a reliable projection at this time. The storm damage simply creates too much uncertainty as to 1993 assessment reductions and offsetting this, the amount of future reinvestment particularly in the damaged resort hotels. However, even if the two DRI tracts were to be developed at the intensities shown on the Future Land Use Map, the assessed valuation could be expected to increase by some $70,000,000.

*Tax Rate:* The 1992-1993 tax rate is $2.28 per thousand assessed valuation. The projections in Table VIII-2 assume that this rate will be reduced by two percent each year as the Village start-up costs taper off. This assumes a constant tax base due to the inability to project otherwise.

*Debt Service:* The Village currently has no debt. If an $11,000,000 capital improvement bond issue is authorized, the annual debt service costs would be $871,200 as shown in Table VIII-2. The stormwater utility revenue bond issue is tentatively projected to have an annual debt service of $300,000 but this is subject to finalization of the master drainage plan. There is no debt capacity limit.

*Impact Fees:* There currently are no impact fees. However, the developer of the southern DRI tract paid the Village $500,000 for park facility improvements as required by the Development Order. A park impact fee should be considered.

**Conclusions**

This analysis has demonstrated the Village's ability to undertake the capital improvement projects listed in the five-year schedule in addition to acquiring some $1,000,000 worth of fire equipment out of County fire tax funds. To summarize, the key sources are:

$11,000,000 potential capital improvement bond issue.

$600,000 County grant for park system capital improvements.

$500,000 Banyan Management Corporation developer impact payment for park system capital improvements.

An ordinance to establish a stormwater utility enterprise fund has been drafted; it will be adopted and the revenue bond amount determined after the stormwater master plan is completed.

The only other possible improvement project under consideration but not included in the Master Plan is street lights and related underground wiring. Planning for this has not been initiated.

**TABLE VIII-2**
**Revenue and Expenditure Projections**

| | Budget for 1992-93 | 1993-94 | 1994-95 | 1995-96 | 1996-97 | 1997-98 |
|---|---|---|---|---|---|---|
| Revenue | | | | | | |
| Property Taxes | 3,502,726 | 6,578,768 | 7,198,491 | 7,400,000 | 7,600,000 | 7,700,000 |
| Franchise Taxes | 490,000 | 625,000 | 625,000 | 637,500 | 650,250 | 863,255 |
| Utility Taxes | 850,000 | 1,183,000 | 1,183,000 | 1,206,660 | 1,230,793 | 1,255,409 |
| Licenses and Permits | 121,000 | 251,000 | 251,000 | 256,020 | 261,140 | 266,363 |
| Site Shared Revenues | 433,772 | 531,000 | 531,000 | 541,620 | 552,452 | 563,501 |
| County Shared Revenues | 97,000 | 120,000 | 120,000 | 122,400 | 124,846 | 127,345 |
| Charges for Services | 16,700 | 56,000 | 57,000 | 58,140 | 59,303 | 60,489 |
| Interest Earned | 5,000 | 100,000 | 100,000 | 102,000 | 104,040 | 106,121 |
| Donations | | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Total | 5,516,200 | 9,445,766 | 10,066,491 | 10,325,340 | 10,583,826 | 10,743,483 |
| Expenditure | | | | | | |
| Elected Officials | 15,000 | 15,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| Administration | 262,750 | 308,395 | 340,074 | 353,600 | 367,800 | 362,700 |
| Village Attorney | 215,000 | 263,000 | 263,000 | 225,000 | 225,000 | 225,000 |
| Community Affairs | 95,000 | 0 | 0 | 0 | 0 | 0 |
| Economic Development | | 155,308 | 124,660 | 97,900 | 97,900 | 97,900 |
| Village Clerk | 44,950 | 126,777 | 125,957 | 129,000 | 132,200 | 135,600 |
| Building/Zoning/Planning | 296,750 | 220,417 | 321,676 | 320,575 | 324,715 | 329,375 |
| Building and Zoning Inspection | 88,550 | 280,800 | 221,000 | 221,000 | 221,000 | 221,000 |
| Public Works | 295,000 | 583,972 | 583,075 | 584,275 | 585,955 | 586,800 |
| Police | 3,000,000 | 2,011,797 | 2,150,000 | 2,225,000 | 2,303,000 | 2,336,000 |
| Fire | 50,000 | 2,456,862 | 2,599,588 | 2,683,000 | 2,770,000 | 2,842,000 |
| Parks and Recreation | 322,500 | 354,063 | 312,231 | 319,901 | 325,156 | 332,523 |
| Non-Department | 386,692 | 378,360 | 453,745 | 425,000 | 425,000 | 425,000 |
| Capital Outlay | 283,608 | 1,893,200 | 1,154,822 | 1,360,000 | 1,400,000 | 1,400,000 |
| Debt Service | | 195,000 | 1,196,461 | 1,136,089 | 1,136,100 | 1,134,585 |
| Contingency | 160,400 | 200,797 | 200,000 | 225,000 | 250,000 | 275,000 |
| Total | 5,516,200 | 9,445,768 | 10,066,491 | 10,325,340 | 10,583,826 | 10,743,483 |

**Source:** Village of Key Biscayne, 1994

# IX. PUBLIC EDUCATION FACILITIES ELEMENT

## PUBLIC SCHOOL INVENTORY

The Key Biscayne K-8 Center is the only public school within the Village limits.

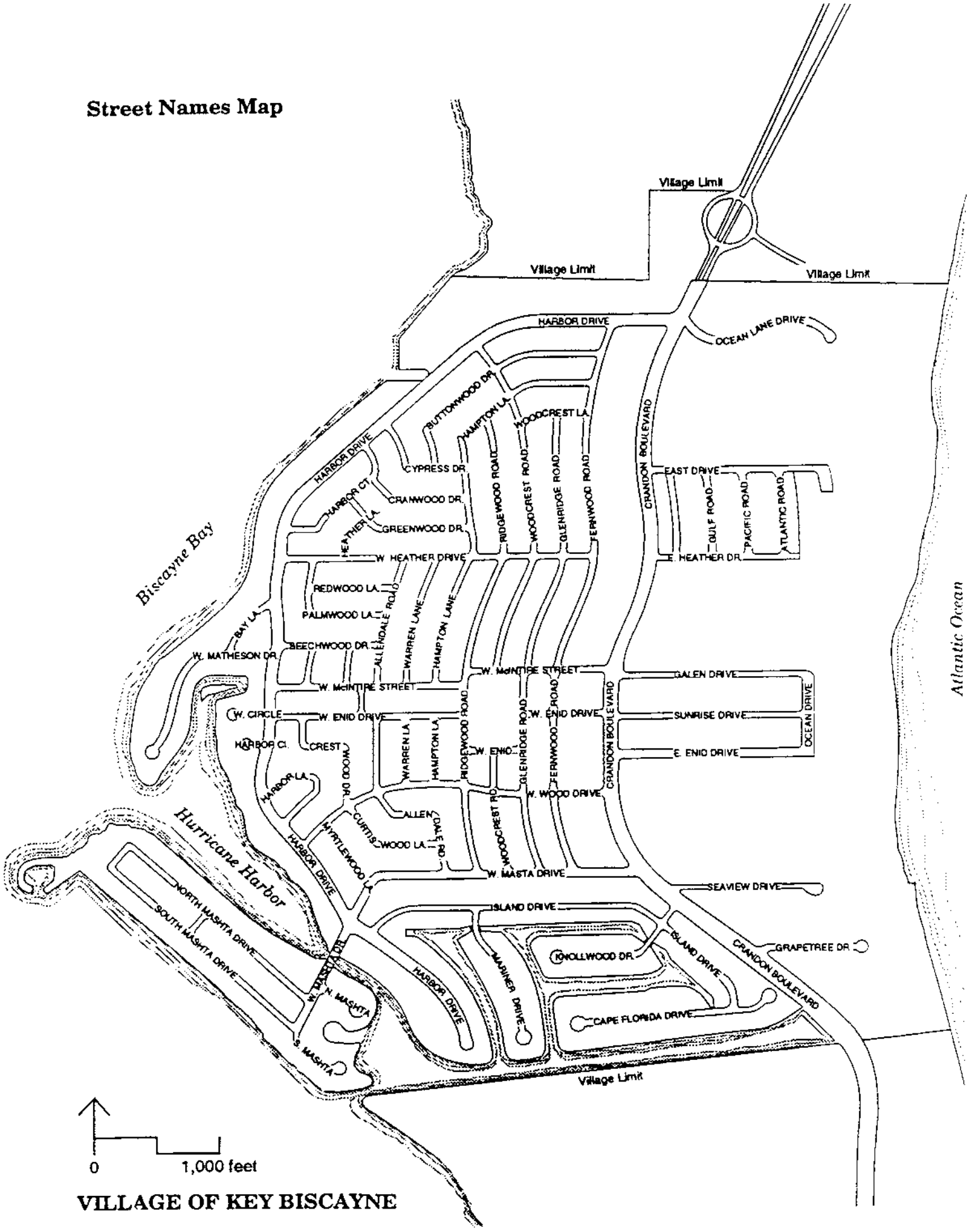
## ANALYSIS

The Village relies upon an Interlocal Agreement between the Miami-Dade County Public Schools and municipalities in the County to maintain the performance of the K-8 Center.

Section 163.3177(6)(h)2, Florida Statutes, requires such an interlocal or other formal agreement to establish joint processes for comprehensive land use and school facilities planning programs. The Village originally entered into the "Interlocal Agreement for Public School Facility Planning in Miami-Dade County" in 2003.

In 2005, the Florida Legislature adopted Senate Bill 360 that, in part, required all non-exempt local governments and school boards to enter into a revised agreement to establish public school concurrency by 2008. The "Amended and Restated Interlocal Agreement for Public School Facility Planning in Miami-Dade County", dated December 12, 2007, was approved by the Village Council via Resolution No. 2008-3 on January 15, 2008, in order to meet this requirement.

The Village relies upon the Interlocal Agreement as data and analysis to support the Public Education Facilities Element and related public school concurrency goals, objectives and policies within the Comprehensive Plan.


Street Names Map
Village Limit
Village Limit
Village Limit
HARBOR DRIVE
OCEAN LANE DRIVE
BUTTONWOOD DR.
HAMPTON LA.
WOODCREST LA.
CRANDON BOULEVARD
EAST DRIVE
HARBOR DRIVE
CYPRESS DR.
HARBOR CT.
CRANWOOD DR.
HEATHER LA.
GREENWOOD DR.
RIDGEWOOD ROAD
WOODCREST ROAD
GLENRIDGE ROAD
FERNWOOD ROAD
GULF ROAD
PACIFIC ROAD
ATLANTIC ROAD
W. HEATHER DRIVE
E. HEATHER DR.
Biscayne Bay
REDWOOD LA.
PALMWOOD LA.
ALLENDALE ROAD
WARREN LANE
HAMPTON LANE
BAY LA.
W. MATHESON DR.
BEECHWOOD DR.
W. McINTIRE STREET
W. McINTIRE STREET
GALEN DRIVE
W. CIRCLE
W. ENID DRIVE
W. ENID DRIVE
SUNRISE DRIVE
OCEAN DRIVE
HARBOR CI.
CREST
WARREN LA.
HAMPTON LA.
RIDGEWOOD ROAD
W. ENID
GLENRIDGE ROAD
FERNWOOD ROAD
CRANDON BOULEVARD
E. ENID DRIVE
HARBOR LA.
WOOD DR.
W. WOOD DRIVE
Hurricane Harbor
ALLEN
CURTIS
WOOD LA.
DALE RD.
WOODCREST RD.
HARBOR DRIVE
MYRTLEWOOD LA.
W. MASTA DRIVE
SEAVIEW DRIVE
ISLAND DRIVE
NORTH MASHTA DRIVE
SOUTH MASHTA DRIVE
KNOLLWOOD DR.
ISLAND DRIVE
GRAPETREE DR.
CRANDON BOULEVARD
W. MASHTA DR.
N. MASHTA
HARBOR DRIVE
MARINER DRIVE
CAPE FLORIDA DRIVE
S. MASHTA
Village Limit
Atlantic Ocean
0
1,000 feet
VILLAGE OF KEY BISCAYNE

# KEY BISCAYNE MASTER PLAN

## Part II

## Goals, Objectives, Policies
## Capital Improvement Element Implementation Systems
## Monitoring, Updating and Evaluation Procedures

TABLE OF CONTENTS PAGE

## INTRODUCTION

Part II of the Master Plan contains goals, objectives and policies, including the future land use plan and the future traffic circulation plan; the capital improvements element implementation systems; and the monitoring, updating and evaluation procedures. These are the components of the Master Plan which are officially adopted by the Key Biscayne Village Council. They are based upon the Part I data and analysis, which is not officially adopted.

The Appendices to Part II are not adopted. They nonetheless provide important cross-reference and scheduling information.

## FUTURE LAND USE

## GOAL 1 ACHIEVE THE FOLLOWING COMMUNITY CHARACTER:

Key Biscayne should be a residential community. Development policies should protect residential character. Future residential development should be at the lowest densities consistent with protection of reasonable property rights. Hotels should be permitted in order to provide ocean access opportunities and respect an established land use pattern; however, they should be modest in size so as not to overpower the community's residential character. Other commercial development should be sized to meet the needs of residents and hotel guests. Office development should be limited to the minimum amount practical in light of existing development patterns.

### Objective 1.1 Future Land Use Categories

*Maintain existing development and achieve new development and redevelopment which is consistent with the community character statement articulated as Goal 1.*

**Policy 1.1.1** 9J-5.006 (3) (c) 7

By the date required by state statute or sooner, the Village shall enact and enforce a land development code which is consistent with the Future Land Use Map (Figure 1), including the land uses and the densities and intensities specified thereon and the descriptions of the requirements of those categories, which appear under the heading "Future Land Use Category Descriptions," beginning on page 12. The map and the descriptions are incorporated by reference into this Policy 1.1.1.

**Policy 1.1.2** 9J-5.006 (3) (c) 7

Between enactment of this plan and adoption of the land development code referenced in Policy 1.1.1, the Village shall regulate all development in accordance the Future Land Use Map (Figure 1), including the land uses and the densities and intensities specified thereon and the description of the requirements of those categories, all of which are incorporated by reference into this Policy 1.1.2.

**Policy 1.1.3** 9J-5.006 (3) (c) 1

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions governing **subdivisions**, **signs** and **floodplain protection**. Such provisions shall be consistent with this plan and with the applicable Florida statutory and administrative code guidelines and otherwise conform to the following standards.

***Subdivision regulations*** shall establish rules for platting and subdividing land consistent with the Future Land Use Map and the other goals, objectives and policies of this Comprehensive Plan. They shall establish a plat approval process consisting of preliminary and final plat approval. Final plat approval shall be required prior to construction of subdivision improvements. General and specific design standards shall be included to ensure: 1) appropriate continuity between new streets and existing streets; 2) appropriate continuity between new and existing pedestrian accessways; 3) rights-of-way appropriate to traffic carrying characteristics, stormwater management needs, and other pertinent considerations; 4) that access to Crandon Boulevard is controlled and limited; 5) grades, alignments and other design characteristics in accord with the State of Florida *Manual of*

*Uniform Minimum Standards for the Design, Construction and Maintenance of Streets and Highways* plus such additional higher engineering standards as the Village may determine are necessary from time to time; 6) appropriate configuration of blocks and lots; 7) adequate utility easements; 8) installation of certain utilities underground. The enumeration of specific features of the subdivision regulations contained herein shall be interpreted as establishing minimum standards for Village subdivision regulations, not as precluding additional or higher standards which may have a legitimate public purpose.

***Sign regulations*** shall limited signs to the minimum amount consistent with reasonable identification of retail and other non-residential uses. Sign regulations shall include, but not necessarily be limited to the following:

Prohibition of specifically identified signs that clutter the visual environment, but are not necessary to minimum reasonable identification. Such signs may include abandoned signs, animated signs, flashing signs, box wall signs, buntings, balloon signs, neon signs, off-premise commercial sings, pole signs, portable signs, projecting signs, roof signs, and swinging signs.

Restrictions of the number, size and type of authorization of signs in order to limit visual clutter while still providing for reasonable identification. Such restrictions may include maximum size and minimum frontage requirements for monument signs and wall signs. Supplemental regulations may be specially tailored for uses with particular sign requirements such as gas stations.

**Floodplain protection provisions** shall be consistent with applicable standards promulgated by the South Florida Water Management District, the South Florida Regional Planning Council, the Dade County Department of Environmental Resource Management, the Florida Department of Environmental Protection, and/or other agencies with relevant jurisdiction and/or information. The Village shall revise as necessary and enforce flood hazard reduction regulations to ensure: 1) adequate drainage paths around structures to guide storm water runoff; 2) for residential buildings in A zones, the elevation of the lowest floor and mechanical equipment above the base flood elevation; 3) for nonresidential buildings in A zones, either the elevation of the lowest floor and mechanical equipment above the base flood elevation or the flood proofing of habitable areas below the base flood elevation; 4) the location of all buildings in V zones according to the requirements of the Florida Coastal Zone Protection Act of 1985; 5) the elevation of all buildings in V zones so that the bottom of the lowest supporting horizontal member and all mechanical equipment is no lower than the base floor elevation; 6) the prohibition of structural fill. The enumeration of specific features of the of flood protection regulations contained herein shall be interpreted as establishing minimum standards for Village subdivision regulations, not as precluding additional or higher standards which may have a legitimate public purpose. In addition, the Village shall participate in the Community Rating System of the National Flood Insurance Program.

**Policy 1.1.4**

The Village shall establish and maintain a street tree master plan as the basis for public right of way re vegetation to achieve a tree and palm canopy with a

specified tree species for each of the Village streets. Implementation begun on Crandon Boulevard in 1993 shall be continued in subsequent years.

Figure 1

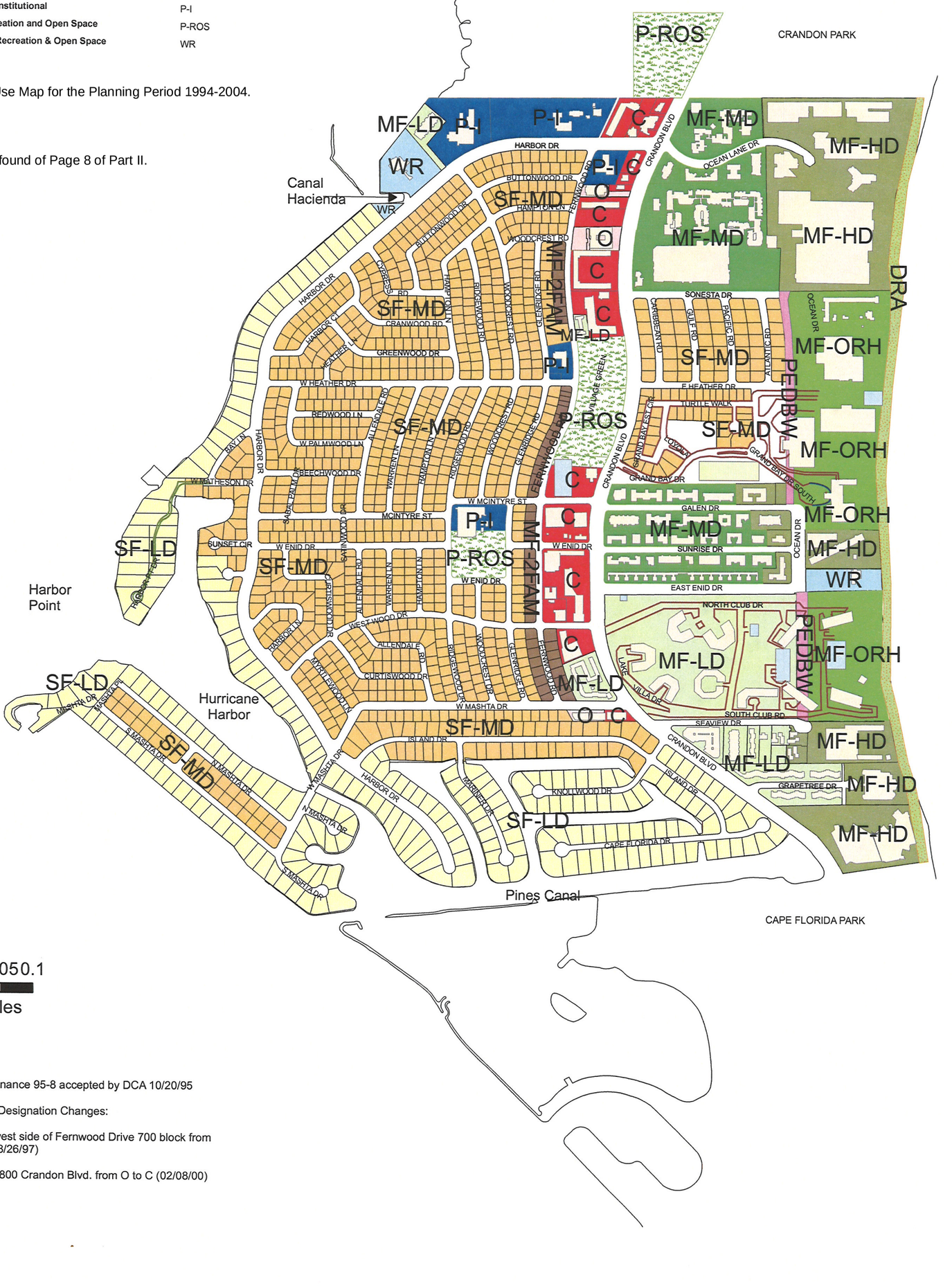
# Village of Key Biscayne Future Land Use Map

Legend

| Land Use Designation | Codes |
|---|---|
| Single Family Low Density Residential | SF-LD |
| Single Family Medium Density Residential | SF-MD |
| Two Family Residential | MF-2FAM |
| Low Density Multiple Family Residential | MF-LD |
| Medium Density Multiple Family Residential | MF-MD |
| Medium Density Multiple Family Ocean Resort Hotel | MF-ORH |
| High Density Multiple Family Residential | MF-HD |
| Commercial | C |
| Office | O |
| Dune Restoration Area | DRA |
| Proposed Pedestrian Bicycle Way | PEDBW |
| Public and Institutional | P-I |
| Public Recreation and Open Space | P-ROS |
| Waterfront Recreation & Open Space | WR |

Future Land Use Map for the Planning Period 1994-2004.

Notes can be found of Page 8 of Part II.




Adopted 09/12/95; Ordinance 95-8 accepted by DCA 10/20/95

Subsequent Land Use Designation Changes:

Ord. 97-17 converted west side of Fernwood Drive 700 block from SF-MD to MF-2FAM (08/26/97)

Ord. 2000-1 converted 800 Crandon Blvd. from O to C (02/08/00)

**Figure 1 (Continued)**

**For the Planning Period 1994-2004**

The land use categories indicated below shall have the regulatory significance described herein and as further defined and described in Future Land Use Element Policy 1.1.1.

Notes Pertaining to Future Land Use Map:

1. The area within designated boundary line is subject to an approved development of regional impact. Pursuant to Florida Statute 163.31678, the designations reflected on this Future Land Use Plan Map are not intended to limit or modify the right to complete development pursuant to the existing Development of Regional Impact Development Order, so long as the Development Order remains valid and effective and development proceeds forward in compliance with the Development Order.

2. The area within designated boundary line is subject to an approved development of regional impact. Pursuant to Florida Statute 163.31678, the designations reflected on this Future Land Use Plan Map are not intended to limit or modify the right to complete development pursuant to the existing Development of Regional Impact Development Order, so long as the Development Order remains valid and effective and development proceeds forward in compliance with the Development Order.

3. Crandon Boulevard is classified in the Traffic Circulation Element of the Master Plan as a four lane divided County Minor Arterial.

4. Harbor Drive between Crandon Boulevard and West Mashta Drive is classified in the Traffic Circulation Element of the Master Plan as a two lane Village Collector.

5. West Mashta Drive between Harbor Drive and Crandon Boulevard is classified in the Traffic Circulation Element of the Master Plan as a two lane Village Collector.

6. Notwithstanding the medium density residential land use category, the site at the southeast corner of Crandon and Seaview may be zoned to permit one story office use if the Village Council finds, based on substantial and competent facts, that such zoning will result in sufficient investment in the existing building or a new building to eliminate the blighting influence caused by the deteriorated condition of the existing building as of the enactment of this future land use map.

7. The recreation and open space element and the capital improvements element express the intent that pedestrian access rights be acquired, through purchase or donation, over at least the designated view corridor.

**Objective 1.2 Commercial Redevelopment** 9J-5.006 (3) (b) 2
9J-5.006 (3) (b) 3

*No later than 2004, achieve private revitalization of at least one Crandon Boulevard property that has a blighting impact on the Village.*

**Policy 1.2.1**

By the date required by state statute or sooner, the Village shall enact and enforce land development code standards and incentives to achieve **new development, renovated development** and/or **redevelopment** that meets high **signage, landscaping, circulation/parking** and other development standards in keeping with the goals, objectives and policies of this plan. Redevelopment shall be consistent with the Future Land Use Map, Policy 1.1.1 and all other relevant goals, objectives and policies of this plan.

**New development, renovated development** and **redevelopment** shall be consistent with the Future Land Use Map, Policy 1.1.1 and all other relevant goals, objectives and policies of this plan.

**Sign regulations** shall limited signs to the minimum amount consistent with reasonable identification of retail and other non-residential uses. Sign regulations shall include, but not necessarily be limited to the following:

Prohibition of specifically identified signs that clutter the visual environment, but are not necessary to minimum reasonable identification. Such signs may include abandoned signs, animated signs, flashing signs, box wall signs, buntings, balloon signs, neon signs, off-premise commercial signs, pole signs, portable signs, projecting signs, roof signs, and swinging signs.

Restrictions of the number, size and type of authorization of signs in order to limit visual clutter while still providing for reasonable identification. Such restrictions may include maximum size and minimum frontage requirements for monument signs and wall signs. Supplemental regulations may be specially tailored for uses with particular sign requirements such as gas stations.

**Landscaping requirements** shall specify above average quantities of plant and other landscaping material and extensive use of xeriscape plant materials and design techniques for non-residential uses. Landscaping regulations shall include, but not necessarily be limited to, establishing a minimum number of trees based on lot size and/or lot frontage, establishing minimum requirements for other plant material, and establishing irrigation restrictions which minimize water loss due to evaporation. Regulations shall address site perimeters, parking lots and residential buffers.

**Parking requirements** shall be designed to encourage high levels of pedestrian and bicycle use. Pedestrian access ways will be required through large parking lots to connect building areas to public sidewalks. Bicycle parking racks shall be required for large scale uses. Parking regulations will establish the minimum number of parking spaces which will be required to serve uses; minimums will be based on intensity measures such as building square feet. Parking regulations will establish

appropriate minimum sizes for circulation isles, parking stalls and parking stall angles. General standards will provide for review of parking lot layout in order to ensure that the layout will be safe.

## GOAL 2 PROTECT AND ENHANCE THE RESIDENTIAL, COMMERCIAL, RESORT AND NATURAL RESOURCE AREAS OF KEY BISCAYNE.

### Objective 2.1 Sanitary Sewer Facilities 9J-5.006 (3) (b) 1

*Extend public sanitary sewer service to additional developed areas no later than 2008 and ensure effective septic and drain field functioning. See Policies 2.1.1 and 2.1.2 for additional measurability.*

**Policy 2.1.1**

The Village shall cooperate with the County in an attempt to complete a financial and engineering plan to extend sanitary sewers to as much of the remaining unsewered areas as is financially feasible and otherwise desirable. The intent is to complete that plan as soon as technically and financially feasible but no later than 1998 and to begin implementation as soon as technically and financially feasible and complete implementation no later than 2008.

**Policy 2.1.2**

The Village shall ensure effective functioning of septic tanks and drain fields by enacting and enforcing requirements that septic tank drain fields be installed with highly permeable material back fill and with marl broken through to ensure maximum downward percolation.

### Objective 2.2 Storm Sewer Infrastructure

*Upgrade the drainage system so that stormwater outfalls into Biscayne Bay (and adjacent canals) fully meet National Pollution Discharge Elimination System (NPDES) standards no later than December 31, 1998 and the standards of Chapter 17-25, FAC and of Chapter 17-302.500, FAC. Upgrade on site drainage standards to ensure that private properties retain at least the first one inch of stormwater on site and permit no more runoff after development than before development.*

**Policy 2.2.1** 9J-5.006 (3) (c) 4

The Village shall enforce flood damage prevention regulations which ensure that new development will occur at topographic elevations sufficient to minimize flood impact. The Village shall continue to enforce coastal construction regulations.

**Policy 2.2.2** 9J-5.006 (3) (c) 4

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions that require one inch of on-site drainage detention, post development runoff equal to or less than pre development runoff, erosion control, a minimum percentage of pervious open space, maintenance of swales, and drainage level of service standards. These requirements shall be designed to help ensure full compliance with the specific standards set forth in Objective 1.1 of the Infrastructure Element.

**Policy 2.2.3** 9J-5.006 (3) (c) 3

By the date required by state statute or sooner, the Village shall enact and enforce as part of the land development code a concurrency management system which meets the requirements of 9J-5.0055. The concurrency management system shall specify that no development permit shall be issued unless the public facilities necessitated by a development (in order to meet level of service standards specified in the Traffic Circulation, Recreation and Open Space, and Infrastructure Policies) will be in place concurrent with the impacts of the development or the permit is conditional to assure that they will be in place. The requirement that no development permit shall be issued unless public facilities necessitated by the project are in place concurrent with the impacts of development shall be effective immediately and shall be interpreted pursuant to the following:

1. *Measuring Conformance with the Level-of-Service*

Public facility capacity availability shall be determined by a set of formulas that reflect the following:

Adding together:

- The total design capacity of existing facilities; plus
- The total design capacity of any new facilities that will become available concurrent with the impact of the development. The capacity of new facilities may be counted only if one or more of the following can be demonstrated:

  (A) For water, sewer, solid waste and drainage:

  (1) The necessary facilities are in place and available at the time a certificate of occupancy is issued, or

  (2) Such approval is issued subject to the condition that the necessary facilities will be in place and available when the impacts of development occur, or

  (3) The new facilities are guaranteed in an enforceable development agreement to be in place when the impacts of development occur. An enforceable development agreement may include, but is not limited to, development agreements pursuant to Section 163.3220, Florida Statutes, or an agreement or development order pursuant to Chapter 380, Florida Statutes (the Development of Regional Impact authorization).

  (B) For recreation:

  (1) Paragraphs (1)-(3) under (A) above except that construction may begin up to one year after issuance of a certificate of occupancy.

  (2) The new facilities are the subject of a binding executed contract for the construction of facilities to be completed

within one year of the time the certificate of occupancy is issued, or

(3) A development agreement as outlined in (4) above but requiring construction to begin within one year of certificate of occupancy issuance.

(C) For traffic:

(1) Paragraphs (A)(1) through (4) or (B) (2) above except that construction can begin up to three years after the approval date.

(2) No modification of public facility level-of-service standards established by this plan shall be made except by a duly enacted amendment to this plan.

Subtracting from that number the sum of:

- Existing volumes or flows; plus
- "Committed" volumes or flows from approved projects that are not yet constructed; plus
- The demand that will be created by the proposed project, i.e., site plan, plat or other development order.

In the case of water, sewers, solid waste and recreation, the formulas must reflect the latest population vis a vis flows or park acreage.

Design capacity shall be determined as follows:

Sewage: the capacity of the County sewage treatment system.

Water: the capacity of the County water treatment and storage system.

Solid Waste: the capacity of the County disposal system.

Drainage: The on-site detention capability and/or storm sewer capacity.

Roadways: The standard for measuring highway capacities shall be the Florida DOT Table of Generalized Two-Way Peak Hour Volumes for Urbanized Areas or other techniques that are compatible to the maximum extent feasible with FDOT standards and guidelines. The measurement of capacity may also be determined by engineering studies provided that analysis techniques are technically sound and acceptable to the Village engineer.

Recreation: Measurement shall be based on recreation data in the Comprehensive Plan plus the latest Village population estimate with any necessary interpretation provided by the Village manager or designee thereof.

Transit: The County Transit Agency bus schedules for routes within the Village.

2. *Concurrency Monitoring System*

The manager or designee thereof shall be responsible for monitoring facility capacities and development activity to ensure that the concurrency management system data base is kept current, i.e., includes all existing and committed development. This data base shall be used to systematically update the formulas used to assess projects. An annual report shall be prepared.

3. *Capacity Reservation*

Any development permit application which includes a specific plan for development, including densities and intensities, shall require a concurrency review. Compliance will be finally calculated and capacity reserved at time of final action of an approved final Design Review approval or building permit if no Design Review is required or enforceable developers agreement. Phasing of development is authorized in accordance with Rule 9J-5.0055. Applications for development permits shall be chronologically logged upon approval to determine rights to available capacity. A capacity reservation shall be valid for a time to be specified in the land development code; if construction is not initiated during this period, the reservation shall be terminated.

4. *Administration*

The Village manager (or designee thereof) shall be responsible for concurrency management. The land development code shall specify administrative procedures, including an appeals mechanism, exemptions, plan modifications, burden of proof, etc.

5. *Project Impact or Demand Measurement*

The concurrency management user's procedural guide (a supplement to the land development code) will contain the formulas for calculating compliance plus tables which provide generation rates for water use, sewer use, solid waste and traffic, by land use category. Alternative methods acceptable to the Village manager or designee thereof may also be used by the applicant. For example, traffic generation may be based upon the Institute of Transportation Engineer's "Trip Generation" manual.

**Objective 2.3 Natural Resources** 9J-5.006 (3) (b) 4

*Upgrade the drainage system so that stormwater outfalls into Biscayne Bay (and adjacent canals) fully meet National Pollution Discharge Elimination System (NPDES) standards no later than December 31, 1998 and the standards of Chapter 17-25, FAC and of Chapter 17-302.500, FAC. Upgrade onsite drainage standards to ensure that private properties retain at least the first one inch of stormwater on site and permit no more runoff after development that before development.*

**Policy 2.3.1** 9J-5.006 (3) (c) 4

Based upon the capital cost implications of the Village of Key Biscayne Drainage Master Plan, the Village shall activate the stormwater utility assessment as a basis for bonding for the first phase of implementation no later than December 31, 1998. The Village shall update its Drainage Master Plan as necessary to ensure the continued efficacy of its provisions to upgrade the

storm sewer system in accordance with the specific standards of Objective 1.1 of the Infrastructure Element.

**Policy 2.3.2**

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions that require one inch of on-site drainage detention, post development runoff equal to or less than pre development runoff, erosion control, a minimum percentage of pervious open space, maintenance of swales, drainage level-of-service standards, ocean beach dune protection and vegetation, and other environmentally sensitive land protection measures. These requirements shall be designed to help ensure full compliance with the specific standards set forth in Objective 2.3 above. Such provisions shall be consistent with this plan and with the applicable Florida statutory and administrative code requirements. They shall also be consistent with applicable standards promulgated by the South Florida Water Management District, the South Florida Regional Planning Council, the Dade County Department of Environmental Resource Management, the Florida Department of Environmental Protection, and/or other agencies with relevant jurisdiction and/or information.

**Objective 2.4 Hurricane Evacuation** 9J-5.006 (3) (b) 5

*Eliminate or reduce land uses which are inconsistent with applicable interagency hazard mitigation report recommendations and enhance the efforts of the Metro-Dade Office of Emergency Management by providing it with all relevant information.*

**Policy 2.4.1**

The Village shall regulate all future development within its jurisdiction in accordance with the Future Land Use Map which is consistent with the Interagency Hazard Mitigation Team Report, FEMA 955-DR-FL, August 1992. The Village shall periodically review and revise the Future Land Use Map in light of future interagency hazard mitigation reports in order to reduce or eliminate uses which are inconsistent therewith.

**Policy 2.4.2**

The Village Manager or designee shall annually assess the Village's existing and permitted population densities to determine if changes are significant enough to transmit such data to the Metro-Dade Office of Emergency Management to assist in their hurricane evacuation planning.

**Objective 2.5 Drainage and Sewer System Land Needs** 9J-5.006 (3) (b) 8

*Ensure the availability of suitable land for drainage and sanitary sewer system facilities needed to support planned infrastructure improvements. See Policies for measurability.*

**Policy 2.5.1**

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions for sewer lift stations, stormwater lift

stations and collection/infiltration mechanisms and other utility land requirements.

**Policy 2.5.2**

The Village shall not vacate any road rights-of-way without first obtaining an engineering opinion determining that the vacated right-of-way is not necessary to accommodate future storm and/or sanitary sewer facilities, all of which are expected to be needed in the future can be accommodated in such rights-of-way.

**Objective 2.6 Historic Preservation**

*No later than 1999, prepare list of potentially significant historic structures and a strategy for their preservation.*

**Policy 2.6.1** 9J-5.006 (3) (c) 8

Based upon historical accounts of early development in the Village, the Council shall designate those structures that due to age, architecture and function are candidates for historic designation and protection. A strategy for the preservation of some or all of these structures shall be drafted.

**Objective 2.7 Biscayne Bay Preservation** 9J-5.006 (3) (b) 6

*Assist Metro-Dade County's efforts to preserve and enhance the State-designated Biscayne Bay Aquatic Preserve.*

**Policy 2.7.1**

Through a combination of (a) implementation of a master drainage plan, (b) replacement of septic tanks with sanitary sewers, (c) land development code provisions for on-site stormwater detention and marina pump-out facilities, and (d) coordination with the Biscayne Bay Shoreline Development Review Committee, the Village will attempt to maintain and improve the water quality of Biscayne Bay.

Note: The following 9J5.006 FAC requirements and related policies are not applicable to Key Biscayne:

- 9J5.006(3)(b)7 urban sprawl
- 9J5.006(3)(c)6 wellfields
- All archaeological and standing structure sites identified in the Florida site file as being located on Key Biscayne are NOT in the Village of Key Biscayne, but rather in the unincorporated portions of Dade County located on the Island of Key Biscayne. The structures are: 1) the North Base Marker at the Key Biscayne Golf Course and 2) the Cape Florida Lighthouse in Bill Baggs Park at the tip of the Island of Key Biscayne. The sites are: 1) the Bear Cut Preserve, 2) Cape Florida, 3) Fort Bankhead and 4) the Light keeper's house foundation. The Florida Department of State, Division of Historical Resources has indicated that there is an archaeological site on Ridgewood Road in incorporated Key Bicayne. The DHR map on which this site is identified is stamped "Confidential: DO NOT DISTRIBUTE OF PUBLISH." Such a map is not suitable grounds for public policy decisions.

## FUTURE LAND USE CATEGORY DESCRIPTIONS

This section is a component of Future Land Use Policy 1.1.1 and is adopted as such by reference. Its purpose is twofold. First, this section explains the types of land uses that are to be permitted by the land development code which implements the Future Land Use Map. The land development code will contain more detail about permitted land uses than does this section. Land development code use regulations which are not specifically addressed in this section and which are not obviously incompatible with this section and other relevant policies may be deemed to be consistent with the overall comprehensive plan.

### Low Density Single Family Residential

This category of land use is intended to allow for the use of single family detached homes on lots of at least 15,000 square feet of net area. Other uses allowed on land within this category include public parks, primary and secondary schools, houses of worship and public utility facilities necessary to serve the homes within this category. The 15,000 square foot lot size limitation shall not preclude the continued use, development or redevelopment of a home on a smaller lot where such lot or parcel was platted or otherwise of record prior to the adoption of this Plan.

### Medium Density Single Family Residential

This category of land use is intended to allow for the use of single family detached homes on lots of at least 7,500 square feet of net area. Other uses allowed on land within this category include public parks, primary and secondary schools, houses of worship and public utility facilities necessary to serve the uses within this category. The 7,500 square foot lot size limitation shall not preclude the continued use, development or redevelopment of a home on a smaller lot where such lot or parcel was platted or otherwise of record prior to the adoption of this Plan.

### Two Family Residential

This category of land use is intended to allow for the use of one single family detached home or two single family attached dwelling units on lots of at least 7,500 square feet of net area. Other uses allowed on land within this category include public parks, primary and secondary schools, houses of worship and public utility facilities necessary to serve the uses within this category. The 7,500 square foot lot size limitation shall not preclude the continued use, development or redevelopment of a single family detached home or two single family attached dwelling units on a smaller lot where such lot or parcel was platted or otherwise of record prior to adoption of this Plan.

### Low Density Multifamily Residential

This category of land use is intended to allow for multifamily and single family attached residential development up to 10 dwelling units per acre. Neither public nor private rights-of-way shall be counted for the purpose of determining the permitted number of units. Accessory recreation facilities such as swimming pools and tennis courts may be permitted in residential developments provided they are for the exclusive use of the residents of the development in which they are located, and their guests, and are not open on a membership or fee basis to nonresidents. Other uses allowed on land within this category include public parks, primary and secondary schools, houses of worship, public utility facilities necessary to serve the uses within this category and adult congregate living facilities (ACLF's) without assisted care provided such ACLF facilities do not exceed 25 occupants per acre. Single family detached residential units may be allowed at a density of one dwelling unit per 7,500 square feet of site area allocated to single family use.

The application of the density limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original density or intensity of the repaired or reconstructed building. This paragraph applies to densities and intensities, not uses.

**Medium Density Multifamily Residential**

This category of land use is intended to allow for multifamily and single family attached residential development up to 16 dwelling units per acre. Neither public nor private rights-of-way shall be counted for the purpose of determining the permitted number of units. Accessory recreation facilities such as swimming pools and tennis courts may be permitted provided they are for the exclusive use of the residents of the development in which they are located, and their guests, and are not open on a membership or fee basis to nonresidents. Other uses allowed on land within this category include public parks, primary and secondary schools, houses of worship, public utility facilities necessary to serve the uses within this category and adult congregate living facilities (ACLF's) without assisted care provided such ACLF facilities do not exceed 25 occupants per acre.

The application of the density limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original density or intensity of the repaired or reconstructed building. This paragraph applies to densities and intensities, not uses.

**High Density Multifamily Residential**

This category of land use is intended to allow for multifamily residential development up to 30 dwelling units per acre. Neither public nor private rights-of-way shall be counted for the purpose of determining the permitted number of units. Accessory recreation facilities such as swimming pools and tennis courts may be permitted in residential developments provided they are for the exclusive use of the residents of the development in which they are located, and their guests, and are not open on a membership or fee basis to nonresidents. Other uses allowed on land within this category include public parks, primary and secondary schools, houses of worship and public utility facilities necessary to serve the uses within this category.

The application of the density limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original density or intensity of the repaired or reconstructed building. This paragraph applies to densities and intensities, not uses.

**Office**

This category of land use is intended to allow for business and professional office use. Buildings within this category shall be limited to up to 35 feet in height and 40 percent maximum lot coverage.
The application of the height and lot coverage limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original intensity of the repaired or reconstructed building. This paragraph applies to intensities, not uses.

**Commercial**

This category of land use is intended to allow for general commercial and business uses and activities serving the daily retailing and service needs of the community. Other uses permitted on land within this category include business and professional office uses, public parks, municipal buildings and facilities and public utilities necessary to serve the uses within this category. Buildings within this category shall be limited to 35 feet in height and 35 percent lot coverage.

The application of the height and lot coverage limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original intensity of the repaired or reconstructed building. This paragraph applies to intensities, not uses.

**Public and Institutional**

This category of land use is intended to allow for the development of governmental facilities and uses and public and private institutional uses, including, but not limited to, houses of worship, schools and health care facilities where compatible with the surrounding area. Public parks and public utilities necessary to serve the uses within this category are also permitted. Buildings within this category shall be limited to 35 feet in height and 35 percent lot coverage.

The application of the height and lot coverage limitation contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original intensity of the repaired or reconstructed building. This paragraph applies to intensities, not uses.

**Public Recreation and Open Space**

This category of land use is intended to allow for public non-commercial recreational uses, including passive and active parks, playgrounds and ancillary and secondary uses supportive of such activities. Buildings within this category shall be limited to 20 feet in height and 15 percent lot coverage.

The application of the height and lot coverage limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original intensity of the repaired or reconstructed building. This paragraph applies to intensities, not uses.

**Medium Density Multifamily and Ocean Resort Hotel**

This category of land use is intended to allow primarily for multifamily residential development and ocean resort hotel development. Either multifamily residential alone or ocean resort hotel development alone may occur on a single parcel or multifamily residential and ocean resort hotel development may occur together on a single parcel.
If only multifamily residential development occurs on a single parcel, then it shall be subject to the same use and density limitations applicable to the medium density residential development (16 dwelling units per acre) land use category.

If only ocean resort hotel development occurs on a single parcel, then it may be permitted at a density not to exceed 30 hotel units per acre; furthermore, no hotel shall contain more than 350 hotel units.

If both multifamily residential development and ocean resort hotel development occur together on a single parcel, then no lot area which is counted toward meeting the lot area required for

multifamily residential uses on a lot shall also be counted toward meeting the lot area required for hotel uses on the same lot. If both multifamily residential development and ocean resort hotel development occur together on a single parcel, then the ancillary facilities permitted for each type of development may be shared or otherwise coordinated.

For the purposes of the Medium Density Multifamily and Ocean Resort Hotel land use category, the term "hotel units" may include individual hotel rooms as well as groups of rooms in suites, provided said suites are designed exclusively to be rented as a unit rather than rented separately as individual rooms. Accessory convenience retail uses sized to serve only the needs of hotel guests may be permitted within hotels. Accessory restaurants, bars and lounges necessary to serve hotel guests may be permitted within hotels, provided they are sized so that they can be supported primarily by hotel guests and island residents. Ancillary recreation facilities such as swimming pools, cabanas and tennis courts may be permitted within hotel sites provided they are sized so that they can be supported primarily by hotel guests and island residents. Gaming facilities are not permitted.

Other uses permitted in the Medium Density Multifamily and Ocean Resort Hotel category include public parks and public utilities necessary to serve the uses within this category.

No buildings in this category shall exceed 150 feet in height.

**Waterfront Recreation and Open Space**

This category of land use is intended to allow for limited water dependent recreational uses including beaches and marinas together with facilities directly supportive of such uses including clubhouses and dock master buildings sized and scaled to meeting only the needs of the members. Buildings within this category shall be limited to 35 feet in height and 15 percent lot coverage.

The application of the height and lot coverage limitations contained in this paragraph shall not preclude the repair or reconstruction of any building or portion thereof which is damaged by any natural disaster or other casualty. Such repair or reconstruction shall not exceed the original intensity of the repaired or reconstructed building. This paragraph applies to intensities, not uses.

**Proposed Pedestrian-Bicycle Way**

The location and the width of the proposed pedestrian-bicycle ways shown on this future land use map are conceptual approximations not precise alignments. Considerable deviation from the alignments shown could fulfill the intent of this plan so long as: 1) provision is made for pedestrians and bicyclists to go from East Drive to Seaview and vis-a-versa along an alignment that is reasonably near the east end of these streets rather than along Crandon Boulevard; and 2) provision is made for pedestrians and bicyclists to go from Harbor Drive to Crandon Park along an alignment west of the commercial area at the northwest corner of Crandon Boulevard and Harbor Drive.

## TRAFFIC CIRCULATION

**GOAL 1** **TO PROVIDE A TRANSPORTATION SYSTEM THAT MEETS THE CIRCULATION NEEDS OF KEY BISCAYNE IN A SAFE AND EFFICIENT MANNER BUT DOES NOT ADVERSELY IMPACT THE QUALITY OF LIFE OF THE RESIDENTS.**

**Objective 1.1 Motorized Transportation System** 9J-5.007 (3) (b) 1

*Maintain the designated level of service but with enhanced pedestrian safety and amenities.*

**Policy 1.1.1** 9J-5.007(3)(c)1

The Village shall regulate the timing of development to maintain at least the following peak hour Level of Service standards:

- Arterials - "E." Crandon Boulevard is the only arterial in the Village.
- Collectors - "B." Harbor Drive and West Mashta Drive are collectors.
- Local Service Streets - "A." All other streets are local service streets.

Crandon Boulevard is projected to be at Level of Service E or better south of Harbor Drive (Table II-4, Traffic Circulation Element Data and Analysis), although the Level of Service could potentially fall slightly below E north of Harbor Drive near the north Village limits. The amount by which traffic on Crandon north of Harbor is projected to exceed Level of Service E is six tenths of one percent (0.006). Barton-Aschman Associates, Inc., traffic engineering consultants for this plan, believe that this amount of traffic (18 trips more than the 3.110 trip capacity), is not significant because it is far less than the margin of projection error. The Village prefers to utilize the E Level of Service standard based on the expectation that future volumes could be lower than projected volumes. If future volumes are equal to projected volumes, then the Village would have to lower the Level-of-Service standard on Crandon Boulevard north of Harbor Drive to 100.6 percent of E capacity.

**Policy 1.1.2** 9J-5.007 (3) (c) 3

By the date required by state statute or sooner, the Village shall enact and enforce land development code standards and a review process to control roadway access points, on-site traffic flow and on-site parking. The land development code will require the use of joint access drives for adjacent uses. It will also set minimum design standards for:

- the spacing and design of driveway curb cuts;
- the size of ingress and egress lanes for major land uses;
- the spacing and design of median openings; and
- the provision of service roads.

State highway access management standards will be considered in developing roadway access point controls, although they are not mandatory since there are no state highways in the Village. The access management controls will be

tailored to achieve the ends set forth in Objective 1.4. On-site traffic flow and on-site parking standards will be designed to encourage high levels of pedestrian and bicycle use, including requiring bike racks under certain conditions.

**Policy 1.1.3** 9J-5.007 (3) (b) and (c)

Street improvements shall be designed and implemented for the collectors (Harbor Drive and Mashta) identified in Policy 1.1.1 and elsewhere in this plan. The intersection at Crandon and Harbor shall be channelized. Speed control methods that will require traffic to stop on a regular basis (such as four-way stop signs) should be avoided, since these will work against what the Collector street is mean to do. Instead strategies such as medians, pavement reduction, or the provision of shrubbery and trees close to the roadway will serve as deterrents to speeding on Collector roads.

**Objective 1.2 Land Use Plan Implications** 9J-5.007 (3) (b) 2

*Limit commercial development and redevelopment to arterial road frontage (plus the Harbor Drive Collector frontage between Crandon Boulevard and Fernwood Road).*

**Policy 1.2.1**

Other than ocean resort hotels, the Future Land Use and zoning maps shall be used to limit new commercial and office development or redevelopment to arterial frontage (Crandon Boulevard) and the related Harbor Drive (Collector) frontage east of Fernwood Road.

**Objective 1.3 Regional Plans** 9J-5.007 (3) (b) 3

*Work with the County to limit traffic volume increases on the Rickenbacker Causeway.*

**Policy 1.3.1**

The Village shall work closely with the Metro-Dade County Planning Department and the Metropolitan Planning Organization to limit the intensity of development along the Causeway and Crandon Boulevard in order to maintain an adequate traffic level of service.

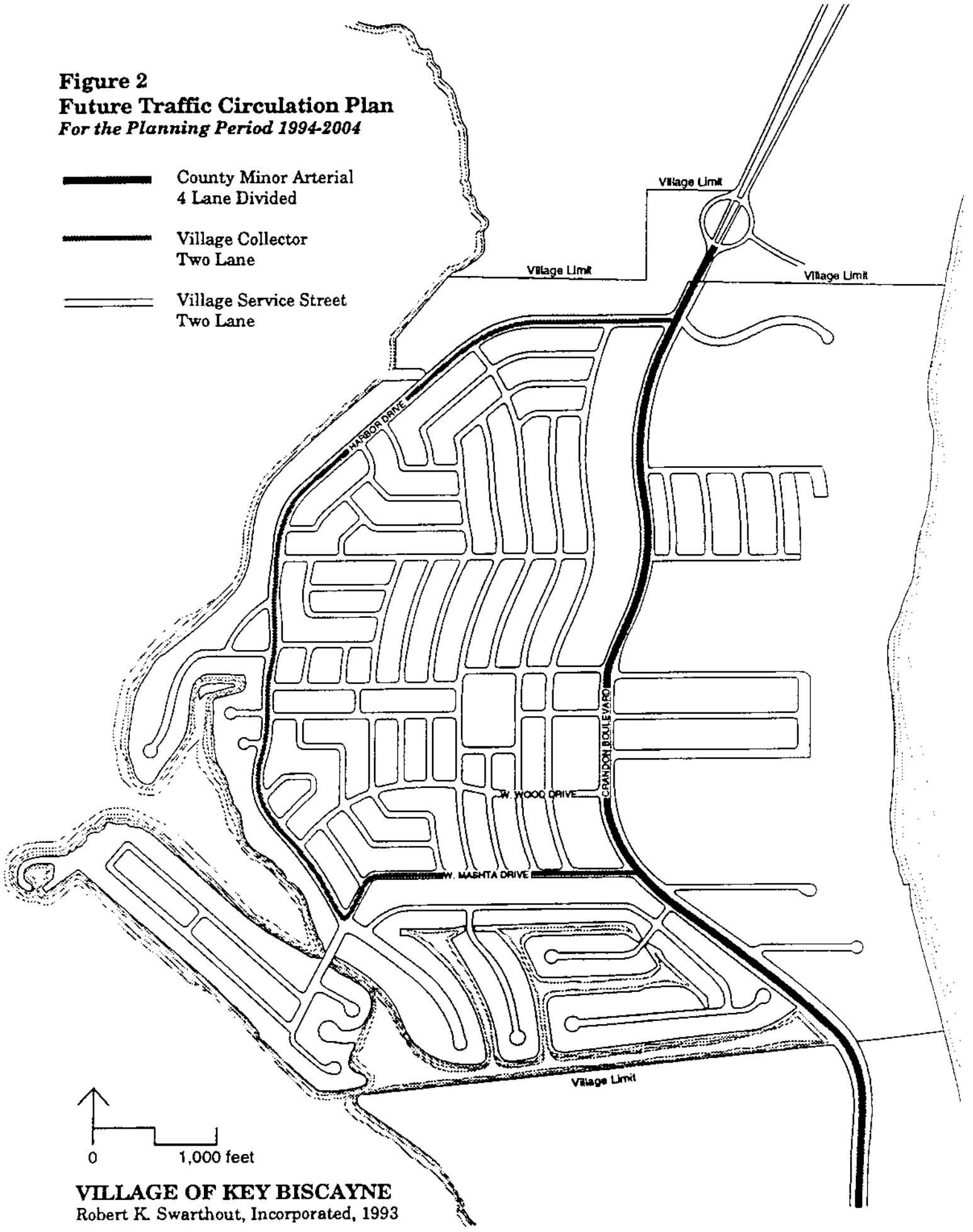
**Objective 1.4 Right-of-Way Protection** 9J-5.007 (3) (b) 4

*Protect existing and future rights-of-way from the encroachment of buildings and other impediments through enactment and enforcement of a land development code which implements the Future Land Use Map and the Future Traffic Circulation Plan, and achieve a 10 percent net reduction in the lineal footage of Crandon Boulevard (plus one block of Harbor Drive) curb cuts no later than 2004 and otherwise protect the integrity of existing and proposed rights of way.*

**Policy 1.4.1** 9J-5.007 (3) (c) 4

The Village shall use the land development code to protect existing rights-of-way through setback requirements which prohibit right-of-way encroachments of any kind.

**Figure 2**
**Future Traffic Circulation Plan**
***For the Planning Period 1994-2004***




**VILLAGE OF KEY BISCAYNE**
Robert K. Swarthout, Incorporated, 1993

**Policy 1.4.2** 9J-5.007 (3) (c) 2

As site plans are submitted, the Village shall use the standards in the land development code and the land development code development review process to reduce the number and width of existing non-residential curb cuts onto Crandon Boulevard and Harbor Drive by the amount stated in Objective 1.4; this policy is not to be implemented in a way which would preclude adequate accessways for the development of vacant land.

## Objective 1.5 Bikeways and Pedestrian Ways

*Achieve the first phase of a Harbor Drive pedestrian and bikeway system no later than 2004 based upon a streetscape and multi-modal circulation plan for Harbor Drive, Fernwood Road, West Wood Drive and West Mashta Drive.*

**Policy 1.5.1** 9J-5.007 (3) (c) 5

No later than 1999, the Village shall complete a detailed bicycle, pedestrian way and streetscape plan for the following streets:

- Harbor Drive
- Fernwood Road
- West Mashta Drive

Related to these plans for streetscape improvements will be traffic engineering techniques to slow traffic speeds; West Wood Drive shall also be included in this speed control planning and implementation.

**Policy 1.5.2** 9J-5.007 (3) (c )5

No later than 2004, achieve the first phase implementation of this plan on Harbor Drive.

## HOUSING

**GOAL 1 TO ASSURE THE AVAILABILITY OF A SOUND AND DIVERSIFIED HOUSING STOCK IN KEY BISCAYNE.**

**Objective 1.1 New Construction** 9J-5.010 (3) (b) 1

*Cooperate with the private sector in the construction of at least 250 additional units on the vacant residentially designated Crandon Boulevard frontage by 2004; said units shall be well designed but diversified housing types.*

**Policy 1.1.1**

The Village Future Land Use Plan and zoning map designations shall continue to provide for a diversity of housing types on the remaining vacant land to meet the needs of the existing and anticipated population.

**Policy 1.1.2** 9J-5.010 (3) (c) 2

The Village shall periodically review its permitting process and the regulatory process established by the land development code thereby assuring a prompt and professional development permitting process.

**Objective 1.2 Group Homes** 9J-5.010 (3) (b) 4

*Accommodate as many small group homes and foster care facilities as the market will support in residential areas and areas with residential character.*

**Policy 1.2.1** 9J-5.010 (3) (c) 6

By the date required by state statute or sooner, the Village shall enact and enforce land development code regulations which permit HRS-licensed group homes, including foster care facilities. Such regulations shall permit small scale group homes and foster care facilities in residential areas and areas with residential character and shall otherwise be designed to meet State law. Prior to enactment of such regulations, the Village shall interpret and enforce applicable existing regulations in a manner which is fully consistent with State law and administrative code requirements pertaining to group homes. The Village shall encourage HRS to consider the hurricane evacuation constraints in their licensing of facilities on the Key.

**Objective 1.3 Conservation, Rehabilitation, Demolition, Substandard Housing Structural and Aesthetic Improvement of Housing** 9J-5.010 (3) (b) 5

*Maintain a structurally sound housing stock by rehabilitating or demolishing housing units that may deteriorate to a substandard condition in the future. Achievement of this objective shall be measured by the existence of no substandard housing units.*

**Policy 1.3.1** 9J-5.010 (3) (c) 3 and 4

The Village Manager or designee shall enforce the County minimum housing standards code or an appropriate modification enacted by the Village Council.

**Policy 1.3.2** 9J-5.010 (3) (c) 3

Through land development code setback/bulk standards and through implementation of the 1993 drainage master plan (including on-site retention standards) the Village shall assure the continuation of stable residential neighborhoods.

**Objective 1.4 Housing Coordination and Implementation** 9J-5.010 (3) (b) 7

*The Local Planning Agency (LPA) shall serve as the body to coordinate and achieve housing policy implementation.*

**Policy 1.4.1** 9J-5.010 (3) (c) 1

The Village shall maintain formal communications with appropriate private and non-profit housing agencies to assure that adequate information on Village housing policies flows to housing providers. This list shall include Homes for South Florida, the Board of Realtors and the Home Builders Association.

**Policy 1.4.2** 9J-5.010 (3) (c) 7

The Village shall fully cooperate with any developer using County Surtax funds, the County Housing Finance Agency or other subsidy mechanisms.

**Objective 1.5 Historically Significant Housing**

*Identify and preserve at least one historically significant residential structure.*

**Policy 1.5.1** 9J-5.010 (3) (c) 3

Based upon historical accounts of early development in the Village, the Council shall designate those structures that due to age, architecture and function are candidates for historic designation and protection. A strategy for the preservation of some or all of these structures shall be drafted.

**Objective 1.6 Development of Affordable Housing in Nearby Communities**

*Provide adequate sites for the distribution of very low income, low income and moderate income families.*

**Policy 1.6.1** 9J-5.010 (3) (b) 3

The Village manager or designee shall monitor the housing and related activities of the South Florida Regional Planning Council and nearby local jurisdictions. The Village manager or designee shall inform the Village Council of these activities and shall recommend, as appropriate, Village actions that could help encourage the provision of adequate sites for the distribution of very low income, low income and moderate income families in nearby communities with land values that can reasonably accommodate such housing.

**Objective 1.7 Structural and Aesthetic Improvement of Existing Housing**

*Achieve and maintain 100 percent standard housing and achieve private reinvestment to structurally and aesthetically upgrade at least 50 existing housing units.*

**Policy 1.7.1**

The Village shall vigorously enforce the existing code to ensure that no housing structures become substandard.

**Policy 1.7.2**

By the date required by State statute, or sooner, the Village shall enact or enforce land development code regulations which set appropriate building height, set back and other regulations which facilitate aesthetically pleasing upgrades to the existing housing stock.

Note: The following 9J-5.010 FAC objectives and related policies are not applicable to Key Biscayne as explained in the Data and Analysis:

- Objective 9J-5.010(3)(b)6 — relocation housing including Policy 9J-5.010 (3) (c) 8
- Objective 9J-5.010(3)(b)1 — references to rural/farm workers including Policy 9J-5.010 (3) (c) 5

# INFRASTRUCTURE

## GOAL 1 TO PROVIDE AND MAINTAIN THE PUBLIC INFRASTRUCTURE IN A MANNER THAT WILL INSURE BAY WATER QUALITY, AND PUBLIC HEALTH, SAFETY, AND QUALITY OF LIFE FOR KEY BISCAYNE RESIDENTS.

### Objective 1.1 Current Deficiencies and Future Needs; Drainage 9J-5.011 (2) (b) 1

*Upgrade the drainage system so that stormwater outfalls into Biscayne Bay (and adjacent canals) fully meet National Pollution Discharge Elimination System (NPDES) standards no later than December 31, 1998 and the standards of Chapter 17-25, FAC and of Chapter 17-302.500, FAC. Upgrade onsite drainage standards to ensure that private properties retain at least the first one inch of stormwater on site and permit no more runoff after development than before development.*

**Policy 1.1.1** 9J-5.011 (2) (c) 1

Based upon the capital cost implications of the Village of Key Biscayne Drainage Master Plan, the Village shall activate the stormwater utility assessment as a basis for bonding for the first phase of drainage plan implementation no later than December 31, 1998. The Village shall update its Drainage Master Plan as necessary to ensure the continued efficacy of its provisions to upgrade the storm sewer system in accordance with the specific standards of Objective 1.1 above.

**Policy 1.1.2** 9J-5.011 (2) (c) 1

During the first phase of drainage master plan implementation (to be initiated in 1994), the Village shall begin to mitigate to the extent technically and economically feasible direct stormwater outfalls into the canals and Biscayne Bay. Anticipated improvements include a series of catch basins, manholes and pipes for the collection of the stormwater and routing to pollution control structures and drainage wells with emergency overflows. The pollution control devises (grease and oil separator) are to be provided before each drainage well to prevent contamination from entering. Emergency overflow structures are to be constructed at the existing outfalls and would discharge only when the storm events generates more than one inch of runoff. These improvements shall be designed to fully meet the specific standards set forth in Objective 1.1 above.

**Policy 1.1.3** 9J-5.011 (2) (c) 1

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions that require one inch of on-site detention, post-development runoff equal to or less than peak pre-development runoff, erosion control, a minimum percentage of pervious open space, maintenance of swales and the drainage level of service standard. These requirements shall be designed to help ensure full compliance with the specific standards set forth in Objective 1.1 above.

**Objective 1.2 Current Deficiencies and Future Needs; Sewage** 9J-5.011 (2) (b) 2

*Extend public sewer service to additional developed areas no later than 2008 and ensure effective septic and drain field functioning. See Policies 1.2.1 and 1.2.2 for additional measurability.*

**Policy 1.2.1** 9J-5.011(2)(c)1

The Village shall cooperate with the County in an attempt to complete a financial and engineering plan to extend sanitary sewers to as much of the remaining unsewered areas as is financially feasible and otherwise desirable. The intent is to complete that plan as soon as technically and financially feasible but no later than 1998 and to begin implementation as soon as technically and financially feasible and complete implementation no later than 2008.

**Policy 1.2.2** 9J-5.011(2)(c)1

The Village shall help ensure effective functioning of septic tanks and drain fields by cooperating with HRS and DERM in the exercise of the jurisdiction of those agencies over septic tank and drain field permitting and requirements.

**Objective 1.3 Future Needs; Solid Waste** 9J-5.011(2)(b)3

*Achieve the most cost-effective solid waste collection system by 1999.*

**Policy 1.3.1** 9J-5.011(2)(c)1

No later than 1996, the Village shall assess the cost effectiveness of replacing the County collection system with a system operated by one or more private contractors subject to Village-established operating specifications. Village control could be maintained through franchise agreements or other regulatory approaches.

**Policy 1.3.2** 9J-5.011(2)(c)1

No later than 1999, the Village will initiate any resulting recommended changes in the solid waste collection system, including the recycling component.

**Objective 1.4 Level of Service**

*Provide adequate capacities to meet the Level of Service (LOS) standards; see policies for measurable standards.*

**Policy 1.4.1** 9J-5.011 (2) (c) 2a

Sewered Areas: The County-wide "maximum day flow"[(1)] of the preceding year shall not exceed 98 percent of the County treatment system's rated capacity. The sewage generation standard shall be 140 average gallons per capita per day.

**Policy 1.4.2** 9J-5.011 (2) (c) 2a

Unsewered Areas: The LOS shall be receipt of a Metro-Dade County Department of Environmental Resources Management septic tank permit.

**Policy 1.4.3** 9J-5.011 (2) (c) 2d

Potable Water: The County-wide "maximum day flow" of the preceding year shall not exceed 98 percent of the County treatment and storage system's rated capacity. The pressure shall be at least 20 pounds per square inch at the property line. The potable water consumption standard shall be 280 average gallons per capita per day.

**Policy 1.4.4** 9J-5.011 (2) (c) 2c

Drainage: All nonresidential development and redevelopment shall adequately accommodate runoff to meet all Federal, state and local requirements. Stormwater shall be treated in accordance with the provisions of Chapter 17-25, FAC in order to meet receiving water standards in Chapter 17-302.500, FAC. One inch of runoff shall be retained on site. Post-development runoff shall not exceed peak pre development runoff.

**Policy 1.4.5** 9J-5.011 (2) (c) 2b

Solid Waste: The County solid waste disposal system shall maintain a minimum of five years capacity. For Village planning purposes, a generation rate of 5.2 pounds per person per calendar day shall be used.

**Objective 1.5 Water Conservation** 9J-5.011 (2) (b) 4

*Reduce the average daily per capita water consumption by five percent no later than 2004 (dependent upon the near-term ability to measure Village-wide consumption).*

**Policy 1.5.1** 9J-5.011 (2) (c) 3

By the date required by state statute or sooner, the Village shall enact and enforce land development code and other regulations that include: 1) water conservation-based irrigation requirements; 2) water conservation-based plant species requirements derived from the South Florida Water Management District's list of native species and other appropriate sources; 3) lawn watering restrictions; 4) mandatory use of ultra-low volume water saving devices for substantial rehabilitation and new construction; and 5) other water conservation measures, as feasible.

**Policy 1.5.2** 9J-5.011 (2) (c) 3

The Village shall promote education programs for residential, commercial and other uses which will discourage waste and conserve potable water.

**Policy 1.5.3**

The Village will cooperate with WASA in an effort to devise a means of tracking water consumption in the Village from customer billings or other sources.

**Policy 1.5.4** 9J-5.011 (2) (c) 3

The Village shall cooperate with WASA efforts to ensure that the potable water distribution system shall reduce water loss to less than 16 percent of the water

entering the system.

Note: 1. The following 9J-5.011 FAC objectives and related policies are not applicable to Key Biscayne:

| | |
|---|---|
| ● Objective 9J-5.011 (2) (b) 3 | urban sprawl |
| ● Objective 9J-5.011 (2) (b) 5 | groundwater recharge/natural drainage features; includes Policy 9J-5.011 (2) (c) 4 |

2. There are no potable water system deficiencies or future need issues within the Village.

## CONSERVATION AND COASTAL MANAGEMENT

Conservation Element and Coastal Management Element goals, objectives and policies are combined because they are complimentary.

**GOAL 1 TO PRESERVE AND ENHANCE THE SIGNIFICANT NATURAL FEATURES IN KEY BISCAYNE.**

**Objective 1.1 Air Quality** 9J-5.013 (2) (b) 1

*Improve air quality to achieve or maintain applicable standards as established by the U.S. Environmental Protection Agency.*

**Policy 1.1.1**

The Village shall maintain compliance with its traffic level of service standard thereby avoiding congestion that would adversely impact air quality.

**Policy 1.1.2** 9J-5.013 (2) (b) 1

Emissions of fumes and vapors from all hazardous waste facilities shall be controlled, and these facilities shall comply with Lowest Achievable Emission Rates. Vapor control systems shall be required to reduce hydrocarbon emissions from vehicles being filled at gas stations.

**Objective 1.2 Water Pollution** 9J-5.012 (3) (b) 2 and 9J-5.013 (2) (b) 2

*Upgrade the drainage system so that stormwater outfalls into Biscayne Bay (and adjacent canals) fully meet National Pollution Discharge Elimination System (NPDES) standards no later than December 31, 1998 and the standards of Chapter 17-25, FAC and of Chapter 17-302,500, FAC. Upgrade onsite drainage standards to ensure that private properties retain at least the first one inch of stormwater on site and permit no more runoff after development that before development.*

**Policy 1.2.1** 9J-5.012 (3) (c) 1 and 2, and 9J-5.013 (2) (c) 1 and 6

Based upon the capital cost implications of the Village of Key Biscayne Drainage Master Plan, the Village shall activate the stormwater utility assessment as a basis for bonding for the first phase of implementation no later than December 31, 1998. The Village shall updated its Drainage Master Plan as necessary to ensure the continued efficacy of its provisions to upgrade the storm sewer system in accordance with the specific standards of Objective 1.1 of the Infrastructure Element.

**Policy 1.2.2** 9J-5.012 (3) (c) 1 and 2, and 9J-5.013 (2) (c) 1 and 6

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions that require one inch of on-site drainage detention, post development runoff equal to or less than pre development runoff, erosion control, a minimum percentage of pervious open space, maintenance of swales, drainage level-of-service standards, ocean beach dune protection and vegetation, and other environmentally sensitive land protection measures. These requirements shall be designed to help ensure full compliance with the specific standards set forth in Objective 1.2 above. Such

provisions shall be consistent with this plan and with the applicable Florida statutory and administrative code requirements, standards promulgated by the South Florida Water Management District and the Department of Environmental Protection.

**Policy 1.2.3** 9J-5.013 (2) (c) 10

The Village shall refer any development permit applications for uses involving the storage of hazardous waste to Metro-Dade County.

**Objective 1.3 Vegetative and Soil Resources** 9J-5.012 (3) (b) 1
9J-5.013 (2) (b) 3

*Achieve 0 net loss of mangroves.*

**Policy 1.3.1** 9J-5.012 (3) (c) 1
9J-5.013 (2) (c) 3, 5, 6, 7, 8 and 9

By the date required by state statute or sooner, the Village shall enact and enforce estuarine waterfront protection provisions in the land development code. The provisions will be drafted to assure that all applicable development permit applications are reviewed in the context of the mangrove protection policies of the State DEP and the waterfront policies of DERM. In particular, DERM Class 1 Permits pursuant to Section 24-58 of the Dade County Code shall be required for all construction seaward of the mean high water line. Such construction shall be designed to minimize environmental impacts and mitigate unavoidable impacts. This provision shall be interpreted to protect sensitive lands from sea wall and other related construction, but it shall not be interpreted as permitting construction seaward of the State Coastal Construction Control Line in violation of other policies of this Comprehensive Plan.

**Policy 1.3.2** 9J-5.012 (3) (c) 1 and 2
9J-5.013 (2) (c) 5 and 6

The Village shall contact DERM if any adverse impact is observed relative to the limited sea grass beds in adjacent Bay waters.

**Objective 1.4 Sea Turtle Preservation** 9J-5.012 (3) (b) 1
9J-5.013 (2) (b) 4

*Strive to achieve 0 human-induced loss of manatees and/or sea turtle* eggs.

**Policy 1.4.1** 9J-5.012 (3) (c) 1
9J-5.013 (2) (c) 5 and 6

The Village police shall maintain communications with County and State marine police in order to report any violations of the boat speed limits in the adjacent waters which are a manatee protection area. The Dade County manatee telephone hotline shall also be publicized by Village officials.

**Policy 1.4.2** 9J-5.012 (3) (c) 1
9J-5.013 (2) (c) 5 and 6

By the date required by state statute or sooner, the Village shall enact and enforce land development provisions which regulate the location and

screening of lights along the beach in a way which is practical to water dependent and water related uses to assist in protecting sea turtles by minimizing the amount of light on beach locations where sea turtles may nest.

## Objective 1.5 Floodplains

*For residential uses, achieve construction of all new building first floors at or above FEMA specified flood elevations. For non-residential uses, achieve construction of all new building first floors at or above FEMA specified flood elevations or in accordance with FEMA approved waterproof specifications.*

**Policy 1.5.1** 9J-5.012 (3) (c) 3 and 9J-5.013 (2) (c) 6

The Village shall enforce the flood damage prevention regulations which ensure that all new residential construction is at or above the flood elevation specified on the FEMA Flood Insurance Rate Map and which ensure that all new non-residential construction is either at or above the flood elevation specified in the FEMA Flood Insurance Rate Map or in accordance with FEMA approved waterproof construction specifications. The Village manager shall design and promulgate specific management techniques to ensure effective enforcement of FEMA regulations.

## Objective 1.6 Emergency Water Conservation

*Achieve a reduction of at least 10 percent in per capita water consumption in the event of a water supply emergency (dependent upon the near term ability to measure Village-wide consumption).*

**Policy 1.6.1** 9J-5.013 (2) (c) 4

The Village shall enact and enforce an emergency water conservation ordinance based on both the South Florida Water Management District model ordinance and any specific SFWMD requirements of the emergency in question.

## Objective 1.7 Conservation of Wildlife and Habitat

*Achieve 0 degradation of fisheries, wildlife, wildlife habitat, marine habitat and environmentally sensitive land.*

**Policy 1.7.1**

Cooperate with U.S. Army Corps of Engineers for beach renourishment if it becomes necessary. Where beach restoration or renourishment is necessary, the project should be designed and managed to minimize damage to the offshore grass flats, terrestrial and marine animal habitats and dune vegetation. Such renourishment shall be done

**Policy 1.7.2**

The Village shall limit permits (when it has jurisdiction) for borrow areas for beach restoration or renourishment projects to areas that do not negatively affect offshore reefs or grass flats.

**Policy 1.7.3**

The Village shall discourage non-water oriented activities and developments from encroaching on beach fronts and dunes by continuing to designate the Dune Restoration Area on the Future Land Use Map. In addition to regulating development by the Dune Restoration Area on the Future Land Use Map, the Village shall, by the date required by state statute or sooner, enact and enforce land development code provisions requiring minimum building setbacks from the ocean. Construction shall not be permitted seaward of the Coastal Construction Control Line, except that non habitable major and minor structures (as defined in 16B-33.002(60), FAC) and restaurants may be permitted so long as: 1) they are approved by a Coastal Construction Control Line permit granted by the State of Florida Department of Natural Resources; 2) at least 50 percent of the permitted area is free of any such structures; 3) no such individual structure shall exceed 15 percent of the permitted area.

**Policy 1.7.4**

The Village shall prohibit dredging or filling that would result in the destruction of grass/algae flats, hard bottom or other benthic communities in any waters within the Key Biscayne Village limits.

**Policy 1.7.5**

The Village shall prohibit the deposit of solid waste or industrial waste including spent oils, gasoline by-products or greases accumulated at garages, filling stations and similar establishments that create a health or environmental hazard upon any vacant, occupied or unoccupied premises, parkway or park, and in any canal, waterway, bay or the ocean within the Village

**Policy 1.7.6**

The Village shall maintain its standing as a bird sanctuary in which it is prohibited for any person to injure, kill, hunt, destroy, capture or molest any endangered, threatened, rare, or species of special concern or any bird; except those persons holding a valid permit to destroy birds for scientific purposes issued by the U.S. Fish and Wildlife Service, Department of the Interior.

**Policy 1.7.7**

The Village shall require all new shoreline development affecting marine habitats to be reviewed by the Dade County Environmental Resources Management Department.

**Policy 1.7.8**

The Village shall give preference to salt tolerant landscaping over traditional planting materials in the plant materials list used in the enactment and administration of the landscape requirements of the land development code.

**Policy 1.7.9**

The Village shall enact and enforce land development regulations which prohibit the propagation and planting of the following plants; it shall also require that eradication of these species be carried out on all sites of new and redevelopment projects:

| | | |
|---|---|---|
| Malaleuca | Brazilian Pepper | Australian Pine |
| Ear Leaf Acacia | Woman's Tongue | Bishop Wood |
| Shoebottom Artesia | Day Blooming Jasmine | Colubrina |
| Aerial Potato | Eucalyptus | Lead Treet |
| Castor Bean | | |

**Policy 1.7.10**

The Village shall coordinate with the County and the Florida Department of Environmental Protection in the monitoring of coastal waters and sediments.

**Policy 1.7.11**

The Village shall cooperate with Federal, state and county programs designed to ensure the required use, proper maintenance and proper functioning of dockside pump out facilities. The program shall comply with all Federal, State and County mandates.

**Policy 1.7.12**

The Village shall promote beautification with an annual clean-up drive for the beaches and shorelines in conjunction with normal trash pick-up activities.

**Policy 1.7.13**

The Village shall enact and enforce an emergency water conservation plan, through a water shortage ordinance, consistent with the policies of the South Florida Water Management District.

**Policy 1.7.14**

The Village hereby designates DERM mangrove jurisdictional areas in the Village as environmentally sensitive lands which shall be protected from development unless their ecological value is replaced via mitigation. These DERM areas are mapped in Figure V-1 of the Data and Analysis of this Plan.

## GOAL 2 TO CONSERVE AND MANAGE THE ENVIRONMENTAL RESOURCES AND MAN-MADE USES IN THE COASTAL AREA OF KEY BISCAYNE

### Objective 2.1 Water-Dependent and Water-Oriented Uses 9J-5.012 (3) (b) 3

*Preserve the existing and planned sites for water-dependent uses and water-oriented ocean resort hotel uses; assure that any related marina expansion or development meets appropriate location standards.*

**Policy 2.1.1** 9J-5.012 (3) (c) 8

By the date required by state statute or sooner, the Village shall enact and enforce as part of the land development code: 1) a zoning district based on the Multifamily Residential and Ocean Resort Hotel Future Land Use Plan category, and 2) a zoning district based on the Waterfront Recreation and Open Space land use category. Planned development or other flexible zoning regulations which effectuate vested property rights and/or fulfill the spirit of

Multifamily Residential and Ocean Resort Hotel and/or the Waterfront Recreation and Open Space land use categories may serve in lieu of specific zoning districts. The regulations of this district shall be consistent with the density limits established by the Future Land Use Map of this plan.

**Policy 2.1.2** 9J-5.012 (3) (c) 8

Any new marina, marina expansion or similar water-dependent use shall meet the following criteria:

a) Construction or subsequent operation of any proposed marina/water-dependent project shall not destroy or degrade:

   (1) Hammocks, pinelands or salt marshes, or

   (2) Mangrove Protection Areas, or

   (3) Sea grass or hard bottom communities, or

   (4) Habitats used by endangered or threatened species.

b) Where applicable, the proposed marina/water dependent project site shall have:

   (1) A minimum depth of 4 feet at mean low tide in the proposed marina basin and access channel, and direct access to the Intracoastal Waterway or to another dredged channel or area with a minimum of 6 feet at mean low tide, and

   (2) Good land side accessibility.

c) The proposed marina/water dependent facility shall be:

   (1) Compatible with existing, surrounding land uses, and

   (2) Of sufficient size to accommodate project and the required parking, and

d) The proposed marina/water dependent facility shall:

   (1) Preserve or improve traditional public shoreline uses and public access to estuarine and coastal waters, and

   (2) Preserve or enhance the quality of the estuarine and coastal waters, water circulation, tidal flushing and light penetration, and

   (3) Preserve archaeological artifacts or zones and preserve, or sensitively incorporate historic sites, and

   (4) Where applicable, provide a hurricane contingency plan.

The above criteria shall be incorporated in the land development code by the date required by state statute or sooner.

**Objective 2.2 Beaches and Dunes** 9J-5.012 (3) (b) 4

*Achieve no new major development or redevelopment seaward of the Coastal Construction Control Line and restore a naturally vegetated dune along the entire Atlantic Ocean frontage of the Village.*

**Policy 2.2.1** 9J-5.012 (3) (c) 1 and 3, and 9J-5.013 (2) (c) 6

By the date required by state statute or sooner, the Village shall enact and enforce as part of the land development code minimum oceanfront setback requirements including protection of the proposed dune system. The requirements shall specify that no building may be built seaward of the coastal construction control line and that only limited boardwalks, gazebos and similar structures may be built seaward of the coastal construction control line. The requirements shall apply to both development and redevelopment.

**Policy 2.2.2** 9J-5.012 (3) (c) 2

By the date required by state statute or sooner, the Village shall enact and enforce as part of the land development code dune development and vegetation planting requirements in conjunction with any new beachfront development and redevelopment. Dune grading and planting requirements shall be drafted to ensure the highest level of restoration of natural conditions which is economically and technically feasible. The requirements shall apply to both development and redevelopment.

**Policy 2.2.3** 9J-5.012 (3) (c) 2

By 1996, the Village shall evaluate the need for and efficacy of alternate financing mechanisms to pay for beach renourishment and dune development as a supplement to achieving beach renourishment and dune development via regulations of development and redevelopment.

**Objective 2.3 Beach Public Access** 9J-5.012 (3) (b) 9

*Achieve one municipal ocean beach access point open to the general public within the Village no later than 2004.*

**Policy 2.3.1** 9J-5.012 (3) (c) 9

The Village shall enforce an existing agreement with a private property owner calling for provision of beach access as a condition for development approval. The accessory so provided shall be open to the general public.

**Objective 2.4 Historic Preservation** 9J-5.012 (3) (b) 10

*No later than 1999, prepare a list of potentially significant historic structures and a strategy for their preservation.*

**Policy 2.4.1** 9J-5.012 (3) (c) 10

Based upon historical accounts of early development in the Village, the Council shall designate those structures that due to age, architecture and function are

candidates for historic designation and protection. A strategy for the preservation of some or all of these structures shall be drafted.

**Objective 2.5 Biscayne Bay Preservation**

*Assist the efforts of Metro-Dade County, the Florida Department of Environmental Protection and the National Park Service to preserve and enhance the State-designated Biscayne Bay Aquatic Preserve. See Policy 2.5.1 for measurability.*

**Policy 2.5.1** 9J-5.012 (3) (c) 13 and 14

The Village shall contribute to the improvement of Biscayne Bay water quality through a combination of: 1) implementation of a master drainage plan, 2) replacement of septic tanks with sanitary sewers tied into the County system and/or upgrading of septic tank and drainfield standards, 3) mandating on-site stormwater detention and 4) marina siting standards.

Standards for on-site storm water retention, storm sewers, sanitary sewers, septic tanks and drain fields are set forth in the Infrastructure Element (Objective 1.1 and related policies; Objective 1.2 and related policies; and Policy 1.4.4) and are incorporated in this policy by reference. Marina standards are set forth in Policy 2.1.2 of this Element and are incorporated in this policy by reference.

**Policy 2.5.2** 9J-5.012 (3) (c) 14 and 15

The Village shall contribute to the improvement of Biscayne Bay water quality by continuing to: 1) have a Village representative periodically consult with the Biscayne Bay Shoreline Development Review Committee and 2) have relevant bay front projects reviewed by the Committee. The Village shall cooperate with the regulatory functions of the Florida Department of Environmental Protection and the National Park Service.

**GOAL 3 TO MINIMIZE HUMAN AND PROPERTY LOSS DUE TO HURRICANES**

**Objective 3.1 Coastal High-Hazard Area Land Use and Infrastructure** 9J-5.012 (3) (b) 5 and 6

*Limit Village funds on infrastructure within the Village (all of which is within the coastal high-hazard area) that would have the effect of directly subsidizing development which is significantly more intensive than authorized by this Plan.*

**Policy 3.1.1** 9J-5.012 (3) (c) 7

The Village shall limit its funding of public infrastructure expansion if such funding and such expansion would have the effect of directly subsidizing a specific private development in the Village.

**Policy 3.1.2** 9J-5.012 (3) (c) 12

Objective 3.1 and Policy 3.1.1 above shall not be implemented in such a way as to preclude the Village's plans to extend sewer lines, improve drainage facilities or reconfigure streets in order to provide adequate infrastructure to serve the

Future Land Use Plan development pattern or development for which rights were vested prior to enactment of this Plan.

**Objective 3.2 Hurricane Evacuation** 9J-5.012 (3) (b) 7

*Maintain the current estimated 13 hour hurricane evacuation clearance time which is based on both pre Hurricane Andrew planning and post Hurricane Andrew experience.*

**Policy 3.2.1** 9J-5.012 (3) (c) 4

The Village shall maintain its traffic level of service which in turn is based upon the Future Land Use map, thereby achieving a reasonable hurricane evacuation time.

**Policy 3.2.2** 9J-5.012 (3) (c) 4

By 1995, the Village shall prepare a hurricane emergency plan based upon the experience of Hurricane Andrew; the plan shall be in concert with the 1991 County Emergency Operations Plan and the 1991 U.S. Corps of Engineers hurricane evacuation study, and any revisions thereto.

**Objective 3.3 Post-Disaster Redevelopment** 9J-5.012 (3) (b) 8

*By 1996, adopt a post-disaster redevelopment plan.*

**Policy 3.3.1** 9J-5.012 (3) (c) 5

By 1996, based upon the 1992-1993 Hurricane Andrew post-disaster assessment, clean-up and housing repair experience, the Village shall prepare a post-disaster redevelopment plan in consultation with the South Florida Regional Planning Council and the Metro-Dade Office of Emergency Management. Special attention shall be devoted to the Building Official's permitting process to distinguish between minor and major repairs, require demolition or nuisance removal, and similar regulatory approaches.

**Policy 3.3.2**

The adopted plan shall specify that during post-disaster redevelopment, the Building Department will distinguish between those actions needed to protect public health and safety with immediate repair/cleanup and long term repair activities and redevelopment areas. Removal or relocation of damaged infrastructure and unsafe structures shall be by the Village in accordance with local procedures and those agencies and practices specified in the Metro-Dade County Emergency Operations Plan.

**Policy 3.3.3**

During post-disaster recovery periods, after damaged areas and infrastructure requiring rehabilitation or redevelopment have been identified, appropriate Village departments shall use the post-disaster redevelopment plan to reduce or eliminate the future exposure of life and property to hurricanes; incorporate recommendations of interagency hazard mitigation reports; analyze and recommended to the Village Council hazard mitigation options for damaged

public facilities; and recommend amendments, if required, to the Village Master Plan.

**Policy 3.3.4**

Unsafe conditions and inappropriate uses identified in the post-disaster recovery phase will be eliminated as opportunities arise. The Village shall make damage assessments throughout the Village and "tag" buildings to indicate that they have been inspected and what condition they are in. Building permits shall be required to repair all damage. Temporary repair permits may be granted for up to 30 days in emergency situations. The Village shall notify the owners of buildings for which a building permit is required in order to repair damage. Qualified personnel shall perform all inspections.

**Objective 3.4 Level of Service and Public Facility Timing** 9J-5.012 (3) (b) 11

*Achieve and maintain Level-of-Service standards through a concurrency management system with a phased capital improvement schedule.*

**Policy 3.4.1** 9J-5.012 (3) (c) 12

The Village shall implement the concurrency management system contained in this plan and the Village shall supplement the concurrency management system with which will be further detailed in land development code capital improvements when appropriate and necessary to meet Level-of-Service standards concurrent with the impact of development.

**Objective 3.5 Hurricane Damage Avoidance**

*Minimize damage from any hurricane storm surge. See Policies for measurability.*

**Policy 3.5.1** 9J-5.012 (3) (c) 3

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions requiring minimum building setbacks from the ocean. Construction shall not be permitted seaward of the Coastal Construction Control Line, except that non habitable major and minor structures (as defined in 16B-33.002(54), FAC) and restaurants may be permitted so long as: 1) they are approved by a Coastal Construction Control Line permit granted by the State of Florida Department of Natural Resources; 2) at least 50 percent of the permitted area is free of any such structures; 3) no such individual structure shall exceed 15 percent of the permitted area.

**Policy 3.5.2** 9J-5.012 (3) (c) 3 and 9J-5.013 (2) (c) 6

The Village shall enforce flood damage prevention regulations which ensure that the first floor of all new residential construction is at or above the flood elevation specified on the FEMA Flood Insurance Rate Map and which ensure that the first floor of all new non-residential construction is either at or above the flood elevation specified in the FEMA Flood Insurance Rate Map or in accordance with FEMA approved waterproof construction specifications. The Village manager shall design and promulgate specific management techniques to ensure effective enforcement.

**Policy 3.5.3**

By the date required by state statute or sooner, the Village shall enact and enforce land development code provisions limiting the amount of fill which may be added to property in conjunction with development and redevelopment. The purpose of the limit will be to minimize the high water elevation of storm surge or other flooding which may result within the Village. At a minimum, fill shall be limited so as to ensure that post development runoff does not exceed peak pre development runoff.

**Policy 3.5.4**

The Village shall monitor: 1) changes to the County Emergency Operations Plan, including any hazard mitigation annexes that may be added thereto, and 2) future interagency hazard mitigation reports. Recommendations of such annexes and reports shall be considered for addition to the Key Biscayne Master Plan as appropriate. Recommendations of such annexes and reports shall be considered as the basis for amending the Key Biscayne Land Development Code as appropriate.

**Policy 3.5.5**

Permitted population density maximums shall be reduced in accordance with the Future Land Use Map of this plan to better coordinate with the 1991 Metropolitan Dade County Emergency Operations Plan, which is the local hurricane evacuation plan for Key Biscayne, and the 1991 lower Southeast Florida Hurricane Evacuation Plan, the regional hurricane evacuation plan.

**Policy 3.5.6**

The Village shall limit its funding of public infrastructure expansion if such funding and such expansion would have the effect of directly subsidizing a specific private development in the Village.

**Objective 3.6 Commercial Redevelopment**

*No later than 2004, achieve private revitalization of at least one Crandon Boulevard property that has a blighting impact on the Village and is likely to sustain significant hurricane damage.*

**Policy 3.6.1** 9J-5.012 (3) (c) 6

By the date required by state statute or sooner, the Village shall enact and enforce land development code standards and incentives to achieve development, renovated development and/or redevelopment that meets high signage, landscaping, circulation/parking and other development standards, all in conformance with the flood damage prevention regulations required by Conservation and Coastal Management Policy 3.5.2.

Note: The following 9J-5 FAC policies are not applicable to Key Biscayne:

- Policy 9J-5.012 (3) (c) 11 deepwater ports

- Policy 9J-5.013 (c) 1 water wells
- Policy 9J-5.013 (c) 2 extraction of minerals
- Inform the Florida Department of State, Division of Historical Resources that, to the best knowledge of Village officials based on documentation supplied by the Florida Department of State and Dade County, all archaeological and standing structure sites identified in the Florida site file as being located on Key Biscayne are NOT in the Village of Key Biscayne, but rather in the unincorporated portions of Dade County located on the Island of Key Biscayne. The structures are: 1) the North Base Marker at the Key Biscayne Golf Course and 2) the Cape Florida Lighthouse in Bill Baggs Park at the tip of the Island of Key Biscayne. The sites are: 1) the Bear Cut Preserve, 2) Cape Florida, 3) Fort Bankhead and 4) the Light keeper's house foundation.

## RECREATION AND OPEN SPACE

**GOAL 1 PROVIDE A DESIRABLE LEVEL OF PUBLIC RECREATION AND OPEN SPACE FACILITIES TOGETHER WITH SUPPLEMENTAL PRIVATE RECREATION AND OPEN SPACE FACILITIES.**

**Objective 1.1 Waterfront Access** 9J-5.014 (3) (b) 1

*Achieve one municipal ocean beach access point within the Village no later than 2004.*

**Policy 1.1.1** 9J-5.014 (3) (c) 3

The Village shall enforce an existing agreement with a private property owner calling for provision of beach access as a condition for development approval. The accessway so provided shall be open to the general public.

**Objective 1.2 School Playfield Access** 9J-5.014 (3) (b) 1

*Assure resident access to the elementary school playfield by 1995.*

**Policy 1.2.1** 9J-5.014 (3) (c) 5

The Village shall seek joint use agreement with the School Board to assure resident access to the school's playfields.

**Objective 1.3 Public Recreation Facilities** 9J-5.014 (3) (b) 3

*Achieve a system of public park and recreation lands which provides at least 2.5 acres per 1,000 people permanent population together with the appropriate range of facilities.*

**Policy 1.3.1**

The Village shall reserve for recreation use all of the Village-owned land designated on the Future Land Use Map. The Village shall actively seek to acquire through purchase, long term lease and/or donation, sufficient additional acreage to meet the standard of 2.5 acres per 1,000 people permanent population. The standard of 2.5 acres per 1,000 people permanent population shall be used for concurrency purposes.

**Policy 1.3.2** 9J-5.014 (3) (c) 4

By the date required by state statute, the Village shall conduct a thorough study of the feasibility of obtaining alternative sites needed to achieve and maintain a Level of Service standard of at least 2.5 acres of local public park land per 1,000 permanent population.

**Policy 1.3.3** 9J-5.014 (3) (c) 5

The Village shall continue to pursue the acquisition (purchase or lease) of additional park land including an addition to Calusa Park and other sites as necessary in order to meet the above Level of Service standard as outlined in the Capital Improvement Schedule.

**Policy 1.3.4** 9J-5.014 (3) (c) 5

As acquisition of the park tracts is assured, the Village shall finalize detailed planning for facilities such as ball fields, playgrounds and a community center. A phased implementation plan shall be initiated.

**Policy 1.3.5**

No later than December 31, 1994, the Village shall explore a recreation impact fee to help finance acquisitions and improvements.

**Objective 1.4 Open Space** 9J-5.014 (3) (b) 4

*Achieve some passive public open space in the central part of the Village, some semi-public open space on the waterfront plus private open space in conjunction with any new private development.*

**Policy 1.4.1** 9J-5.014 (3) (c) 1

By the date required by state statute or sooner, the Village shall enact and enforce as part of the land development code: 1) minimum front, side and rear **residential** setbacks, and 2) minimum pervious open space for all new construction. Definitions and standards will be included. The amount of open space required by these regulations shall be consistent with the high property values of the island and the need to ensure reasonably satisfactory levels of access to light and air, but pervious area shall not be less than 30 percent of total site area for the average single family residential site.

**Policy 1.4.2** 9J-5.014 (3) (c) 2

By the date required by state statute or sooner, the Village shall enact and enforce a land development code zoning district to implement the **Waterfront Recreation and Open Space** land use category and thereby preserve such open space uses as the beach club and yacht club. The amount of open space required by these regulations shall be consistent with the high property values of the island and the need to ensure reasonably satisfactory levels of access to light and air, but in no case shall previous area be less than 15 percent of the entire site.

**Policy 1.4.3** 9J-5.014 (3) (c) 2

The Village shall evaluate the desirability of developing a village center in tandem with central area public open space.

**Objective 1.5 Public-Private Coordination** 9J-5.014 (3) (c) 2

*By 2004, achieve a fully coordinated system of recreational resources.*

**Policy 1.5.1**

By 1996, the Village Manager or designee shall complete an inventory of all private and semi-public recreational facilities. This survey will be used in finalizing the public recreational facilities plan described in Policy 1.3.3.

## INTERGOVERNMENTAL COORDINATION

**GOAL 1 TO MAINTAIN OR ESTABLISH PROCESSES TO ASSURE COORDINATION WITH OTHER GOVERNMENTAL ENTITIES WHERE NECESSARY TO IMPLEMENT THIS PLAN.**

**Objective 1.1 Coordination with the County Plan and School Board** 9J-5.015 (3) (b) 1

*Achieve consistency between the Village plan and both the Metro-Dade County Comprehensive Plan and the City of Miami Comprehensive Plan (and amendments thereto); achieve coordination with the plans of the Dade County School Board. See policies throughout this element for measurability.*

**Policy 1.1.1** 9J-5.015 (3) (c) 5

The Village shall continue to monitor the Metro-Dade County Comprehensive Plan process as the County Plan is updated and revised in conjunction with its Evaluation and Appraisal Report.

**Policy 1.1.2** 9J-5.015 (3) (c) 1

The Village shall maintain an active dialogue with the School Board staff relative to any plans for the elementary school within the Village.

**Policy 1.1.3** 9J-5.015 (3) (c) 2 and 4

The Village will utilize the informal mediation process of the South Florida Regional Planning Council in order to try to resolve annexation and other conflicts with other governmental entities; the Village will enter into mediations on a nonbinding basis.

**Policy 1.1.4** 9J-5.015 (3) (c) 7

The Village will thoroughly review and compare proposed development in the City of Miami and Dade County with proposed development in the Village Comprehensive Plan for consistencies and conflicts between identical elements and between plans as a whole. Where appropriate, the Village will respond at public hearings, through memoranda, or through the regional planning council's mediation process.

**Policy 1.1.5**

Implement activities associated with the Amended and Restated Interlocal Agreement for Public School Facility Planning in Miami-Dade County, including, but not limited to coordinating City, County and School Board plans based upon consistent projections of the amount, type and distribution of population growth and student enrollment; participating in decision-making through floating membership on the School Board's School Site Planning and Construction Committee regarding potential sites for new schools and proposals for significant renovation, the location of relocatables or additions to existing buildings, and potential closure of existing schools; and collaborating to identify options aimed to provide the capacity to accommodate anticipated student enrollment demand associated with increases in residential development potential.

**Policy 1.1.6**

Village shall coordinate with the Miami-Dade County Public Schools and other parties to the adopted Amended and Rested Interlocal Agreement for Public School Facility Planning to establish Level of Service Standards (including Interim LOS standards) for public school facilities and any amendments affecting public school concurrency.

**Objective 1.2 Master Plan Impact and Implementation Coordination** 9J-5.015 (3) (b) 2

*Establish mechanism to coordinate the impact of development proposed in the Village Master Plan with other jurisdictions.*

**Policy 1.2.1** 9J-5.015 (3) (c) 1

No later than 1999, the Village shall consider and attempt to consummate as appropriate interlocal agreements generally of the type described below:

Sewers: An agreement to cooperate and coordinate with appropriate County agencies for the extension of sewers.

Solid Waste: An agreement to cooperate and coordinate with the County Solid Waste Management Department for the disposal of solid waste generated in the Village.

Lease of Calusa Park: A lease agreement by which the Village would commit to maintain the recreation facilities at the Calusa Park for the benefit of all Dade County residents. This site and/or others identified herein and/or St. Agnes field (a private school facility that may be available part time on a lease basis) are needed to meet Village recreation level-of-service standards.

Lease of Virginia Key Site(s) for Recreation: A lease agreement by which the Village would commit to develop and maintain recreation facilities at one or more sites on Virginia Key. These sites and/or others identified herein and/or St. Agnes field (a private school facility that may be available part time on a lease basis) are needed to meet Village recreation level-of-service standards.

Expansion of Calusa Park into Crandon Park: An agreement to cooperate and coordinate with the County Parks Department for the expansion of Calusa Park to accommodate play fields. This site and/or others identified herein and/or St. Agnes field (a private school facility that may be available part time on a lease basis) are needed to meet Village recreation level-of-service standards. It is understood that pursuit of the desired agreement for Calusa Park will require the Village to petition Dade County government to modify its current plan for Crandon Park.

Bill Baggs State Park: An agreement to cooperate and coordinate with the Florida Department of Environmental Protection for the provision of play fields at Bill Baggs State Park. This site and/or others identified herein and/or St. Agnes field (a private school facility that may be available part time on a lease basis) are needed to meet Village recreation level-of-service standards. It is understood that pursuit of the desired agreement for Bill Baggs State Park will require the Village to petition an

agency of state government to modify its current plan for Bill Baggs State Park.

Key Biscayne Elementary School: An agreement to cooperate and coordinate with the Dade County School Board to make the Key Biscayne Elementary School playground available for community use.

Crandon Boulevard: An agreement to cooperate and coordinate with the Dade County Public Works Department and the Dade County Transit Agency to achieve an improved Crandon Boulevard streetscape.

**Policy 1.2.2** 9J-5.015 (3) (c) 1

The Village shall maintain an active dialogue with the Metro-Dade Planning Department and other County agencies relative to limiting land use intensity between the Village and the maintained.

**Policy 1.2.3** 9J-5.015 (3) (c) 3

The Village Manager shall assist the County in providing information to the residents of the Village relative to services provided by the County, e.g., solid waste, potable water, sewers, transit and hurricane response planning. Such information may be disseminated through a Village newsletter, Village Hall counter handouts, notices posted at the Village Hall, and/or other appropriate means.

**Policy 1.2.4** 9J-5.015 (3) (c) 6

The Village shall contribute to the improvement of Biscayne Bay water quality through a combination of (a) implementation of a master drainage plan, (b) replacement of septic tanks with sanitary sewers tied into the County system, (c) mandating on-site stormwater detention and (d) marina siting standards.

**Policy 1.2.5** 9J-5.015 (3) (c) 6

The Village shall contribute to the improvement of Biscayne Bay water quality by continuing to: 1) have a Village representative periodically consult with the Biscayne Bay Shoreline Development Review Committee and 2) have relevant bay front projects reviewed by the Committee. The Village shall cooperate with the regulatory functions of the Florida Department of Environmental Protection and the National Park Service.

**Objective 1.3 Level of Service Standards Coordination** 9J-5.015 (3) (b) 3

*Ensure coordination with Metro-Dade County in establishing level-of-service standards for sewage, and potable water.*

**Policy 1.3.1** 9J-5.015 (3) (c) 7

Monitor changes to the adopted level-of-service standards of Metro-Dade County and appropriately adjust its own level-of-service standards accordingly.

## CAPITAL IMPROVEMENTS

**GOAL 1 TO UNDERTAKE CAPITAL IMPROVEMENTS NECESSARY TO PROVIDE ADEQUATE INFRASTRUCTURE AND A HIGH QUALITY OF LIFE, WITHIN SOUND FISCAL PRACTICES.**

**Objective 1.1 The Annual Capital Improvement Program Process** 9J-5.016 (3) (6) 1

*Achieve annual Village Council use of this Element as the framework to monitor public facility needs as a basis for annual capital budget and five-year program preparation.*

**Policy 1.1.1** 9J-5.016 (3) (c) 7

As part of the annual budget process, staff and engineering studies shall form the basis for preparation of a five-year capital improvement program, including one year capital budget, to further the master plan elements.

**Policy 1.1.2** 9J-5.016 (3) (c) 3

The capital improvement program shall include a drainage facility improvement/replacement program based upon the 1993 drainage master plan.

**Policy 1.1.3** 9J-5.016 (3) (c) 1

In setting priorities, the following kinds of criteria shall be used by the Village Council; in all cases, financial feasibility or budget impact will be assessed:

- Public safety projects: any project to ameliorate a threat to public health or safety.
- Quality of life projects: any project that would enhance the quality of life, such as a public streetscape improvement project.
- Level of service or capacity projects: any project needed to maintain an adopted or otherwise desirable Level of Service.
- Redevelopment projects: any project that would assist in the revitalization of deteriorated non-residential properties.
- Biscayne Bay enhancement projects: any project which would enhance the environmental quality of Biscayne Bay.

**Policy 1.1.4** 9J-5.016 (3) (c) 9

The Village shall use designated funding mechanisms such as the drainage utility and sewer assessments to the maximum extent feasible thereby freeing up general funds (and general obligation bonds) for such Village-wide projects as park land acquisition and streetscape work as outlined in the policies of other Master Plan elements.

**Policy 1.1.5** 9J-5.016 (3) (c) 2

The Village shall pursue a prudent policy in terms of borrowing for capital improvements or other purposes.

**Policy 1.1.6**

The Village shall coordinate new residential development with the future availability of public school facilities consistent with the adopted level of service standards for public school concurrency, to ensure the inclusion of those projects necessary to address existing deficiencies in the 5-year schedule of capital improvements, and meet future needs based upon achieving and maintaining the adopted level of service standards throughout the planning period.

**Objective 1.2 Level of Service and Land Use Decisions** 9J-5.016 (3) (b) 3

*Achieve coordinated Village use of the Future Land Use Plan, financial analyses in this Element and Level of Service standards in both reviewing development applications and preparing the annual schedule of capital improvements.*

**Policy 1.2.1** 9J-5.016 (3) (c) 4

The following peak hour Level of Service (LOS) standards shall be maintained:

*Streets:* The Village shall regulate the timing of development to maintain at least the following peak hour level of service standards:

- Arterials -- "E"
- Collectors - "B"
- Local Service Streets - "A"

within the Village limits, Crandon Boulevard will be at level of service E or better, although the level of service could potentially fail slightly below E near the north Village limits.

*Sanitary Sewers in Sewered Areas:* The County-wide "maximum day flow" of the preceding year shall not exceed 98 percent of the County treatment system's rated capacity. The sewage generation standard shall be 140 average gallons per capita per day.

*Sanitary Sewers in Unsewered Areas:* Septic tanks shall be permitted only in compliance with applicable county and state agency standards; compliance shall be determined by receipt of required approvals and permits from the a Metro-Dade County Department of Environmental Resources Management and the Florida Department of Health and Rehabilitative Services.

*Potable Water:* The County-wide "maximum day flow" of the preceding year shall not exceed 98 percent of the County treatment and storage system's rated capacity. The pressure shall be at least 20 pounds per square inch at the property line. The potable water consumption standard shall be 280 average gallons per capita per day.

*Drainage:* All nonresidential development and redevelopment shall accommodate runoff to meet all Federal, state and local requirements.

*Solid Waste:* The County solid waste disposal system shall maintain a minimum of five years capacity. For Village planning purposes, a generation rate of 5.2 pounds per person per calendar day shall be used.

*Recreation:* The Village shall achieve and maintain a Level of Service standard of at least 2.5 acres of local public park land per 1,000 permanent population.

*Public School Facilities:* Upon public school concurrency becoming effective, the adopted Level of Service (LOS) standard for all Miami-Dade County public school facilities is 100% utilization of Florida Inventory of School Houses (FISH) Capacity (With Relocatable Classrooms). This LOS standard, except for Magnet Schools, shall be applicable in each public school concurrency service area (CSA), defined as the public school attendance boundary established by the Miami-Dade County Public Schools. The adopted LOS standard for Magnet Schools is 100% of FISH (With Relocatable Classrooms), which shall be calculated on a districtwide basis. Level of service standards for public school facilities apply to those traditional educational facilities, owned and operated by the Miami-Dade County Public Schools, that are required to serve the residential development within their established Concurrency Service Area. Level of service standards do not apply to charter schools. However, the capacity of both charter and magnet schools will be credited against the impact of development.

**Objective 1.3 Infrastructure in Coastal High Hazard Area** 9J-5.016 (3) (b) 2

*Spend no Village funds on infrastructure within the Village (all of which is within the coastal high-hazard area) that would have the effect of directly subsidizing development which is significantly more intensive than authorized by this Plan.*

**Policy 1.3.1**
The Village's capital improvement program schedule shall not include any infrastructure projects that would have the effect of directly causing developer applications for Land Use Plan or zoning map amendments to achieve significantly more intensive development than authorized by this plan.

**Objective 1.4 Concurrency** 9J-5.016 (3) (b) 4

*Assure the provision of public facilities concurrent with the impacts of development through a concurrency management system to be included in the 1994 land development code.*

**Policy 1.4.1** 9J-5.016 (3) (c) 6

By the date required by state statute or sooner, the Village shall enact and enforce as part of the land development code a concurrency management system which meets the requirements of 9J-5.0055. The concurrency management system shall specify that no development permit shall be issued unless the public facilities necessitated by a development (in order to meet level of service standards specified in the Comprehensive Plan) will be in place concurrent with the impacts of the development or the permit is conditional to assure that they will be in place. The requirement that no development permit shall be issued unless public facilities necessitated by the project are in place

concurrent with the impacts of development shall be effective immediately and shall be interpreted pursuant to the following:

1. *Measuring Conformance with the Level-of-Service for water, sewer, solid waste, drainage, traffic and recreation facilities.*

   Public facility capacity availability shall be determined by a set of formulas that reflect the following:

   Adding together:

   - The total design capacity of existing facilities; plus
   - The total design capacity of any new facilities that will become available concurrent with the impact of the development. The capacity of new facilities may be counted only if one or more of the following can be demonstrated:

     (A) For water, sewer, solid waste and drainage:

     (1) The necessary facilities are in place and available at the time a certificate of occupancy is issued, or

     (2) Such approval is issued subject to the condition that the necessary facilities will be in place and available when the impacts of development occur, or

     (3) The new facilities are guaranteed in an enforceable development agreement to be in place when the impacts of development occur. An enforceable development agreement may include, but is not limited to, development agreements pursuant to Section 163.3220, Florida Statutes, or an agreement or development order pursuant to Chapter 380, Florida Statutes (the Development of Regional Impact authorization).

     (B) For recreation:

     (1) Paragraphs (1)-(3) under (A) above except that construction may begin up to one year after issuance of a certificate of occupancy.

     (2) The new facilities are the subject of a binding executed contract for the construction of facilities to be completed within one year of the time the certificate of occupancy is issued, or

     (3) A development agreement as outlined in (4) above but requiring construction to begin within one year of certificate of occupancy issuance.

     (C) For traffic:

     (1) Paragraphs (A) (1) through (4) or (B) (2) above except that construction can begin up to three years after the approval date.

(2) No modification of public facility level-of-service standards established by this plan shall be made except by a duly enacted amendment to this plan.

Subtracting from that number the sum of:

- Existing volumes or flows; plus
- "Committed" volumes or flows from approved projects that are not yet constructed; plus
- The demand that will be created by the proposed project, i.e., site plan, plat or other development order.

In the case of water, sewers, solid waste and recreation, the formulas must reflect the latest population vis a vis flows or park acreage.

Design capacity shall be determined as follows:

Sewage: the capacity of the County sewage treatment system.

Water: the capacity of the County water treatment and storage system.

Solid Waste: the capacity of the County disposal system.

Drainage: The on-site detention capability and/or storm sewer capacity.

Roadways: The standard for measuring highway capacities shall be the Florida DOT Table of Generalized Two-Way Peak Hour Volumes for Urbanized Areas or other techniques that are compatible to the maximum extent feasible with FDOT standards and guidelines. The measurement of capacity may also be determined by engineering studies provided that analysis techniques are technically sound and acceptable to the Village engineer.

Recreation: Measurement shall be based on recreation data in the Comprehensive Plan plus the latest Village population estimate with any necessary interpretation provided by the Village manager or designee thereof.

Transit: The County Transit Agency bus schedules for routes within the Village.

2. *Measuring Conformance with the Level of Service for Public School Facilities:*

(A) Necessary public school facilities must be in place or under actual construction within three years after issuance of final subdivision or site plan approval, or the functional equivalent.

(B) In the event the adopted Level of Service standard of the Miami-Dade County Public Schools established Concurrency Service Area cannot

be met as a result of a proposed development's impact, the development may proceed provided at least one of the following conditions is met:

a. The development's impact can be shifted to one or more contiguous CSAs that have available capacity and is located, either in whole or in part, within the same Geographic Areas (Northwest, Northeast, Southwest, Southeast, see Figure 1A through 1D) as the proposed development; or

b. The developments' impact is mitigated, proportionate to the demand for public schools it created, through a combination of one or more appropriate proportionate share mitigation options, as defined in Section 163.3180(13)(e)1, Florida Statutes. The intent of these options is to provide for the mitigation of residential development impacts on public school facilities, guaranteed by a legal binding agreement, through mechanisms that include, one or more of the following:

    a. Contribution of land;

    b. The construction, expansion, or payment for land acquisition or construction of a permanent public school facility; or

    c. The creation of a mitigation bank based on the construction of a permanent public school facility in exchange for the right to sell capacity credits.

    The legally binding proportionate share mitigation agreement is subject to the approval of Miami Dade County School Board and the Village and must be identified in the Miami-Dade County Public School Facilities Work Program.

c. The development's impacts are phased to occur when sufficient capacity will be available.

3. *Concurrency Monitoring System*

The manager or designee thereof shall be responsible for monitoring facility capacities and development activity to ensure that the concurrency management system database is kept current, i.e., includes all existing and committed development. This database shall be used to systematically update the formulas used to assess projects. An annual report shall be prepared.

4. *Capacity Reservation*

Any development permit application which includes a specific plan for development, including densities and intensities, shall require a concurrency review. Compliance will be finally calculated and capacity reserved at time of final action of an approved final Design Review approval or building permit if no Design Review is required or enforceable developers agreement. Phasing of development is authorized in accordance with Rule 9J-5.0055. Applications for development permits shall be chronologically logged upon approval to determine rights to available

capacity. A capacity reservation shall be valid for a time to be specified in the land development code; if construction is not initiated during this period, the reservation shall be terminated.

4. *Administration*

The Village manager (or designee thereof) shall be responsible for concurrency management. The land development code shall specify administrative procedures, including an appeals mechanism, exemptions, plan modifications, burden of proof, etc.

5. *Project Impact or Demand Measurement*

The concurrency management user's procedural guide (a supplement to the land development code) will contain the formulas for calculating compliance plus tables which provide generation rates for water use, sewer use, solid waste and traffic, by land use category. Alternative methods acceptable to the Village manager or designee thereof may also be used by the applicant. For example, traffic generation may be based upon the Institute of Transportation Engineer's "Trip Generation" manual.

**Objective 1.5 Funding Capital Improvements** 9J-5.016 (3) (b) 5

*The land development code concurrency management system shall reflect both the existing approved Development of Regional Impact development orders; this system shall operate in concert with the capital improvement program, recreation impact fee and drainage utility to assure the funding and provision of needed capital improvements. See policies for measurability.*

**Policy 1.5.1** 9J-5.016 (3) (c) 5

The concurrency management system formulas shall include the public facility demands to be created by the two DRI projects (Continental, and Key Biscayne Hotel and Villas) as "committed" and the capital improvement schedule shall include the project implications of this committed demand to assure concurrency, so long as either of these development orders is in effect.

**Policy 1.5.2** 9J-5.016 (3) (c) 8

No later than December 31, 1994, the Village shall explore a recreation impact fee that would apply to all new development in order to help fund acquisition and improvements.

**Policy 1.5.3** 9J-5.017 (3) (b) 4 and (c) 8

The Village shall not give development approval to any new construction, redevelopment or renovation project which creates a need for new or expanded public capital improvement unless the project pays a proportional share of the costs of these improvements following legally prescribed criteria for such fees.

**Policy 1.5.4**

The capital improvements associated with the construction of educational facilities are the responsibility of the Miami-Dade County Public Schools. To address financial feasibility associated with public school concurrency, the Miami-Dade County Public School Facilities Work Program for educational

facilities will be incorporated by reference into the Capital Improvements Element.

**Policy 1.5.5**

The Village shall coordinate with the Miami-Dade County Public Schools, to annually update its Facilities Work Program to include existing and anticipated facilities for both the 5-year and long-term planning periods, and to ensure that the adopted level of service standard, including interim standards, will continue to be achieved and maintained. Miami-Dade County, through its annual update to the Capital Improvements Schedule, will incorporate by reference the latest adopted Miami-Dade County Public Schools Facilities Work Program for educational facilities. Miami-Dade County and the Miami-Dade County Public Schools will coordinate their planning efforts prior to and during the Miami-Dade County Comprehensive Development Master Plan Amendment process and during updates to the Miami-Dade County Public Schools Facilities Work Program.

**Policy 1.5.6**

Those capital improvements for educational facilities, as listed in the Miami-Dade County Public Schools Facilities Work Program dated September 2007 and adopted by the Miami-Dade School Board, are incorporated by reference into the Capital Improvements Element.

## CAPITAL IMPROVEMENT ELEMENT IMPLEMENTATION SYSTEMS

9J-5.016 (4) (a)

### A. Five-Year Schedule of Capital Improvements

9J-5.016 (4) (a) 1 and 2

See schedule on page 41.

### B. Other Programs

9J-5.016 (4) (b)

The other principal programs needed to implement this Element are as follows:

1. An annual capital programming and budgeting process beginning no later than July 1995 and including use of the project selection criteria contained in Policy 1.1.3; related thereto will be the annual review of this Element.

2. Completion of a master drainage plan and final approval of a drainage utility funding mechanism.

3. Preliminary financial and engineering feasibility exploration of extending sewers to the unsewered areas.

4. Amendments to the existing land development code to assure conformance to the "concurrency" requirements relative to development orders, levels of service and public facility timing as outlined in C below.

5. Exploration of park impact fees.

6. Evaluate the need for and efficacy of financing mechanism to pay for beach renourishment and dune development.

### C. Monitoring and Evaluation

9J-5.016 (5)

The Village Manager or designee shall annually prepare a status report on this Capital Improvement Element for submittal to the Village Council. The primary purpose is to update the five-year schedule including the basis for the next year's capital budget. The project evaluation criteria shall be used in the project list review and special attention shall be devoted to maintenance of the level of service standards. This entire evaluation process shall be integrated into the Village's annual budget process.

### D. Concurrency Management

9J-5.016 (4) (b) and 9J-5.0055

Concurrency management shall be implemented as articulated in Land Use Element Policy 2.14 and Capital Improvement Element Policy 1.4.1.

**CAPITAL IMPROVEMENT SCHEDULE**

| **Project** | **1994-1995** | **1995-1996** | **1996-1997** | **1997-1998** | **1998-1999** |
|---|---|---|---|---|---|
| Central Park ("tree farm") acquisition | $9,200,000[1] | | | | |
| Park Improvements | | | | | |
| Central Park | | | 1,500,000[1] | | |
| Calusa Park | | | 150,000[2] | | |
| Playfield development | | 450,000[2] | | | |
| Harbor Drive streetscape | | | | 500,000[3] | 1,000,000[3] |
| Drainage improvements | 8,000,000[4] | | | | |
| Beach access walkway and tot-lot | | 80,000[3] | | | |
| Fernwood Road streetscape | | | | | 200,000[3] |
| Ocean Lane Drive streetscape | 100,000[3] | | | | |
| Sewer Extension Plan | | | 125,000[3] | | |

Funding Sources:

(1) Bond issue
(2) County grant - $600,000
(3) Capital outlay reserve
(4) Drainage utility revenue bond

**MONITORING, UPDATING AND EVALUATION PROCEDURES, 1994-1998** 9J-5.005 (7)

1. **Annual Monitoring:**

   In conjunction with one of the plan amendment cycles, the Local Planning Agency shall annually conduct a public workshop on the Master Plan. A status report shall be provided by the Village Manager or designee and then citizen comment shall be solicited. This meeting shall be publicized by a legal notice in the newspaper plus efforts to have a news story in the Islander and flyer announcements at Village Hall. The LPA will then submit a report on the status of the Plan to the Village Council. This report may be accompanied by recommended amendments, using the normal amendment process.

2. **Five-Year Evaluation and Appraisal Report (EAR):**

   In early 1999, the Village Manager or designee shall prepare a Five-Year Evaluation and Appraisal Report in conformance with statutory requirements and with special emphasis on the extent to which the 1993 Master Plan objectives and policies have been achieved. The report will pinpoint obstacles to plan implementation and update baseline data.

3. **Revised Objectives and Policies:**

   As a part of this EAR process, amendments to the goals, measurable objectives and policies based upon the above review, focusing on the 1999-2004 period but also including longer term objectives. The citizen participation procedures used in preparing the 1993 Master Plan (plus any future modifications thereto) shall be used in amending the Plan.

## PUBLIC SCHOOL FACILITIES ELEMENT

**GOAL 1** **DEVELOP, OPERATE, AND MAINTAIN A SYSTEM OF PUBLIC EDUCATION BY MIAMI-DADE COUNTY PUBLIC SCHOOLS, IN COOPERATION WITH THE COUNTY AND OTHER APPROPRIATE GOVERNMENTAL AGENCIES, WHICH WILL STRIVE TO IMPROVE THE QUALITY AND QUANTITY OF PUBLIC EDUCATIONAL FACILITIES AVAILABLE TO THE CITIZENRY OF THE VILLAGE AND OTHER LOCAL GOVERNMENTS WITHIN THE COUNTY.**

**Objective 1.1**

*Work towards the reduction of the overcrowding which currently exists in the Miami-Dade County Public Schools, while striving to attain an optimum level of service pursuant to Objective 1.2. Provide additional solutions to overcrowding so that countywide enrollment in Miami-Dade County's public schools will meet state requirements for class size by September 1, 2010.*

**Policy 1.1.1**

Cooperate with the Miami-Dade County Public Schools in their efforts to continue to provide new student stations through the Capital Outlay program, in so far as funding is available.

**Policy 1.1.2**

Collect impact fees from new development for transfer to the Miami-Dade County Public Schools to offset the impacts of these additional students on the capital facilities of the school system.

**Policy 1.1.3**

Cooperate with the Miami-Dade County Public Schools in their efforts to develop and implement alternative educational facilities, such as primary learning centers, which can be constructed on small parcels of land and relieve overcrowding at elementary schools, in so far as funding and rules permit.

**Policy 1.1.4**

Cooperate with the Miami-Dade County Public Schools in their efforts to provide public school facilities to the students of the Village, which operate at optimum capacity, in so far as funding available. Operational alternatives may be developed and implemented, where appropriate, which mitigates the impacts of overcrowding while maintaining the instructional integrity of the educational programs.

**Policy 1.1.5**

Cooperate with the Miami-Dade County Public Schools in their efforts to maintain and/or improve the established level of service (LOS), for Public Educational Facilities, as established for the purposes of school concurrency.

**Policy 1.1.6**

The Village will through the Staff Working Group of the Interlocal Agreement for Public School Facility coordinate with Miami-Dade County Public

Schools, and applicable municipalities to review annually the Educational Element and school enrollment projections.

**Objective 1.2**

*The Village shall coordinate new residential development with the future availability of public school facilities consistent with the adopted level of service standards for public school concurrency, to ensure the inclusion of those projects necessary to address existing deficiencies in the 5-year schedule of capital improvements, and meet future needs based upon achieving and maintaining the adopted level of service standards throughout the planning period.*

**Policy 1.2.1**

Public school concurrency shall be applied on a less than district-wide basis in the form of concurrency service areas, except for Magnet Schools where public school concurrency shall be applied on a district wide basis. Level of Service standards for public school facilities apply to those traditional educational facilities, owned and operated by Miami-Dade County Public Schools, that are required to serve the residential development within their established concurrency service area. Level of Service standards do not apply to charter schools. However, the actual enrollment (October Full Time Equivalent (FTE)) of both magnet and charter schools as a percentage of the total district enrollment will be credited against the impact of development.

**Policy 1.2.2**

The adopted Level of Service (LOS) Standard for all Miami-Dade County Public School facilities is 100% FISH Capacity (With Relocatable Classrooms). This LOS Standard, except for Magnet Schools, shall be applicable in each public school concurrency service area (CSA), defined as the public school attendance boundary established by the Miami-Dade County Public Schools. The adopted LOS standard for Magnet Schools is 100% of FISH (With Relocatable Classrooms) which shall be calculated on a district-wide basis.

**Policy 1.2.3**

It is the goal of the Village and Miami-Dade County Public Schools for all public school facilities to achieve 100% utilization of Permanent FISH (No Relocatable Classrooms) by January 1, 2018. To help achieve the desired 100% of permanent FISH utilization by 2018, Miami-Dade County Public Schools should continue to decrease the number of relocatable classrooms over time. Public school facilities that achieve 100% utilization of Permanent FISH capacity (No Relocatable Classrooms) should, to the extent possible, no longer utilize relocatable classrooms, except as an operational solution. Relocatable classrooms may be used by the Miami-Dade County Public School System as an operational solution during replacement, renovation, remodeling or expansion of a public school facility; and in the event of a disaster or emergency which prevents the School Board from using a portion of the affected school facility.

By December 2010, Miami-Dade County in cooperation with Miami-Dade County Public Schools will assess the viability of modifying the adopted LOS

standard to 100% utilization of Permanent FISH (No Relocatable Classrooms) for all CSAs.

In the event the adopted LOS standard of the Miami-Dade County Public Schools established CSA cannot be met as a result of a proposed development's impact, the development may proceed provided at least one of the following conditions is met:

1. The development's impact can be shifted to one or more contiguous CSAs that have available capacity and is located, either in whole or in part, within the same Geographic Areas (Northwest, Northeast, Southwest, Southeast, see Figure 1A through 1D) as the proposed development; or

2. The developments' impact is mitigated, proportionate to the demand for public schools it created, through a combination of one or more appropriate proportionate share mitigation options, as defined in Section 163.3180(13)(e)1, Florida Statutes. The intent of these options is to provide for the mitigation of residential development impacts on public school facilities, guaranteed by a legal binding agreement, through mechanisms that include, one or more of the following:

    a. Contribution of land;

    b. The construction, expansion, or payment for land acquisition or construction of a permanent public school facility; or

    c. The creation of a mitigation bank based on the construction of a permanent public school facility in exchange for the right to sell capacity credits.

    The legally binding proportionate share mitigation agreement is subject to the approval of Miami Dade County School Board and the Village and must be identified in the Miami-Dade County Public School Facilities Work Program.

3. The development's impacts are phased to occur when sufficient capacity will be available.

If none of the conditions are met, the development shall not be approved.

**Policy 1.2.4**

Concurrency Service Areas (CSA) shall be delineated to: (1) Maximize capacity utilization of the facility; (2) Limit maximum travel times and reduce transportation costs; (3) Acknowledge the effect of court-approved desegregation plans; (4) Achieve socio-economic, racial, cultural and diversity objectives; and (5) Achieve other relevant objectives as determined by the School Board's policy on maximization of capacity. Periodic adjustments to the boundary or area of a CSA may be made by the School Board to achieve the above stated factors. Other potential amendments to the CSAs shall be considered annually at the Staff Working Group meeting to take place each year no later than April 30 or October 31, consistent with Section 9 of the Interlocal Agreement for Public School Facility Planning.

**Policy 1.2.5**

The Village through the implementation of the concurrency management system and Miami-Dade County Public School Facilities Work Program for educational facilities, shall ensure that existing deficiencies are addressed and the capacity of schools is sufficient to support residential development at the adopted level of service (LOS) standards throughout the planning period in the 5-year schedule of capital improvements.

**Policy 1.2.6**

Pursuant to Chapter 163, Florida Statutes, the Miami-Dade County Public Schools 5-Year District Facilities Work Program, developed by Miami-Dade Public Schools and adopted by the Miami-Dade County School Board on September 5, 2007, is incorporated by reference into the Village's Capital Improvement Plan, as applicable. The Village shall coordinate with Miami-Dade County Public Schools to annually update its Facilities Wok Program and/or concurrency service area maps to include existing and anticipated facilities for both the 5-year and long-term planning periods, and to ensure that the adopted level of service standard will continue to be achieved and maintained. The Village, through its annual updates of the 5-year Capital Improvements Element and Program, will incorporate by reference the latest adopted Miami-Dade County Public Schools Facilities Work Program for educational facilities. The Village, Miami-Dade County Public School, and other local governments will coordinate their planning efforts prior to and during the Village's Comprehensive Land Use Plan amendment process, and during updates to the Miami-Dade County Public Schools Facilities Work Program. The Miami-Dade County Public Schools Facilities Work Program will be evaluated on an annual basis to ensure that the level of service standards will continue to be achieved and maintained throughout the planning period.

**Objective 1.3**

*Obtain suitable sites for the development and expansion of public education facilities.*

**Policy 1.3.1**

In the selection of sites for future educational facility development, the Village encourages the Miami-Dade County Public Schools to consider whether a school is in close proximity to residential areas and is in that a location that would provide a logical focal point for community activities.

**Policy 1.3.2**

Where possible, the Miami-Dade County Public Schools should seek sites which are adjacent to existing or planned public recreation areas, community centers, libraries, or other compatible civic uses for the purpose of encouraging joint use facilities or the creation of logical focal points for community activity.

**Policy 1.3.3**

The Village acknowledges and concurs that, when selecting a site, the Miami-Dade County Public Schools will consider if the site meets the minimum size criteria as recommended by the State Department of Education or as determined to be necessary for an effective educational environment.

**Policy 1.3.4**

When considering a site for possible use as an educational facility, the Miami-Dade County Public Schools should review the adequacy and proximity of other public facilities and services necessary to the site such as roadway access, transportation, fire flow and portable water, sanitary sewers, drainage, solid waste, police and fire services, and means by which to assure safe access to schools, including sidewalks, bicycle paths, turn lanes, and signalization.
When considering a site for possible use as an educational facility the Miami Dade County Public Schools should consider whether the present and projected surrounding land uses are compatible with the operation of an educational facility.

**Policy 1.3.5**

The Village will continue to cooperate with Miami-Dade County Public Schools and adjacent local governments in utilizing Miami-Dade County Public Schools as emergency shelters during county emergencies.

**Objective 1.4**

*Miami-Dade County Public Schools will continue to enhance effectiveness of the learning environment.*

**Policy 1.4.1**

Miami-Dade County Public Schools is encouraged to continue the design and construction of educational facilities which create the perception of feeling welcome, secure and positive about the students' school environment and experiences.

**Policy 1.4.2**

The Miami-Dade County Public Schools is encouraged to continue to design and construct facilities which better provide student access to technology designed to improve learning, such as updated media centers and science laboratories.

**Policy 1.4.3**

The Miami-Dade County Public Schools is encouraged to continue to improve existing educational facilities, in so far as funding is available, through renovation and expansion to better accommodate increasing enrollment, new educational programs and other activities, both curricular and extra-curricular.

**Objective 1.5**

*The School Board, the Village, and other appropriate jurisdictions shall establish and implement mechanisms for on-going coordination and communication to ensure the adequate provision of public educational facilities.*

**Policy 1.5.1**

The Village shall coordinate and cooperate with the Miami-Dade County Public Schools, the State, County, municipalities, and other appropriate

agencies to develop or modify rules and regulations in order to simplify and expedite proposed new educational facility developments and renovations.

**Policy 1.5.2**

The location of future educational facilities should occur where capacity of other public facilities and services is available to accommodate the infrastructure needs of the educational facility.

**Policy 1.5.3**

The Miami-Dade County Public Schools should coordinate school capital improvement plans with the planned capital improvement projects of the Village, other municipalities, and the County.

**Policy 1.5.4**

The Village shall cooperate with the Miami-Dade County Public Schools in their efforts to ensure that they are not obligated to pay for off-site infrastructure in excess of their fair share of the costs.

**Policy 1.5.5**

The Village shall work with the County and Miami-Dade Public Schools to periodically review the Educational Facilities Impact Fee Ordinance to strive to ensure that the full eligible capital costs associated with the development of public school capacity (new schools and expansion of existing ones) are identified when updating the impact fee structure. Pursuant to the terms of the state mandated Interlocal Agreement, the County and School Board shall annually review the Ordinance, its formula, the Educational Facilities Impact Fee methodology and technical report, in order to make recommendations for revisions to the Board of County Commissioners.

**Policy 1.5.6**

The Village and the Miami-Dade County Public Schools will annually review the Public School Facilities Element and the Village will make amendments, if necessary.

**Policy 1.5.7**

The Village shall seek to coordinate with the Miami-Dade County Public Schools in formalizing criteria for appropriate sharing of responsibility for required off-site facility improvements attributable to construction of new public schools or expansion of existing ones. The criteria should be prepared prior to the next full review of the School Impact Fee Ordinance.

**Policy 1.5.8**

The Village shall coordinate with the Miami-Dade County Public Schools and local governments to eliminate infrastructure deficiencies surrounding existing school sites.

**Policy 1.5.9**

The Village and the Miami-Dade County Public Schools shall coordinate efforts to ensure the availability of adequate sites for the required educational facilities.

**Policy 1.5.10**

The Village and the Miami-Dade County Public Schools shall coordinate the appropriate roles and responsibilities of affected governmental jurisdictions in ensuring the timely, orderly and efficient provision of adequate educational facilities.

**Policy 1.5.11**

The Village will account for the infrastructure needs of new, planned or expanded educational facilities when formulating and implementing its own capital improvement plans.

**Objective 1.6**

*Miami-Dade County Public Schools, in conjunction with the Village and other appropriate agencies, will strive to improve security and safety for students and staff.*

**Policy 1.6.1**

Continue to cooperate with the Miami-Dade County Public Schools to develop and/or implement programs and policies designed to reduce the incidence of violence, weapons and vandalism on school campuses. Encourage the design of facilities, which do not encourage criminal behavior and provide clear sight lines from the street.

**Policy 1.6.2**

Continue to cooperate with the Miami-Dade County Public Schools to develop and/or implement programs and policies designed to reduce the number of incidents related to hazardous conditions as reported by the Environmental Protection Agency (EPA), the fire marshal, the State Department of Education (DOE), and other appropriate sources.

**Policy 1.6.3**

Continue to cooperate with the Miami-Dade County Public Schools to provide for the availability of alternative programs for at-risk students at appropriate public educational facilities.

**Policy 1.6.4**

Coordinate with the Miami-Dade County Public Schools and the County to provide for pedestrian and traffic safety in the area of schools, and signalization for educational facilities.

**Education Element Map Series:**

Consistent with Section 163.3177(12)(g), Florida Statutes, a map showing existing and future conditions is included in the element. Figure 1D has been included in this Element which indicates the location of existing and proposed schools and ancillary facilities over the 5 year planning period. The map was prepared by Miami Dade County and is included, along with maps for existing and proposed public schools in four areas of the County that are generally equivalent to the proposed Educational Impact Fee Benefit Districts in the County's Education Element. The entire map series prepared by Miami Dade County as part of its support data, inventory and analysis dated October 30, 2007 is hereby adopted by reference.

## PART II APPENDIX A

## CONSISTENCY OF THE KEY BISCAYNE MASTER PLAN WITH THE STATE COMPREHENSIVE PLAN

This appendix is provided to fulfill the requirements of 9J-5.021, FAC.
It is not an officially adopted portion of the Master Plan.

| State Goal | State Policy Number | Village Element | Village Policy Number |
|---|---|---|---|
| Housing (5) | 2 | Housing | 1.2.1 |
| | 3 | Housing | 1.4.1, 1.4.2 |
| | 4 | Housing | 1.1.2 |
| Public Safety (7) | 25 | Coastal/Conservation | 3.1.1, 3.5.1, 3.5.2, 3.5.3 |
| Water Resources (8) | 8 | Coastal/Conservation | 1.3.2, 1.5.1 |
| | 10 | Coastal/Conservation | 1.2.1-1.2.3 |
| | 11 | Infrastructure | 1.5.1, 1.5.2 |
| | 12 | Infrastructure | 1.1.2, 1.2.1 |
| Coastal and Marine (9) | 2 | Coastal/Construction | 2.3.1 |
| | 3 | Coastal/Construction | 3.1.1 |
| | 4 | Coastal/Construction | 1.2.1, 1.3.1-1.3.3, 1.4.1, 1.4.2, 2.2.1-2.2.3 |
| | 5 | Coastal/Construction | 2.5.1 |
| | 6 | Coastal/Construction | 2.1.1, 2.1.2 |
| | 7 | Coastal/Construction | 1.3.2, 1.3.3, 1.4.1 |
| | 10 | Coastal/Construction | 2.1.1 |
| Natural & Recreational (10) | 1 | Coastal/Construction | 1.3.1-1.3.3, 1.4.1, 1.4.2 |
| | 2 | Recreation | 1.3.1-1.3.3 |
| | 3 and 4 | Coastal/Construction | 1.4.1, 1.4.2 |
| | 7 | Coastal/Construction | 1.3.1, 1.3.2 |
| Air Quality (11) | 1 | Coastal/Construction | 1.1.1 |
| | 2 | Traffic | 1.1.1 |
| Hazardous/ Non-Hazardous (13) | 1 | Infrastructure | 1.1.1 |
| | 6 | Conservation | 1.2.3 |
| Land Use (16) | 5 | Land Use | 2.1.4 |
| | 6 | Land Use | 2.2.1, 2.1.2 |
| Public Facilities (18) | 3 | Capital Improv. | 1.1.4, 1.4.1, 1.5.2 |

**PART II APPENDIX A (Continued)**

**CONSISTENCY OF THE KEY BISCAYNE MASTER PLAN WITH THE STATE COMPREHENSIVE PLAN**

| State Goal | State Policy Number | Village Element | Village Policy Number |
|---|---|---|---|
| Transportation (20) | 3 | Traffic | 1.3.1 |
| | 12 | Traffic | 1.2.1 |
| | 13 | Traffic | 1.3.1 |
| Government Efficiency (21) | 1 | Iner. Govern. | 1.2.1 |

## PART II APPENDIX B

## CROSS ELEMENT IMPLEMENTATION PLAN
## VILLAGE OF KEY BISCAYNE

This appendix is provided for informational purposes. It is not an officially adopted portion of the Master Plan.

The following constitute major Master Plan policies that have a target date and therefore taken together constitute an implementation program. They are listed chronologically according to the target date in the plan. Most of these policies are contained in more than one element. These cross-element references show internal plan consistency. Only items to be completed during the 1994-1999 period are listed; all other policies have a target date of after 1999.

### 1994

1. Explore recreation impact fee

   Recreation and Open Space and Capital Improvement Elements

### 1995

1. Development Code: Revise by the date required by state statute; the code must include zoning, subdivision, floodplain, drainage environmentally sensitive lands, parking, signs and concurrency of public facilities. Specific Plan-mandated policies to be addressed by the code include:

   - commercial redevelopment incentives
   - revised parking, access, landscaping and related site planning standards
   - architectural design review
   - drainage standards including detention, erosion control, swale protection and level of service standard
   - ocean setback standards
   - minimum previous area
   - dune enhancement; dune and other environmentally sensitive land protection
   - zoning provisions for lift stations and similar utility facilities
   - bike rack requirements
   - single family setback and bulk standards
   - group home provisions
   - landscape section provisions referring to plant list and irrigation requirements
   - Bay-front environmental regulations
   - turtle-sensitive beach lighting
   - two water-oriented zoning districts
   - marina standards
   - concurrency management system with level of service standards

   All elements

2. Five-year capital programming process

   All elements

3. Activate stormwater utility including bonding based upon 1993 drainage master plan

   Land Use and Infrastructure Elements

4. Prepare hurricane emergency plan

   Conservation/Coastal Element

5. Explore feasibility of obtaining sites needed to achieve and maintain a LOS of 2.5 acres of local public park land per 1,000 permanent residents.

**1996**

1. Complete solid waste collection study

   Infrastructure

2. Initiate dune and beach enhancement fund

   Conservation/Coastal and Capital Improvement Elements

3. Adopt a post-disaster redevelopment plan

   Conservation/Coastal Element

4. Complete survey of private recreational facilities as basis for public facilities plan refinement

   Recreation and Open Space, and Capital Improvement Elements

5. Begin drainage improvements including mitigation of Bay outfalls

   Land Use, Infrastructure, Conservation/Coastal and Capital Improvement Elements

**1998**

1. Complete an engineering plan to extend sanitary sewers to remaining unsewered areas.

**1999**

1. Complete historic buildings survey

   Land Use, Housing and Coastal/Conservation Elements

2. Complete streetscape and speed control plan for Harbor Drive, Fernwood Road and West Mashta Drive

   Traffic and Capital Improvements Elements

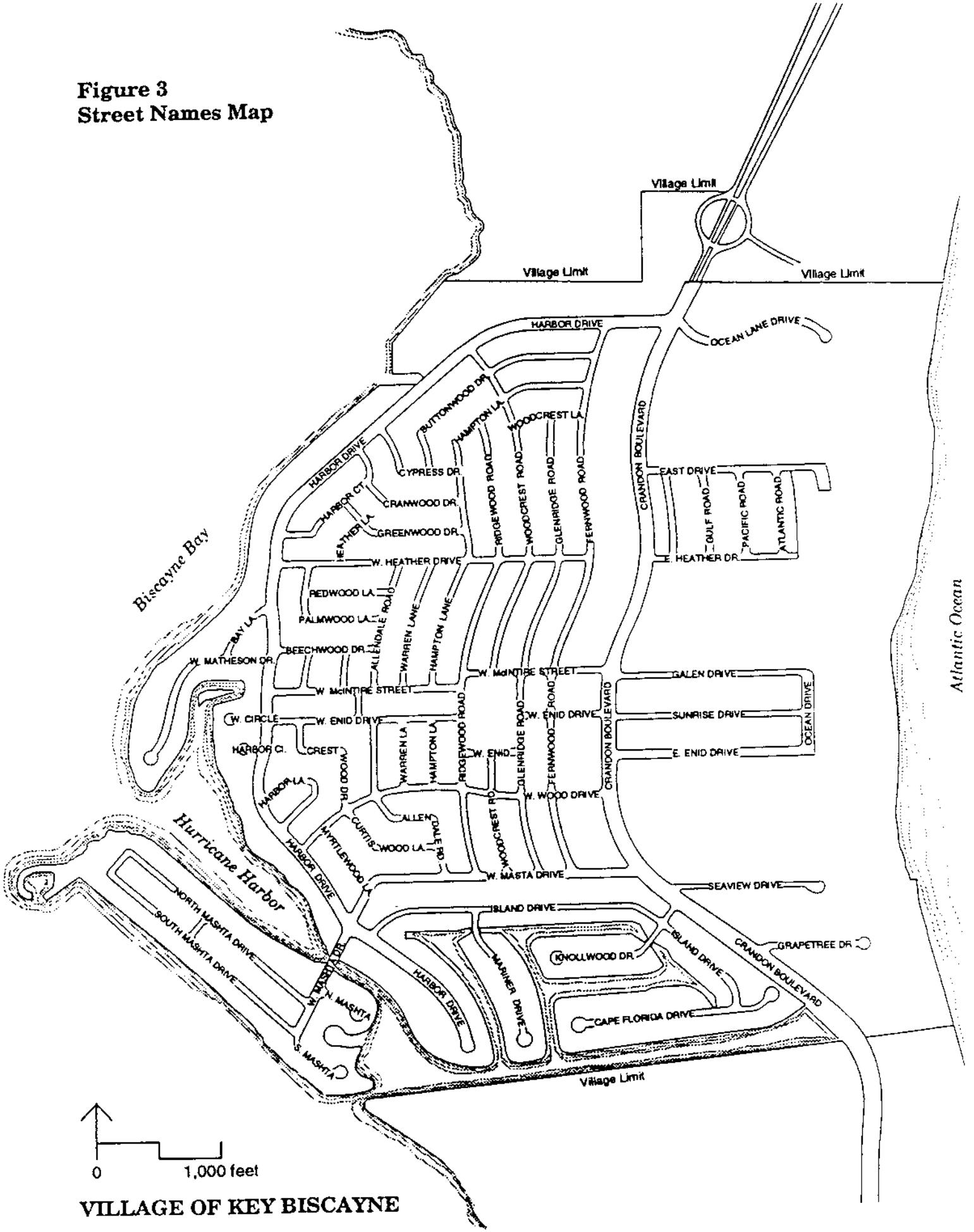
3. Complete any solid waste collection system improvements

   Infrastructure Element

4. Consider and, if desirable, enter into interlocal or similar intergovernmental agreements on: sewers, solid waste, parks, school playfield and Crandon Boulevard streetscape

   Land Use, Traffic, Infrastructure, and Recreation and Open Space Elements

**Figure 3**
**Street Names Map**




**VILLAGE OF KEY BISCAYNE**

**RESERVE MATERIAL**

**Overview of Practices**
- Nonstructural Source Controls
- Structural Runoff Controls
- Erosion and Sediment Control Practices

**Guidelines for Using Nonstructural Source Controls**
- Fertilizer Application Control
- Pesticide Use Control
- Solid Waste Collection and Disposal
- Source Control on Construction Sites
- Street Cleaning

**Structural Stormwater Controls**
- Concrete Grid and Modular Pavement
- Detention Basins
- Exfiltration Trenches
- Grassed Waterways and Swales
- Parking Lot Storage
- Porous Asphalt Pavement
- Retention Basins
- Rooftop Runoff Disposal
- Storage/Treatment Facilities
- Underdrains and Stormwater Filter Systems

**Erosion and Sediment Control Practices**
- Temporary Gravel and Construction Entrance
- Construction Road Stabilization
- Straw Bale Barrier
- Silt Fence
- Brush Barrier
- Storm Drain Inlet Protection
- Temporary Diversion Dike
- Temporary Fill Diversion
- Temporary Right-of-Way Diversion
- Diversion
- Temporary Sediment Trap
- Temporary Sediment Basin
- Temporary Slope Drain
- Paved Flume
- Stormwater Conveyance Channel
- Outlet Protection
- Riprap
- Check Dams
- Waterway Drop Structure
- Level Spreader
- Subsurface Drain
- Surface Roughening
- Topsoiling
- Temporary Seeding
- Permanent Seeding
- Sodding
- Bermudagrass Establishment
- Mulching
- Trees, Shrubs, Vines and Ground Covers

Tree Preservation and Protection
Dust Control

**RESERVE MATERIAL**

**Policy 3.3.1** 9J-5.012 (3) (c) 5

By 1999, based upon the 1992-1993 Hurricane Andrew post-disaster assessment, clean-up and housing repair experience, the Village shall prepare a post-disaster redevelopment plan in consultation with the South Florida Regional Planning Council and the Metro-Dade Office of Emergency Management. Special attention shall be devoted to the Building Official's permitting process to distinguish between minor and major repairs, require demolition or nuisance removal, and similar regulatory approaches. The plan shall specify that structures which suffer repeated damage exceeding 50% of their assessed value shall rebuild to the requirements of all current development regulations, and shall not be located east of the coastal construction control line. No redevelopment shall be permitted in areas of repeated damage unless it is determined by the Village to be in the public interest and/or necessary to honor constitutionally protected private property rights.

**Policy 1.1.2** 9J-5.013 (2) (b) 1

Key Biscayne shall support the establishment of a mandatory Statewide annual motor vehicle inspection program which includes inspection of air emission equipment. This text added by RKS deleted by Council.

**Policy 1.7.6**

The Village shall limit development activities that adversely affect habitat that may be critical to endangered, threatened or rare species or species of special concern.

*Drainage:* All nonresidential development and redevelopment shall accommodate runoff to meet all Federal, state and local requirements. Stormwater shall be treated in accordance with the provisions of Chapter 17-25, FAC in order to meet receiving water standards in Chapter 17-302.500, FAC. Post-development runoff shall not exceed peak predevelopment runoff.