BAL HARBOUR
FLORIDA'S PARADISE

COMPREHENSIVE PLAN

Original Comprehensive Plan
Prepared By:

Ludovici and Orange Consulting Engineers, Inc.
329 Palermo Avenue
Coral Gables, Florida 33134-6678

1995 Evaluation and Appraisal Report (EAR)
and
1997 EAR-Based Amendments
Prepared By:

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Preparation of this Document was aided through financial assistance received from the State of Florida under the Local Government Comprehensive Planning Assistance Program authorized by Chapter 86-167, Laws of Florida, and the Local Government Evaluation and Appraisal Report Assistance Program authorized by Chapter 93-206, Laws of Florida and administered by the Florida Department of Community Affairs.

BAL HARBOUR VILLAGE
COMPREHENSIVE PLAN AMENDMENT CHRONOLOGY

1. Ordinance No. 325 adopted December 6, 1988 – Adoption of Original Comprehensive Plan.

2. DCA No. 97-1ER - Ordinance No. 410 adopted March 8, 1997 – 1995 Evaluation and Appraisal Report (EAR) Based Amendments including overall update and new Transportation Element. Found "In Compliance" by DCA on May 8, 1997.

3. DCA No. 97-R1 - Ordinance No. 429 adopted December 16, 1997 – Amendment to the Coastal Management Element; Post Disaster Redevelopment Planning GOP's per DCA Stipulated Settlement Agreement. Found "In Compliance" by DCA on January 15, 1998.

ORDINANCE NO. 325

ORDINANCE OF THE VILLAGE OF BAL HARBOUR, FLORIDA APPROVING AND ADOPTING THE BAL HARBOUR VILLAGE COMPREHENSIVE PLAN; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, pursuant to the requirements of Section 163.3167, Florida Statutes, the Village of Bal Harbour has prepared a proposed Comprehensive Plan; and

WHEREAS, pursuant to the provisions of Section 163.3184, Florida Statutes, the Village Council, acting as the local planning agency, after public notice, held a public hearing on June 21, 1988, concerning the transmittal of the proposed Comprehensive Plan to the Florida Department of Community Affairs; and

WHEREAS, following said public hearing, the Village Council did transmit to the Florida Department of Community Affairs the proposed Comprehensive Plan; and

WHEREAS, the Village Council, acting as the local planning agency, did conduct on December 6, 1988, a second public hearing, after giving due public notice, concerning the adoption of the proposed Comprehensive Plan following the receipt of written comments from the Florida Department of Community Affairs; and

WHEREAS, after considering the written comments of the Florida Department of Community Affairs and public comments received during the public hearings, the Village Council has determined that the adoption of the proposed Comprehensive Plan is within the public interest and protective of the public health, safety and welfare.

NOW, THEREFORE, THE BAL HARBOUR VILLAGE COUNCIL HEREBY ORDAINS:

Section 1. The Bal Harbour Comprehensive Plan is hereby approved and adopted in accordance with the provisions

of Chapter 163, Part II, Florida Statutes and Chapter 9J-5 Florida Administrative Code. The Bal Harbour Comprehensive Plan shall consist of this Ordinance and the following portions of the document entitled Village of Bal Harbour Final Comprehensive Master Plan, 2 December 1988, which is attached hereto and incorporated herein:

(1) Chapter III, the Future Land Use Element;

(2) Chapter XI, The Capital Improvements Element;

(3) Chapter XII, Comprehensive Master Plan Implementation;

(4) The Goals, Policies and Objectives of the following Chapters:

(a) Traffic Circulation Element;

(b) Housing Element;

(c) Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Ground Water Aquifer Recharge Element;

(d) Coastal Management Element;

(e) Conservation Element;

(f) Recreation and Open Space Element;

(g) Intergovernmental Coordination Element.

The remaining portions of the document entitled Village of Bal Harbour Final Comprehensive Master Plan, 2 December 1988 are not adopted as part of the Bal Harbour Comprehensive Plan, but are considered as supporting documents pursuant to state law.

Section 2. The Village Manager is directed to transmit to the Florida Department of Community Affairs, within five (5) working days of the date of adoption, five (5) copies of the approved Comprehensive Plan and to provide copies of said plan to other interested parties as provided by law.

Section 3. Severability. Should any provision of

this Ordinance be declared by a court of competent jurisdiction to be invalid, the same shall not affect the validity of the Ordinance as a whole, or any part thereof, other than the part declared to be invalid.

Section 4. Effective Date. This Ordinance shall be effective immediately upon its adoption.

PASSED AND ADOPTED upon first reading this 21st day of June, 1988.

PASSED AND ADOPTED upon second reading this 6th day of December, 1988.

Mayor

Attest:

Village Clerk

Approved as to form and legal sufficiency:

Village Attorney

ORDINANCE NO. 410

AN ORDINANCE OF THE VILLAGE COUNCIL OF BAL HARBOUR VILLAGE, FLORIDA, AMENDING ITS ADOPTED COMPREHENSIVE PLAN TO INCLUDE NEW, REVISED AND/OR UPDATED DATA, TEXT, TABLES, MAPS, FIGURES, ANALYSIS, AS WELL AS GOALS, OBJECTIVES AND POLICIES IN THE FUTURE LAND USE ELEMENT, HOUSING ELEMENT, SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER AND NATURAL GROUNDWATER AQUIFER RECHARGE ELEMENT, RECREATION AND OPEN SPACE ELEMENT, CONSERVATION ELEMENT, COASTAL MANAGEMENT ELEMENT AND INTERGOVERNMENTAL COORDINATION ELEMENT; ADOPTING A TRANSPORTATION ELEMENT TO REPLACE THE CURRENT TRAFFIC CIRCULATION ELEMENT; ADOPTING A NEW CAPITAL IMPROVEMENTS ELEMENT TO REPLACE THE CURRENT ELEMENT; ALL IN RELATION TO ITEMS IDENTIFIED IN THE VILLAGE'S 1995 EVALUATION AND APPRAISAL REPORT (EAR); CONTAINING A PROVISION FOR INCLUSION IN THE COMPREHENSIVE PLAN; CONTAINING A PROVISION FOR SEVERABILITY AND CONTAINING AN EFFECTIVE DATE.

WHEREAS, Bal Harbour Village adopted a Comprehensive Plan on December 6, 1988 by Ordinance No. 325 in accordance with the applicable provisions of Chapter 163, Part II, Florida Statutes (F.S.) and Rule 9J-5, Florida Administrative Code (F.A.C.), and

WHEREAS, Section 163.3191 F.S. requires each local government to prepare and adopt an Evaluation and Appraisal Report (EAR) initially seven (7) years after the original Comprehensive Plan was adopted and thereafter at least each five (5) years, and

WHEREAS, Bal Harbour Village prepared an EAR which was adopted on October 24, 1995, and

WHEREAS, the Florida Department of Community Affairs found the EAR sufficient in accordance with the applicable provisions of Subsection 163.3191 (9) F.S. on December 22, 1995, and

WHEREAS, Bal Harbour Village is required to prepare and adopt EAR-Based amendments which will incorporate items identified in the EAR including new, revised and/or updated data, text, tables, maps, figures, analysis, as well as Goals, Objectives and Policies into the Village's adopted Comprehensive Plan within one year after the Village adopts the EAR, and

WHEREAS, the Village has prepared EAR-based amendments which are attached hereto and incorporated herein as Exhibit "A".

NOW, THEREFORE, BE IT ORDAINED BY THE VILLAGE COUNCIL OF BAL HARBOUR AS FOLLOWS:

SECTION 1. That the Village's adopted Comprehensive Plan entitled "Village of Bal Harbour Final Comprehensive Plan, 2 December 1988" is hereby amended to incorporate the information, materials and amendments attached hereto as Exhibit "A".

SECTION 2. Severability - The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses and phrases of this Ordinance but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

SECTION 3. Inclusion in the Code - It is the intention of the Village Council, and it is hereby ordained that the provisions of this Ordinance shall become and made a part of the Bal Harbour Village Comprehensive Plan; that sections of this Ordinance may be renumbered or relettered to accomplish such intentions; and that the word "Ordinance" shall be changed to "Section" or other appropriate word.

SECTION 4. Effective Date - The effective date of these plan amendments shall be the date a final order is issued by the Florida Department of Community Affairs or Administrative Commission finding the amendments in compliance in accordance with Section 163.3184, Florida Statutes.

PASSED AND ADOPTED on first reading and for transmittal to the Florida Department of Community Affairs this 17 day of September 1996.

PASSED AND ADOPTED on second reading this 18 day of March 1997.

MAYOR

ATTEST:

VILLAGE CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

VILLAGE ATTORNEY

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State of Florida)

County of Dade)

Bal Harbour Village)

I, Jeanette Horton, Village Clerk of Bal Harbour Village, Florida, do certify that the foregoing is a true copy of Ordinance No. 410 adopted by the Council of Bal Harbour Village, Florida on the 18th day of March 1997.

In witness whereof, I hereto set my hand and place the seal of Bal Harbour Village this 25 day of March 1997.

Jeanette Horton, CMC/AAE
Village Clerk

ORDINANCE NO. 429

AN ORDINANCE OF BAL HARBOUR VILLAGE, FLORIDA, ADOPTING AMENDMENTS TO THE COASTAL MANAGEMENT ELEMENT OF THE BAL HARBOUR VILLAGE COMPREHENSIVE MASTER PLAN PURSUANT TO THE PROVISIONS OF A STIPULATED SETTLEMENT AGREEMENT BETWEEN BAL HARBOUR VILLAGE AND THE STATE OF FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS ("DCA"); DIRECTING TRANSMITTALS OF THIS ORDINANCE TO AFFECTED AGENCIES; PROVIDING FOR SEVERABILITY, INCLUSION IN THE COMPREHENSIVE MASTER PLAN, AND AN EFFECTIVE DATE.

WHEREAS, Bal Harbour Village ("Village") adopted a Comprehensive Master Plan on December 6, 1988, by enacting Ordinance No. 325, in accordance with the applicable provisions of Chapter 163, Part II, Florida Statutes, and Rule 9J-5, Florida Administrative Code; and

WHEREAS, Section 163.3191, Florida Statutes, requires each local government to prepare an initial Evaluation and Appraisal Report ("EAR") not later than seven (7) years after the original comprehensive plan was adopted, and periodically thereafter not less than once each five (5) years; and

WHEREAS, the Village prepared an EAR which was adopted on October 24, 1995; and

WHEREAS, the DCA found the EAR sufficient in accordance with the applicable provisions of Section 163.3191(9), Florida Statutes, on December 2, 1995; and

WHEREAS, the Village was required to prepare and adopt EAR-based amendments to incorporate into the Village's adopted Comprehensive Master Plan items identified in the EAR, including amendments related to Goals, Objectives and Policies; and

WHEREAS, on March 18, 1997, the Village adopted certain EAR-based amendments by enacting Ordinance No. 410; and

WHEREAS, on May 8, 1997, the DCA issued a "Statement of Intent" and published a "Notice of Intent to Find the Village of Bal Harbour Plan Amendments Adopted By Ordinance No. 410 on March 18, 1997, in Compliance Except for the Coastal Management Policies 2.3.10.1 and 2.3.10.4 Adopted Pursuant to Ordinance No. 410 which is Not in Compliance"; and

WHEREAS, a petition was filed with the State of Florida Department of Administrative Hearings to address the DCA's finding of not "in compliance"; and

WHEREAS, the Village and the DCA have together proposed remedial amendments to the aforementioned Coastal Management Element Goals, Objectives and Policies to bring the Comprehensive Plan amendments into compliance with Chapter 163, Florida Statutes, and Rule 9J-5, Florida Administrative Code; and

WHEREAS, the Comprehensive Plan Amendments to be adopted by this ordinance have been reviewed by the DCA and the Village has been informed the proposed amendments will satisfy the DCA's objections to the Coastal Management Element as adopted by Ordinance No. 410; and

WHEREAS, this ordinance is adopted in conformity with and pursuant to Chapter 163, Florida Statutes, and Rule 9J-11, Florida Administrative Code.

NOW, THEREFORE, THE COUNCIL OF BAL HARBOUR VILLAGE, FLORIDA, HEREBY ORDAINS:

Section 1. That the Village's adopted Comprehensive Master Plan entitled "Village of Bal Harbour Final Comprehensive Plan, 2 December 1988," as amended May 18, 1997, is hereby amended to incorporate Exhibit "A" attached hereto and incorporated herein by this reference.

Section 2. The Village Clerk is hereby directed to make appropriate transmittals as required by law.

Section 3. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this ordinance but they shall remain in effect, it being the legislative intent that this ordinance shall stand notwithstanding the invalidity of any part.

Section 4. It is the intention of this ordinance shall become and be made a part of the Village's Comprehensive Master Plan.

Section 5. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 6. The effective date of the Comprehensive Master Plan amendments approved by this ordinance shall be the date a final order is issued by the DCA or Administration Commission finding the amendments in compliance in accordance with Section 163.3184, Florida Statutes, whichever occurs earlier. No development orders, development permits, or land uses dependent on such amendments may be issued or commence before the amendments have become effective. If a final order of noncompliance is issued by the Administration Commission, these amendments may nevertheless be made effective by adoption of a resolution affirming their effective status, a copy of which resolution shall be filed with

the Village Clerk and sent to the Department of Community Affairs, Bureau of Local Planning, 2740 Centerview Drive, Tallahassee, Florida 32399-2100. The DCA's notice of intent to find a plan amendment in compliance shall be deemed to be a final order if no timely petition challenging the amendment is filed.

PASSED AND ADOPTED this 16 day of December, 1997.

MAYOR

Attest:

VILLAGE CLERK

Approved As to Form And Legal Sufficiency:

VILLAGE ATTORNEY

927013

EXHIBIT A

BAL HARBOUR VILLAGE
COASTAL MANAGEMENT ELEMENT

PROPOSED AMENDMENTS FOR COMPLIANCE APPROVAL

Listed below are proposed revisions to the Village's CME policies prepared in accordance with DCA's recommended remedial actions. The Village feels that the inconsistencies cited by DCA have been addressed and the policies, as amended, are now consistent with Section 163.3177, F.S., the State Comprehensive Plan and requirements of Rule 9J-5, F.A.C.

Policy 2.2.04.01: The Village shall ~~discourage~~ prohibit any future proposed land use amendment and/or development or redevelopment activity which would increase the adopted intensity of the Coastal High Hazard Area as defined in the Future Land Use Element.

Objection 2.3 - Post Disaster Redevelopment:

Bal Harbour Village shall provide immediate response to post-hurricane situations in concert with a post-disaster redevelopment plan which will reduce or eliminate the exposure of human life and public and private property to natural hazards.

Policy 2.3.01: The current Dade County Hurricane Procedures Plan shall be modified to comply with the policies under this objective, and shall contain step-by-step details for post-disaster recovery operations.

Policy 2.3.02: After a hurricane but prior to re-entry of the population into evacuated areas, the Village Council shall meet to hear preliminary damage assessments, appoint a Recovery Task Force and consider a temporary moratorium of building activities not necessary for the public health, safety and welfare.

Policy 2.3.03: The Recovery Task Force shall include the Building Inspector, Emergency Management Director, Public Works Director and other Village staff members as directed by the Village Council. Staff shall be provided by the departments whose directors sit on the Task Force. The Task Force shall be terminated after implementing its responsibility under Policy 2.3.06.

Policy 2.3.04: The Recovery Task Force shall review and decide upon emergency building permits; coordinate with Dade County, State and Federal Officials to prepare disaster assistance applications; analyze and recommend to the Village Council hazard mitigation options including reconstruction or relocation of damaged public facilities; develop a redevelopment plan; and recommend amendments to

the comprehensive plan, Dade County Hurricane Procedure Plan and other appropriate policies and procedures.

Policy 2.3.05: Immediate repair and clean-up actions needed to protect the public heath and safety include repairs to potable water, wastewater and power facilities; removal of building and/or vegetative debris; stabilization or removal of structures about to collapse; and minimal repairs to make dwellings habitable such as minor roof repairs and other weatherproofing/security measures. These actions shall receive first priority in permitting decisions. Long term redevelopment activities shall be postponed until the Recovery Task Force has completed its tasks.

Policy 2.3.06: The Recovery Task Force shall propose comprehensive plan amendments which reflect the recommendations in any interagency hazard mitigation reports or other reports prepared pursuant to Section 406 of the Disaster Relief Act of 1974 (PL93-288).

Policy 2.3.07: If rebuilt, structures which suffer damage in excess of fifty (50) percent of their appraised value shall be rebuilt to meet all current requirements, including those enacted since construction of the structure.

Policy 2.3.08: Structures which suffer ~~repeated~~ recurring damage to pilings, foundations or loadbearing walls shall be required to rebuild landward of their current location ~~or~~, to modify the structure to structurally enhance the structure, institute other mitigation measures or delete the areas most prone to damage.

Policy 2.3.09: Repair or reconstruction of the existing seawalls at Bal Harbour must be accompanied by beach fill.

Policy 2.3.10: ~~The Village shall develop and adopt prior to the 1989 hurricane season a formal decision making process to evaluate options for damaged public facilities including abandonment, repair in place, relocation and reconstruction with structural modifications. This process shall consider these options in light of factors such as cost to construct, cost to maintain recurring damage, impacts on land use, impacts on the environment and public safety.~~

Following a natural disaster and prior to the implementation of long-term redevelopment, the Village shall do the following: Based upon the damage assessment report prepared by the Metro Dade Public Works Department, the Village shall consult with its Public Works

officials and consultant engineer to evaluate options for damaged public facilities including abandonment, repair in place, relocation, and repair with structural modification, to determine the most strategic approach to long-term development. The evaluation shall include but not be limited to issues pertaining to damage caused by natural disaster, cost to construct repairs, cost to relocate, cost to structurally modify, limitations of right-of-way, and maintenance costs.

Policy 2.3.10.1: ~~That portion of a structure seaward of the Coastal Construction Control Line (CCCL)~~ Structures existing within the Coastal High Hazard Area (CHHA) ~~which has been shown to be susceptible to storm damage and~~ which suffers ~~repeated~~ recurring damage (damage in excess of 50% of current replacement cost of construction) ~~to pilings, foundations, or load bearing walls,~~ shall be modified in accordance with the most recent South Florida Building Code requirements. This may include, but is not limited to, retrofitting, stormproofing and other structural upgrades to structures.

Policy 2.3.10.2: Structures which are damaged in excess of fifty percent (50%) of their current replacement value shall be required to be rebuilt to meet all current ~~construction~~ land development requirements as determined by the Village Building Official.

Policy 2.3.10.3: The physical Post Disaster Redevelopment Plan is to rebuild the Village in accordance with the original Master Development Plan. The operational Post Disaster Plan will be prepared by May 31, 1998 and reviewed and updated annually prior to each hurricane season.

Policy 2.3.10.4: ~~By 1998 the City~~ The Village shall ~~develop and adopt~~ utilize the following ~~detailed~~ criteria to distinguish between immediate repair and clean up actions and long-term redevelopment subsequent to a natural disaster. ~~In the interim, immediate repair shall include public infrastructure for public safety such as water, wastewater, and roadways.~~

Potable Water Facilities:

Immediate repair shall include: implementation of necessary actions, including but not limited to, repairing or replacing water lines and pumping facilities to insure a closed system, proper disinfection, and sufficient pressure to meet demands for fire flow

and domestic water (for consumption purposes only), the utilization of auxiliary pumps and electrical generators.

Long-term redevelopment shall include: implementation of the necessary actions to return the Village's water distribution system to at least its condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Wastewater Facilities:

Immediate repair shall include: implementation of necessary actions, including but not limited to, repairing or replacing wastewater lines and pumping facilities, utilization of auxiliary pumps and electrical generators, methods to remove and treat raw sewage to avoid discharge of raw sewage into adjacent water bodies and onto land.

Long-term redevelopment shall include: implementation of necessary actions to return the Village's sanitary sewer system to at least it's condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Drainage Facilities:

Immediate repair shall include: implementation of necessary actions, including but not limited to, the removal of sand and debris from drainage structures, pumping of stormwaters, utilization of temporary electrical generators, to insure function of the system to address potential flooding.

Long-term redevelopment shall include implementation of actions necessary to return the Village's stormwater system to at least its condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Roadway Facilities:

Immediate Repair:

Primary actions shall include, but not be limited to, removal of sand and debris from State Road A1A (Collins Avenue) and 96th Street and needed stabilization to allow access for emergency vehicles.

Secondary actions shall include removal of sand and debris from local roadways to facilitate access for emergency vehicles.

Long-term redevelopment shall include coordination with the Florida Department of Community Affairs Division of Emergency Management, Department of Transportation (FDOT), Dade County, and private property owners to accomplish necessary actions to restore the Village's roadway system (public and private) respectively to at least their condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Bridges:

Immediate repair shall include coordination with the FDOT, federal government, and Dade County to ensure the operation of at least one bridge to facilitate access to the Village.

Long-term redevelopment shall include coordination with FDOT to restore damaged bridges to at least their condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Habitable Structures:

Immediate repair shall include removal of debris and vegetation; stabilization or removal of structures about to collapse and minimal repairs to make dwellings and other structures habitable, such as minor roofing repairs and other weatherproofing/security measures. In these instances, building permits shall not be necessary prior to performing the work but retroactive permits shall be required in accordance with the provisions set forth in Ordinance No. 92-99 of Dade County, Florida (Exhibit 1).

Long-term redevelopment activities shall include normal construction activities for rebuilding and/or substantial structural repairs in accordance with the South Florida Building Code and other limitations contained within the Village's Comprehensive Plan and Land Development Regulations.

Policy 2.3.10.4.a.: The process for making long-term redevelopment decisions in post disaster periods shall be consistent with the following general guidelines and principles for the relocation, removal or modification of damaged structures:

1. The Village adopts the following definitions for making decisions pertaining to redevelopment in the CHHA. Based upon the following definitions, all rebuilding activities shall be subject to Coastal Construction Code Standards and CHHA limitations:

   a) "Repair" means the restoration of a portion of the structure, including the foundation of the structure, to its original design configuration of an equivalent structural standard. Repair of a structure assumes that a significant portion of the structure, including its foundations, remains intact. If the supported structure or its foundation has collapsed to the point that either the supported structure or the foundation requires substantial rebuilding, then such activity shall not constitute repair. If a structure, as a result of damage to either the supported structure or the foundation, is no longer habitable, such structure shall be presumed to require substantial rebuilding.

   b) "Rebuilding" means any construction activity, including alteration of an existing foundation, which would result in increased structural stability such that the survivability of the structure during a coastal storm is increased. Rebuilding shall also include any construction activity which, as noted above, involves the substantial rebuilding of either the supported structure or the foundation of the structure.

2. Rebuilding (as defined above) activities will be in accordance with DEP's requirements for development seaward of the Coastal Construction Control Line, and all structural requirements of the South Florida Building Code. Further, prior to approving such redevelopment activities, the Village shall require the applicant to provide documentation that the structure being built is as landward as possible from the FEMA V-Zone and Coastal Construction Control Line. The applicant shall provide proof that the structure cannot be moved any further landward on the lot without causing harm to public health and safety. The Village may vary building setback requirements in order to accomplish the intent of this policy.

3. The Village shall keep a record of all repairs and rebuilding activities. Structures may not be rebuilt (as defined above) more than twice in any 100-year period in the Velocity (V or VE) Zones.

Policy 2.3.11: The Village shall maintain a contingency fund equal to 25 percent of the value of public facilities in the ~~coastal high hazard area~~ CHHA in order to cover the local government's match for disaster assistance grants.

Policy 2.3.12: The Village shall identify land and structures in the ~~coastal high hazard area~~ CHHA, inventory their assessed value, judge the utility of the land for public ~~access~~ use and make recommendations for acquisition when post-disaster opportunities arise. Because of the extremely high land and existing structure costs in the Village, should acquisition opportunities arise, the Village will explore funding options such as grants and/or loans.

Policy 2.3.13: When undertaking post-disaster redevelopment activities, development permits may be waived for short term recovery measures such as: emergency repairs to streets, water, electricity or other utilities to restore service; removal of debris; and public assistance matters including temporary shelter or housing.

Policy 2.3.14: Repair and Clean Up. In planning post-disaster redevelopment activities, factors to be considered in order to protect the public health and safety shall include:

1. Repairs to potable water, wastewater and power facilities.
2. Removal of debris.
3. Stabilization or removal of structures in a perilous condition.
4. Minimal repairs to make structures habitable.

These considerations shall receive first priority in determining the appropriateness of emergency building permits. Long-term redevelopment activities shall be postponed until the Recovery Task Force has coordinated immediate repair and clean-up operations.

Policy 2.3.15: Permitting Decision Priorities. Immediate recovery actions needed to protect the public health and safety shall take priority in permitting decisions following hurricane or other storm events or other natural disasters. Such priority actions will include, but not be limited to: debris removal; roadway and infrastructure repair; water use restrictions, if necessary; access restrictions, if required to

protect lives or property, and other similar activities needed to assure the safe movement of people, goods and supplies within the impacted area. Long term repair or recovery actions, such as relocating infrastructure, rebuilding of damaged structures and the like, will be distinguished from the short-term actions herein described.

Policy 2.3.16 The applicable provisions of the South Florida Building Code, as it exists in August 1997, relating to hurricane precautions, inspections and permitting are hereby adopted by reference.

Policy 2.3.17 The Village adopts the following criteria relating to consideration of relocating public infrastructure, cognizant of the Village's geographic limitations and development status:

1. The land upon or under which the infrastructure existed is gone or reconfigured so that replacement is not possible technically or financially as determined by the Village Council.

2. The cost of repairs or retrofitting versus relocation costs.

3. Opportunities arising out of acquisition of land by the Village or other governmental entity.

Policy 2.3.18 Notwithstanding the preceding policies, no regulation, permitting procedure or post disaster redevelopment planning shall be approved or applied to property, as the case may be, so as to constitute a taking or inordinately burden an existing use of real property or a vested right to a specific use of real property within the meaning of the Bert J. Harris, Jr., Private Property Rights Protection Act, Chapter 95-181, Laws of Florida, codified as Section 70.001, Florida Statutes.

Policy 2.3.19 The Village recognizes that certain vested development rights may exist for property within the Village. The Village will consider such claims after petition is made to the Village and, after due public hearings, the Village Council may grant approval to the request. The documentation for a claim shall follow the procedures found in Section 2-114.1, Code of Metropolitan Dade County, Florida.

Agend[illegible]tem No. 2(1)(A)
9-15-92

ORDINANCE NO. 92-99

EMERGENCY ORDINANCE ESTABLISHING PROCEDURES FOR OBTAINING RETROACTIVE BUILDING PERMITS FOR REPAIR OR RECONSTRUCTION WORK; PROVIDING FOR THE ENGAGEMENT OF BUILDING OFFICIALS, PLANS EXAMINERS, INSPECTORS AND CHIEF INSPECTORS BY CONTRACT; ALLOWING MASTERS AND QUALIFYING AGENTS TO SERVE AS SPECIAL INSPECTORS WITHIN THEIR TRADES; CREATING STANDARDS FOR ROOF REPAIR AND RECONSTRUCTION WORK AND FOR CONSTRUCTION OF NEW ROOFS; SUSPENDING CONTRARY PROVISIONS OF SECTION 8-1 OF THE CODE OF METROPOLITAN DADE COUNTY AND THE SOUTH FLORIDA BUILDING CODE FOR A LIMITED TIME; PROVIDING SEVERABILITY, EXCLUSION FROM THE CODE, AND AN EFFECTIVE DATE.

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF DADE COUNTY, FLORIDA:

Section 1. The Board of County Commissioners of Metropolitan Dade County, Florida, does hereby make the following findings of fact:

(a) On August 24, 1992, Dade County, Florida, was hit by Hurricane Andrew with winds in excess of 150 miles per hour.

(b) The hurricane has left many residential and commercial structures in urgent need of repairs.

(c) The exigent circumstances do not allow for the permitting and inspection process currently provided in the law to occur consistent with the health, safety and welfare of the residents of Metropolitan Dade County.

(d) Section 10-3(c) of the Dade County Code allows contractors not certified by the County or the State to perform disaster repair work. Because such contractors do not have local places of business, they will not be available to correct

any work determined by subsequent inspection not to be up to code. It is therefore necessary to require prior permitting allowing for inspections contemporaneous with the performance of the work.

(e) The Board of Rules and Appeals, which has disciplinary authority over building officials and is otherwise empowered to recommend amendments to the South Florida Building Code, has considered and recommended the following provisions.

(f) The Board of County Commissioners passes this ordinance in the exercise of its police power to protect the health, safety and welfare of the affected community.

Section 2. Term.

Notwithstanding any other provision of the Code of Metropolitan Dade County, including but not limited to Section 8-1 and the applicable provisions of the South Florida Building Code, commencing on the effective date of this ordinance through March 1, 1993, the following provisions shall govern the repair of both residential and commercial structures throughout Dade County. Contrary provisions of the Code of Metropolitan Dade County and the South Florida Building Code are hereby suspended for this term.

Section 3. Retroactive Permits.

3.01. When used in this ordinance, the term structure shall refer to any and all residential or commercial structures located within the geographic boundaries of Dade County, Florida.

3.02. The following repairs may be done to structures by persons authorized to act as contractors pursuant to Section

10-3 of the Code of Metropolitan Dade County, excluding those registered to perform disaster repair pursuant to Section 10-3(c), prior to obtaining a building permit for such work:

(a) Window and door replacement, including but not limited to sliding and garage doors, provided any and all replacement windows and doors shall have received the prior approval of the Metropolitan Dade County Product Control Section;

(b) Fence repair or replacement;

(c) Structural repairs to swimming pools;

(d) Roofing repairs, including the repair or replacement of roof trusses or sheathing;

(e) Repair of overhangs and eaves;

(f) Dry-wall and interior ceiling repair or replacement;

(g) Air conditioning duct work and in-kind condenser replacement; and

(h) Carpet, cabinet and tile installation and replacement.

3.03. All work done work prior to obtaining a permit in accordance with Section 3.02 shall be considered of a temporary nature unless done under the direct supervision of a registered engineer or registered architect. Work of a temporary nature may be subject to being redone or repaired when necessary to obtain compliance with the South Florida Building Code. Building Officials are hereby empowered to inspect or test work of a temporary nature by destructive methods in the event that such methods are required to oversee compliance with the South Florida

Building Code. Any and all costs or damages relating to such testing shall be borne by the permit applicants pursuant to Section 3.05 below.

3.04. Permits shall be obtained prior to commencement of the work for all other repairs or replacements for which a permit is currently required by the South Florida Building Code, including, but not limited to the following types of work:

(a) Repairs to load bearing walls;

(b) Electrical repairs and new installations;

(c) Plumbing repairs and new installations;

(d) Gas repairs and new installations; and

(e) Any new construction including additions and alterations.

3.05. Building permits must be obtained within the earlier of ninety (90) days following the completion of any of the repair or replacement activities set forth in Section 3.02 above or one-hundred and eighty (180) days following the commencement of such activity. As a condition to obtaining the permit, the applicant shall provide documentation which the Building Official may find reasonably sufficient to determine compliance with the South Florida Building Code and the cost of the subject repairs.

3.06. Any repair or replacement authorized pursuant to Section 3.02 for which a permit is not obtained as required in Section 3.05, shall be in violation of the South Florida Building Code and the Code of Metropolitan Dade County and such structure and the persons performing the work shall be subject to the

provisions of the South Florida Building Code and the Code of Metropolitan Dade County governing work done without permit.

Section 4. Contract Duties.

4.01 Appointing authorities for Building Officials, as such terms are defined in the South Florida Building Code may enter into contracts with independent contractors to perform the services required of Building Officials, Plans Examiners, Chief Inspectors, including, but not limited to roofing and structural, and Inspectors.

4.02 Such independent contractors shall satisfy all criteria set forth in the South Florida Building Code to occupy their respective positions, with the exception that the independent contractors shall not be required to be employees of the appointing authority and shall be subject to certification by the Board of Rules and Appeals only in the manner set forth in Section 4.03 below.

4.03 Independent contractors shall be subject to certification by the Board of Rules of Appeals as temporary appointments within thirty (30) days following the commencement of their duties pursuant to the applicable contract.

4.04 The contract to be entered into pursuant to this Section shall contain such insurance or other requirements as the appointing authority in its discretion believes reasonably necessary in relation to the scope of the engagement. The term of the contract, including any and all renewals, shall not exceed the effective term of this ordinance.

Section 5. Special Inspectors.

In addition to other special inspectors authorized by the South Florida Building Code, the Building Official shall be authorized to retain as special inspectors as that term is defined by the South Florida Building Code those persons who have been certified as masters or qualifying agents by the Construction Trades Qualifying Board for a particular trade. The persons so appointed shall be limited to performing inspections in connection with the trade for which they have been certified. The appointment of such persons shall be subject to such insurance or other requirements as the appointing authority in its discretion believes to be reasonably necessary in relation to the scope of the appointment.

Section 6. Roof Repairs.

During the term of this ordinance, the following shall govern roof repair and reconstruction, and the construction of new roofs in connection with any structure:

(a) The use of staples for tin caps, shingle, and sheathing installation is prohibited.

(b) Eave flashing and gravel stops shall be nailed 4" on center with galvanized roofing nails or other nails approved by Dade County Product Control.

(c) Minimum #30 underlayment shall be used. Underlayment shall be nailed in accordance with South Florida Building Code Section 3403.4(b) for installation of anchor sheet.

(d) All hips, ridges and starters shall be nailed and tabs shall be secured with plastic roofing cement.

(e) A minimum of six nails shall be used for each shingle.

(f) The use of composite, wafer board, oriented strand board and structural particle board sheathing is prohibited.

(g) Tiles shall be nailed with two galvanized nails or mortar set and glued with glue approved by Dade County Product Control.

(h) Partially damaged roofs containing composite, wafer board, oriented strand board, or structural particle board sheathing shall be repaired with plywood of equivalent thickness.

Section 7. If any section, subsection, sentence, clause, or provision of this ordinance is held invalid, the remainder of this ordinance shall not be affected by such invalidity.

Section 8. The provisions of this ordinance shall be excluded from the Dade County Code.

Section 9. This ordinance shall become effective immediately upon its enactment.

PASSED AND ADOPTED: SEP 15 1997

Approved by County Attorney as to form and legal sufficiency. RAG

Prepared by: LJS

STATE OF FLORIDA)
) SS:
COUNTY OF DADE)

I, MARSHALL ADER, Clerk of the Circuit Court in and for Dade County, Florida, and Ex-Officio Clerk of the Board of County Commissioners of said County, DO HEREBY CERTIFY that the above and foregoing is a true and correct COPY OF ORDINANCE 92-99 PASSED AND ADOPTED SEPTEMBER 15, 1992

as appears of record.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on this 16 day of September, A.D., 19 92.

MARSHALL ADER, Clerk
Board of County Commissioners
Dade County, Florida

By _____
Deputy Clerk

COUNTY COMMISSIONERS SEAL

MASTER TABLE OF ELEMENTS

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VILLAGE OF BAL HARBOUR, FLORIDA

COMPREHENSIVE PLAN

I. INTRODUCTION

A. Preface to the Planning Process

The legal basis which requires all municipal governments and public agencies in the State of Florida to conduct comprehensive planning efforts comes from Chapter 163 of the State's Statutes, adopted in 1975. Known as the Local Government Comprehensive Planning Act, it was substantially amended in 1985 and 1986 to also govern the scope, quality, adoption, implementation and revisions to the previously and newly required planning efforts. The amendment also mandated the promulgation of specific requirements by the Florida Department of Community Affairs (DCA) to carry out the statute's goal.

Having been assigned the State's land planning agency, the DCA adopted minimum planning criteria, content and quality for local government plans. Originally adopted in 1986, Chapter 9J-5 of the Florida Administrative Code established the "Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance."

B. The Planning Components

It is in keeping with the specifications prescribed by Rule 9J-5, F.A.C. that this Comprehensive Plan has been prepared. The planning elements contained herein are the same in title, order and scope as required by Rule 9J-5 of communities such as Bal Harbour. These are:

- Future Land Use Element
- Transportation Element
- Housing Element
- Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element
- Coastal Management Element
- Conservation Element
- Recreation and Open Space Element
- Intergovernmental Coordination Element
- Capital Improvements Element

Chapter 163, Part II F.S. and Rule 9J-5 were amended in 1993 to require a Transportation Element for communities within urbanized areas, including Bal Harbour, in lieu of a Traffic Circulation Element. This new element requires a comprehensive analysis of all transportation related issues including vehicular, pedestrian, bicycle, mass transit and other forms of transportation. The 1996 Evaluation and Appraisal Report (EAR) identified the need to adopt a new element during the EAR-based amendment period.

Bal Harbour has determined that inclusion of other "Optional" elements are not needed in carrying out its duties and none are included in this document.

C. Applicability of Rule Requirements

Certain specifications of 9J-5 require that local plans address certain issues, which do not apply to present or future conditions of Bal Harbour. While every attempt has been made to indicate why these issues do not apply; some may not be addressed. Usually, wherever an issue is not addressed, it is for one of the following reasons:

- Bal Harbour is a small community; and is practically completely built-out;
- Bal Harbour is not able to grow, or annex land: being surrounded by water on three sides and by another municipality on the remaining side;
- Bal Harbour has a small resident population, augmented seasonally by both transient (temporary) residents and other visitors (tourists);
- Bal Harbour has no industries;
- Bal Harbour was opened for development and was substantially developed when zoning regulations were written for subsequent development;
- Bal Harbour participates in and is subject to certain services provided by Metropolitan Dade County government;
- County and neighboring municipalities' comprehensive plans were not available during the preparation of Bal Harbour's plan, except as referenced;
- Bal Harbour has limited financial and technical resources;
- The character of Bal Harbour Village is one not prone to major redevelopment, reconstruction or changes in land use.

It is not the intent of Bal Harbour to avoid addressing mandated issues. If omissions exist in this document, they are unintentional, and have probably occurred for one of the above listed or other obvious reason. It is the intent of the Village of Bal Harbour to address, program, plan, adopt, maintain, implement and revise public services which it is mandated to provide to its residents in accordance with its Charter of organization. It is also the intent of Bal Harbour to produce a planning document that is meaningful to its staff and residents, that is practical and concise, and that it not be bogged down by exhaustive explanations of issues which are not applicable to its operation.

D. Bal Harbour Village Government

The government of the Village of Bal Harbour is the "Local Planning Agency" under the terms of the definition of Rule 9J-5. F.A.C. The Bal Harbour government is comprised of the following:

1. A five-member Village Council, which includes a Mayor and Vice Mayor; elected by the Village residents;
2. A Village Attorney, selected and appointed by the Village Council;
3. A Village Clerk, selected and appointed by the Village Council; and
4. A Village Manager, selected and appointed by the Village Council;
5. Department Heads, selected by and reporting to the Village Manager as follows:

    - Building Official
    - Police Chief
    - Finance Director
    - Public Works Director

All of the services provided and functions performed by the Village government fall under the direct control of the Department Heads or the Village Manager. The Village Attorney and Finance Director are professionals in private practice and act in their official positions on consignment and continuing contracts. In addition, the Village has continuing contracts with engineering, land surveying and landscape architectural firms, who provide planning, design and consultant services as-needed.

E. Public Participation in the Planning Process

Information regarding the preparation of this document was disseminated via the Village newsletter, mailed to every household and in free distribution at the Village Hall and at commercial establishments.

Public input toward this document was received at public workshops, public hearings and direct citizen contact with the Village Manager.

The planning process culminating in this document was described and explained to all of the Department Heads, the Village Council and the public at the public workshops and public hearings.

Pertinent portions of the document, were provided In draft and final form to participating Department Heads for their review, comments and input. They were encouraged to seek public input and comments.

Copies of the draft of this document was distributed to neighboring municipalities, the Dade County Planning Department and the South Florida Regional Planning Council and the Florida Department of Community Affairs.

Their comments are included in the final document.

In the preparation of the original Comprehensive Plan, the Village of Bal Harbour employed the services of Henry Von Oesen & Associates in the preparation of the Coastal Management Element, and those of Ludovici & Orange Consulting Engineers, Inc. in the preparation of the remaining elements. The Village employed Craig A. Smith & Associates to prepare the 1995 Evaluation and Appraisal Report (EAR) and 1997 EAR-Based Amendments which are incorporated herein.

After this plan is adopted, the residents of Bal Harbour are encouraged to submit comments on its effectiveness and on how its implementation may be improved.

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II. THE PLANNING AREA AND EXTENT OF THE PLANNING PERIOD

II. THE PLANNING AREA AND EXTENT OF THE PLANNING PERIOD

A. The Planning Area

The Village of Bal Harbour is situated in northeast Dade County on the Atlantic Ocean. Figure 2.1 shows its location in relationship to other municipalities and to the rest of the County. Bal Harbour is surrounded by water on three sides and borders the Town of Surfside on its southern limit. On the east, there is the Atlantic Ocean and Bal Harbour Beach. To the west is the northernmost section of Biscayne Bay and Indian Creek. On its northern limit is the Bakers Haulover Cut, a waterway which connects Biscayne Bay with the Atlantic Ocean.

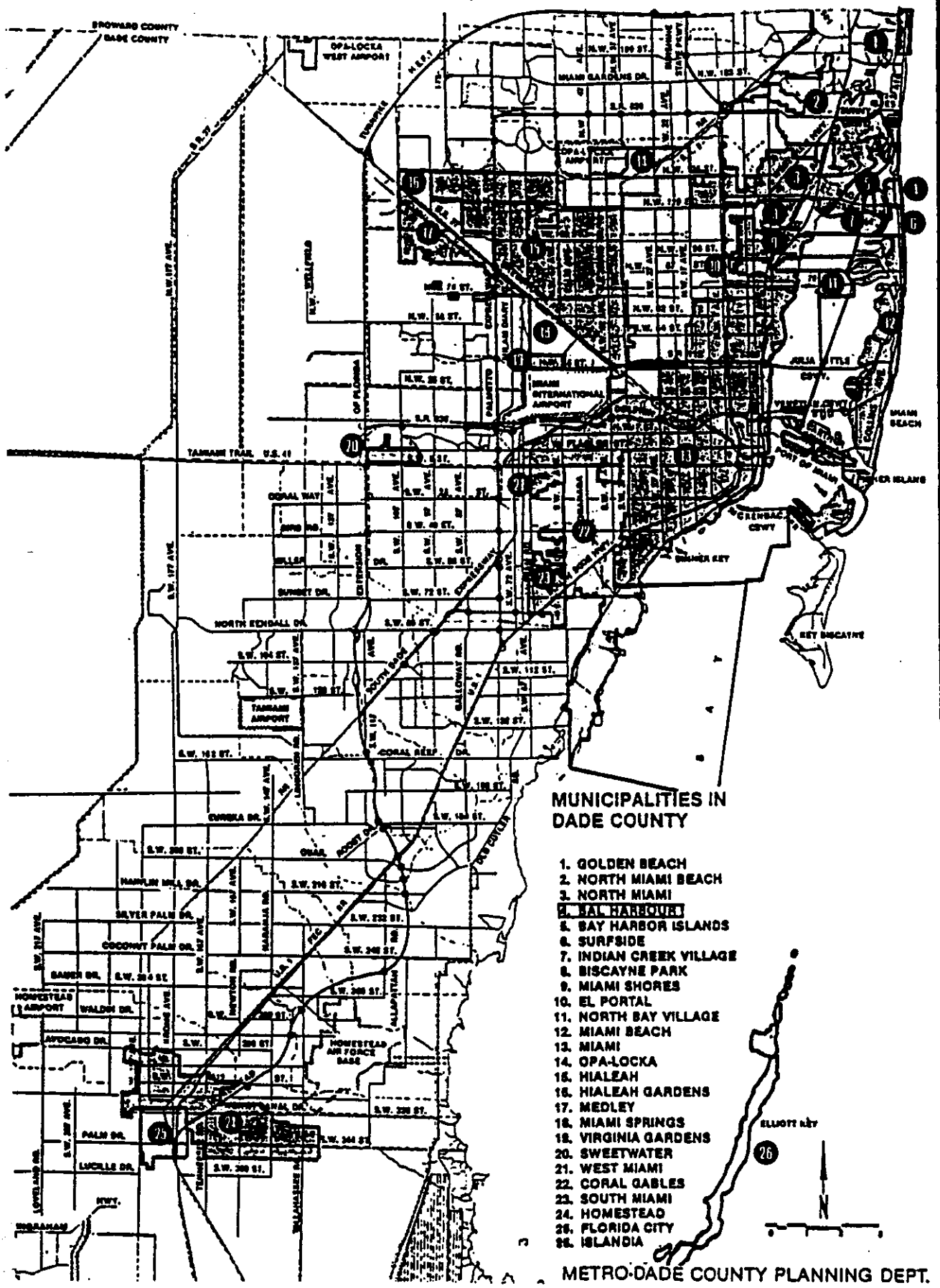
Across Indian Creek and to the west lies the Town of Bay Harbor Islands. Bal Harbour and Bay Harbor Islands are connected by a four lane bridge that forms part of Broad Causeway, connecting both of these municipalities with the mainland at North Miami.

Across Baker's Haulover Cut and to the north lies Haulover Beach, Haulover Park and Haulover Marina. Part of unincorporated Dade County, the facilities are all owned by Metro-Dade County and are operated by its Parks and Recreation Department. Haulover Park and Beach and Bal Harbour are connected by a four lane bridge that is part of State Road A-I-A.

The Bal Harbour Village planning area coincides with the incorporated area of Bal Harbour, a municipal corporation, established under the laws of the State of Florida. See Figure No. 2.2. The Village's jurisdictional limits are well defined in its southern, western and northern boundaries. Although the Village charter places the eastern boundary 1,500-feet east of the mean low water line, this boundary is not well defined for the following reasons:

- The Florida Department of Natural Resources claims jurisdiction up to the Coastal Construction Control Line, and also exerts certain developmental jurisdiction for construction activities extending inland that depend on state administrative decisions that include the Erosion Control Line, the 30-year Projected Erosion Line, and other limits of varying location.

- Man has constructed structures up to the Dade County Erosion Control Line.


BROWARD COUNTY
DADE COUNTY
OPA-LOCKA WEST AIRPORT
MIAMI GARDENS DR.
N.W. 183 ST.
N.W. 170 ST.
N.W. 154 ST.
N.W. 138 ST.
N.W. 122 ST.
N.W. 106 ST.
N.W. 90 ST.
N.W. 74 ST.
N.W. 58 ST.
N.W. 42 ST.
N.W. 26 ST.
N.W. 14 ST.
S.R. 826
S.R. 924
S.R. 934
S.R. 836
S.R. 112
S.R. 953
S.R. 907
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S.R. 9
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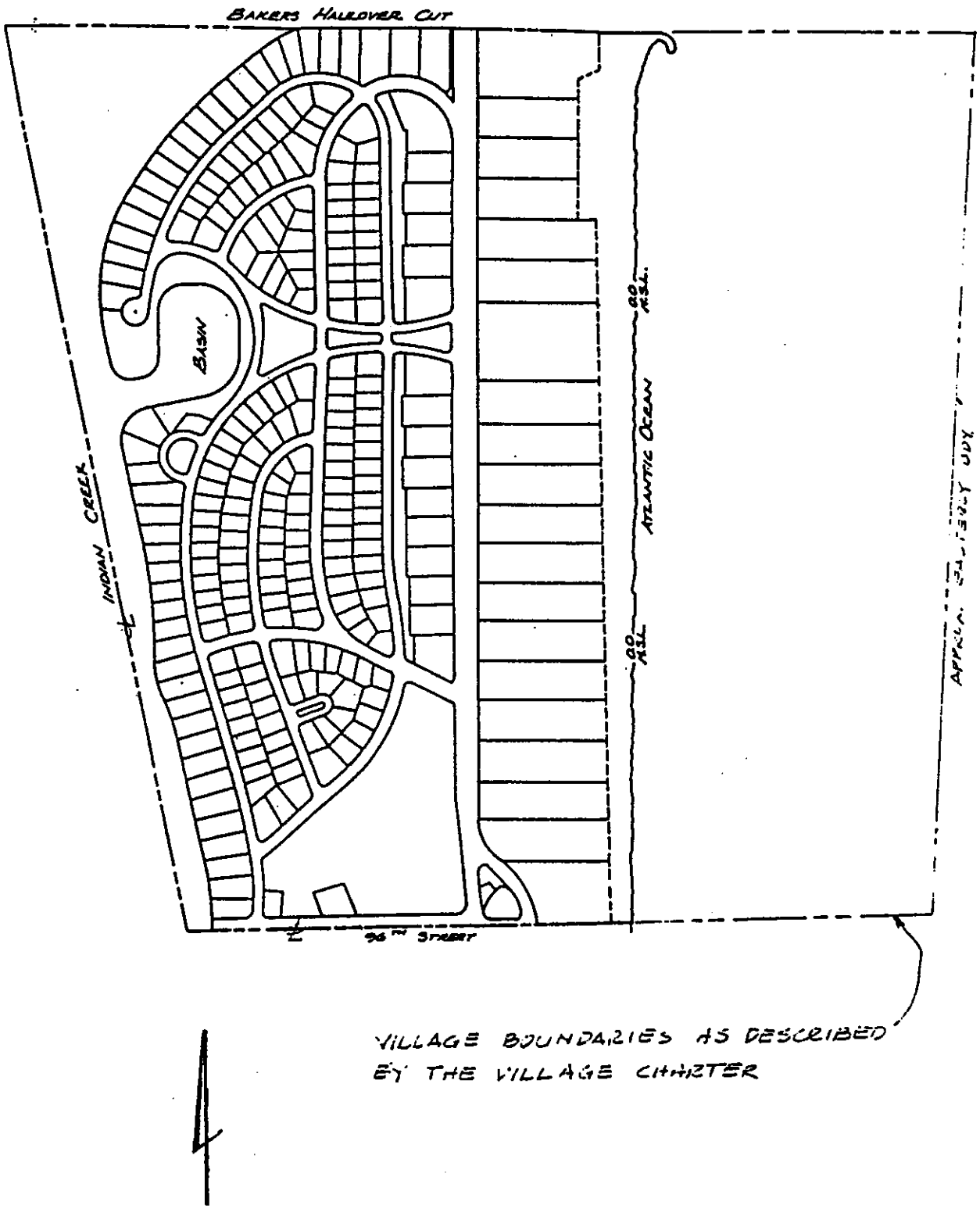

PLANNING AREA MAP
VILLAGE OF BAL HARBOUR
DADE COUNTY, FLORIDA

LUDOVICI & ORANGE
CONSULTING ENGINEERS INC.
333 PALERMO AVENUE, CORAL GABLES, FLORIDA 33134

DRAWING NO. 2.2

- The Florida Department of Environmental Protection claims jurisdiction for certain activities along the Mean High Water Line; and has amended its jurisdictional limits to include other lands.
- The shoreline shifts depending on the elevation of the tide, the deposition and the erosion of sands or other naturally occurring materials.
- The shoreline is changed by man via beach restoration and other projects intended to protect property and real estate investments, and to promote the use of the beach and adjacent waters as a natural resource desirable to and enjoyed by man for recreation.

For the purposes of this document, the easterly limits of the planning area shall be the Atlantic Ocean in the generic term, acknowledging that the land-water interface is subject to change by man and by nature; and that the beach and near-shore waters accessible to man is a buffer, and that activities of man in this buffer are subject to man's laws, which are also subject to change. The only exception is the Coastal Management Element, which includes near-shore submerged waters of the Atlantic in its analysis.

B. The Planning Period

The planning period covered by this document is 1995 to 2005 and follows the Village's fiscal year. Therefore, the period begins with the 1995/96 fiscal year. Figure 2.3 depicts the plan's implementation schedule up to the time of adoption and acceptance.

The preparation of the original plan began in 1987 with final adoption on December 6, 1988. Compliance approval of the original plan occurred in 1989. The original plan was based on the best available background information and support documentation at that time. One of the primary purposes of the Evaluation and Appraisal Report process is to update data, identify changes in state and/or regional laws, policies and procedures and propose amendments to the adopted Comprehensive Plan. Additionally, annual revisions to certain elements may be necessary based on changing circumstances in the community. Users are encouraged to obtain revisions as they occur if they desire their copies to be up to date.

Rule 9J-5 also requires that the entire plan be updated and re-evaluated every five years. The preparation, review and adoption schedules will dictate that re-evaluations must commence approximately one to two years prior to anticipated adoption of revisions.

Certain planning components will eventually have revisions which by necessity will not coincide or be entirely synchronized with other components' revisions. It is impossible to take snap-shots of all data and components at the same moment. Whereas the data used is the best and most current available existing data, data and data sources range up to ten years' vintage, and caution should be exercised when comparing similar or related data.

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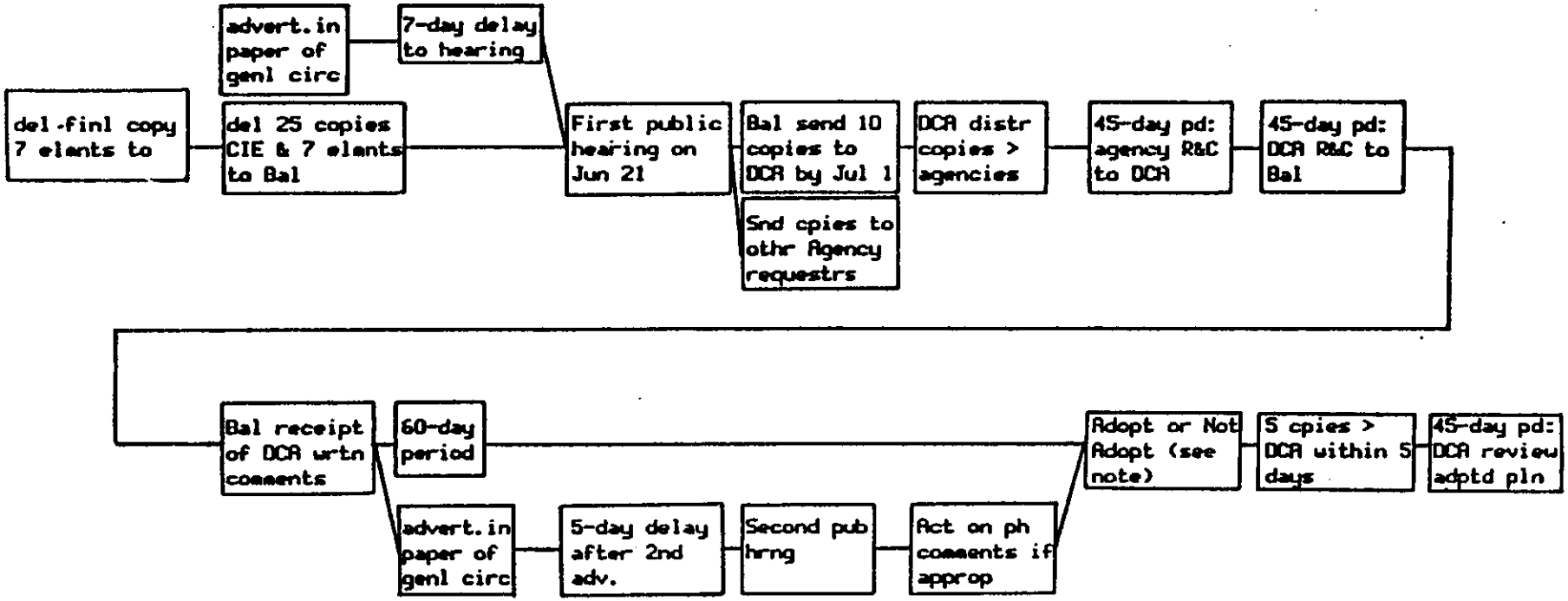


Note: Local government must ADOPT or ADOPT WITH CHANGES within 60 days of receipt of DCA comments

LUDOVICI & ORANGE
CONSULTING ENGINEERS INC.
320 PALERMO AVENUE, CORAL GABLES, FLORIDA 33134

DWG. NO. 2.3

IMPLEMENTATION SCHEDULE

III FUTURE LAND USE ELEMENT

III. FUTURE LAND USE ELEMENT

A. Background and History
B. Demographics, Resident Population
C. Seasonal and Migratory Population
D. Analysis of the Character of the Planning Area

1. Groundwater
2. Soils
3. Floodplains
4. Extractions
5. Wetlands
6. Historical and Archaeological Resources

E. Existing Land Use

1. Low Density Residential Land Use
2. Medium Density Residential Land Use
3. High Density Residential Land Use
4. Hotel Land Use
5. Commercial Land Use
6. Municipal Land Use
7. Recreational Land Use
8. Open Space Land Use
9. Beach Land Use
10. Bay Bottom Land Use
11. Institutional Land Use
12. Streets and Highways

F. Future Land Use

1. Recreational Land Use to Multifamily (High Density) Land Use
2. Institutional Land Use to Commercial Land Use
3. Recreational Land Use to Municipal Land Use

G. Land Use Modifications through Redevelopment

H. Land Use and Public Services Facilities Analysis

1. Population Growth During the Planning Period
2. Land Requirements and the Concept of Capacity Population

III. FUTURE LAND USE ELEMENT

A. Background and History

Bal Harbour is approximately 290 acres in size, of which 40 are submerged lands and 245.3 are developed. Only about 4.68 acres remain vacant.

Bal Harbour was developed beginning in 1929 when sand dunes and mangroves were razed, drained, filled and bulkheaded. During World War II, the entirety of Bal Harbour was leased by its developers to the U.S. Government. In 1946, the owners, Miami Beach Heights, Inc., incorporated the land into a town. At that time, the land was subdivided and platted. Development during the 1950's was mostly single family houses, most of which still stand today. Development in the 1960's was mostly of hotels and apartment houses. During the 1970's condominium buildings were built along the ocean-front, and some redevelopment was experienced, as some hotels were transformed into condominiums.

B. Demographics, Resident Population

Population growth, as compared to Dade County's, has been slow in the Village's fifty years. The three most recent U.S. Census population are recorded as follows:

1970	2,038	1,267,800
1980	2,973	1,625,800
1990	3,045	1,937,200

Source: 1990 US Census

The 1995 estimated populations are 3,078 for Bal Harbour and 2,058,760 for Dade County.

Midrange projections for Bal Harbour and Dade County are as follows:

1995	3,078	2,058,760
2000	3,257	2,295,201
2005	3,266	2,535,803
Capacity	7,197*	2,932,000

Source: CAS 1995

* Includes hotel to multiple-family residential conversions of 876 hotel rooms to 741 dwelling units. If it is assumed that present hotels are converted to condominiums or rental apartments, and the town becomes completely built-out, then a capacity population of 7,197 would be reached. This capacity population is calculated assuming that the hotels are converted to multiple-family residential units at the maximum permitted density of 55 dwelling units per acre. For the purposes of this plan, conversion of present hotel uses to other uses is not considered, and the capacity population is not utilized.

The following socio-economic information is available from the 1990 census data for Bal Harbour and for Dade County as a whole:

Total Population	3,078	1,995,500
Hispanic	292	997,750
Black	10	454,000
New Hispanic White	2,946	460,000
Under 18 Yrs.	160	505,000
18-64 Years	1,170	1,193,167
65 & Older	1,923	284,936
Per Capita Income (1989)	$56,413	$17,340

C. Seasonal and Migratory Populations

It is estimated that there are approximately 818 vacant dwelling units, or 26% out of a total of 3,147 dwelling units in Bal Harbour. Additionally, there are 876 hotel rooms. This forms the basis of the estimated peak population potential calculated in Table 3.1. The present potential peak population is comprised of 3,078 residents, 2,760 transients and 1,359 visitors, for the total of 7,197 people. Table 3.2 contains the potential peak population projections based on the future land use map.

The total population projections for resident, transient and visitor groups are used in establishing current and future levels of service standards, which are to be found in other elements of the comprehensive plan.

D. Analysis of the Character of the Planning Area

1. Groundwater

Because of the Village's proximity to the ocean, and given its geologic origins, groundwater is brackish. There are no known water supply wells or wellfields, and none are planned. Water, in sufficiently adequate quantity and quality, is supplied from the mainland by the Miami Dade Water and Sewer Authority Department (MD-WASAD). This source is used for all potable, recreational and irrigation demands of the Village. It is suspected there may be wells for cooling systems, discharging to groundwater; but specific information on number, location or size is not available.

TABLE 3.1
(REVISED 1996)
PRESENT POTENTIAL PEAK POPULATION

Source	Max. DU	Existing DU	Max. Hotel Rooms	Existing Hotel Rm.	Estimated Res. Pop.	Max. Pop.
Single Family	212	181			186	329
Med. Density	498	491			507	772
High Density	3056	2475			2555	4737
Hotel			1348	876		1359
Total	3766	3147	1348	876	3248	7197

Notes:
1. Average ppdu 1.55 per 1990 Census.
2. Hotel Rooms assume 80% occupancy.
3. Existing Complan estimated 33 1/3% seasonal occupancy.

Source: CAS 1996

TABLE 3.2
(REVISED 1996)
PROJECTED FUTURE PEAK POPULATION

	Resident	Migratory (Transient)	Seasonal (Visitors)	Total
1990	3045	2230	1012*	6287
1995	3078	1358	1081	5517
2000	3257	1358	1084	5699
2005	3266	1358	1088	5712

*Per 1990 Census Data (653 DU x 1.55 ppdu)

Source: CAS 1996

2. Soils

The soils at Bal Harbour Village are categorized by the US Soil Conservation Service as "Manmade". The Village is by origin a barrier island, which was cleared and filled to its present day elevations.

3. Floodplains

The most recent Flood Insurance Rate Map as published by the Federal Emergency Management Administration (Panel No. 92 of 625/map number 12025C0092H dated March 2, 1994) shows the Village being mostly in Zone AE, with a base flood elevation of 8.0. It is reproduced with graphic changes as Figure 3.1. Only the area east of Collins Avenue differs, with zones varying from Zones X to AE to VE. The buildable areas east of Collins Avenue (lying landward of the Coastal Construction Control Line, CCCL) all fall in either Zone AE(8) or Zone X. All new developments or future redevelopment's will comply with the local code requirements that reflect the 100-year base flood elevation determinations.

4. Extractions

Bal Harbour has no mineral or soil extraction uses. Even though the beaches have been renourished in the past and will require restoration in the future, the sand has been dredged from offshore.

5. Wetlands

There are no wetlands inside of the Village limits, except as depicted by the "Bay Bottom" land use classification. (The definition for wetlands used in this determination is the one contained in 17-4 FAC). There are no Areas of Critical State Concern within Bal Harbour. The portion of Biscayne Bay contained within the Village limits falls outside the boundary of the portion of the Bay that is classified as an Outstanding Florida Water.

6. Historical and Archaeological Resources

Bal Harbour has no historical or archaeological resources.

E. Existing Land Use

Bal Harbour is 98.6 percent built-out. Past changes in land use have not been substantial having been limited to those consisting of demolition of hotel structures and the construction or rebuilding of new residences in previously developed or vacant parcels.

Table 3.3 contains current land uses and natural resources for the Village. As is evident from this table and from Figure 3.2, some of the land uses and natural resources categories are not found in Bal Harbour. These are listed in Table 3.3 for analysis purposes but are omitted from Figure 3.2 for the sake of clarity and simplicity.

Recognizing that the shoreline will continue to shift with the passage of time, being dependent on natural phenomena (albeit influenced by man and manmade features) the Village limits could change over time. For simplicity, the Existing Land Use Map shows the beach use as extending to the mean sea level line of 1929 (not necessarily the same elevation or location of actual mean sea level). At present this line ranges from approximately 120 feet to 210 feet east of the CCCL. All of the land (submerged or subject to being submerged) east of this line, is regarded as not being within the Village's political jurisdiction, and is not shown in Figure 3.1.

1. Low Density Residential Land Use

   Approximately one fourth of the entire Village, and one third of its land area is dedicated to single family residential development. There are 212 single family lots, and 181 existing single family homes. From a reconnaissance of the most recent aerial photograph, and researching building permit data, seventeen (17) homes are built over lot lines (one home occupies more than one platted lot) and that six homes use the adjacent lot as the yard of the house. These "yards" are counted as vacant lots, just as obvious vacant lots are. Total number of vacant lots is sixteen.

   Since the zoning regulations were written approximately ten years after the land had been subdivided, and limit the number of dwelling units to one per lot, the density appearing on the Existing Land Use Map is the total number of platted lots divided by the number of acres of the single family zoning classification, and adjusted for the smallest lot; thus yielding 6 units per acre.

2. Medium Density Residential Land Use

   The medium density land use category refers to the multi-family parcels of which there are 29. None of the parcels are vacant.

   The zoning code permits from eight to twenty-four units per parcel, depending on the zoning of the individual parcel. This translates to a density of between 14.5 and 31.7 units per net acre.

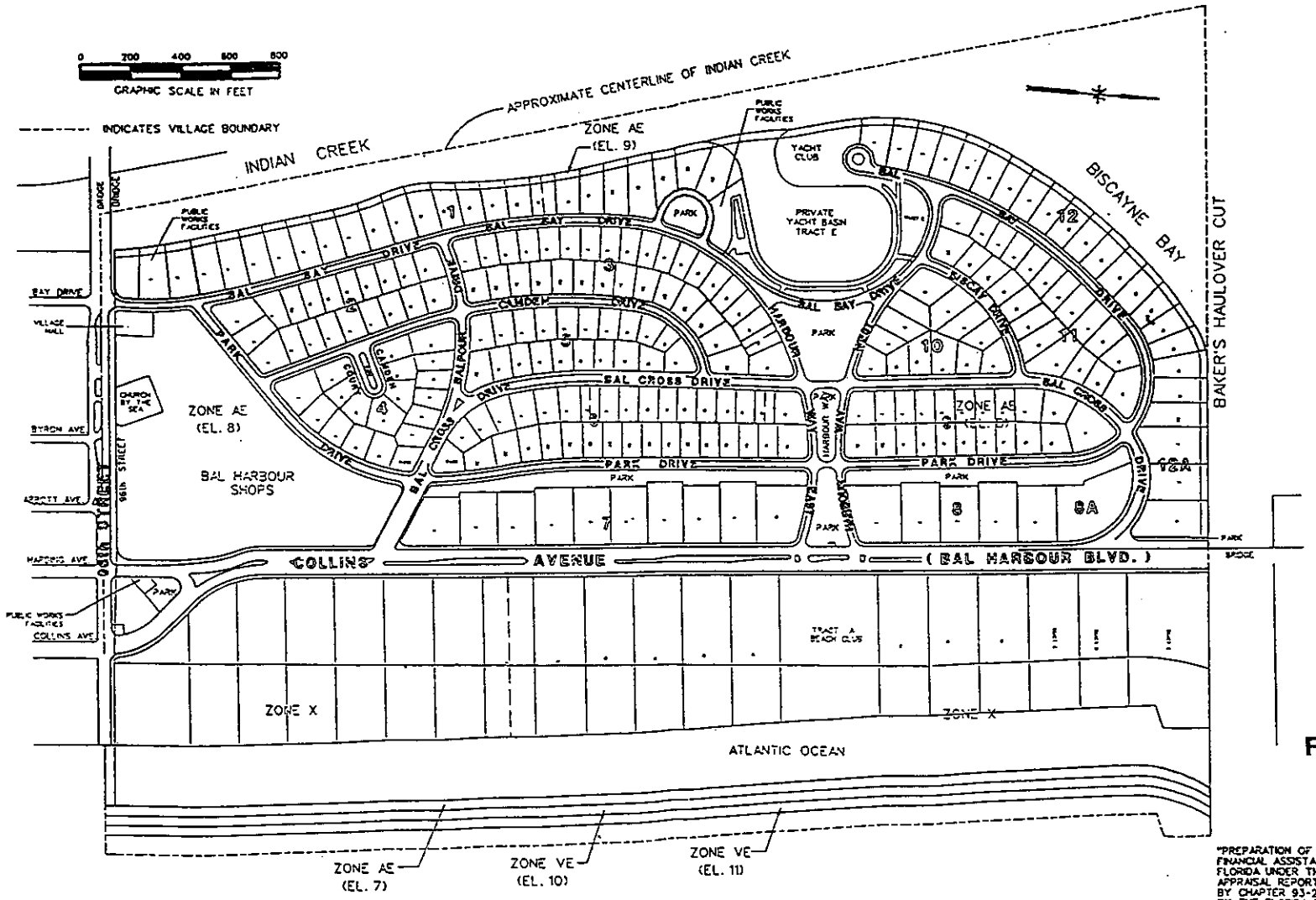


FIGURE 3.1

"PREPARATION OF THIS MAP WAS AIDED THROUGH FINANCIAL ASSISTANCE RECEIVED FROM THE STATE OF FLORIDA UNDER THE LOCAL GOVERNMENT EVALUATION AND APPRAISAL REPORT ASSISTANCE PROGRAM AUTHORIZED BY CHAPTER 93-206, LAWS OF FLORIDA, AND ADMINISTERED BY THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS."

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 West McNab Road, Pompano Beach, Florida 33069

BAL HARBOUR VILLAGE

FLOOD ZONE MAP
SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY 1993

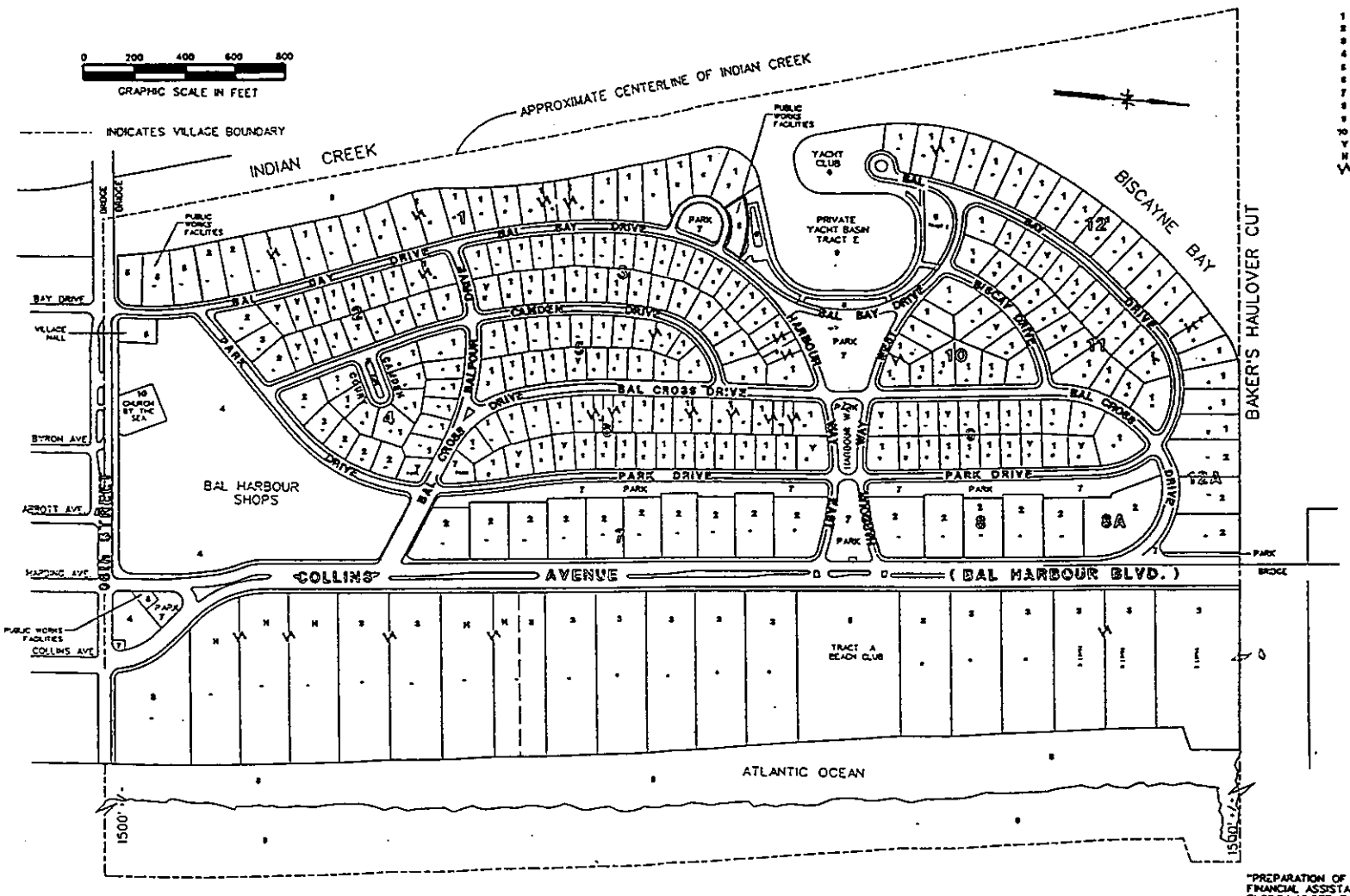
SCALE 1"=200'
94-125

SHEET

TABLE 3.3
EXISTING LAND USES, HISTORICAL AND NATURAL RESOURCES
OF BAL HARBOUR
(AS OF JUNE 1995)

	Use/Resource Category	Approx. Net Acres	Jurisd'l Percent	Percent of Dry Land
1.a	Residential Low Density	60.40	14.06	25.02
1.b	Residential Medium Density	21.56	4.91	8.73
1.c	Residential High Density	55.63	11.77	20.95
2.	Commercial Use	17.50	3.83	6.82
3.	Industrial Use	0	0	0
4.	Agricultural Use	0	0	0
5.	Recreational Use	9.78	2.22	3.96
6.	Conservation Use	0	0	0
7.	Educational Use	0	0	0
8.	Municipal Use	1.86	0.42	0.75
9.	Open Space	8.13	1.85	3.29
10.	Vacant Land	4.69	2.15	3.83
	a.Res. Low Den.	4.69		
	b.Res. Medium Den.	0		
	c.Res. High Den.	0		
11.	Historic Resources	0	0	0
12.	Institutional Use	0.66	0.15	0.26
13.	Beaches and Shores	28.62	6.51	11.59
14.	Bays and Harbors	192.56	43.81	N.I.
15.	Wetlands	0	0	0
16.	Minerals Extraction	0	0	0
17.	Streets and Highways	36.55*	8.32	14.80
	TOTAL	437.94	100	100

Source: CAS 1995 EAR
Notes: *Includes landscaped medians and shoulders
N.I. = Not Included in 247.00 acres of dry land



Page III - 8 of 29

MAP 4.1.1

"PREPARATION OF THIS MAP WAS AIDED THROUGH FINANCIAL ASSISTANCE RECEIVED FROM THE STATE OF FLORIDA UNDER THE LOCAL GOVERNMENT EVALUATION AND APPRAISAL REPORT ASSISTANCE PROGRAM AUTHORIZED BY CHAPTER 93-206, LAWS OF FLORIDA, AND ADMINISTERED BY THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS."

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 West McNab Road, Pompano Beach, Florida 33069

BAL HARBOUR VILLAGE

EXISTING LAND USE MAP
AUGUST 1995

SCALE 1"=200'

94-125

SHEET

3. High Density Residential Land Use

The high density land use category is limited to the ocean-front parcels east of Collins Avenue. There are nineteen parcels that could fall into this category, but only fourteen and one half are used for multi-family developments, and are presently condominium high rise structures. Since two structures fall across lot lines, and one lot is shared by two units, there in fact are only twelve condominium structures.

The zoning codes calls for a minimum of 24 and a maximum of 55 units per net acre. The code also permits conversion to hotel units from the condominium units and vice versa provided the above density requirements are met.

4. Hotel Land Use

There is no zoning code distinction between the hotel and condominium land uses in the Village Code. At present four and one half of the ocean front lots have hotel uses. One hotel covers three of these lots while the other covers one and one-half lots.

The zoning code calls for a minimum of 100 rooms and a maximum density of 100 rooms per net acre. Lot sizes vary, but are typically 2.75 acres in size.

5. Commercial Land Use

There are two commercial lots, totaling almost 17 acres of net land. One lot is a bank, and is only about a quarter of an acre. The remaining commercial consists of 16.5 acres of a regional shopping mall.

The Bal Harbour Shops is comparatively small for a regional shopping center, except that the tenants it houses consist of mostly specialty shops and anchor stores that are not found anywhere else in the county. Some are exclusive stores found only in New York or other major metropolitan cities. Therefore patrons from all of Dade and Broward Counties shop at this mall.

The shops have approximately 300,000 square feet of leased space, and parking for approximately 1,900 vehicles. There are three major points of access to the mall: one from 96 Street, and two from Collins Avenue. All three have full traffic signalization.

6. Municipal Land Use

Municipal services are located at four locations, taking up six parcels. The Village Hall that houses the administration, building department, clerk, post office, finance, police headquarters and council quarters take one parcel.

Three contiguous parcels are taken up by the Public Works Compound. This facility includes parking for the Village Hall and Village staff, a water storage tank, a water pumping station, the Public Works Building (maintenance garage, storage, offices and employee lounge), and the living quarters for the Public Works Director.

The two other parcels each contain a sanitary sewer pumping station. One also contains a trash transfer station.

7. Recreational Land Use

The recreational land use is presently limited to two parcels, both of which are waterfront. One is a 5.5 acre parcel on the beach containing a recreation building, tennis courts, pool and parking. This parcel is approximately 50 percent open space.

The other tract is the narrow strip of land that surrounds the marina. The marina itself is a somewhat circular boat basin approximately 5 acres in size, adjacent to Indian Creek, on the west side of the Village. It contains a recreation building, passive recreational facilities and parking. At one time it also featured now obsolete fuel facilities for the boats. The marina has 40 slips (more if smaller boats are docked), and can dock approximately 6 more boats dock-side. Berthing is possible for three large (50-foot) or more smaller boats.

8. Open Space Land Use

Distributed in small parcels throughout the Village are over 8 acres of green open space. These range in size from 0.15 to almost 3 acres in size. These open spaces also serve as passive recreational spaces. Their vast majority are in relative proximity, only interrupted by local streets, and forming a double axis that extends 1,000 feet from east to west and 3,000 feet from north to south.

9. Beach Land Use

A significant part of the Village's open and recreational space is the beach that spans its full frontage on the east to the Atlantic Ocean. It is an environmentally protected area. This land use is discussed in more details in the Coastal Management Element.

The beach varies from 180 to 240 feet in width. Running its full length is a 10-foot wide jogging path, constructed of compacted granular material. The path runs in a serpentine fashion around xeric dunes landscaping that was restored by the Village as part of the dunes and beach restoration projects.

10. Bay Bottom Land Use

The approximately 40 acres of Biscayne Bay (and Indian Creek) that fall within the jurisdictional limits of Bal Harbour are protected by a sea wall and bulkhead. These 40 acres include 5 acres more or less of the yacht basin and marina described above.

The bay-land frontage consists of approximately 4,100 lineal feet of bulkhead. Additionally there are 1,200 feet of frontage to Bakers Haulover Cut. All the bulkheading is privately owned and maintained, except that at the Public Works Compound.

11. Institutional Land Use

The only institutional use at present is the church property on 96 Street. The congregation is one of two Congregational Churches in the Dade County Area. The zoning of this property also permits commercial and office land uses.

12. Streets and Highways

All minor local streets are two lane with valley gutter. The only major roadways are:

- Collins Avenue, running north and south; is a six lane arterial facility with separate left-turn and bus stop storage lanes, has a landscaped median, curb and gutter, and sidewalk, and includes a bridge at the north end. Northbound and southbound traffic are split into three-lane one way traffic in front of Bal Harbour Shops (just north of 96 Street) near the Surfside City limits.

- 96 Street, running east and west is a four-lane divided arterial road with separate left-turn and bus stop storage lanes; has a landscaped median, curb and gutter and sidewalk. The Village limits are at the centerline of the road. The southern half belongs to the Town of Surfside.

Both roadways are maintained by the Florida Department of Transportation; except that Bal Harbour maintains the following:

- Lighting of street and pedestrian areas;
- Landscaped medians;
- Street cleaning, except for the south half of 96 Street;
- Drainage of the north half of 96 Street;
- Parking facilities under the Haulover bridge;
- Bus bench shelters.

The Village's internal roadways have security control, thusly:

- Manned guard house at the entrance from Collins Avenue;
- Controlled gate for entrance and exit at the access from 96 Street;
- Physical barriers at two other access points from Collins Avenue.

The internal streets have lighting and positive drainage.

F. Future Land Use

The future land uses are expected to be the same as those found in the present, except that vacant parcels will be constructed following the currently permitted uses of the zoning codes, and other minor modifications described below. The future laud uses are tabulated on Table 3.4.

The Future Land Use Map, Figure 3.3, applies to the 1995 to 2010 planning periods. By 2010 all vacant parcels are expected to be constructed. During the period the only anticipated construction will be the result of reconstruction of single family homes or redevelopment of existing commercial, multifamily or hotel properties. The other anticipated changes are as follows:

1. Recreational Land Use to Multifamily (High Density) Land Use

   The 5.5 acre club facility located between Collins Avenue and the beach-front could be re-developed as high density multifamily or hotel, in accordance with the Village Code and the plat and the zoning regulations. Redevelopment is anticipated in the near future.

2. Institutional Land Use to Commercial Land Use

The present day make-up of the "Church-by-the Sea" is unknown. If its members diminish, selling of the property could become economically attractive. The zoning of the land permits commercial development. It could form part of the Bal Harbour Shop complex, as it is surrounded by it on three sides.

3. Recreational Land Use to Municipal Land Use.

The southern end of the marina land, currently listed as recreational, presently houses the solid waste transfer station. The transfer station is undersized, poorly laid out, has problems with traffic and the handling of vehicles and is in general need of improvements. It is conceivable that the Village would require additional space to properly operate the facility in order to improve the service it provides and improve its appearance. It is conceivable that since the marina is under-utilized (only 12 out of 40 slips are used), the entire southern tip could be purchased by the Village.

G. Land Use Modifications Through Redevelopment

The values of properties in and around Bal Harbour are in the upper percentile ranks in Dade County. The 1990 Census and 1995 research reported average oceanfront condominium values of $375,000; inland multiple family residences average $100,000; higher than in any other municipality. Single family residences averaged $750,000. These properties are well maintained, and are not allowed to deteriorate. New homes being built in vacant lots display custom designs and investments indicative of quality in the surrounding real estate market.

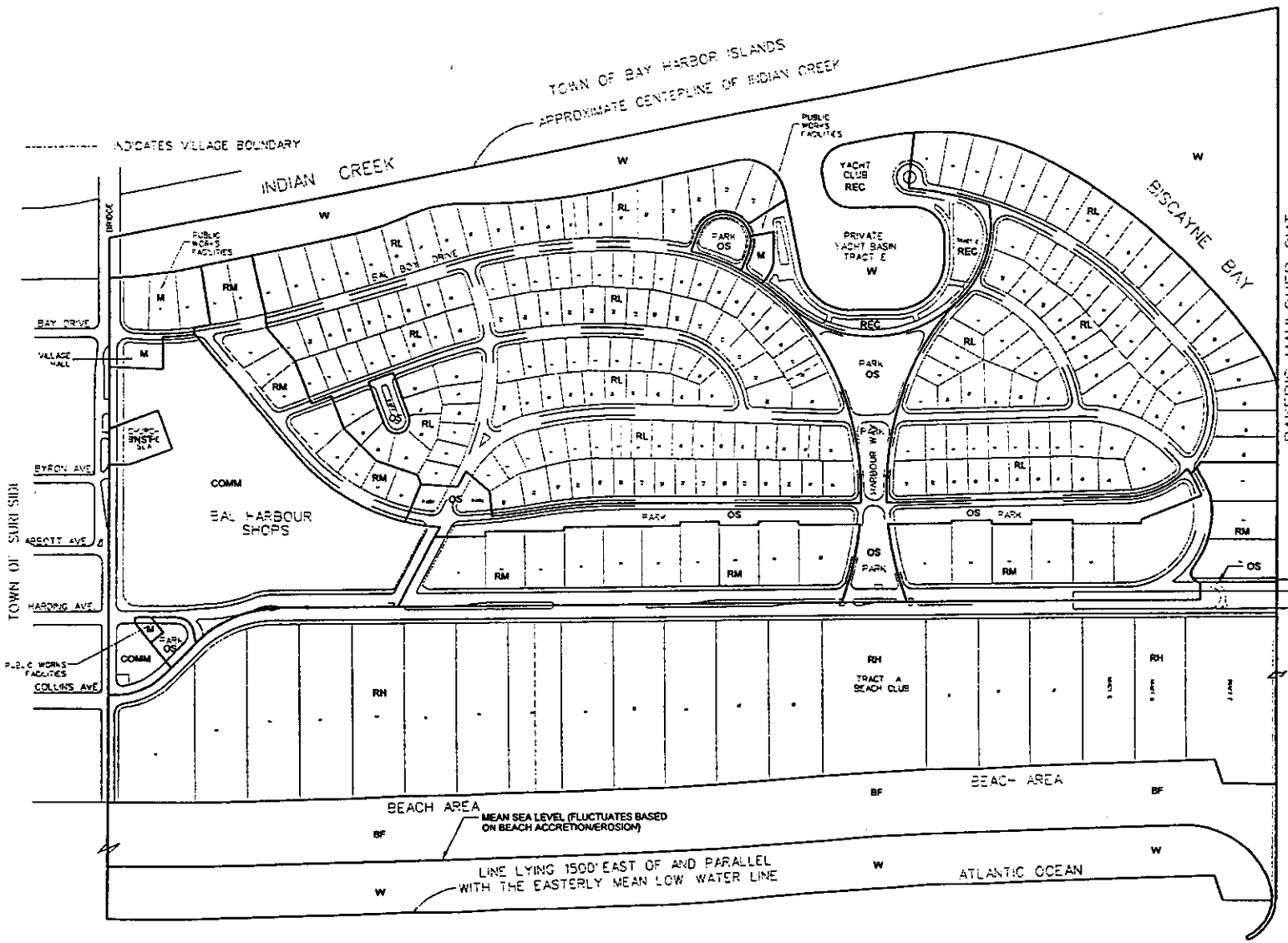
This environment is neither conducive to nor indicative of redevelopment by the private sector. Exceptions do occur, and the oceanfront club property is an example of possible redevelopment. However, the balance of Bal Harbour gives all indications that redevelopment is unlikely.

TABLE 3.4
FUTURE LAND USES, HISTORIC AND
NATURAL RESOURCES OF BAL HARBOUR

	Use/Resource Category	Approx. Net Acres	Jurisd'l Percent	Percent of Dry Land
1.a	Residential Low Density	66.24	15.07	26.82
1.b	Residential Medium Density	21.56	4.91	8.73
1.c	Residential High Density	62.25	14.16	25.20
2.	Commercial use	17.41	3.96	7.05
3.	Industrial use	0	0	0
4.	Agricultural use	0	0	0
5.	Recreational use	5.58	1.27	2.26
6.	Conservation use	0	0	0
7.	Educational use	0	0	0
8.	Municipal use	2.06	0.47	0.83
9.	Open space	6.73	1.53	2.72
10.	Vacant land	0	0	0
11.	Historic resources	0	0	0
12.	Institutional use	0	0	0
13.	Beaches and shores	28.62	6.51	11.59
14.	Bays and harbors	192.56	43.80	N.I.
15.	Wetlands	0	0	0
16.	Minerals extraction	0	0	0
17.	Streets and highways	36.55*	8.32	14.80
	TOTAL	439.56	100	100

* Includes landscaped medians and shoulders.

N.I. = Not Included in 247.00 acres of dry land.



200 100 0 200 400

GRAPHIC SCALE
1" = 200'

LEGEND	
RESIDENTIAL	
LOW (UPTO 8 DUA)	RL
MEDIUM (UP TO 36 DUA)	RM
HIGH (UP TO 86 DUA) INCLUDES HOTEL USES	RH
COMMERCIAL	COMM
MUNICIPAL	M
RECREATION	REC
OPEN SPACE	OS
BEACHFRONT (ENVIRONMENTALLY SENSITIVE LIMITED TO CONSERVATION/REC)	BF
WATER	W
INSTITUTIONAL (RELIGIOUS)	INST

NOTE:
IN ACCORDANCE WITH THE COASTAL HIGH HAZARD AREA (CHHA) DEFINITION FOUND IN CHAPTER 163 F.S. AND RULE 9J-5 F.A.C., THE ENTIRE VILLAGE IS WITHIN THE CATAGORY 1 HURRICANE EVACUATION AREA AND THEREFORE IS LOCATED WITHIN THE CHHA.

NOTE:
SCALES SHOWN ON PLANS ARE FOR FULL SIZE 24" BY 36" PRINTS. CRAIG A. SMITH & ASSOCIATES OFFICIAL ISSUE 11" BY 17" PRINTS ARE EXACTLY HALF SIZE. ANY OTHER REPRODUCTION SHALL MAKE THE PRINTS NOT TO SCALE.

NO	DATE	REVISION	BY

Designed: MM 2/97
Drawn: RAB 2/97
Checked: MM 2/97

APPROVED BY: _____ DATE _____

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 West McNab Road - Pompano Beach
Florida 33069 (954) 782-8222

PREPARED FOR
BAL HARBOUR VILLAGE

FUTURE LAND USE MAP

SCALE 1"=200'

PROJECT NUMBER 95-0239

SHEET NUMBER 1/1

In addition, socioeconomic conditions indicate that property owners have the financial means to continue to maintain properties as in the past. Household income for 1989 was reported to average $57,022 and was distributed across the following ranges:

Less than $5,000	income:	68 Households
$5,000 to $7,499	income:	24 Households
$7,500 to $9,999	income:	32 Households
$10,000 to $14,999	income:	64 Households
$15,000 to $19,999	income:	71 Households
$20,000 to $24,999	income:	73 Households
$25,000 to $34,999	income:	105 Households
$35,000 to $49,999	income:	159 Households
$50,000 or more	income:	351 Households

Source: 1990 US Census

Bal Harbour's average household income was third highest of all municipalities, and more than double the County's $23,846 average.

H. Land Use and Public Services Facilities Analysis

1. Population Growth During the Planning Period

As is evident from the data and projections presented in sections B and C above, population growth through the 20 year period is expected to grow by approximately 2.5 percent for resident population and total potential peak population (including transient population and visitors). This is a very modest growth rate of only 0.124 percent per year, which could easily be obscured by the relative inaccuracy of the estimates and the projections. There is no degree of conservatism whatsoever in the population projections. Therefore, any deviation in the occurrence of events over the next 20 years could completely invalidate this analysis, if not the entire comprehensive planning process. For this reason, the local government should monitor the local economy and real estate development market, and anticipate changes, especially an upturn, which could change the economic environment of certain of its land uses, resulting in an insufficiency or inadequacy of public services and facilities.

2. Land Requirements and the Concept of Capacity Population

Bal Harbour is unable to grow in any horizontal direction due to physical barriers. Its only room for growth is vertically and from within in terms of increased density. Land use changes which result in the modest population increases are described above. Projected population is a function of the available land and the uses to which it is put. Additional land is not needed (as it is not available) to accommodate the projected population.

A substantial change in the demographic characteristics could dictate an entirely new scenario of required services and facilities. For example, if instead of having 70 percent of the population over 65 years of age, Bal Harbour were to suddenly acquire young, growing families with five children per household, the demands for recreational space would be greater; perhaps a school would be needed.

The assumption made by this analysis is that the socio-economic make up of Bal Harbour, and its demographic distributions will stay essentially the same. This assumption has some rationale behind it.

The reason the assumption has a sound basis, is that if it were irrational, and all of the existing hotels converted to condominiums, and all of the vacant lots were built upon, the projected "capacity" population under that scenario is only 3 percent greater than the present "potential peak" population experienced during certain times of the year when the snow birds come to visit.

The conclusion is that Bal Harbour is expected to remain in about the same shape and character as it is in today for at least during the planning period.

3. Bal Harbour Services and Facilities

a) Government and Administrative Staff

Present level of service will remain adequate to serve throughout the planning period. Government regulations will require that more records be kept and made available and accessible to be used in the preparation of planning efforts, and in the evaluation of the impact of proposed construction projects. Additional storage of files, file retrieval systems, computer data analyses will become necessary to provide efficient service.

b) Police Department

The Chief of Police has expressed a definite need to increase the police headquarters facilities to the level that they were a few years ago. A study by a professional knowledgeable in the law enforcement field and who can assist with staff and special requirements is recommended. Assuming that the present staff levels provide adequate service to the area under their jurisdiction, there is nothing related to development or land use changes that would evidently require additional staff.

c) Public Works Department

At present the Public Works Department is charged with the following duties:

- Maintenance and operation of water service and distribution system;
- Maintenance and operation of sanitary sewer collection and pumping system;
- Maintenance of stormwater collection and discharge system;
- Operation of solid wastes collection and transportation;
- Maintenance of public vehicles;
- Maintenance of landscaping of public grounds, parkways, medians and open spaces;
- Maintenance of street lights;
- Maintenance of public buildings;
- Maintenance of beach area;
- Maintenance of public parking areas.

Assuming that the current staff provides adequate service to the above list of duties, there is no foreseeable development - related event that would require additional staff. Other events which are connected to increased public facilities, however, may dictate changes in staff.

d) Transportation Element Needs

The Transportation Element does not identify any deficiencies that would occasion the need for increasing or improving any facility other than normal maintenance efforts.

e) Infrastructures Element Needs

Deficiencies identified in and improvements recommended by the Infrastructures Element will most likely not require additional staff or shifting of existing staff duties.

f) Development Orders

There are no recent or pending development orders (developments of regional impact) that impact Bal Harbour.

4. Dade County Services and Facilities

Dade County Government provides numerous services which include, but are not limited to the following:

- Aviation and Ports facilities;
- Corrections and rehabilitation (prison facilities);
- Elections administrations;
- Environmental and pollution control enforcement;
- Fire fighting resources;
- Housing for the disadvantaged;
- Care for the ill, elderly, and children;
- Hospital facilities;
- Police and law enforcement assistance;
- Highways and traffic control facilities;
- Bus and other mass transit facilities;
- Parks and other recreation facilities;
- Planning and technical support services;
- Library system;
- Property appraisals and tax collection services;
- Water supply and wastewater treatment facilities;
- Solid waste disposal facilities.

The Dade County School Board provides for public education of school-age children and adults.

The descriptions and analyses of the above listed services, facilities and resources, which the residents of Bal Harbour benefit from and pay taxes for, are beyond the scope of this study

Some of the above services are the subject of similar planning processes, which the County and the various other agencies are undertaking.

I. Incompatible or Inconsistent Land Uses

There are no land uses within Bal Harbour that are or may be incompatible with other land uses within, or land uses adjacent to, the Village limits. Figure 3.4 shows that portion of the proposed Future County Land Use Map, covering an area up to three miles outside of the Village. Accompanying Figure 3.5 is the legend that applies to Figure 3.4. The adjacent municipalities of Surfside and Bay Harbor Islands have land uses that consist of the following:

- Low density residential:compatible;
- Commercial: compatible;
- High density residential: compatible;
- Environmentally protected (beach): compatible.

The Haulover Park area adjacent to the north consists of:

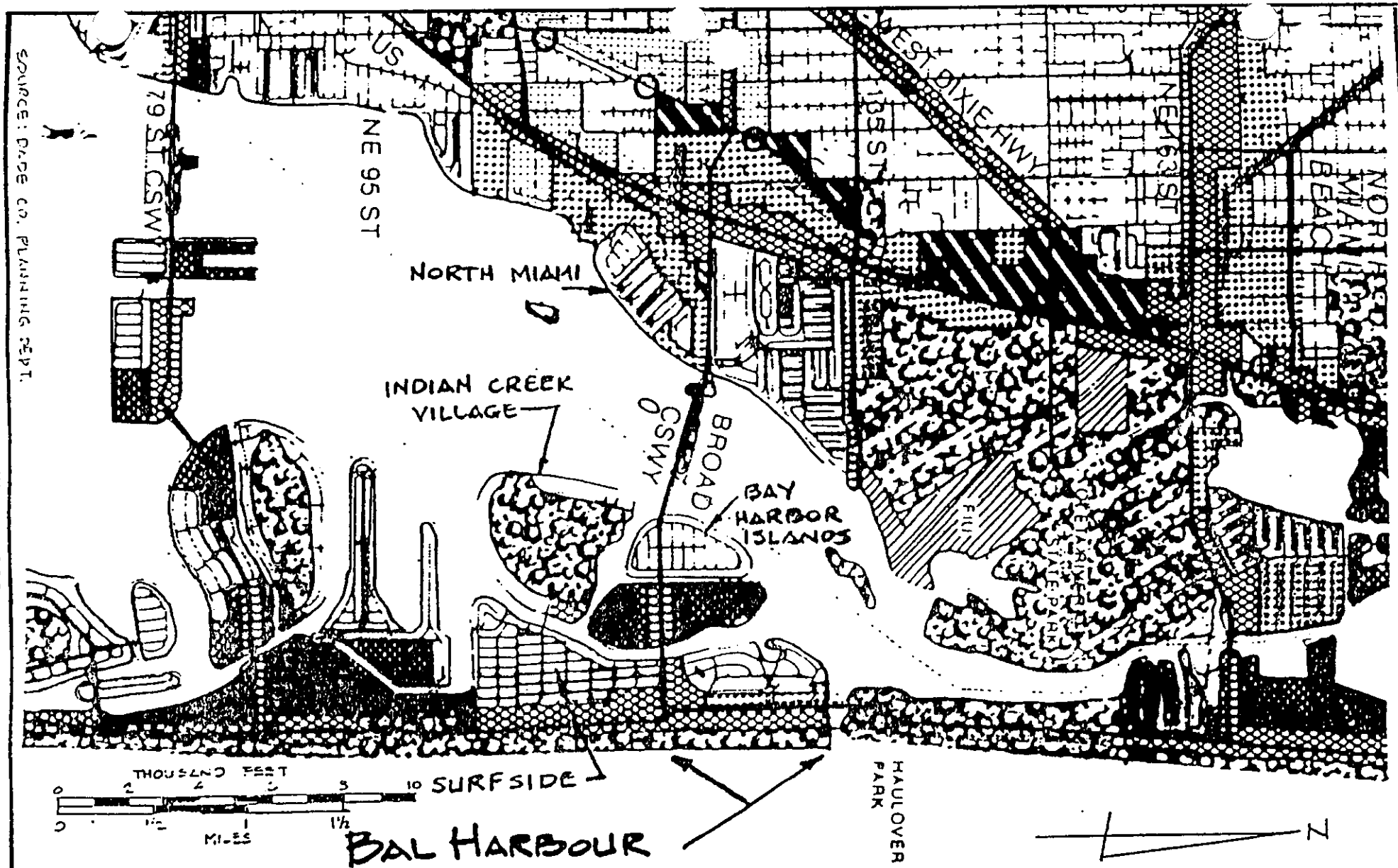
- Recreational: compatible;
- Environmentally protected (beach): compatible.

The County's land use map has shown the area of Bal Harbour between Collins Avenue and the beach as being commercial. This may be an interpretation of the hotel uses that existed in the area. The area at present is comprised of hotels and high density residential. The County's designation is not entirely inaccurate, but this plan is more precise.

A new map identifying, in a clearer fashion, land uses in adjoining communities to observe compatibility is included as Figure 3.6.

J. Public Educational Facilities

The Village of Bal Harbour is a planned community nearly fully developed. No large tracts of land remain in the Village except for the Beachfront Ocean Club site which is 5.5 acres in size. This tract is scheduled for redevelopment to a high rise residential development in the near future. In 1995 the Florida Legislature enacted Florida Law 95-341 which amended Chapter 163 F.S. to require local governments to identify lands within a community upon which public schools could be constructed and list in the Land Use Element in what categories schools are permitted. This would be impractical for the Village at this stage of the communities development. No land is available and the average age of residents is nearly 70 years old. The expenditure of public monies on educational facilities on a narrow barrier island would conflict with state statutes and South Florida Regional Planning Council and Village Policies on expenditures of public monies in coastal areas such as Bal Harbour. In light of the above, the Village has no ability to comply with the new planning law provision.



DES.	
DWN.	
CHK. ROR	
DWG. NO. 3.4	

LUDOVICI & ORANGE
CONSULTING ENGINEERS INC.
329 PALERMO AVENUE, CORAL GABLES, FLORIDA 33134

DADE COUNTY FUTURE LAND USE MAP

PROPOSED 2000 AND 2010 LAND USE PLAN

FOR METRO-DADE COUNTY, FLORIDA

RESIDENTIAL

ESTATE DENSITY	UP TO 2.5	DWELLING UNITS PER GROSS ACRE
LOW DENSITY	UP TO 6	DWELLING UNITS PER GROSS ACRE
LOW-MEDIUM DENSITY	UP TO 13	DWELLING UNITS PER GROSS ACRE
MEDIUM DENSITY	UP TO 25	DWELLING UNITS PER GROSS ACRE
MEDIUM-HIGH DENSITY	UP TO 60	DWELLING UNITS PER GROSS ACRE
HIGH DENSITY	UP TO 125	DWELLING UNITS PER GROSS ACRE

- INDUSTRIAL AND OFFICE
- RESTRICTED INDUSTRIAL AND OFFICE
- BUSINESS AND OFFICE
- OFFICE/RESIDENTIAL
- INSTITUTIONAL AND PUBLIC FACILITY
- PARKS AND RECREATION
- AGRICULTURE
- OPEN LAND
- ENVIRONMENTAL PROTECTION
- ENVIRONMENTALLY PROTECTED PARKS

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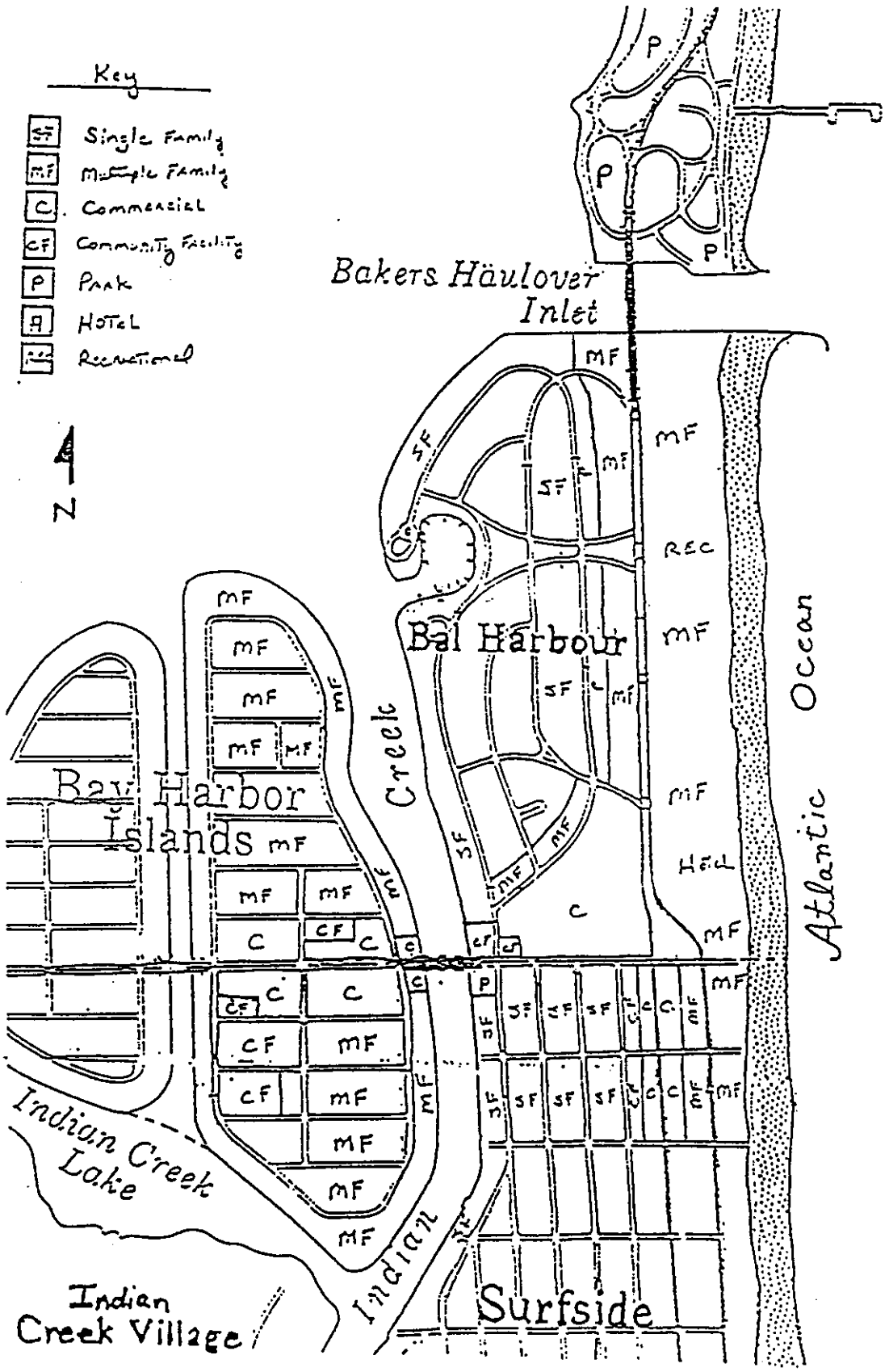
CONSULTING ENGINEERS INC.
320 PALERMO AVENUE, CORAL GABLES, FLORIDA 33134

DADE COUNTY LAND USE MAP LEGEND



ADJACENT LAND USES

BAL HARBOUR VILLAGE

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS

1994

K. GOALS, OBJECTIVES AND POLICIES

GOAL: Maintain the high quality built environment of Bal Harbour by ensuring that all physical development activities adhere to the Village's Land Development Regulations.

Objective 9J-5.006(3)(b): Maintain and enforce a current comprehensive set of Land Development Regulations (LDR's).

Policy: Annually review LDR's to ensure they properly address all land development activities.

Policy: Those Density and Intensity Standards found in the Future Land Use Element shall be enforced rigidly.

GOAL: Maintain the existing character of the Village while honoring the Future Land Use Map.

Objective 9J-5.006(3)(b)1: Coordinate future land uses with:

- Topography: Bal Harbour has a flat topography, therefore all proposed land uses are suitable. No policies are necessary.

- Soil Conditions: Future land uses are of the same types as current uses, therefore all proposed land uses are equally suited. No policies are necessary.

- Availability of facilities and services:

  Policy: Location, extent, and intensity of future developments shall be subject to the physical ability to provide for adequate public services to levels adopted by the comprehensive plan.

  Policy: Developments and construction that adversely impact on the resources of Bal Harbour and its residents shall not be allowed.

  Policy: New developments and construction shall be required to make improvements to existing public facilities in order to mitigate their impact thereon.

  Policy: Review ordinances in light of the comprehensive plan. Amend plan or ordinances as required for consistency.

  Policy: Maintain adequate resources to review and assess

impact of new construction on public services, resources and facilities.

Policy: Cooperate with regional agencies in the implementation and enforcement of Development Orders.

Objective 9J-5.006(3)(b)2: Renewal of blighted areas:

Policy: Annually review the incentives used by other municipalities around the state and country in the redevelopment of properties, and report to the Council as to how Bal Harbour may implement similar programs.

Objective 9J-5.006(3)(b)3: There shall be no land uses that are inconsistent with community's character and with future land uses:

Policy: Amend the Future Land Use Plan for consistency with land uses adopted and approved by Future Land Maps of the County and of other adjacent municipalities, or request amendments of these plans when found inconsistent with Bal Harbour's.

Policy: Construction shall not be permitted in land use categories of Bay Bottom or Beachfront, except for marginal construction to repair already existing facilities, beach renovations, shoreline protection, revetments, stabilization, or other water-dependent uses.

Policy: Review construction and development plans for consistency with the goal set herein, and for conformity with the community's standards.

Policy: Enforce the Zoning and Development Codes of Bal Harbour.

Objective 9J-5.006(3)(b)4: Protect natural and historical resources.

Policy: Developments and construction that adversely impact on the quality of the natural environment shall not be allowed.

Policy: Developments and construction shall be allowed to mitigate adverse effects on the natural environment only to the extent permissible by environmental regulatory agencies.

Policy: Coordinate for the review of proposed development or

construction by other regulatory agencies at the county, regional and state levels.

Policy: Cooperate with Metro Dade County's Department of Environmental Resources Management, the Florida Department of Environmental Protection and the U.S. Army Corps of Engineers in enforcing rules and regulations controlling activities in wetlands, estuarine and coastal areas.

Policy: Require that new construction be protected against flooding; and that it not cause the flooding of other properties.

Policy By 1998, the Village shall identify any structure which may have reached or will soon reach the age that would be deemed significant by the Department of State. A report shall be prepared and updated during each EAR update identifying the residences, their current status and suggested actions, if any.

Objective 9J-5.006(3)(b)5: Require provisions for hurricane preparedness and evacuation.

Policy: Incorporate regional and local agency recommendations into development orders.

Policy: Consult the Coastal Management Element when reviewing proposed development plans.

Objective 9J-5.006(3)(b)6: The Village Council shall annually review Dade County's and the South Florida Regional Planning Council's recommendations relating to the Hurricane Evacuation Report, and all land uses shall be coordinated with recommendations deemed appropriate by the Village Council.

Policy: The Village shall determine the appropriateness of recommendations of the SFRPC and Dade County based on parameters including but not limited to the following:

- Consistency with the Village's adopted "Master Plan" and "Future Land Use Map.

- Consistency with the Village's existing and planned development pattern.

Policy: Recommendations that suggest the implementation of policies or actions that would be inconsistent with the above-

mentioned parameters shall be determined to be inappropriate.

Policy: The Village shall review all future proposed Land Use Amendments in concert with recommendations of the SFRPC and Dade County relating to the Hurricane Evacuation Report as deemed appropriate by the Village Council.

Objective 9J-5.006(3)(b)7: Comply with the Florida State Comprehensive Plan.

Policy: Cooperate with state and regional agencies in the implementation of resource management plan.

Policy: The Village Manager shall act in the capacity of liaison between Bal Harbour and any state or regional resource management plan, or may, with the Village Council's approval, assign such representation.

Objective 9J-5.006(3)(b)8: Discourage proliferation of urban sprawl. This objective does not apply. Bal Harbour is built out and has no opportunities for the annexation of land.

Objective 9J-5.006(3)(b)9: Ensure availability of land for public facilities and support utilities.

Policy: Cooperate with utilities seeking access through Bal Harbour, provided the proposed services are of public benefit to Bal Harbour and its residents.

Objective 9J-5.006(3)(b)10: Encourage use of innovative land development techniques.

Policy: Amend the Bal Harbour Village code to permit mixed-use and planned unit development to form part of any redevelopment of the ocean-front district.

Policy: Allow the oceanfront parcels to develop as hotels, condominium or rental apartments, and permit mixed use of those properties with limited convenience commercial or business uses to primarily serve their residents or patrons.

Objective 9J-5.006(3)(b)11: Monitor Dade County's activities on the dredge spoil disposal sites within Biscayne Bay by annual inspection and through Intergovernmental Coordination.

Policy: Even though no sites are within the Village, coordinate with Dade County to identify and protect those sites deemed appropriate and mapped for such purposes.

Policy: Object to spoil sites being poorly maintained and/or utilized for activities not conducive to the aesthetics of Biscayne Bay or residents of the Village.

Policy: By June 1997, request in writing Dade County to alert the Village of any current or future improvement/construction activities on the spoil islands.

Disposition of Policy Requirements in 9J-5.006 (3)(c)

Policy 1. Provided above.
Policy 2. Provided above.
Policy 3. Provided above.
Policy 4. Provided above.
Policy 5. Provided above.
Policy 6. Not applicable. No wellfields are possible (salinity).
Policy 7. Not applicable. Built-out.
Policy 8. Provided above.

IV. TRANSPORTATION ELEMENT

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Introduction

Bal Harbour Village adopted a Traffic Circulation Element in accordance with the requirements of Chapter 163.3177 (6)(b) F.S. and Rule 9J-5.007 F.A.C. requirements in December 1988. Because of the Village's size and population, the Village was not required to prepare a Mass Transit or Ports, Aviation and Related Facilities Elements. In 1994, the Florida Legislature amended Chapter 163 to require each local government within a Metropolitan Planning Organization (MPO) to prepare a Transportation Element which would replace the Traffic Circulation Element, Mass Transit Element and Ports, Aviation and Related Facilities Element. The purpose of the Transportation Element is to plan for a multi modal transportation system that places emphasis on public transportation systems.

Description of Existing Transportation System

This portion of the Element examines the facilities that serve vehicular and non-vehicular traffic within the Bal Harbour planning area. The transportation system is a critical component of society, playing a role in all facets of life, having economic implications, and of recreational value.

The transportation system has two basic components. One is the internal access and circulation of the residential neighborhood within the community. The other is the external component that serves as the link to other communities. The first, or internal component is maintained by Village or private homeowners association. The second, or external component forms part of the Dade County Traffic Circulation Network.

The Dade County transportation planning process is carried out by the Metropolitan Planning Organization (MPO), whose charge is to master plan and coordinate roadways, mass transit and other transportation systems on a countywide basis. The MPO's governing board is the Board of County Commissioners.

Roadway System

Figure 4-1 graphically illustrates the existing transportation road system. Within Bal Harbour, the following roadways are classified as follows:

Arterial Roads

Collins Avenue (SR A1A)
96th Street

Collector Roads

Bal Bay Drive (portion from Yacht Club entrance to 96th Street)
Harbour Way (from Yacht Basin to Collins Avenue)

Local Roads

All other Village roads.

Limited and Controlled Access Facilities

None

Significant Parking Facilities

The Village considers three areas to warrant a description of having significant parking facilities.

- Bal Harbour Shops - approximately 1,900 parking spaces (surface/garage).
- Hotel Oceanfront developments - approximately 1,500 parking spaces (surface/garages).
- Residential oceanfront development - (2475 DU x 2) approximately 4950 parking spaces (surface/garages).

Public Transit System

Figure 4-2 depicts the existing Public Transit System. Information was obtained from Metro-Dade's Transportation Administration

Public Transit Terminals and Transfer Stations

No public transit terminals or transfer stations exist within Bal Harbour. However, periodic bus stops are located along Collins Avenue and 96th Street.

Public Transit Rights of Way and Exclusive Public Transit Corridors

There are no public transit right-of-ways or exclusive public transit corridors located within the Village.

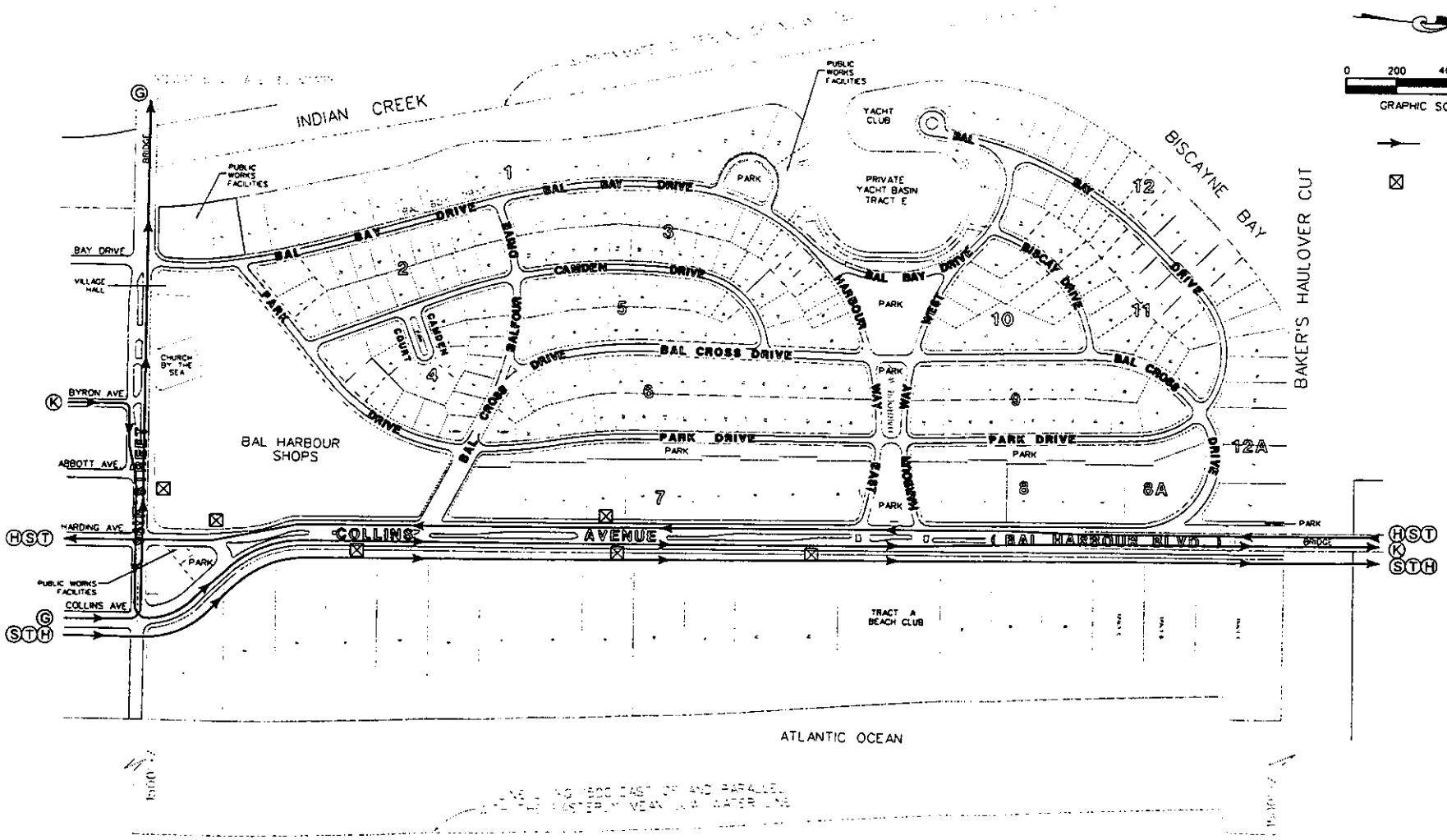

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FIGURE 4-2
EXISTING PUBLIC TRANSIT SYSTEM

SCALE 1"=200'

PROJECT NUMBER 96-0238

SHEET NUMBER 1 / 2

Significant Bicycle and Pedestrian Ways

Figure 4-3 depicts the existing bicycle and pedestrian ways within the Village.

a) Bicycle Traffic

There are no dedicated bicycling facilities in Bal Harbour.

Bicycling within the Village's local streets is common, given the relatively low traffic volumes, and controlled traffic conditions encountered. Also bicycling in common along Collins Avenue especially northward to the Harbour Beach Regional Park.

Bicycling is prohibited by local ordinance on sidewalks, the beachfront jogging path east of the oceanfront development and the beach area itself.

b) Pedestrian Traffic

Observed pedestrian traffic is most common in the following areas, in decreasing order of observed use:

- Crossing of A1A from the residential developments and hotels on the east side of Collins Avenue to the small park adjacent to the bank, the bank and to the Bal Harbour Shops. The crossing has pedestrian and traffic signalization.
- Crossing of 96 Street at the intersection with Harding Avenue, from Surfside to the Bal Harbour Shops. This is a fully signalized intersection;
- Walking of pedestrians along the sidewalk on the east side of Collins Avenue;
- Walking of pedestrians along the sidewalk on the north side of 96 Street;
- Walking of pedestrians along the sidewalk on the west side of Collins Avenue.
- Crossing of Collins Avenue at the intersection of Harbour Way. The crossing has pedestrian and traffic signalization.

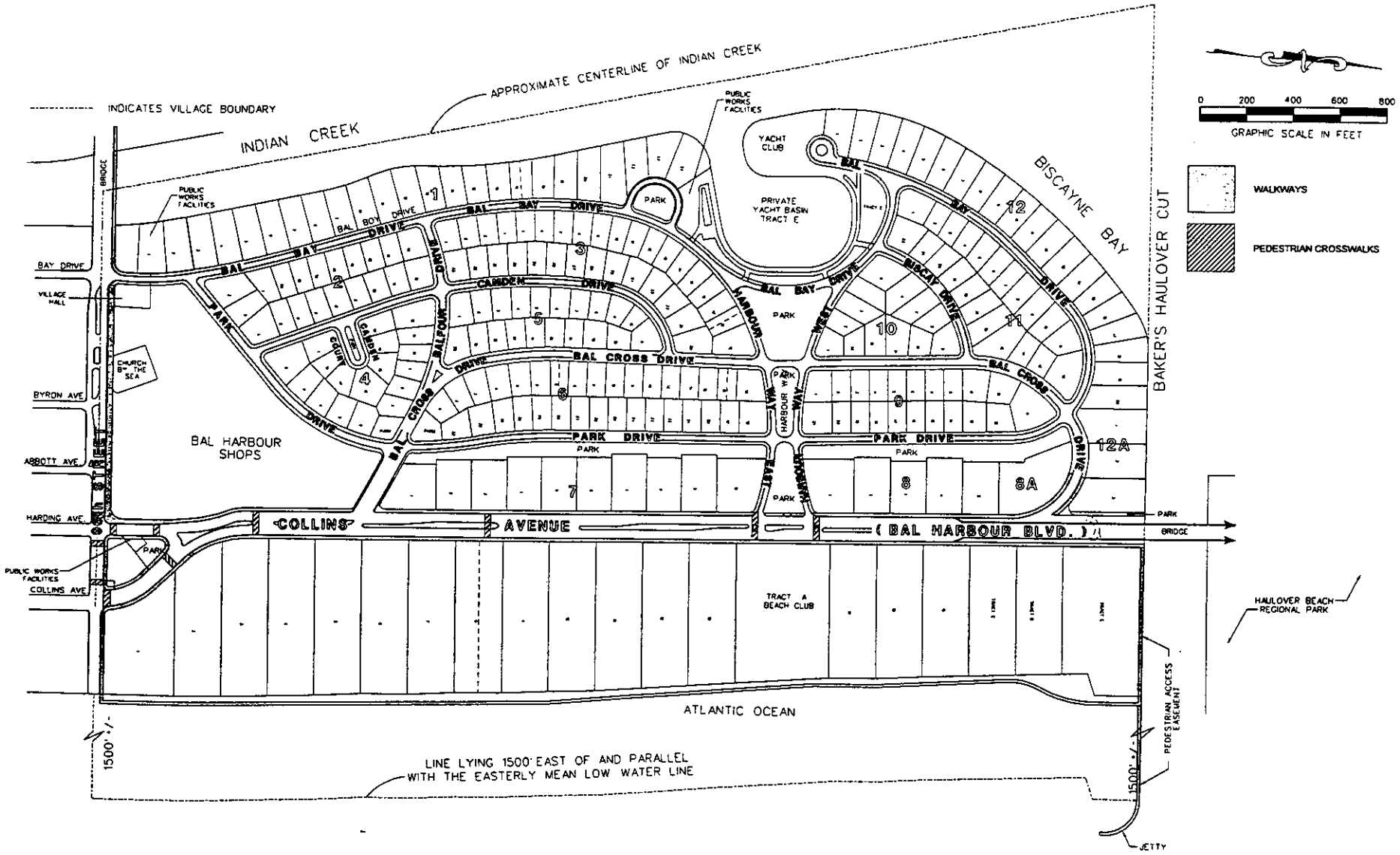

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FIGURE 4-3
EXISTING BICYCLE AND PEDESTRIAN WAYS

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 1 / 2

- Beach strolling, jogging, etc.
- Village strolling, jogging, etc.

Ports, Airport Facilities, Railways and Intermodal Facilities

Figure 4-4 illustrates the proximity of the Village to Ports, Airports, Railways and Related Facilities.

Port Facilities

There are no port facilities, per se, within Bal Harbour. The nearest major seaport is the Port of Miami which is located approximately 10 miles south of the Village, east of the central business district of the City of Miami. The Village does have a private 43 slip marina accessed from the Indian Creek. The marina is located within the single family area at the western terminus of Harbour Way. Also, many of the homes along Indian Creek, and those portions of Biscayne Bay and Baker's Haulover Cut adjacent to the Village have private docking facilities.

Airport Facilities Including Clear Zones and Obstructions

There are no airport facilities within or in near proximity to the Village.

Miami International Airport

- Miami International Airport is located approximately 12 miles southwest of the Village. The runway alignments are generally east/west. Air traffic typically lands from the west and takes off eastward over the Atlantic Ocean before beginning turning movements. Therefore, there are no clear zones or obstruction issues affecting the Village.

Opa Locka Airport

- Opa Locka Airport is a general aviation facility located approximately 9 miles northwest of the Village. Air traffic is generally restricted to non commercial activities. The runway alignments are generally east/west. Air traffic typically makes turning movements within a few miles of the airport, therefore, no clear zone or obstruction issues affect the Village.

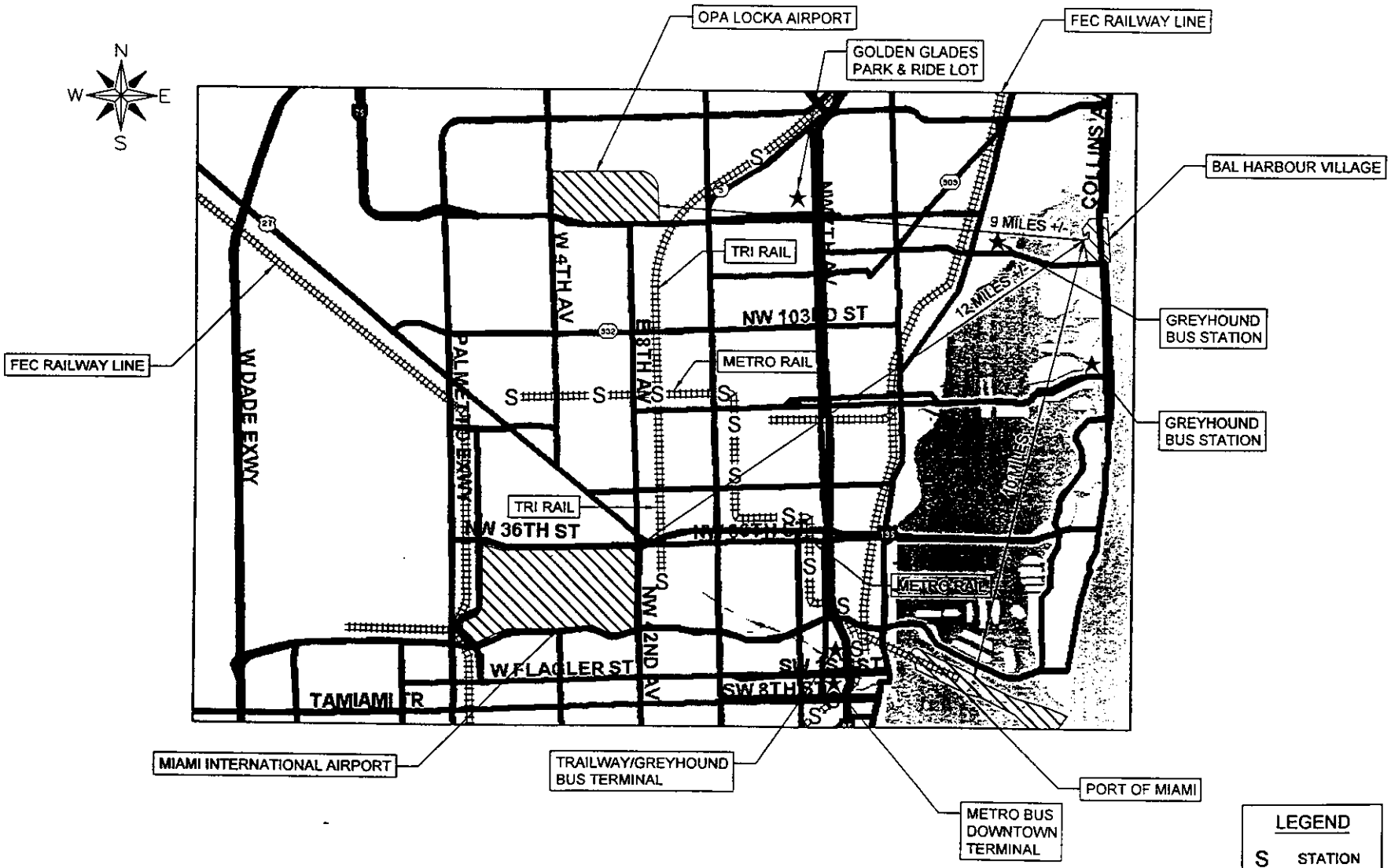

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FIGURE 4-4
EXISTING PORTS, AIRPORT FACILITIES, RAILWAYS, AND INTERMODAL FACILITIES

SCALE: N.T.S.
PROJECT NUMBER: 96-0238
SHEET NUMBER: 1/2

Other Facilities

- There are no heliports or similar facilities within the Village. It is noted that considerable helicopter and small planes travel north/south east of the Village over the Atlantic Ocean. Some visual and/or noise issues affect the Village on occasion.

Freight and Passenger Rail Lines and Terminals

There are no freight or passenger railroad lines or terminals either within or in near proximity to the Village. The nearest railroad line runs north/south west of US 1 on the mainland approximately 3 miles west of the Village.

Intermodal Terminals and Access to Intermodal Facilities

There are no intermodal terminals within the Village. Access to such facilities involves driving to a terminal such as a park and ride lot or metro rail station to cite examples.

Existing Functional Classification and Maintenance Responsibilities

The Functional Classification of roadways is utilized to create a hierarchical system to establish the responsibility for roadway maintenance and operation by either the State, the County or the local jurisdiction. The following broad guidelines are used to define roadway types:

- Principal Arterials - Major highways serving heavy volumes of traffic through the urban area.

- Minor Arterials - Roadways carrying moderately heavy volumes of traffic which channel traffic to community activity centers.

- Collectors - Roadways carrying low volumes of traffic to the arterial network.

- Local Roadways - Neighborhood roadways carrying low volumes of traffic to collector or arterial roadways.

The existing functional classification of roadways in the Village are provided in the following Table 4-1 and illustrated in Figure 4-5. Both the Federal Government and State of Florida have utilized functional classification systems to assign roadway jurisdictions. In May of 1996 the

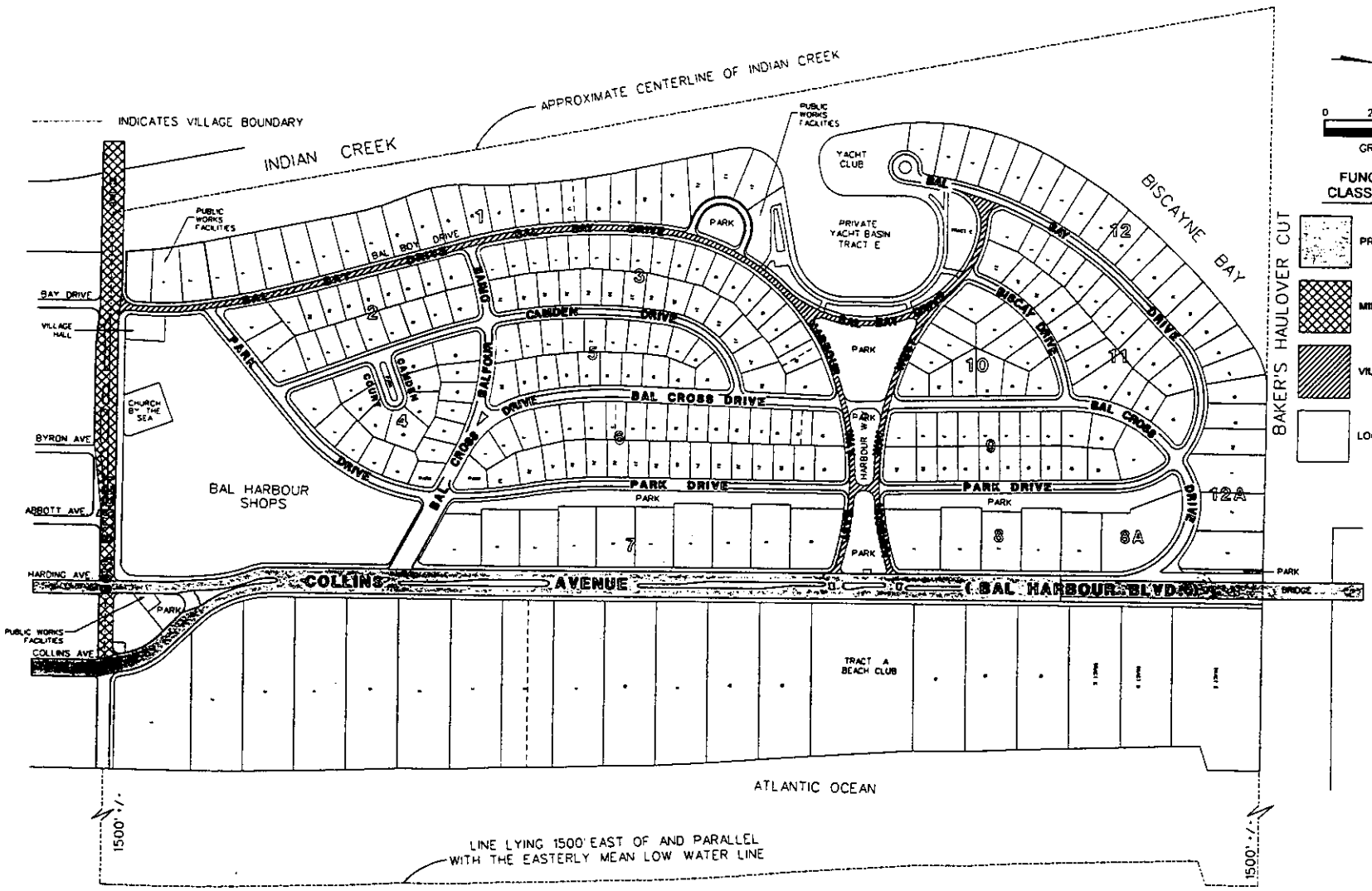

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FIGURE 4-5
EXISTING FUNCTIONAL CLASSIFICATION OF ROADWAYS

SCALE 1"=200'
PROJECT NUMBER 96-0238
SHEET NUMBER 1/2

Florida Department of Transportation District Six issued a letter stating that applicable State laws pertaining to functional classifications had been repealed. Therefore, the information provided is from the Federal classification system and/or previous State classification system.

Table 4-1

Roadway	From	To	Classification	Length
Collins Avenue	96th Street	Baker's Haulover Cut Bridge	Principal Arterial	4450'+/-
96th Street	NB Collins Avenue	Indian Creek Bridge	Minor Arterial	1650'+/-
Bal Bay Drive	96th Street	Yacht Club	Collector	3600'+/-
Harbour Way	Collins Avenue	Yacht Club	Collector	1000'+/-
All Other Roadways	N/A	N/A	Local	N/A

Maintenance responsibilities are divided between the State Department of Transportation for Collins Avenue (SR AIA) and 96th Street and the Village for all local streets. However, the Village has made significant landscaping and hardscape improvements in the roadway medians and edges. The Village has a interlocal agreement with FDOT for maintenance of landscaping, sidewalks, lighting, bus shelters, etc.

Number of Through Lanes for Each Roadway

The number of through lanes is described in Table 4-2 and illustrated in Figure 4-6.

Table 4-2

Roadway	No. Of Through Lanes
Collins Avenue	6 (3 each direction)
96th Street	4 (2 each direction)
All Other Roadways	2 (1 each direction)

Major Public Transit Generators and Attractors

The Village considers three (3) land uses or areas as being either a major public transit trip generator or attractor. Figure 4-7 depicts these areas.

A. Bal Harbour Shops Regional Mall. This mall contains approximately 300,000 square feet of leasable space with about 1,900 parking spaces. The mall is a very upscale retail facility

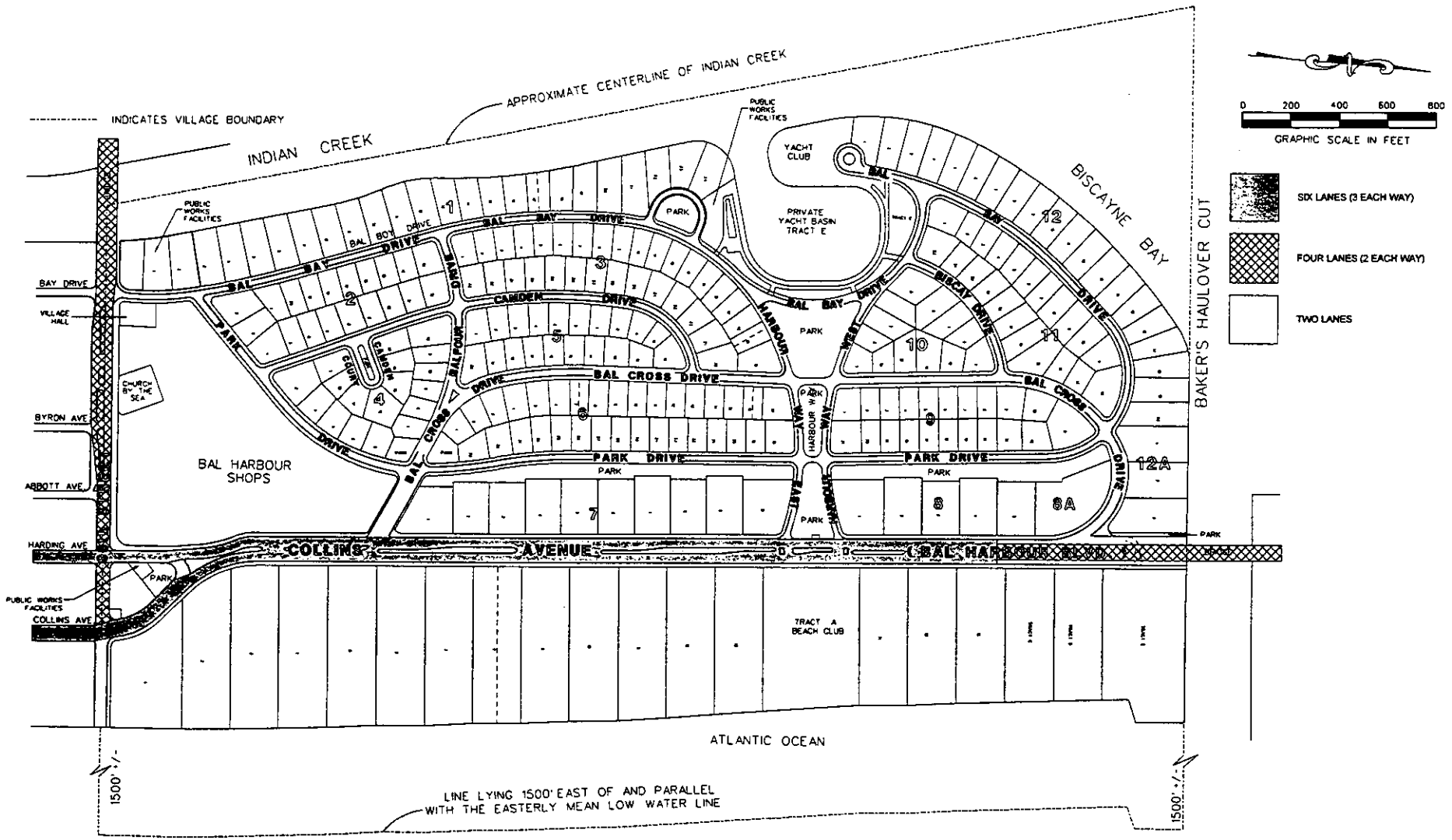

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FIGURE 4-6
EXISTING NUMBER OF THROUGH LANES

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 1/2

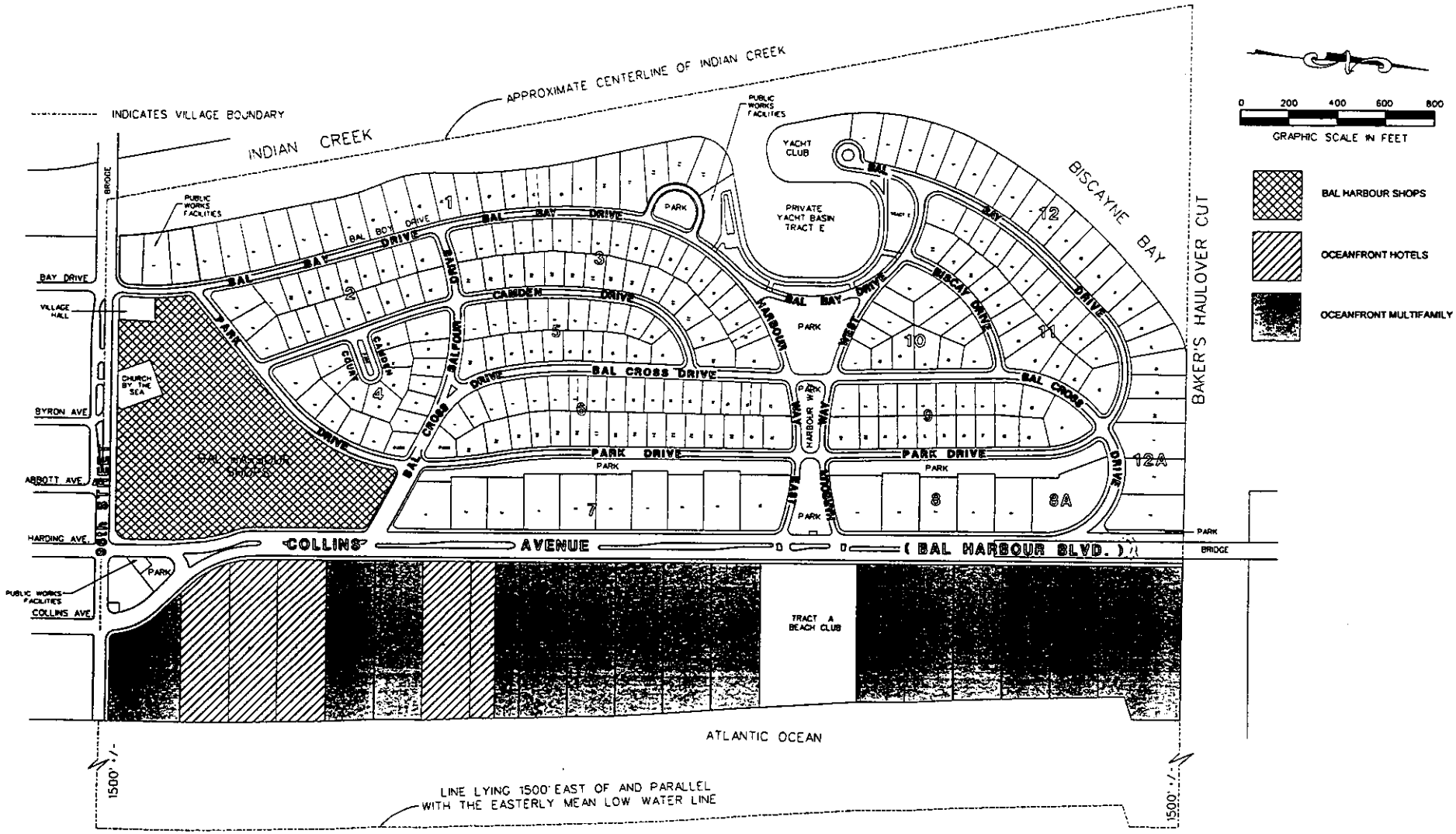

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FIGURE 4-7
EXISTING MAJOR PUBLIC TRANSIT TRIP GENERATIONS AND ATTRACTIONS

SCALE 1"=200'

PROJECT NUMBER 96-0238

SHEET NUMBER 1/2

where most patrons drive a private motor vehicle or walk from nearby development. The mall offers both valet parking as well as self parking. Although specific data is not available, it is believed that some employees and/or some patrons utilize public transit facilities. Actual numbers are not known.

B. Oceanfront Hotels - Just east of the Bal Harbour Shops is the Bal Harbour Sheraton Resort, a 663 room luxury resort. A short distance to the north is another hotel known as the Seaview which has 213 rooms. The very nature of hotels, even luxury, typically dictates higher usage of public transportation by guests and employees.

C. Other Oceanfront Development - All lands east of Collins Avenue (SR AIA) other than the two hotel uses mentioned above, and Tract A (Beach Club) are developed as high-rise residential development. There are 2,475 total dwelling units in twelve (12) separate developments. Based on an average of two spaces per dwelling unit, it is estimated there are approximately 4,950 parking spaces for residents, guests and employees.

Designated Local and Regional Transportation Facilities Critical to the Evacuation of the Coastal Population.

According to the "Metropolitan Dade County Emergency Operations Plan - Section 1 - Hurricane Procedures" both Collins Avenue (SR AIA) and 96th Street are designated as major evacuation routes for Village residents. All residents of the Village are required to evacuate during hurricanes. The Village attempts to maintain a current list of residents that may need assistance during evacuation periods. 96th Street in the primary evacuation route while Collins Avenue must be traveled upon for considerable distance north and south to other roadways crossing Biscayne Bay to the mainland. Figure 4-8 depicts the routes..

Existing Peak Hour. Peak Direction Levels of Service for Roads, Mass Transit Facilities and Corridors/Routes

The existing peak hour, peak direction levels of service for roads, transit facilities and corridors/routes are described in Tables 4-3 and Table 4-4 and illustrated on Figure 4-9.

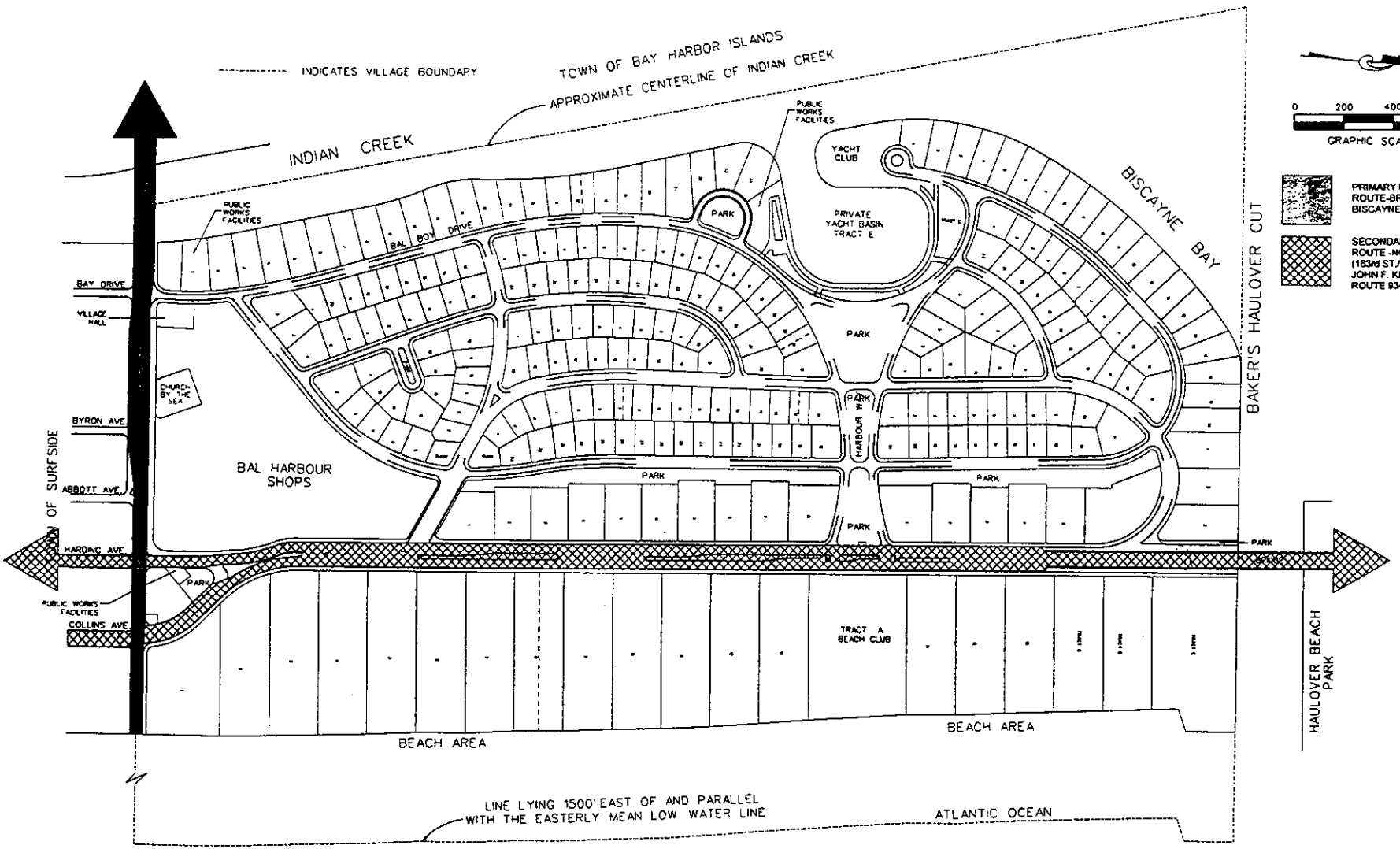

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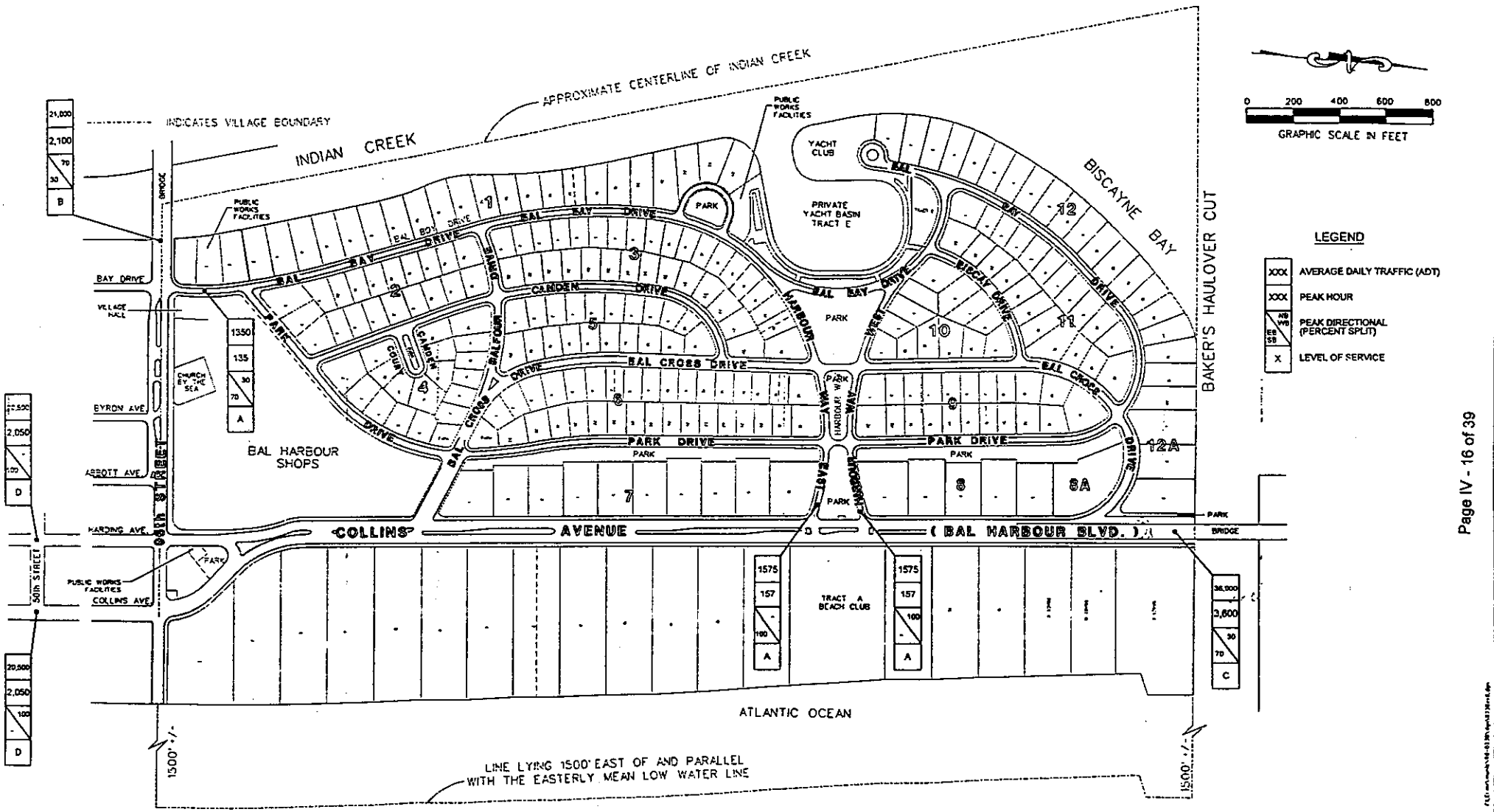
FIGURE 4-8
EXISTING EVACUATION ROUTES

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 1/2



NOTE: TRAFFIC COUNTS BASED ON YEAR 1995 FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 6 INFORMATION

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FIGURE 4-9
EXISTING PEAK HOUR & PEAK DIRECTIONAL AND LEVEL OF SERVICE

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 1/2

A. Roadways

Table 4-3

Level of Service Analysis

Location	1995 24 hours		Lanes	LOS D Cap	1995 LOS	
	ADT	Peak			ADT	Peak
96th Street @ Bridge (site 132)	21,000	23,520	4	31,100	B	C
Collins Avenue @ Bridge (site 540)	36,000	40,320	6	47,500	C	D
Collins Avenue n/o 50th Street (SB)	20,500	22,960	3SB	23,750	D	E
Collins Avenue n/o 50th Street (NB)	20,500	22,960	3NB	23,750	D	E
Harbour Way	2,100	2,310	2	7,700	A	A
Bal Bay Drive	900	990	2	7,700	A	A

Source: FDOT 1996

Peak hour calculations are estimated to generally follow normal patterns except that, due to a mostly elderly population (Village residents average age 70 years old), the typical work hour peaks are probably not as high as more standard situations. For purposes of this analysis, however, an 12% factor is utilized to examine a worst case scenario.

Table 4-4

Peak Hour/Peak Directional Analysis

		Peak Direction%	
Location	Peak Hour	AM Peak	PM Peak
96th Street @ Bridge	2,520	70 WB/30 EB	30 WB/70 EB
Collins Avenue @ Bridge	4,320	70 SB/30 NB	30 SB/70 NB
Collins Avenue SB	2,460	100 SB	N/A
Collins Avenue NB	2,460	100 NB	N/A
Harbour Way @ Collins Avenue EB	157	100 EB	-
Harbour Way @ Collins Avenue WB	157	70 SB/30 NB	30 SB/70 NB
Bal Bay Drive @ 96th Street	135	100 WB	-

B. Mass Transit Facilities/Routes

Bus Service

InterCounty bus service is provided by Metro Dade's Transportation Administration. Routes K, H, S and T serve Collins Avenue and Route G serves 96 Street. Three routes (K, S and T) provide transfer service to Metro-Mover and Metro-Rail. In addition, local service for special needs is provided on an as needed basis to residents who may be transportation disadvantaged or otherwise unable to ride on the regular busses.

- Route K originates at the Downtown Miami Government Center, travels east along the McArthur Causeway to Miami Beach, then along Collins Avenue and other roadways for the entire length of Miami Beach from 5 Street through Bal Harbour, and terminates across the Broward County line at the Diplomat Mall on Hallandale Beach Blvd.;

- Route S originates and travels the same general route as K, except that it terminates at the Aventura Mall on Biscayne Blvd. and 192 Street.

- Route G originates at Lincoln Road and Washington Avenue in Miami Beach, travels along Collins Avenue to 96 Street, and then across Broad Causeway and N.W. 125 Street in North Miami and terminates at Bunche Park in Opa Locka;

- Route H originates in South Miami Beach, travels north on Collins Avenue and terminates at the 163rd Street Shopping Center:

- Route T originates at the Downtown Miami Government Center, crosses on the Julia Tuttle (63 Street) Causeway, travels along Collins and terminates at the Haulover Marina.

Conversations with the Metro Dade Transit Division yielded a conclusion that no capacity problems existed, in fact, methods to increase ridership are continually being sought.

Bal Harbour has installed and maintains bus bench shelters at all of the stops that fall within its jurisdiction in an effort to increase ridership.

Transportation Analysis

1. Analysis of Existing Transportation System

Arterial Roads

Two arterial roads traverse Bal Harbour. Both roadways are part of the State's roadway system and are maintained by the Florida Department of Transportation (DOT).

1. Collins Avenue

a) Facility Description

Collins Avenue traverses north to south through Bal Harbour as a six-lane, divided facility. It is provided with bus pull-out lanes and left-turn storage lanes at key intersections. Curb and gutters flank each direction, at the median and the outside edge. Each side of the road has a concrete sidewalk and a narrow grassed strip that separates the curb from the sidewalk pavement. Traffic signalization is provided by Dade County's Public Works Department.

The roadway is well paved and well marked with adequate traffic control signs and lane striping. There is adequate drainage except for a few localized small low spots that hold water. Signed speed limit is 30 miles per hour.

Collins Avenue is part of State Road A-1-A that commences at the southern tip of Miami Beach, approximately six miles to the south, and continues along the Atlantic coastline to North Florida.

The Village of Bal Harbour maintains the median and sidewalk landscaping and provides for the street and pedestrian lighting on both sides of the road.

Near the northern Village limits Collins Avenue narrows to four lanes, undivided, for its bridge crossing over the Baker's Haulover Cut. One-way access service drives at the sides of the bridge and under it provide access to the adjacent properties, and to the public passageway to the beach. The bridge's elevation at this location also permits parking for beach patrons. This parking area is maintained by the Village.

b) Present Level of Service

The Dade County Public Works Department has determined that Collins Avenue's present level of service (LOS) is "C"; meaning its traffic volume is between 70 and 80 percent of its capacity. It is estimated that Bal Harbour contributes roughly 30 percent of the Collins Avenue traffic.

c) Future Level of Service

The Dade County Public Works Department estimates that Collins Avenue will continue to operate at LOS "C" through the year 2005 in the area of Bal Harbour. LOS south of 96 Street is anticipated to increase to "D", meaning congested conditions will occur during the peak hour. The projected LOS's are based on the future land uses in and around Bal Harbour.

d) Proposed Improvements

There are no proposed improvements by FDOT or Metro Dade that would affect the capacity of Collins Avenue.

The Florida DOT maintains the physical roadway conditions of Collins Avenue. However, projected volumes of traffic do not warrant increasing the capacity or making physical improvements other than normal maintenance to the roadway.

2. Ninety Six Street

a) Facility Description

The centerline of Ninety Six Street serves as the boundary between Bal Harbour and the neighboring city of Surfside. Having four lanes of traffic, the road has a divided landscape median for about half of the distance between Collins Avenue and the Indian Creek Bridge. The median exists between Abbott Drive and Bal Bay Drive. It is provided with bus pull-out lanes in the area in front of the Bal Harbour Shops. Curb and gutters flank the roadway and sidewalks are provided on both sides, each side by the adjacent municipality. Traffic signalization is provided by Dade County Public Works Department.

East of northbound Collins Avenue, Ninety Six Street dead ends to the beach, and provides for vehicular (limited to maintenance, emergency and police) and pedestrian access to the beach. This

portion of roadway is two lanes with parking on both sides and is locally maintained.

The roadway is well paved and well marked with signage and striping. Drainage is not always adequate and improvements are warranted. Signed speed limit is 30 mph.

Ninety Six Street is a State Road from where it commences at Collins Avenue, and continues west across Bay Harbour Islands and Board Causeway, into the City of North Miami, Terminating just west of Interstate 95 at U.S. 441 (N.W. 7th Avenue). At that point it continues as a local collector road.

Bal Harbour maintains the median and north sidewalk landscaping, maintains the drainage system on the north side of the street, and provides for the street and pedestrian lighting on that side as well.

Near the western Village limits with Bay Harbor Islands, the roadway crosses Indian Creek with a bridge.

b) Present Level of Service

The Dade County Public Works Department has established that 96th Street operates at a LOS "B". Bal Harbour contributes less than ten percent of the traffic load on this road.

c) Future Level of Service

The Dade County Public Works Department estimates the Broad Causeway will decline to operate at LOS "D" in the year 2005 from the mainland to Collins Avenue. The future LOS is based on future land uses in and around Bal Harbour.

d) Proposed Improvements

There are no roadway improvements proposed by DOT or the County for the portion of the roadway that lies within the planning area that would change its capacity. A road repaving and drainage improvements is scheduled for FY 96/97.

The County, whose responsibility is to operate traffic signals, should investigate the need for adding signalization to the intersection of 96 Street and Bal Bay Drive.

Collector Roadways

Two of the internal Village roads serve as collector roads. These roads serve to distribute traffic from the arterials to the local streets. Both collectors have relatively free flow within the Village. One, Harbour Way intersects Collins Avenue and is provided with a traffic signal. The second is Bal Bay Drive, and it intersects 96 Street at the foot of the Indian Creek bridge. The latter intersection is unsignalized, and it is difficult to make a left turn exiting the Village to proceed eastbound on 96 Street.

The collector roads are maintained by Bal Harbour's Public Works Department.

1. Road Descriptions

   Both Harbour Way and Bal Bay Drive are well paved and provided with valley gutters and positive drainage. Harbour Way is a divided road, having a very wide median, and Bal Bay Drive is a two lane undivided road.

   Harbour Way has a security guard house controlling the entrance into the Village, and Bal Bay Drive has a automatic gate that is operated with remote controls (similar to garage door openers).

2. Present Level of Service

   It is estimated that traffic generated by both these roadways is approximately 4500 vehicles per day combined. (This traffic has Bal Harbour as an origin or a destination, without through traffic). Assuming an 70:30 percent distribution between the two, yields 3150 trips per day at Harbour Way, the most used entrance. With peak capacities of 1200 trips per hour for the two lane undivided, and 1900 trips per hour for the divided road, the level of service is well within the "A" range (operating at 60 percent or less of capacity).

   The above service capacities are based on roadways that are free-flowing without the security controls that exist. These controls reduce road capacity which may increase the effective level of service. However, congestion of these roads has not been observed, implying that they operate above LOS "C" (traffic volume is less than 75 percent of Capacity) or better.

3. Future Level of Service

Future traffic volumes based on projected populations and future land uses are estimated to increase less than one percent over the current volumes as the area is fully developed except for a few vacant single family lots. The resulting level of service will continue to remain at "A".

4. Proposed Improvements

Roads are in good condition and improvements, except for drainage, are not necessary. It is believed that the major cause of pavement failures was poor subsurface conditions, not directly associated with the roads' construction, but with the underlying soils beneath the road foundations. The same cause has affected the drainage patterns. It is possible that subsidence of underlying muck or poor deposits (some natural, others manmade) will continue, and that resurfacing of roads may again be required in the future. A major drainage improvement program has been designed and will be constructed during 1996-97.

The Village should continue to monitor for dips in roads, pavement cracks or openings where none existed before, and other similar defects.

Local Streets

All local streets are two-lane, undivided, with curb and gutter. The entire single family area west of Collins Avenue and some low density multiple family developments are served by the street system, and except for drainage improvements, no other improvements are necessary. The staff of the Public Works Department, who maintains the street network should, as with the case of the collector roads, monitor for pavement failures.

Analysis of Average Daily and Peak Hour Trips

From the data provided previously, all roadways are operating at or above adopted level of service standards. As the community is nearly completely developed, the Village impact should remain fairly constant. Development occurring external to the Village will be the main cause of traffic count increases/decreases.

Analysis of Modal Split and Vehicle Occupancy Rates

Data sources with reliable estimates are difficult to obtain. Further, because of the unique demographics of the Village (very high income/elderly) countywide data would not present an accurate portrait of modal splits or vehicle occupancy rates. Absent of actual data, it is estimated via local observance that greater

than 95% of the resident population exclusively utilizes automobiles. The balance utilizes public transportation or private for-hire services. Hotel guests and patrons of the Village's commercial enterprises vary as to access. An estimate would be that 80% utilize automobiles with the balance using public transit or private for-hire services.

Occupancy rates for vehicles are estimated to be approximately 1.5 persons per vehicle.

Analysis of Existing Public Transit Facilities

The Village is well served by Intercounty bus service as five (5) routes traverse the community. No other forms of public transit are immediately available to Village residents. A description of the routes is provided earlier in this element with a map demoting routes. Metro-Dade Transit maintains records on ridership by route, peak hour capacities, and headway's. Observation of buses reveals that no visual capacity problems exist as buses appear approximately 50% occupied at most.

Population Characteristics Including Transportation Disadvantaged

The population of Bal Harbour Village can best be described as older and quite wealthy. The average age of a Village resident is 69.7 years old. A more detailed breakdown is as follows:

Table 4-5

Age Group	No.	Percent
Under 18	160	5%
18-64	1170	36%
65 and Over	1923	59%
Total	3253	100%

Source: 1990 US Census.

Per capital income was $56,413 according to the 1990 US Census. Annual household income is estimated at $128,000 per year.

The occupancy of residences is now estimated at 1.55 people per dwelling unit. Out of a total of 1,967 households, 1,102 or 56% are one person households. 80% of the one person households were occupied by a female. 1,442 households (73%) had households with a least one person over 65 years of age.

An exact number of persons needing transportation assistance is difficult to determine. The vast majority of residents are mobile and can either walk or drive

for services. Metro Dade Transit provides special public services and there are, in addition, private providers. It is estimated that approximately 25 persons requiring some assistance. A list is kept for hurricane evacuation purposes which supports the findings.

Characteristics of Major Trip Generation and Attractors

As described in previous sections, the Village has identified three (3) land uses which it considers major trip generators and attractors. These include the Bal Harbour Shops Regional Mall, the two (2) hotel developments and the overall oceanfront high rise residential development.

A. Bal Harbour Shops - the Bal Harbour Shops is considered a regional mall. It is located north of 96th Street and west of Collins Avenue. The land area is approximately 16.5 acres in size.

   The Bal Harbour Shops is comparatively small for a regional shopping center, except that the tenants it houses consist of mostly specialty shops and anchor stores that are not found anywhere else in the county. Some are exclusive stores found only in New York or other major metropolitan cities. Therefore, patrons from all of Dade and Broward Counties shop at this mall.

   The shops have approximately 300,000 square feet of leased space and parking for approximately 1,900 vehicles. There are five major points of access to the mall: three from 96 Street, and two from Collins Avenue. The three major entrances have full traffic signalization.

B. Oceanfront Hotel Development - There are two (2) hotels existing as of 1995. These include the Bal Harbour Sheraton Resort and the Seaview Hotel. The Bal Harbour Sheraton has 663 rooms, ancillary uses such as convention/meeting rooms, limited retail shopping and recreational facilities. There are approximately 1200 parking spaces at the facility. Access to the resort is from Collins Avenue at three driveway openings. The main entrance aligns at a signalized median opening access from the main entrance to the Bal Harbour Shops. The resort, in addition to typical tourism characteristics, provides facilities for conferences and meetings.

C. Oceanfront Residential Development - The balance of the oceanfront in the Village contains high-rise luxury condominiums and rental dwelling units. There are twelve (12) developments containing 2,475 dwelling units. Each developments has direct access to Collins Avenue with either one or two driveways. Nearly all have garage parking facilities. According to the 1990 US Census, 67% of total units in the Village are occupied on an all-year basis. Applied to the oceanfront area, therefore, it

is estimated that 1,650 dwelling units are occupied on a yearly basis with the balance seasonal. The three (3) most northerly developments have access to Collins Avenue via a frontage/loop roadway along and under the Baker's Haulover Cut Bridge. One Tract of land on the oceanfront is presently developed as a private club for certain Village residents. This parcel contains tennis courts, a swimming pool, cabanas and a club house. Proposals are being discussed to redevelop the land into another luxury high rise residential development. The property could yield a maximum of 275 dwelling units developed at maximum density. Access is directly across from Harbour Way, the main signalized entrance to the Village's single family area.

Analysis of the Availability of Transportation Facilities and Service to Serve Existing Land Uses.

The Village is 98% built-out as of 1995. All roadways are built to their ultimate sections with Collins Avenue at 6 lanes divided with center turn lanes and 96th Street at 4 lanes divided with center turn lanes. All local and collector roadways are 2 lanes. All roadways are presently operating at acceptable levels of service. Adequate public transportation is available for Village residents should they choose to use those services. At complete community buildout, all facilities and services will remain at acceptable LOS. The only improvement desired by the Village is increased operational controls at 96th Street and Bal Bay Drive to allow for easier/safer turning movements. Also, 96th Street is in need of drainage improvements and resurfacing. The Department of Transportation is scheduled to perform the work within FY 96/97.

Analysis of the Adequacy of the Existing and Proposed Transportation System to Evacuate the Coastal Population Prior to an Impending Natural Disaster.

The Coastal Management Element describes in detail hurricane evacuation procedures. In general, within 12 hours of an anticipated storms landfall or coastal impact, evacuation notice will be given to residents. The primary evacuation route is west on the Broad Causeway (96th Street/NW 125th Street). Analysis estimates that this roadway can accommodate approximately 2,720 vehicles per hour. Public safety officers are recommended to assist in traffic control at key intersections. Village residents and other barrier island community residents should have ample time to evacuate even with the limited capacity of the Broad Causeway. Alternate routes are also available north or south on Collins Avenue to other roadways.

Analysis of Growth Trends, Travel Patterns, Interactions Between Land Use and Transportation Facilities and Compatibility Between Future Land Uses and Transportation Elements.

The Village is nearly 98% developed as of 1995. Travel patterns, interactions between land uses and transportation facilities and compatibility issues are well established. No changes are identified for the future buildout of the Village. The Village has recently installed substantial new landscaping along Collins Avenue to improve the streetscape appearance. Further enhancements are envisioned along 96th street and local streets.

Analysis of Existing and Projected Intermodal Deficiencies and Needs

There are no identifiable deficiencies noted within the Village. Village residents are anticipated to continue the use of automobiles for travel purposes. In addition, five (5) different Metro Dade bus routes provide service to the Village. Many residents walk or bicycle for recreation and for obtaining goods/services.

Analysis of the Projected Transportation Level of Service and System Needs

The Village is approximately 98% built-out as of 1995. All levels of service (LOS) for roadways are operating at or above LOS C. With the buildout of the remaining oceanfront parcel and sixteen (16) remaining single family lots, the following is an estimate of additional vehicular traffic that could be added.

275 multifamily residences @ 5 Tpd	= 1,375 Tpd
16 single family residences @ 10 Tpd	= 160 Tpd
	1,535 Tpd

Sufficient capacity exists on all roadways to accommodate the additional vehicular traffic and maintain adopted LOS standards. All of the multifamily units would have access to Collins Avenue exclusively. Single family units would have two options for access, either Collins Avenue or 96th Street. The Village's traffic generation is estimated to comprise approximately 30% of total traffic generation on Collins Avenue and 10% on 96th Street. Traffic generation in adjacent communities and/or through traffic comprise most of the roadway traffic. Traffic projections for both arterial roadways forecasts by FDOT and Dade County estimate that both Collins Avenue and 96th Street will operate at LOS C within the Villages with possibly LOS D during peak hours.

As mentioned previously, no rail, airport or seaport facilities are located within or in near proximity to the Village, therefore, integration and coordination analysis is not applicable. No new facilities and/or expansions of alternate transportation modes are needed or desired by the Village to provide a safe and efficient transportation network or enhance mobility. The Village is within the Dade

County Transportation Concurrency Exception Area but the effect is not applicable since roadways are operating or are projected to operate above acceptable LOS standards.

Analysis of Projects Planned by the Florida Department of Transportation's Adopted Work Program, Metropolitan Planning Organization and Local Transportation Authority

The only project planned within the Village is to improve drainage and resurface 96th Street. This project was originally proposed for FY 94-95 but was delayed due to budgetary constraints. It is currently proposed for FY 1996-97. There are no known compatibility issues with policies or guidelines of such plans.

Analysis of Maintenance of Adopted Level of Service (LOS) Standards

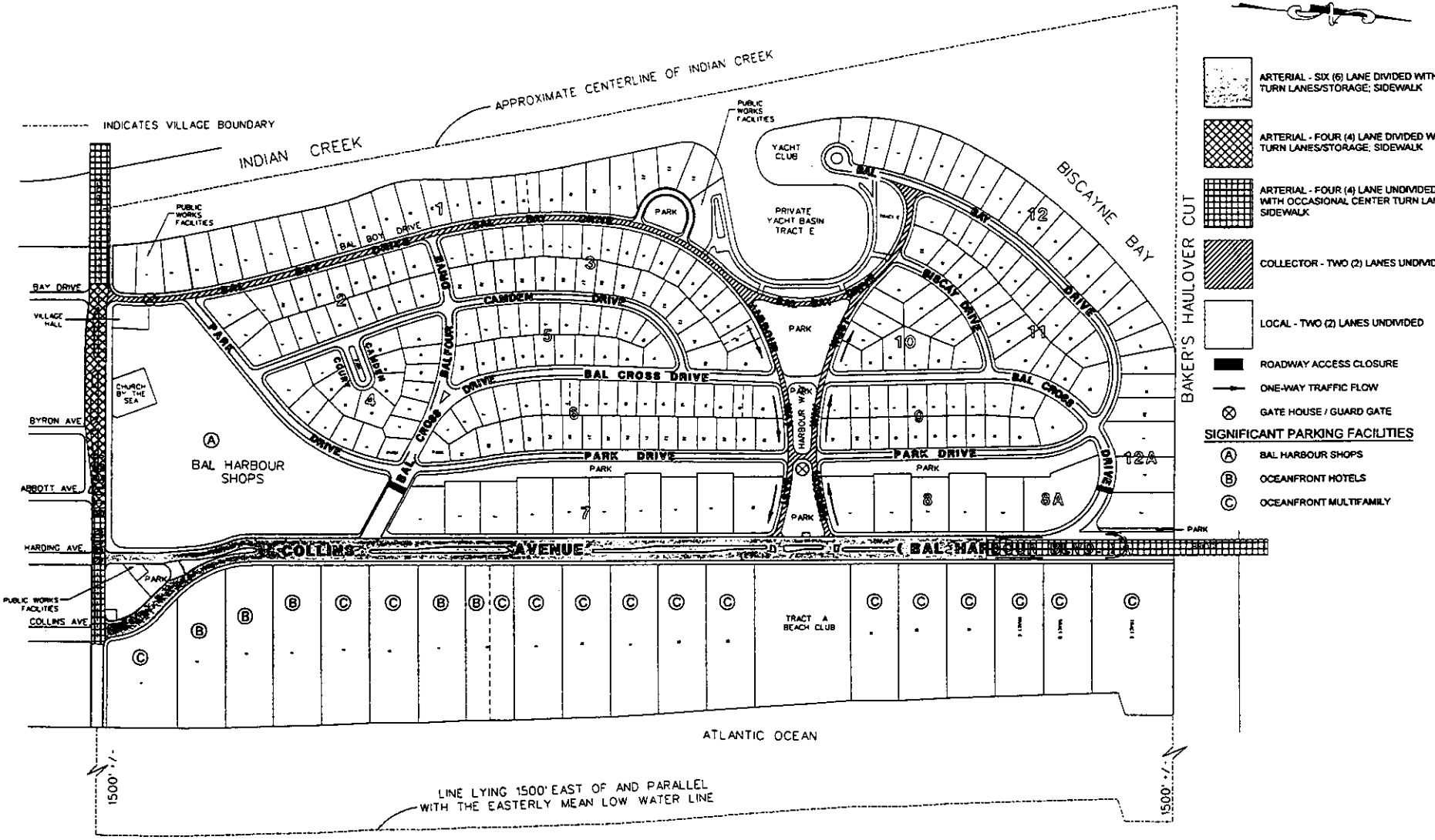
Dade County has established LOS E for all arterial roadways. Bal Harbour Village has adopted LOS D for arterial roadways. All roadways within the Village are operating at LOS C or above. LOS D is anticipated in the future only at peak hour periods. Therefore, the maintenance of LOS standards is anticipated to be achieved. Even with anticipated development of remaining parcels of lands within the Village, LOS standards are forecasted to be maintained at adopted LOS. The adopted LOS is compatible with all other Comprehensive Plan elements, future projections and their Goals, Objectives and Policies.

Analysis of Internal Consistency Between Elements

Bal Harbour Village is a fully planned community designed to function internally at high levels of service for its residents. All roadways and other infrastructure were originally sized to accommodate all Village growth. Coordination with Dade County and the Florida Department of Transportation insures that all services and facilities are provided for Village residents as well as in a regional participant context. Transportation facilities are currently sized and constructed to serve the Village at build out. No inconsistencies are known to exist between elements of the adopted plan.

Analysis of Transportation Management Programs Necessary to Promote and Support Public Transportation Systems

The Village promotes and supports the use of Public Transportation Programs. As an example, the Village has funded and constructed bus shelters at all bus stops in attempts to increase ridership. Bus route notices are posted and available at Village Hall. All land uses except single family homes have direct access to pedestrian walkways linking to public transportation access points. The Village attempts to participate with Dade County and FDOT on programs to the best of their ability given the size and built-out condition of the community.



NO.	DATE	REVISION	BY

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Drawn: RAB 07/96
Checked: CRS 07/96

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FIGURE 4-10
FUTURE ROADWAY SYSTEM

SCALE: 1"=200'

PROJECT NUMBER: 96-0238

SHEET NUMBER: 2/2

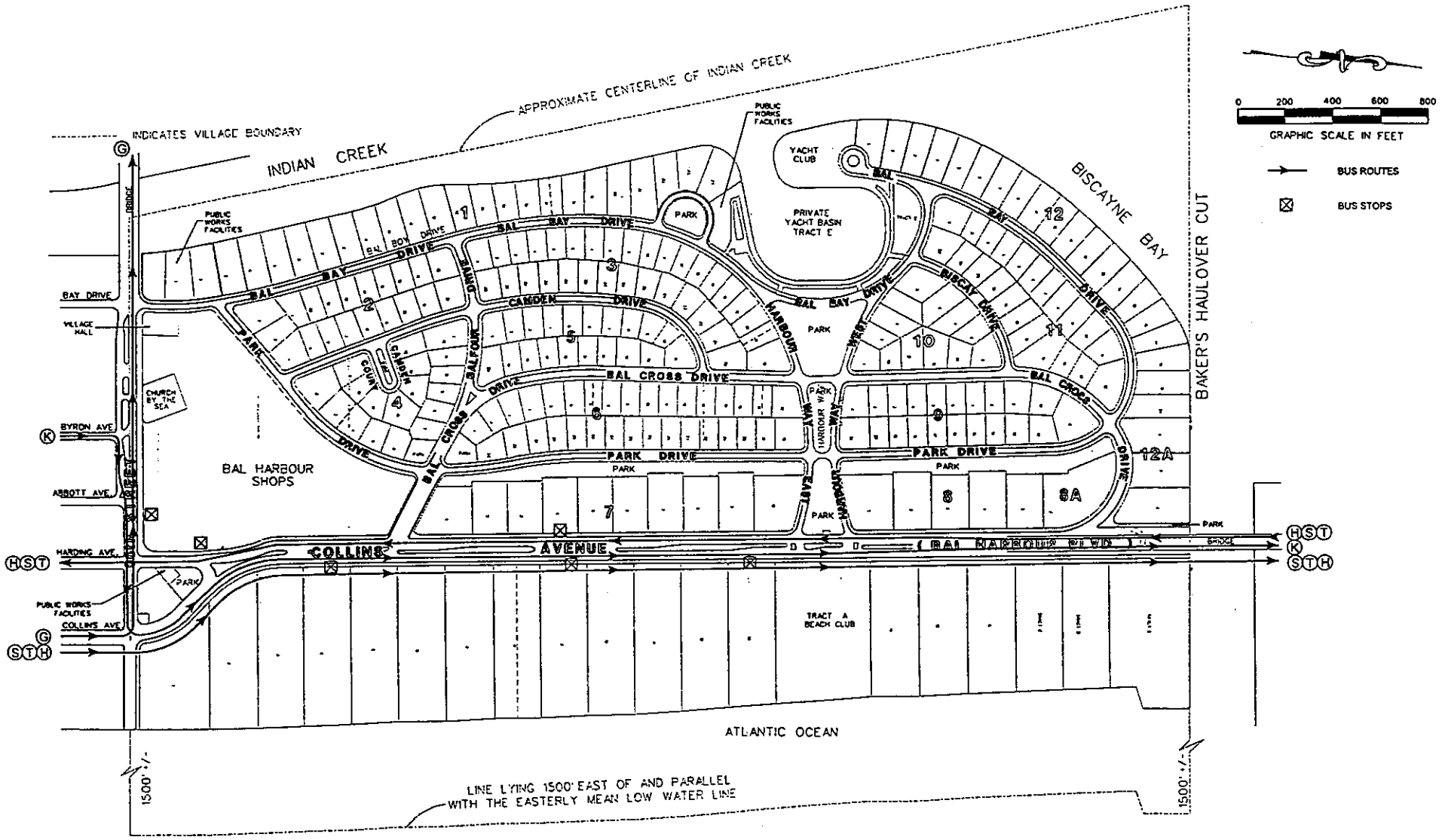

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FIGURE 4-11
FUTURE PUBLIC TRANSIT SYSTEM

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 2/2

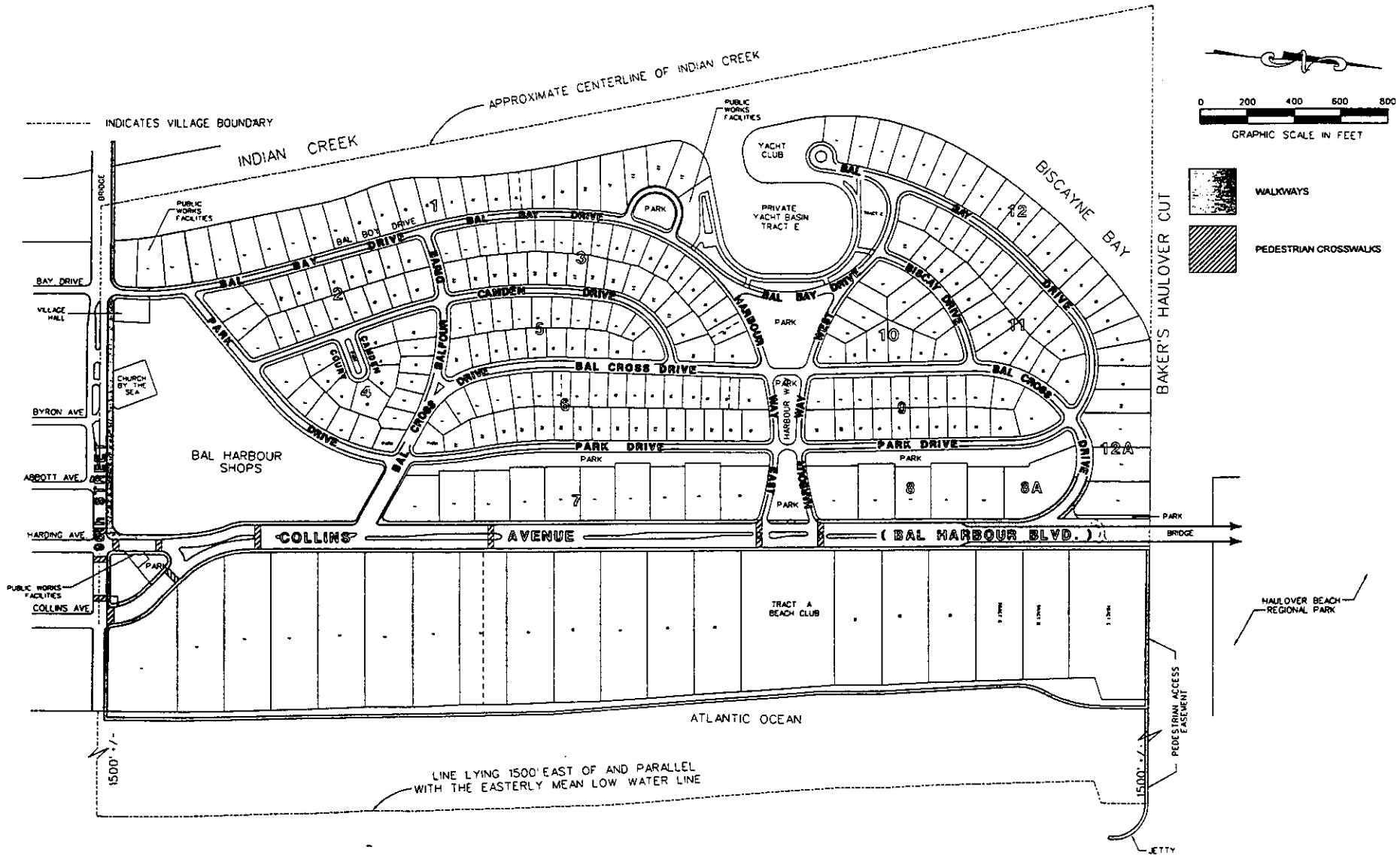

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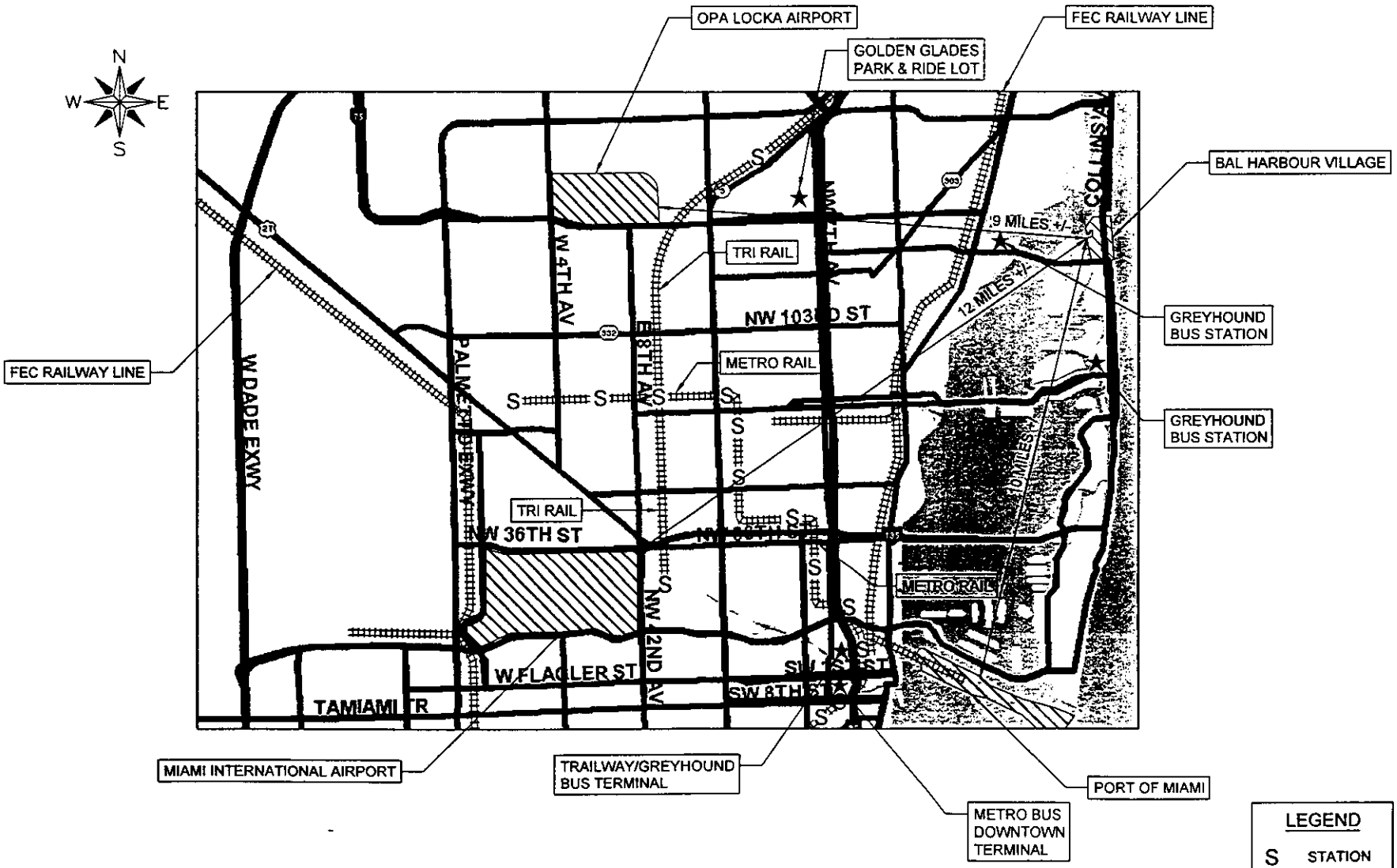
FIGURE 4-12
SIGNIFICANT BICYCLE AND PEDESTRIAN WAYS

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 2 / 2



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Designed: MJM 07/96
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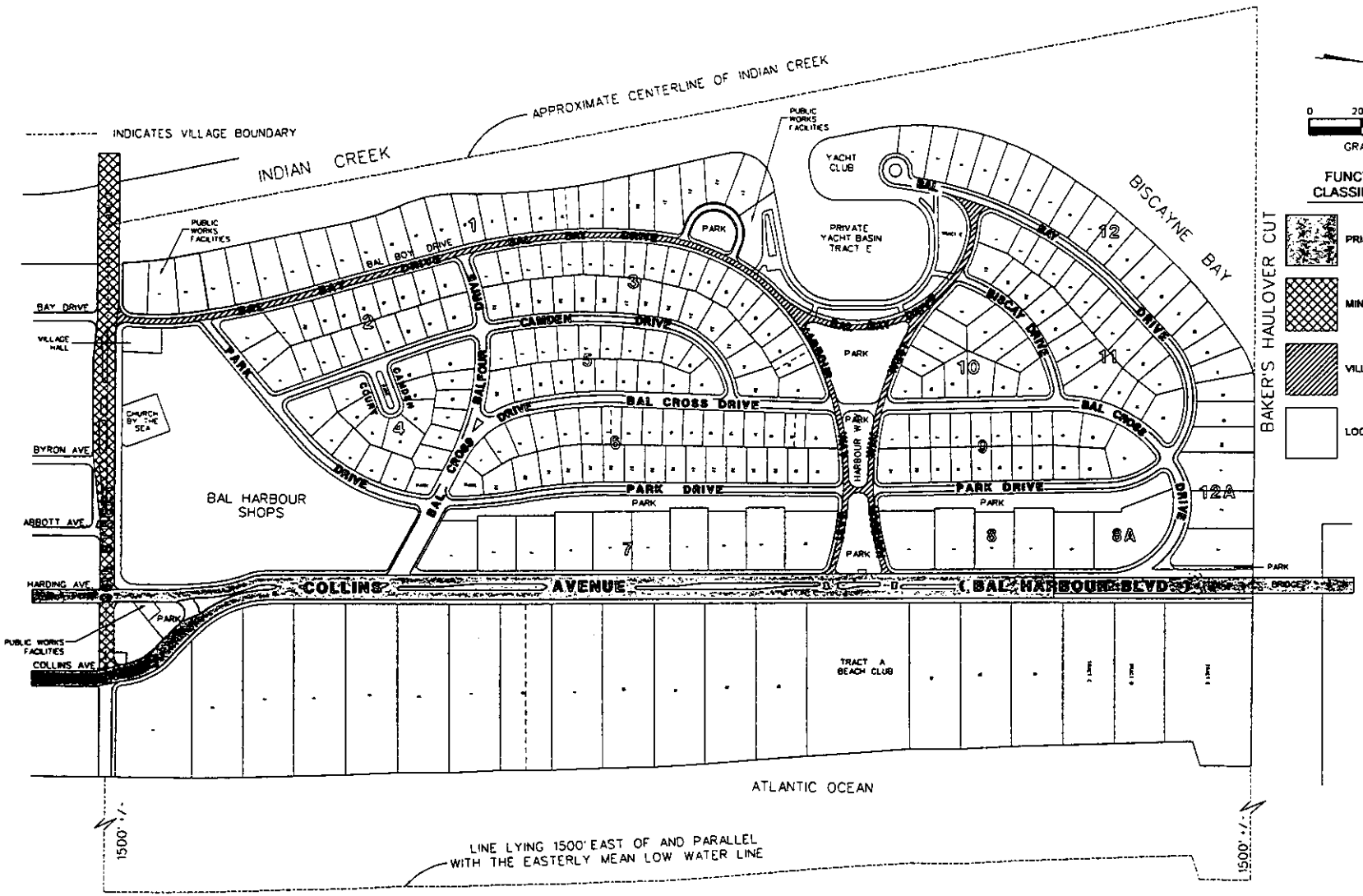
FIGURE 4-13
FUTURE PORTS, AIRPORT FACILITIES, RAILWAYS, AND INTERMODAL FACILITIES

SCALE: N.T.S.
PROJECT NUMBER: 96-0238
SHEET NUMBER: 2 / 2



NO	DATE	REVISION	BY

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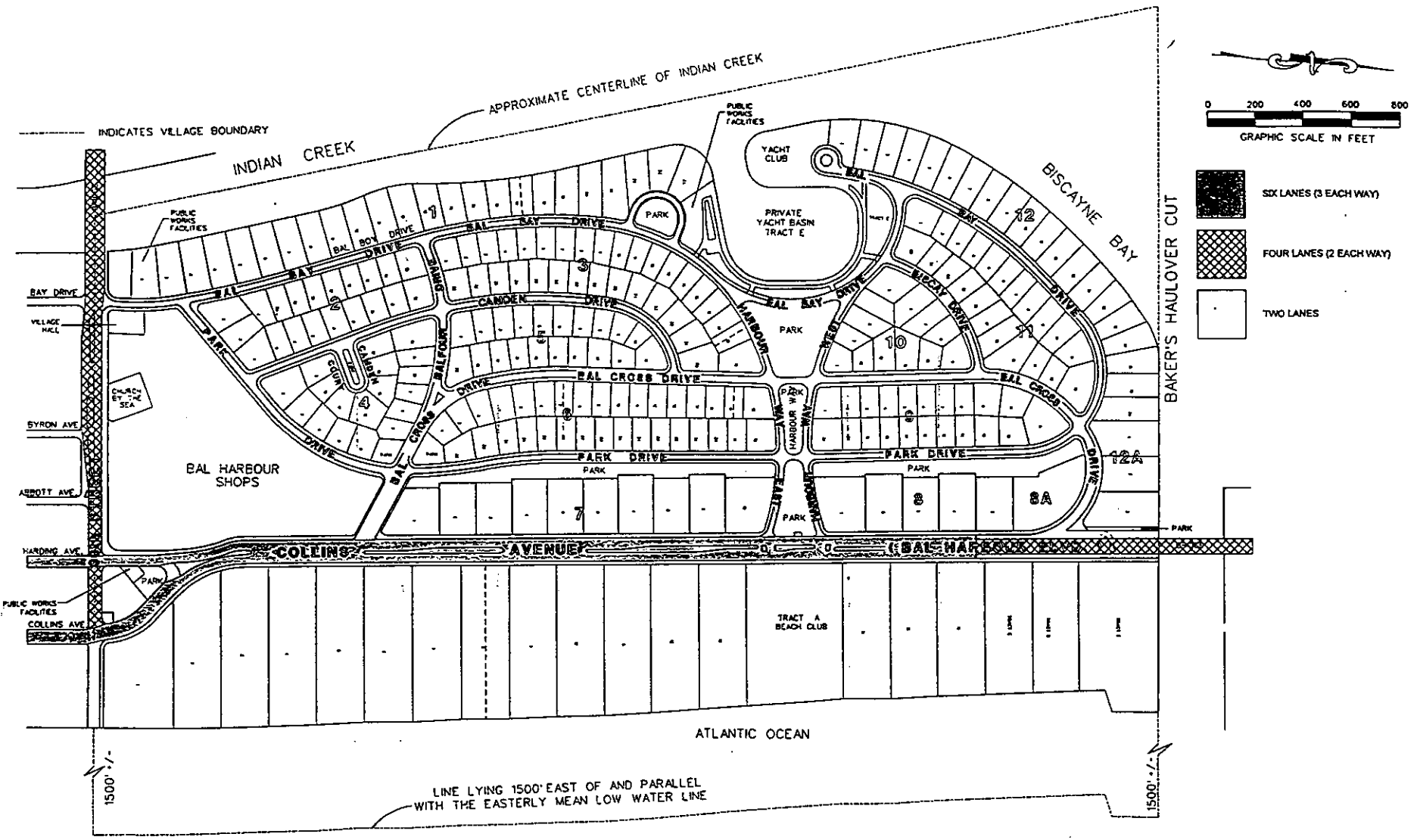
FIGURE 4-14
FUTURE FUNCTIONAL CLASSIFICATION OF ROADWAYS

SCALE 1"=200'

PROJECT NUMBER 96-0238

SHEET NUMBER 2 / 2



NO	DATE	REVISION	BY

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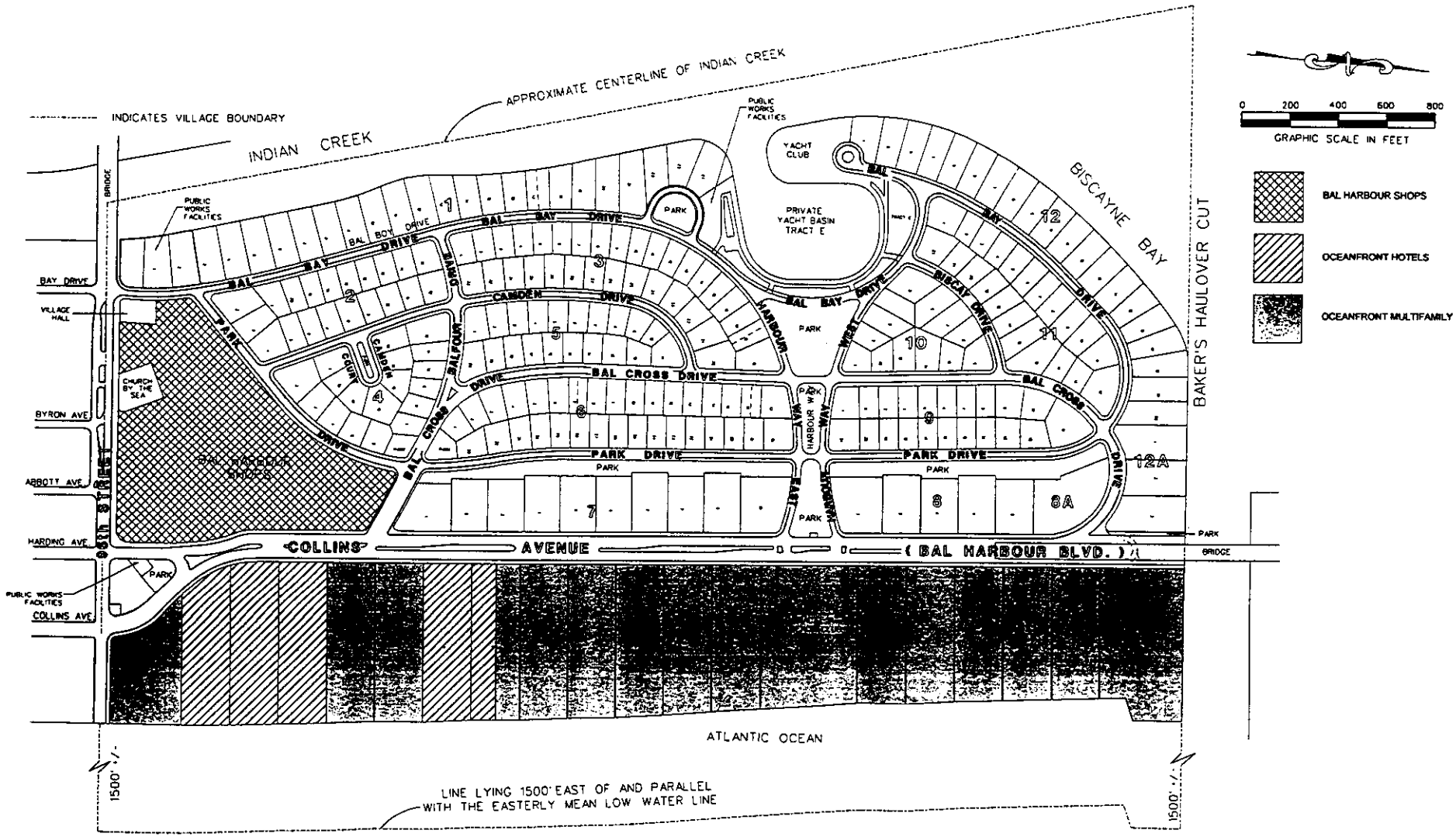
FIGURE 4-15
FUTURE NUMBER OF THROUGH LANES

SCALE: 1"=200'
PROJECT NUMBER: 96-0238
SHEET NUMBER: 2/2



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Drawn: RAB 07/96
Checked: GRS 07/96

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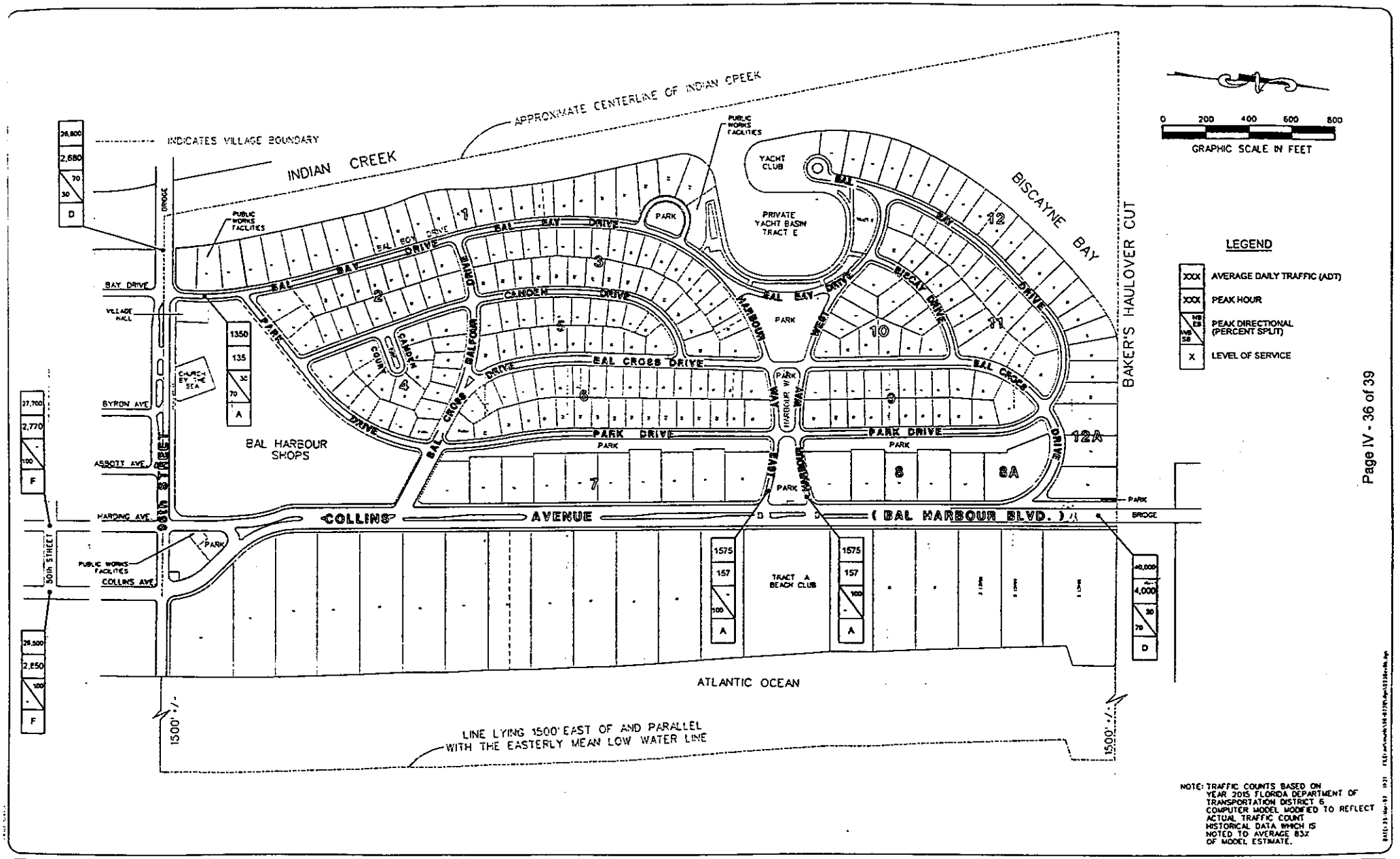
FIGURE 4-16
FUTURE MAJOR PUBLIC TRANSIT TRIP GENERATIONS AND ATTRACTIONS

SCALE 1"=200'

PROJECT NUMBER 96-0238

SHEET NUMBER 2 / 2



NOTE: TRAFFIC COUNTS BASED ON YEAR 2015 FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 6 COMPUTER MODEL MODIFIED TO REFLECT ACTUAL TRAFFIC COUNT HISTORICAL DATA WHICH IS NOTED TO AVERAGE 832 OF MODEL ESTIMATE.

Designed: MJM 07/06	CRAIG A. SMITH & ASSOCIATES	PREPARED FOR	FIGURE 4-17	SCALE	PROJECT NUMBER	SHEET NUMBER
Drawn: RAB 07/06	CONSULTING ENGINEERS-PLANNERS-SURVEYORS	BAL HARBOUR VILLAGE	PROJECTED PEAK HOUR & PEAK DIRECTIONAL AND LEVEL OF SERVICE	1"=200'	96-0238	1/2
Checked: CRS 07/06	1000 West Mcnab Road - Pompano Beach Florida 33069 (954) 782-8222					

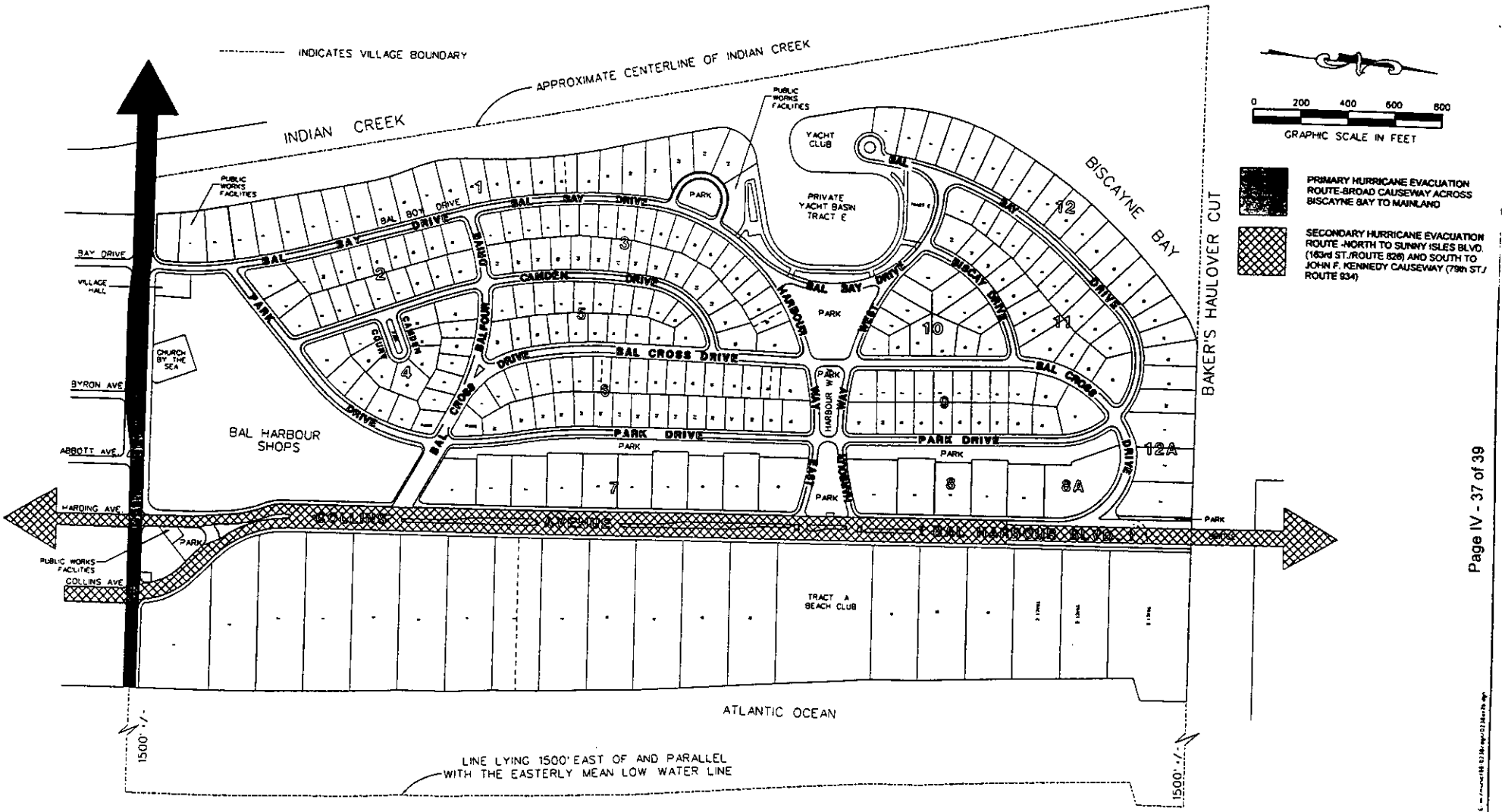


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FIGURE 4-18
FUTURE EVACUATION ROUTES

SCALE 1"=200'
PROJECT NUMBER 96-0238
SHEET NUMBER 2/2

GOALS, OBJECTIVES AND POLICIES

Goal: To preserve and maintain the existing transportation network including arterial, collector and residential streets and their appurtenant lighting, signing and marking.

Objective IV-1: Provide for a safe and efficient motorized and non-motorized transportation system.

Policy: Cooperate and coordinate with FDOT's maintenance of Collins Avenue (SR AIA), the single north-south arterial road within Bal Harbour; and coordinate with the Village of Surfside and DOT in the maintenance of 96th Street, the single east-west arterial road serving Bal Harbour.

Policy: Continue to perform routine maintenance via Village's Public Works Department on local streets and the landscaped areas of Collins Avenue and 96th Street.

Policy: Execute prompt responses to random hazards.

Policy: Maintain on-duty police staffing levels for adequate enforcement of traffic regulations and for episodes of signal malfunction and convention traffic control special duty assignments.

Policy: Monitor traffic signal timing and phasing on Collins Avenue (SR AIA) and on 96th Street as controlled by Metro-Dade County.

Policy: Monitor public bus transportation schedules and load factor to make recommendations to Metro-Dade as needed, and make schedules available to the public.

Policy: Coordinate with state, regional and metropolitan transportation agencies to provide access and throughways of arterial roadways including 96th Street and Collins Avenue with the necessary infrastructure to permit LOS "D" or better.

Policy: The established Level of Service (LOS) Standard for local roadways and collectors shall be LOS "D" or better.

Policy: Parking within the Traffic Lanes of Collins Avenue and 96th Street, except on emergency basis, shall be prohibited to ensure maximum operational flows of traffic.

Policy: Enforce ordinances limiting the number, location and size of driveways connecting to roadways.

Policy: Pedestrian and bicycle usage shall be encouraged by maintaining all walkways in a high level of maintenance.

Policy: Development applications shall be required to demonstrate locations for bicycle storage and pathway connections shall be made between buildings and the public walkway system.

Policy: Develop strategies to promote the increased use of intermodal services to transport residents and/or tourists between residences and hotels to the airports, seaports and rail facilities.

Objective IV-2: Coordinate traffic circulation system with future land uses.

Policy: Revise future transportation map or map series as may be necessary to conform with modifications to the Future Land Use Map during each Evaluation and Appraisal Report period.

Objective IV-3: Coordinate with the Dade County Metropolitan Planning Organization, public transportation agencies, Florida DOT, and any regional resource management plan.

Policy: Revise future transportation map or map series as may be necessary to conform with mandated regional, state, metropolitan or area-wide transportation plan.

Policy: Continue to coordinate with Dade County, FDOT, MPO and adjacent communities on transportation planning and designs.

Objective IV-4: Protect present and future public rights-of-way from building encroachment.

Policy: Enforce the local ordinances that restrict building construction across property lines, and that require buildings to be set back from the right-of-way line.

Objective IV-5: Provide for a safe, convenient and energy efficient multi-modal transportation system.

Policy: Continue to provide enhancements at bus stops such as shelters, benches and public information to encourage ridership.

Objective IV-6: Coordinate with Dade County to provide efficient public transit services for all land uses and to accommodate the special needs of the transportation disadvantaged.

Policy: Encourage the identification of persons with special transportation needs for shopping, recreational and hurricane evacuation purposes.

Disposition of Non-Applicable Provisions of 9J-5.019 (4)

9J-5.019 (4)(c)4.- No further rights-of-way required.
9J-5.019 (4)(c)6.- No peak hour traffic problems are noted.
9J-5.019 (4)(c)7.- Transportation system totally developed and above LOS.
9J-5.019 (4)(c)8.- No seaports, airports or other related facilities exist.
9J-5.019 (4)(c)9.- No exclusive public transit corridors exist.
9J-5.019 (4)(c)10.- Village has no ability or responsibility to influence items listed.
9J-5.019 (4)(c)12.- No public transportation corridor exists.
9J-5.019 (4)(c)13.- No FIHS facilities with Village.

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APPENDIX A

METHOD FOR DETERMINING LEVELS OF SERVICE

The following is a description of how Level of Service (LOS) Standards are defined and utilized to determine acceptable operating levels. The Village utilizes LOS definitions common to Dade County. The Florida Department of Transportation (FDOT) establishes LOS for roadways under their jurisdiction which include both Collins Avenue (SR AIA) and 96th Street except for the portion east of northbound Collins Avenue.

ANALYSIS OF EXISTING SYSTEM

The existing roadway network has been analyzed to determine peak hour volumes, capacities, peak hour volume to capacity ratios and resulting levels of service. Such an analysis is required in order to establish a basis for adopting Level of Service (LOS) standards at peak hour pursuant to Chapter 9J-5 F.A.C. Traffic counts were provided by the Florida Department of Transportation and Dade County MPO.

LEVEL OF SERVICE

To determine current LOS on the roadway network, peak hourly demand volumes for various roadways were calculated using 1995 average daily traffic (ADT) volume counts. These counts were obtained from the Dade County Public Works Department (Highway Division), and include counts supplied by the Florida Department of Transportation (FDOT) for the arterial roadways on the State system.

Establishing a roadway's LOS is the most common index of traffic congestion. Level of service may denote any number of differing operating conditions that may occur on a given lane or roadway when it is accommodating various traffic volumes. The LOS of a roadway is often defined as ratio of the traffic volumes (V) to the actual capacity (C) of the roadway (V/C ratio).

The following table illustrates the peak hour two-way direction roadway capacities used to calculate the V/C ratios for this analysis of existing roadway conditions in Bal Harbour. Listed below are the V/C ratios used to determine LOS. Both the peak hour capacities and the V/C ratios are consistent with those used by the SFRPC and the DCPW. Specific peak hour volumes were not available for this analysis, therefore, a peak hour factor of 10% was applied to the ADT counts.

The descriptions of service levels used are as follows:

V/C	LOS	DESCRIPTION
0 - .60	LOS A	Free flow traffic at average travel speeds.
.61 - .70	LOS B	Stable flow with the presence of other users in traffic stream being noticeable.
.71 - .80	LOS C	Uncongested with other users in traffic stream causing significant interactions.
.81 - .90	LOS D	Congested stable flow with major delays.
.91 - 1.00	LOS E	Very congested with traffic at or near capacity.
1.01 +	LOS F	Extremely congested with breakdown flow (major delays occurring frequently).

The Florida Department of Transportation adopted a Level of Service (LOS) Manual in 1995. This manual sets forth minimum accepted LOS Standards for State roadways. Table 2.1 "Statewide Minimum of Level of Service Standards for the State Highway System" states that for roadways such as Collins Avenue (SR AIA) and 96th Street which are within urbanized areas with population characteristics over 500,000, the adopted LOS is "D". A local government cannot establish a higher level of service for state roadways. The Village has also adopted a LOS Standard of "D" for all roadways in the Village.

The following roadway capacity volumes were utilized in the analysis. Both major arterial roadways have three (3) signals within a mile, therefore, the LOS "D" capacity for such restricted capacity was utilized.

Roadway	Lanes	LOS "D" Capacity	Peak Hour Capacity
96th Street	4 LD	31,100	2,890
Collins Avenue	6 LD	47,500	4,420

SOURCE: FDOT 1995 LOS Manual

TABLE F-1

GENERALIZED TWO-WAY PEAK HOUR VOLUMES FOR FLORIDA'S URBANIZED AREAS*

STATE TWO-WAY ARTERIALS
UNINTERRUPTED FLOW

Unsignalized

	Level of Service				
Lanes	A	B	C	D	E
2 Undiv.	810	1,270	1,720	2,260	3,010
4 Div.	1,950	3,260	4,560	5,470	6,510
6 Div.	2,930	4,890	6,840	8,210	9,770

INTERRUPTED FLOW

Class Ia (>0.00 to 2.49 signalized intersections per mile)

	Level of Service				
Lanes	A**	B	C	D***	E***
2 Undiv.	-	1,170	1,420	1,550	1,580
4 Div.	-	2,590	3,100	3,320	3,330
6 Div.	-	4,020	4,690	5,000	5,000
8 Div.	-	5,010	5,770	6,120	6,120

CLASS I

Class Ib (2.50 to 4.50 signalized intersections per mile)

	Level of Service				
Lanes	A**	B**	C	D	E
2 Undiv	-	-	820	1,330	1,480
4 Div	-	-	1,790	2,890	3,160
6 Div.	-	-	2,720	4,420	4,780
8 Div.	-	-	3,330	5,390	5,850

Class II (more than 4.50 signalized intersections per mile and not within primary city central business district of urbanized area over 500,000)

	Level of Service				
Lanes	A**	B**	C**	D	E
2 Undiv.	-	-	-	1,090	1,400
4 Div.	-	-	-	2,440	3,070
6 Div.	-	-	-	3,750	4,650
8 Div.	-	-	-	4,570	5,690

CLASS II

Class III (more than 4.50 signalized intersections per mile and within primary city central business district of urbanized area over 500,000)

	Level of Service				
Lanes	A**	B**	C**	D	E
2 Undiv.	-	-	-	1,220	1,370
4 Div.	-	-	-	2,710	3,000
6 Div.	-	-	-	4,130	4,530
8 Div.	-	-	-	5,030	5,530

CLASS III

FREEWAYS

Group 1 (within urbanized area over 500,000 and leading to or passing within 5 miles of primary city central business district)

	Level of Service				
Lanes	A	B	C	D	E
4	1,900	3,100	4,700	5,900	7,100
6	2,800	4,400	6,700	8,500	10,700
8	3,700	5,900	8,900	11,300	14,200
10	4,900	7,800	11,600	14,800	18,600
12	5,600	8,900	13,380	16,900	21,300

Group 2 (within urbanized area and not in Group 1)

	Level of Service				
Lanes	A	B	C	D	E
4	1,900	3,000	4,500	5,700	6,900
6	2,700	4,300	6,400	8,200	10,300
8	3,600	5,700	8,600	10,900	13,700
10	4,700	7,500	11,300	14,300	18,000
12	5,400	8,600	12,900	16,300	20,600

NON-STATE ROADWAYS
MAJOR CITY/COUNTY ROADWAYS

	Level of Service				
Lanes	A**	B**	C	D	E
2 Undiv	-	-	990	1,290	1,410
4 Div.	-	-	2,220	2,820	3,030
6 Div.	-	-	3,440	4,320	4,570

OTHER SIGNALIZED ROADWAYS
(signalized intersection analysis)

	Level of Service				
Lanes	A**	B**	C	D	E
2 Undiv	-	-	470	930	1,060
4 Div.	-	-	1,030	2,060	2,290

ADJUSTMENTS
DIVIDED/UNDIVIDED

(alter corresponding two-way volume indicated percent)

Lanes	Median	Left Turn Bays	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY

(alter corresponding two-way volume indicated percent)

One-Way Lanes	Corresponding Two-Way Lanes	Adjustment Factor
2	4	-40%
3	6	-40%
4	8	-40%
5	8	-25%

* The table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are two-way hourly volumes based on the 1994 Highway Capacity Manual Update and Florida traffic, roadway and signalization data. To convert to annual average daily traffic volumes, these values must be divided by an appropriate K_{100} factor (Warning: do not use a peak to daily traffic ratio; a K_{100} must be used). The table's input value assumptions and level of service criteria appear on the back.

** Cannot be achieved.

*** Volumes are comparable because intersection capacities are reached.

Source: Florida Department of Transportation, 1995.

95TUT
08/04/95

TABLI `- 1 (cont.)

GENERALIZED TWO-WAY PEAK HOUR VOLUMES FOR FLORIDA'S URBANIZED AREAS (cont.)

INPUT VALUE ASSUMPTIONS

	FREEWAYS Group		STATE TWO-WAY ARTERIALS						NON-STATE ROADWAYS	
					Class					
	1	2	Two-Lane Undivided*	Uninterrupted	Ia	Ib	II	III	Major	Other Signalized
TRAFFIC CHARACTERISTICS										
Directional distribution factor (D)	.568	.568	-	.568	.568	.568	.568	.568	.568	.568
Peak hour factor (PHF)	.950	.950	-	.925	.925	.925	.925	.925	.925	.925
Adjusted saturation flow rate										
2- lane facility	NA	NA	-	1850	1850	1850	1850	1800	1850	1800
4- lane facility	2125	2050	-	2000	1850	1850	1850	1800	1850	1800
6-lane facility	2225	2150	-	2000	1850	1850	1850	1800	NA	NA
8-lane facility	2225	2150	-	NA	1700	1700	1700	1650	NA	NA
10-lane facility	2225	2150	-	NA	NA	NA	NA	NA	NA	NA
12-lane facility	2125	2050	-	NA	NA	NA	NA	NA	NA	NA
Turns from exclusive lanes	NA	NA	-	NA	.12	.12	.12	.12	.12	.18
ROADWAY CHARACTERISTICS										
Through lanes	4-12	4-12	-	2-6	2-8	2-8	2-8	2-8	2-6	2-6
Arterial classification	NA	NA	-	NA	I	I	II	III	I	NA
Free flow speed	60	60	-	50	45	40	35	30	45	NA
Medians	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Left turn bays	NA	NA	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIGNAL CHARACTERISTICS										
Signalized intersections/mile	NA	NA	-	NA	1.5	3.0	5.0	7.5	2.5	NA
Arrival type	NA	NA	-	NA	3	4	4	4	4	3
Signal type	NA	NA	-	NA	Act	Semi	Semi	Semi	Semi	Semi
Cycle length (C)	NA	NA	-	NA	120	120	120	120	120	120
Weighted effective green (g/C)	NA	NA	-	NA	.45	.45	.45	.45	.42	.32

*Same as corresponding input assumption for multilane arterials.

LEVEL OF SERVICE CRITERIA

LOS	FREEWAYS		UNINTERRUPTED MULTILANE	STATE TWO-WAY ARTERIALS				NON-STATE ROADWAYS	
				Class			All	Arterials*	Other Signalized Roadways
	4 Lane (v/c)	6+ Lane (v/c)	50mph (v/c)	I (average travel speed)	II (average travel speed)	III (average travel speed)	(intersection v/c)	(average travel speed)	(stopped delay)
A	≤0.272	≤ 0.261	≤ 0.30	≥ 35 mph	≥ 30 mph	≥ 25 mph	≤ 1.00	-	≤ 5 sec
B	≤ 0.436	≤ 0.417	≤ 0.50	≥ 28 mph	≥ 24 mph	≥ 19 mph	≤ 1.00	-	≤ 15 sec
C	≤ 0.655	≤ 0.626	≤ 0.70	≥ 22 mph	≥ 18 mph	≥ 13 mph	≤ 1.00	-	≤ 25 sec
D	≤ 0.829	≤ 0.793	≤ 0.84	≥ 17 mph	≥ 14 mph	≥ 9 mph	≤ 1.00	-	≤ 40 sec
E	≤ 1.00	≤ 1.00	≤ 1.00	≥ 13 mph	≥ 10 mph	≥ 7 mph	≤ 1.00	-	≤ 60 sec
F	> 1.00	> 1.00	> 1.00	< 13 mph	< 10 mph	< 7 mph	> 1.00	-	> 60 sec

*Same as state arterials.

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TABLE 5 - 1

GENERALIZED PEAK HOUR DIRECTIONAL VOLUMES FOR FLORIDA'S URBANIZED AREAS*

STATE TWO-WAY ARTERIALS
UNINTERRUPTED FLOW

Unsignalized

Lanes	Level of Service A	B	C	D	E
2 Undiv.	460	720	980	1,280	1,710
4 Div.	1,110	1,850	2,590	3,110	3,700
6 Div.	1,670	2,780	3,890	4,660	5,550

INTERRUPTED FLOW

Class Ia (>0.00 to 2.49 signalized intersections per mile)

Lanes	Level of Service A**	B	C	D***	E***
2 Undiv.	-	660	810	880	900
4 Div.	-	1,470	1,760	1,890	1,890
6 Div.	-	2,280	2,660	2,840	2,840
8 Div.	-	2,840	3,280	3,480	3,480

CLASS I

Class Ib (2.50 to 4.50 signalized intersections per mile)

Lanes/	Level of Service A**	B**	C	D	E
2 Undiv.	-	-	460	760	840
4 Div.	-	-	1,020	1,640	1,800
6 Div.	-	-	1,550	2,510	2,710
8 Div.	-	-	1,890	3,060	3,320

Class II (more than 4.50 signalized intersections per mile and not within primary city central business district of urbanized area over 500,000)

Lanes	Level of Service A**	B**	C**	D	E
2 Undiv.	-	-	-	620	800
4 Div.	-	-	-	1,390	1,740
6 Div.	-	-	-	2,130	2,640
8 Div.	-	-	-	2,600	3,230

CLASS II

Class III (more than 4.50 signalized intersections per mile and within primary city central business district of urbanized area over 500,000)

Lanes/ Divided	Level of Service A**	B**	C**	D	E
2 Undiv.	-	-	-	690	780
4 Div.	-	-	-	1,540	1,700
6 Div.	-	-	-	2,340	2,570
8 Div.	-	-	-	2,860	3,140

CLASS III

FREEWAYS

Group 1 (within urbanized area over 500,000 and leading to or within 5 miles of primary city central business district)

Lanes	Level of Service A	B	C	D	E
4	1,100	1,760	2,640	3,350	4,040
6	1,660	2,640	3,970	5,030	6,340
8	2,210	3,530	5,290	6,700	8,460
10	2,760	4,410	6,620	8,380	10,570
12	3,160	5,050	7,580	9,610	12,100

Group 2 (within urbanized area and not in Group 1)

Lanes	Level of Service A	B	C	D	E
4	1,060	1,700	2,550	3,230	3,900
6	1,600	2,560	3,840	4,860	6,130
8	2,130	3,410	5,110	6,480	8,170
10	2,670	4,260	6,390	8,100	10,210
12	3,050	4,870	7,310	9,270	11,690

CLASS I

NON-STATE ROADWAYS
MAJOR CITY/COUNTY ROADWAYS

Lanes	Level of Service A**	B**	C	D	E
2Undiv.	-	-	560	730	800
4 Div.	-	-	1,260	1,600	1,720
6 Div.	-	-	1,950	2,450	2,600

OTHER SIGNALIZED ROADWAYS
(signalized intersection analysis)

Lanes	Level of Service A**	B**	C	D	E
2Undiv.	-	-	270	530	600
4 Div.	-	-	590	1,170	1,300

CLASS II

ADJUSTMENTS
DIVIDED/UNDIVIDED
(alter corresponding directional volume indicated percent)

Lanes	Median	Left Turn Bays	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY
(alter corresponding directional volume indicated percent)

One-Way Lanes	Corresponding Two-Way Lanes	Adjustment Factor
2	4	+20%
3	6	+20%
4	8	+20%
5	8	+50%

* The table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are hourly directional volumes based on the 1994 Highway Capacity Manual Update and Florida traffic, roadway and signalization data. To convert to annual average daily traffic volumes, these values must be divided by an appropriate D factor and K_{100} factor (Warning: do not use a peak to daily traffic ratio; a K_{100} must be used). The table's input value assumptions and level of service criteria appear on the back.

** Cannot be achieved.

*** Volumes are unreliable because intersection capacities are reached.

Source: Florida Department of Transportation, 1995.

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TABLE 5-1 (cont.)

GENERALIZED PEAK HOUR DIRECTIONAL VOLUMES FOR FLORIDA'S URBANIZED AREAS (cont.)

INPUT VALUE ASSUMPTIONS

	FREEWAYS Group		STATE TWO-WAY ARTERIALS Class					NON-STATE ROADWAYS	
	1	2	Two-Lane Undivided*	Uninterrupted	Ia	Ib	II	III	Major	Other Signalized
TRAFFIC CHARACTERISTICS										
Peak hour factor (PHF)	.950	.950	-	.925	.925	.925	.925	.925	.925	.925
Adjusted saturation flow rate										
2- lane facility	2125	2050	-	1850	1850	1850	1850	1800	1850	1800
4 to 6- lane facility	2225	2150	-	2000	1850	1850	1850	1800	1850	1800
8-lane facility	2225	2150	-	NA	1700	1700	1700	1650	NA	NA
10-lane facility	2225	2150	-	NA	NA	NA	NA	NA	NA	NA
12-lane facility	2125	2050	-	NA	NA	NA	NA	NA	NA	NA
Turns from exclusive lanes	NA	NA	-	NA	.12	.12	.12	.12	.12	.16
ROADWAY CHARACTERISTICS										
Through lanes	4-12	4-12	-	2-6	2-8	2-8	2-8	2-8	2-6	2-6
Arterial classification	NA	NA	-	NA	I	I	II	III	I	NA
Free flow speed	60	60	-	50	45	40	35	30	45	NA
Medians	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Left turn bays	NA	NA	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIGNAL CHARACTERISTICS										
Signalized intersections/mile	NA	NA	-	NA	1.5	3.0	5.0	7.5	2.5	NA
Arrival type	NA	NA	-	NA	3	4	4	4	4	3
Signal type	NA	NA	-	NA	Act	Semi	Semi	Semi	Semi	Semi
Cycle length (C)	NA	NA	-	NA	120	120	120	120	120	120
Weighted effective green ratio (g/C)	NA	NA	-	NA	.45	.45	.45	.45	.42	.32

*Same as corresponding input assumption for multilane arterials.

LEVEL OF SERVICE

LOS	FREEWAYS (v/c)		UNINTERRUPTED MULTILANE (v/c)	STATE TWO-WAY ARTERIALS Class (average travel speed)			All (intersection v/c)	NON-STATE ROADWAYS	
	4 Lane	6+ Lane		I	II	III		Arterials* (average travel speed)	Other Signalized Roadways (stopped delay)
A	≤0.272	≤ 0.261	≤ 0.30	≥ 35 mph	≥ 30 mph	≥ 25 mph	≤ 1.00	-	≤ 5 sec
B	≤ 0.436	≤ 0.417	≤ 0.50	≥ 28 mph	≥ 24 mph	≥ 19 mph	≤ 1.00	-	≤ 15 sec
C	≤ 0.655	≤ 0.626	≤ 0.70	≥ 22 mph	≥ 18 mph	≥ 13 mph	≤ 1.00	-	≤ 25 sec
D	≤ 0.829	≤ 0.793	≤ 0.84	≥ 17 mph	≥ 14 mph	≥ 9 mph	≤ 1.00	-	≤ 40 sec
E	≤ 1.00	≤ 1.00	≤ 1.00	≥ 13 mph	≥ 10 mph	≥ 7 mph	≤ 1.00	-	≤ 60 sec
F	> 1.00	> 1.00	> 1.00	< 13 mph	< 10 mph	< 7 mph	> 1.00	-	> 60 sec

*Same as state arterials.

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TABLE E - 1

GENERALIZED ANNUAL AVERAGE DAILY VOLUMES FOR FLORIDA'S URBANIZED AREAS*

STATE TWO-WAY ARTERIALS UNINTERRUPTED FLOW

Unsignalized

	Level of Service				
Lanes	A	B	C	D	E
2 Undiv.	8,900	13,900	18,900	24,800	33,100
4 Div.	21,500	35,800	50,100	60,100	71,600
6 Div.	32,200	53,700	75,200	90,200	107,400

INTERRUPTED FLOW

Class Ia (>0.00 to 2.49 signalized intersections per mile)

	Level of Service				
Lanes	A**	B	C	D***	E***
2 Undiv.	-	12,600	15,200	16,600	17,000
4 Div.	-	27,900	33,300	35,700	35,800
6 Div.	-	43,200	50,400	53,700	53,700
8 Div.	-	53,800	62,000	65,800	65,800

CLASS I

Class Ib (2.50 to 4.50 signalized intersections per mile)

	Level of Service				
Lanes	A**	B**	C	D	E
2 Undiv.	-	-	8,800	14,300	15,900
4 Div.	-	-	19,200	31,100	34,000
6 Div.	-	-	29,300	47,500	51,400
8 Div.	-	-	35,800	58,000	62,900

Class II (more than 4.50 signalized intersections per mile and not within primary city central business district of urbanized area over 500,000)

	Level of Service				
Lanes	A**	B**	C**	D	E
2 Undiv.	-	-	-	11,800	15,200
4 Div.	-	-	-	26,500	33,400
6 Div.	-	-	-	40,700	50,600
8 Div.	-	-	-	49,700	61,600

CLASS II

Class III (more than 4.50 signalized intersections per mile and within primary city central business district of urbanized area over 500,000)

	Level of Service				
Lanes	A**	B**	C**	D	E
2 Undiv.	-	-	-	13,200	14,800
4 Div.	-	-	-	29,500	32,600
6 Div.	-	-	-	44,800	49,300
8 Div.	-	-	-	54,700	60,100

CLASS III

FREEWAYS

Group 1 (within urbanized area over 500,000 and leading to or passing within 5 miles of the primary city central business district)

	Level of Service				
Lanes	A	B	C	D	E
4	22,000	35,200	52,900	67,000	80,800
6	33,100	52,900	79,400	100,600	126,900
8	44,100	70,500	105,900	134,100	169,200
10	55,200	88,200	132,400	167,700	211,400
12	63,200	101,100	151,700	192,200	242,300

Group 2 (within urbanized area and not in Group 1)

	Level of Service				
Lanes	A	B	C	D	E
4	20,300	32,500	48,800	61,800	74,500
6	30,600	48,900	73,400	93,000	117,300
8	40,800	65,200	97,900	124,000	156,300
10	51,000	81,500	122,300	155,000	195,400
12	58,400	93,200	140,000	177,300	223,600

NON-STATE ROADWAYS

MAJOR CITY/COUNTY ROADWAYS

	Level of Service				
Lanes	A**	B**	C	D	E
2 Undiv	-	-	10,900	14,200	15,500
4 Div.	-	-	24,400	31,000	33,200
6 Div.	-	-	37,800	47,500	50,200

OTHER SIGNALIZED ROADWAYS (signalized intersection analysis)

	Level of Service				
Lanes	A**	B**	C	D	E
2 Undiv	-	-	5,200	10,200	11,700
4 Div.	-	-	11,400	22,600	25,100

ADJUSTMENTS

DIVIDED/UNDIVIDED (alter corresponding two-way volume indicated percent)

Lanes	Median	Left Turn Bays	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY (alter corresponding two-way volume indicated percent)

One-Way Lanes	Corresponding Two-Way Lanes	Adjustment Factor
2	4	-40%
3	6	-40%
4	8	-40%
5	8	-25%

* The table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are annual average daily traffic (AADT) maximum volumes (based on K_{100} factors, not peak hr daily ratios) for levels of service, and are based on the 1994 Highway Capacity Manual Update and Florida traffic, roadway and signalization data. The table's assumptions and level of service criteria appear on the back.

** Cannot be achieved.

*** Volumes are comparable because intersection capacities are reached.

Source: Florida Department of Transportation, 1995.

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GENERALIZED ANNUAL AVERAGE DAILY VOLUMES FOR FLORIDA'S URBANIZED AREAS (cont.)

INPUT VALUE ASSUMPTIONS

	FREEWAYS Group 1	FREEWAYS Group 2	STATE TWO-WAY ARTERIALS Two-Lane Undivided*	Uninterrupted	Class Ia	Class Ib	Class II	Class III	NON-STATE ROADWAYS Major	NON-STATE ROADWAYS Other Signalized
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K100)	.088	.092	-	.091	.093	.093	.092	.092	.091	.091
Directional distribution factor (D)	.568	.568	-	.568	.568	.568	.568	.568	.568	.568
Peak hour factor (PHF)	.950	.950	-	.925	.925	.925	.925	.925	.925	.925
Adjusted saturation flow rate										
2- lane facility	NA	NA	-	1850	1850	1850	1850	1800	1850	1800
4- lane facility	2125	2050	-	2000	1850	1850	1850	1800	1850	1800
6-lane facility	2225	2150	-	2000	1850	1850	1850	1800	NA	NA
8-lane facility	2225	2150	-	NA	1700	1700	1700	1650	NA	NA
10-lane facility	2225	2150	-	NA	NA	NA	NA	NA	NA	NA
12-lane facility	2125	2050	-	NA	NA	NA	NA	NA	NA	NA
Turns from exclusive lanes	NA	NA	-	NA	.12	.12	.12	.12	.12	.16
ROADWAY CHARACTERISTICS										
Through lanes	4-12	4-12	-	2-6	2-8	2-8	2-8	2-8	2-6	2-6
Arterial classification	NA	NA	-	NA	I	I	II	III	I	NA
Free flow speed	60	60	-	50	45	40	35	30	45	NA
Medians	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Left turn bays	NA	NA	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SIGNAL CHARACTERISTICS										
Signalized intersections/mile	NA	NA	-	NA	1.5	3.0	5.0	7.5	2.5	NA
Arrival type	NA	NA	-	NA	3	4	4	4	4	3
Signal type	NA	NA	-	NA	Act	Semi	Semi	Semi	Semi	Semi
Cycle length (C)	NA	NA	-	NA	120	120	120	120	120	120
Weighted effective green (g/C)	NA	NA	-	NA	.45	.45	.45	.45	.42	.32

*Same as corresponding input assumption for multilane arterials.

LEVEL OF SERVICE CRITERIA

LOS	FREEWAYS 4 Lane (v/c)	FREEWAYS 6+ Lane (v/c)	UNINTERRUPTED MULTILANE 50mph (v/c)	STATE TWO-WAY ARTERIALS Class I (average travel speed)	Class II (average travel speed)	Class III (average travel speed)	All (intersection v/c)	NON-STATE ROADWAYS Arterials* (average travel speed)	NON-STATE ROADWAYS Other Signalized Roadways (stopped delay)
A	≤0.272	≤ 0.261	≤ 0.30	≥ 35 mph	≥ 30 mph	≥ 25 mph	≤ 1.00	-	≤ 5 sec
B	≤ 0.436	≤ 0.417	≤ 0.50	≥ 28 mph	≥ 24 mph	≥ 19 mph	≤ 1.00	-	≤ 15 sec
C	≤ 0.655	≤ 0.626	≤ 0.70	≥ 22 mph	≥ 18 mph	≥ 13 mph	≤ 1.00	-	≤ 25 sec
D	≤ 0.829	≤ 0.793	≤ 0.84	≥ 17 mph	≥ 14 mph	≥ 9 mph	≤ 1.00	-	≤ 40 sec
E	≤ 1.00	≤ 1.00	≤ 1.00	≥ 13 mph	≥ 10 mph	≥ 7 mph	≤ 1.00	-	≤ 60 sec
F	> 1.00	> 1.00	> 1.00	< 13 mph	< 10 mph	< 7 mph	> 1.00	-	> 60 sec

*Same as state arterials.

V. HOUSING ELEMENT

V. HOUSING ELEMENT

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V. HOUSING ELEMENT

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V. HOUSING ELEMENT

A. Background

It has been established that Bal Harbour is fully developed, has no practical room to grow (except by increasing density), and is virtually built out, having only sixteen (16) single family lots that comprise 4.69 acres of its buildable area vacant.

It becomes a moot argument as to whether Bal Harbour can provide accommodations for its future population. Instead the question is reversed, and becomes: what population could Bal Harbour accommodate? After all, public services are measured more on a per capita basis than on a per dwelling unit basis. The answer has been estimated at approximately 7,197 or 145 percent of the present resident population. (See discussion on this topic in Future Land Use Element).

Therefore, the objective of this element is to analyze the following parameters, which could enter into the formula as to whether that capacity population is achievable:

- The quality, quantity, types and age of present housing units.
- The magnitude of other units, and the likelihood - and practicality - of conversion to housing units, i.e., redevelopment.
- The size and zoning of platted parcels and the conditions that would permit redevelopment.

All analyses within this section have excluded hotel rooms, except when specific mention is made of their inclusion.

B. Population and Housing

With only 74 percent of the housing units being occupied year-round, Bal Harbour growth in terms of population does not have a direct correlation with its growth in terms of housing units.

Tables 5.1 and 5.2 show present and projected population and housing units, respectively for Bal Harbour. This data is generated assuming no redevelopment or deviation from the Future Land Use Map.

C. Households and Socioeconomic Factors

Table 5.3 shows the present and projected population, number of housing units, number of households and the number of persons per household.

TABLE 5.1
POPULATION GROWTH

YEAR	TOTAL POPULATION	POPULATION CHANGE	ANNUAL CHANGE	PERCENT CHANGE
1970	2,038			
1980	2,973	935	94	4.6
1990	3,045	72	7	0.2
2000	3,498	453	45	13
2010	3,508	10	1	0.1
2015	3,520	12	2	0.1

Source: CAS 1995

TABLE 5.2
HOUSING UNITS

YEAR	TOTAL DU's	DU's CHANGE	ANNUAL CHANGE	PERCENT CHANGE
1970	1,698			
1980	2,650	952	95	5.6
1990	2,797	147	15	5.3
2000	3,353	556	56	17.0
2010	3,359	6	0.6	0.1
2015	3,363	4	0.8	0.1

Source: CAS 1995

Projections assuming redevelopment of Beach Club property and construction on vacant single family lots.

TABLE 5.3
HOUSEHOLDS, DEMOGRAPHICS

	1985	1990	2000	2010	2,015	Capacity
Population (Resident)	3,133	3,045	3,498	3,508	3,512	7,197
No. Total Housing Units	2,650	2,650	3,353	3,359	3,359	4,235
No. Households (HH)	1,780	1,967	2,163	2,167	2,167	3,134
No. Persons per HH	1.67	1.55	1.55	1.55	1.55	3.4

Source: 1990 US Census

The Dade County trend has been toward an increase in number of households and a slight increase in the number of persons per household. The trend in Bal Harbour has been toward a decrease, the rate dropped from 1.78 in 1970 to 1.67 in 1980 to 1.55 in 1990.

The income distribution as reported in the 1990 Census for Bal Harbour is tabulated below in the Future Land Use Element. The family incomes reported for Bal Harbour are as follows:

Less than $5,000	33 families
$5,000 to $ $9,999	32 families
$10,000 to $14,999	48 families
$15,000 to $ $24,999	43 families
$25,000 to $34,999	75 families
$35,000 to $49,999	130 families
$50,000 to $74,999	103 families
$75,000 to $99,999	88 families
$100,000 or more	241 families

Mean Family Income: $55,715 comprised of 1,944 families

The mean family income for Bal Harbour is one of the highest of all the municipalities and more than double the mean for Dade County of $26,909.

The 1990 Census data also indicates that out of 1,942 household reports of income sources, 1,123 were from social security and 65 from public assistance. The same data shows that 9.7 percent of all families were considered to be below the poverty level, consisting of 41 total families. Of these, nearly all were householders of age 65 or older.

D. Age, Quality and Value of Housing.

Development of Bal Harbour has occurred over 50 years. The Village is experiencing a trend towards redevelopment of existing properties, primarily oceanfront development and single family development. The conditions of maintenance and aesthetics of single family and multiple family units has been excellent.

Table 5.4 summarizes the age of occupied housing units in Bal Harbour. As is evident the most number of dwelling units were added between 1960 and 1979. At present the percent of houses by age are as follows:

Year Built	No. DU	Percent
1990 to present	41	2 %
1980 to 1989	177	9%
1960 to 1979	1,369	69%
1940 to 1959	379	19%
1939 or earlier	19	1%
	1,985	100%

Source: 1990 US Census

TABLE 5.4

AGE OF HOUSING

	Bal Harbour	Dade County
All Year Round Units	3,147	771,288
1970 or later	2,297	170,833
1960 to 1970	452	210,085
1950 to 1960	190	147,084
before 1950	208	243,286

Source: 1990 US Census

TABLE 5.5

AVERAGE VALUE OF HOUSING*, 1995

	Bal Harbour	Dade County
Single Family Homes	$750,000	$82,100
Oceanfront Condominium Units	$375,000	N/A
Inland Multiple Family Units	$100,000	$85,300 (Av. Res.)

*Excepting apartment units.

Source: 1990 US Census

TABLE 5.6

HOUSING COSTS TO INCOME COMPARISON

Owner Occupied Units

Median Household Income	=	$43,750
Median Mortgage Cost	=	$ 1,394
Percentage of Housing Costs to Income	=	38%

Rental Occupied Units

Median Household Income	=	$33,452
Median Rental Cost	=	$ 1,000
Percentage of Housing Costs to Income	=	36%

Source: 1990 US Census

As is evident from the above data, the cost of housing compared to household income slightly exceeds the normally accepted 30-35% of income spent on housing.

Table 5.5 compares the average 1995 value of single-family and condominium units at Bal Harbour with Dade County's. Market values have increased considerably at Bal Harbour. In 1988 the market value of a vacant single family lot is approximately the same as that of a house and lot in 1980. This has doubled again between 1988 and 1995. Assuming that the average cost to build may be 3.0 times the value of the land, house values in 1995 average nearly five times their values in 1980. This is the equivalent of approximately 15 percent per year increase in value. This fact has been confirmed by real estate professionals who reported the average market value for single family houses (detached) and condominium units is approximately $750,000 for single family houses and $375,000 for oceanfront condominium units.

The 1990 Census housing quality indicators for resident-occupied units reported that out of 2,797 units, no units were without complete plumbing; 25 units had only room heaters or portable type heating equipment. The sum total of all of these deficiencies (by today's standards), would average to less than 1 percent of the total dwelling units. In comparison, a similar analysis for Dade County results in 30 percent of units having deficient comfort control by the same standards.

E. Housing Affordability

Affordability of housing is expressed in terms of the rent-to-income and owner costs-to-income ratios present in the community. The 1990 Census reported these ratios in the various income range categories. Table 5.6 presents this data.

As is evident from Table 5.6, housing at Bal Harbour is mostly afforded by the income groups of $35,000 per year (1990 dollars) or more, representing 70.8 percent of the respondents to the Census inquiry.

It is evident that housing costs, which rise at a rate parallel with property values, have risen at a rate higher than income levels. The result will be reduced affordability of housing and a market-dictated shift in income for Bal Harbour residents. This could lead to a shift in the demographic composition from single-person households to couples or families, an increase in the number of persons per household, and a reduction in the average age of residents.

F. Household Occupancy Characteristics

The composition of households dictate to a large extent the quality of the services that a municipality renders. Given that certain services, once the infrastructure is in place, are fixed, any significant change in household composition could impact the level of service provided by that facility. The composition of households can vary from single resident, over 65 years of age and fixed income, to a family unit comprised of any number of people of varying ages and with multiple incomes.

Also, for the purposes of planning analyses, the tenure (rank) of the occupant may be important; as well as whether the unit is vacant, occupied year round part time, year round all of the time, or during limited periods of time.

Tables 5.7. and 5.8 summarize these characteristics as reported from the 1990 Census for Bal Harbour and for Dade County.

G. Group and Subsidized Housing

There are no group housing units in Bal Harbour. There is no government or agency subsidized housing in Bal Harbour.

H. Historically Significant Housing

There are no historically significant housing in Bal Harbour.

I. Future Development and/or Redevelopment

Bal Harbour has capacity for approximately sixteen additional single family housing units, buildable on currently vacant lots. The only possibility remaining for additional housing are:

- Hotel to condominium conversions
- Redevelopment of multifamily structures
- Redevelopment of the oceanfront club site to residential/hotel use

TABLE 5.7

HOUSEHOLD'S CHARACTERISTICS

	Bal Harbour	Dade County
Number of Families	805	481,263
Number of Households	1,967	692,355
One Person Households	1,102	172,164
Male	20%	72,853
Female	80%	99,311
Two Person Households ±	865	520,191
Related (Family)	788	483,778
Not-Related (Non-Fam)	77	36,413
Households w/ Person 65 +	1,804	270,806
One person	839	69,425
Two Persons	965	201,381
Persons per Household	1.55	2.66

Source: 1990 US Census

TABLE 5.8

OCCUPANCY CHARACTERISTICS

	Bal Harbour	Dade County
Total Units	3,147	692,355
Total Year-Round Units	3,130	688,788
Vacant, for Sale or Rent	192	42,826
Vacant (Temporary Housing)	20%	19,369
Occupied Units	2,180	626,593

Persons Per Household	Bal Harbour	Dade County
One Person	633	172,164
Two Persons	1,092	201,710
Three Persons	568	121,208
Four Persons	434	100,901
Five Persons	172	52,120
Six Persons	68	23,971
Seven or More Persons	32	20,281

Source: 1990 US Census.

J. GOALS, OBJECTIVES AND POLICIES

GOAL: Maintain the existing high quality and character of the present housing stock.

Objective 9J-5.010 (3) (b) 1.: Provide for adequate and affordable housing for current and anticipated populations. Does not apply since Bal Harbour is built out.

Objective 9J-5.010 (3) (b) 2.: Require the elimination of substandard housing conditions and for the structural and aesthetic improvements of existing housing.

Policy: Enforce local building codes.

Policy: Enforce architectural review board criteria.

Objective 9J-5.010 (3)(b) 3.: Provide for adequate siting for very low income, low income and moderate income housing and adequate sites for mobile and manufactured housing. Does not apply since Bal Harbour is built out. Also, barrier island location is inappropriate especially for mobile homes.

Objective 9J-5.010 (3) (b) 4.: Provide for sites for group houses and foster care facilities. Does not apply since Bal Harbour is built out.

Objective 9J-5.010 (3) (b) 5.: Provide for the conservation of historically significant structures, and for the rehabilitation or demolition of deteriorated housing.

Policy: Require that the architectural review board annually updates guidelines for evaluating housing for historical value, by the end of 1997.

Policy: Require that the architectural review board annually updates guidelines for determining when a structure is in need of rehabilitation or demolition.

Objective 9J-5.010 (3) (b) 6.: Provide for housing relocations. Does not apply since Bal Harbour is built out.

Objective 9J-5.010 (3) (b) 7.: Formulate housing implementation programs. Does not apply since Bal Harbour is built out.

Disposition of Policy Requirements in 9J-5.010 (3)(c)

Policy 1. Does not apply, Village is built out.
Policy 2. Regulatory and permitting process does not require modification.
Policy 3. Addressed above.
Policy 4. Addressed above.
Policy 5. Does not apply, Village is built out.
Policy 6. Does not apply, Village is built out.
Policy 7. Does not apply, Village is built out.
Policy 8. Does not apply, Village is built out.
Policy 9. Does not apply, Village is built out.
Policy 10. Does not apply, Village is built out.
Policy 11. Does not apply, Village is built out.

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VI. SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER AND NATURAL GROUNDWATER AQUIFER RECHARGE ELEMENT

VI. SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER AND NATURAL GROUNDWATER AQUIFER RECHARGE ELEMENT

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3. Regulations Governing Drainage

F. Goals, Objectives and Policies

VI. SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER AND NATURAL GROUNDWATER AQUIFER RECHARGE ELEMENT

A Sanitary-Sewer Sub-Element

Operation and maintenance of all facilities described herein are the responsibility of the Village's Public Works Department.

1. Collection System

All areas of the village are served by sanitary sewers. The system is comprised of two subsystems, each tributary to one of two pumping stations. See Figure 6.1.

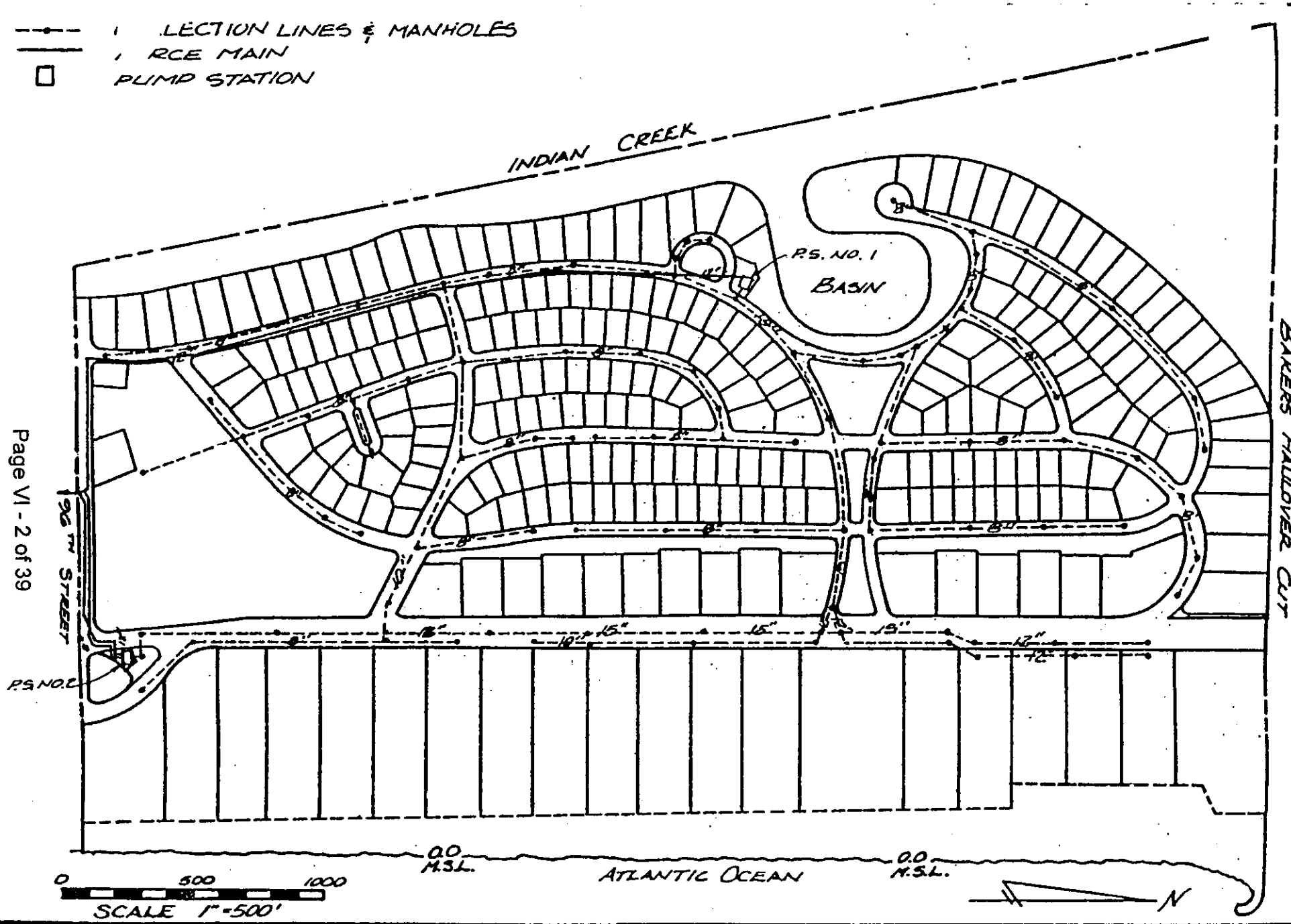
The west system ("Village sewers") was built in 1946 and discharges at Pump Station No. 1. The east system ("Collins Avenue sewer") was built in 1964 and discharges at Pump Station No. 2. The two systems are interconnected across Collins Avenue, with the upper reaches of the Village sewers having the ability to overflow to the Collins Avenue sewer.

The Village has inspected and repaired collection pipe leakage for inflow and infiltration during the 1989 to 1995 period. This will need to be monitored in the future as the system continues to age.

2. Pumping Stations and Transmission Force Mains

Pump Station No. 1 is comprised of two pumps served by electric motors having two speeds. This station served the Village until the No. 2 station was built in 1964. The No. 1 station pumped to the Miami Beach ocean outfall through a 12 and 16-inch diameter force main shared with and through the Town of Surfside. When No. 2 Pump Station was built, No. 1 Pump Station was rerouted to discharge at No. 2, from where it is repumped.

Pump Station No. 2 is comprised of three dry-pit pumps. Two of the pumps are served by two-speed motors, and the third by a natural-gas driven engine. This pump station discharges through the same force main that is shared with Surfside, terminating at a flow meter which connects to a 24-inch diameter interceptor force main that is part of the Miami Beach sewerage system. The sewage is repumped twice more by Miami Beach before being discharged into the Metropolitan Dade County system. Refer to Figure 6.2 for a schematic of the regional wastewater system of which Bal Harbour forms a part.



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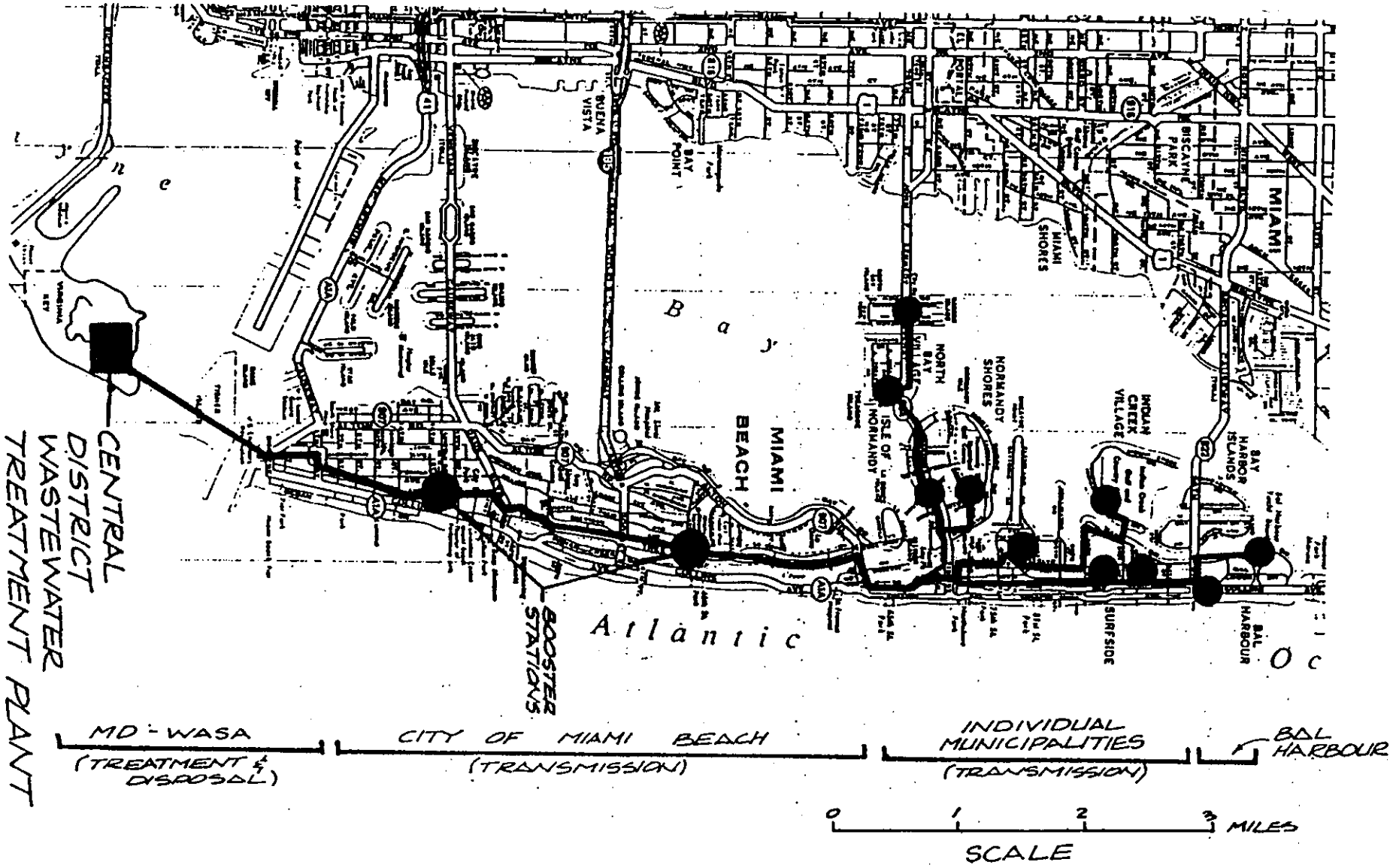
SANITARY SEWER SYSTEM



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JURISDICTIONAL LIMITS

REGIONAL WASTEWATER SYSTEM

CENTRAL DISTRICT - COLLECTION ZONE 601

AGENCY JURISDICTIONAL LIMITS

Both Pump Station No. 1 and No. 2 were nearly completely rebuilt in 1991. Metro Dade WASA made improvements to the shared transmission system south of the Village in 1992-93.

Bal Harbour is the northernmost system discharging into a force main system that flows to the south. Approximately 40 pumping stations serving six municipalities manifold together into this system.

3. Treatment and Disposal

Treatment of Bal Harbour's wastewater takes place at Metro Dade County's Water and Sewer Authority (WASA) Department's Central Regional Wastewater Treatment Plant at Virginia Key. Effluent disposal takes place by ocean outfall. Sludges are incinerated and sludge residue is landfilled in western Dade County.

4. Interagency Agreements

a) With the Town of Surfside, for common use of a 16 inch force main.
b) With Miami Beach, for rehandling of wastewaters. Maximizes Bal Harbour and Surfside flows to 3,400 gpm.
c) With WASA, for wastewater treatment.

WASA is the local 201-agency, that charged with county-wide treatment and disposal.

5. Capacities Assessment of System Components

The system's components' capacities and demands are summarized in Table 6.1. and discussed below. This table is calculated using the levels of service for the various contributing land uses as listed in Table 6.2.

a) Collection System

The collection system is adequately sized to handle the developed and future development of Bal Harbour. Infiltration and inflow were found to exist in certain portions of the collection system. Portions of leaking pipes were either replaced or grouted. Some minor problem is noted at manhole covers.

b) Sewage Pumping Stations

Pump Station No. 1 is adequately sized to handle gravity flows tributary to it, and to discharge them into Pump Station No. 2. Pump Station No.1 was nearly completely rebuilt in 1991, addressing previously noted deficiencies and should serve adequately for many years.

Pump station No. 2 is adequately sized to handle the gravity flows of the Village's permanent resident population. The rebuilding of the pump station in 1991 and WASA system improvements now provide capacity for daily and peak flows until buildout.

TABLE 6.1

CAPACITY - DEMAND COMPARISON TABLE
(Million Gallons Per Day (MGD))

System Component	Capacity	Demand* Average	Other
Gravity (flowing 90% full)			
East (Pump Station No.2)	2.5	0.8	2.0 peak
West (Pump Sta. No.1)	1.9	.25	0.6 peak
Pumping			
Three constant speed pumps	3.83	1.30	3.26 peak
Force Mains			
No. 1 at No. 2	1.6	1.6	1.6
No. 2 to Surfside	3.5	2.3	2.63 peak
Surfside to Miami Beach	6.5	4.6	4.9 peak
Miami Beach Repump Booster Station	19	7.5	12.5 peak
Miami Beach Transmission	50	27.4	27.6
Treatment Facility			
Virginia Key WWTP	143	116	154 load

Note: All capacities/demand/flows are reported in Millions Gallons Per Day (MGD)

Source: Dade County Water and Sewer Authority (WASA) 1995
Village of Bal Harbour
CAS

* in MGD estimated. Based upon the following unit generation rates:

Resident Population	100 gallons per capita per day
Migratory Population	100 gallons per capita per day
Seasonal Population	80 gallons per capita per day
Commercial Space	100 gallons per day per 1,000 square feet
Convention Halls	50 gallons per capita per day

TABLE 6.2

SANITARY SEWERS - POTENTIAL TOTAL REQUIREMENTS

Contributing Land Uses	(Inventory) Demand	LOS	Avg. Daily Flow Total Req'mt
Single Family Homes	203 units	400 gal/day	81,200
Condominium Units	1,030 units	200 gal/day	206,000
Apartments	1,634 units	200 gal/day	326,800
Hotel Rooms*	876 rooms	160 gal/day	140,160
Convention Halls*	3,000 persons	50 gal/c/day	150,000
Commercial	1,000,000 sq. ft.	0.1 gal/sq. ft.	100,000
Municipal	14,000 sq. ft.	0.1 gal/sq. ft.	1,400
Recreational	30,000 sq. ft.	0.1 gal/sq. ft.	3,000
Institutional	20,000 sq. ft.	0.1 gal/sq. ft.	2,000
TOTAL			1,010,560

ADF = 1,010,560 gal/day
Peak = 2,526,400 gal/day = 1,754 gpm
LOS = established level of service

* contained in the same land use category

NOTE: Inventory source is Table 3.1 in the Future Land Use Element

Source: Dade County Water and Sewer Authority (WASA) 1995
Village of Bal Harbour
CAS

c) Force Main System

The Bal Harbour sewage is pumped via a force main that is approximately 40 years old. WASA has investigated the force main but no improvements have been made as of 1995. However, improvements were made to the gravity system.

d) Miami Beach System

The Miami Beach system is adequately sized for current and future (planning period and beyond) demands imposed upon it by Bal Harbour.

e) Treatment and Disposal

The Virginia Key WWTP and its support disposal facilities are adequately sized to meet current and future demands imposed upon them by Bal Harbour. WASA expanded the plant capacity to 143 mgd and the 1996 ADF is 116 mgd.

6. Needs Assessment

Sanitary Sewer system needs for improvements stem from the following:

a) Lack of system reliability to adequately handle flows, as a result of:

1) conditions outside of the system exceeding design conditions; or
2) age of the system, having critical components that have far exceeded life expectancy: or
3) a combination of the above

As a result, the following steps must be taken:

a) Continue to monitor if infiltration or inflow are excessive. Quantify infiltration and inflow to determine current system impact, estimate possible elimination, and future system impact.

b) Determine if the transmission force main system, and its various segments will be able to withstand increases in operating pressures and increases in flow.

c) Determine what Inter-agency agreement should be written or existing one be modified (and what its new terms must be) for the mutual benefit of the agencies, in order to best serve the public's health and welfare.

Preliminary engineering studies and observations have revealed that:

a) Under present conditions infiltration's small because gravity sewers operate in a surcharge manner, and that there may be some degree of exfiltration. If the sewers were to operate as designed, the potential for infiltration is substantial. Inflow is substantial during heavy rains, especially due to water ponding in the streets because of inadequate drainage.

7. Levels of Service

Table 6.2 contains a summary of the existing levels of service that are currently provided by the sanitary sewer system to the various contributory land uses. The combined demand created is slightly higher than one million gallons per day, calculated at average daily rates.

Gravity sewers are sized to handle maximum daily flows when flowing full. Pumping stations are designed for peak hour flow rates. Maximum day is estimated to be 2.0 higher than average day, and peak is 2.5 times the average.

B. SOLID WASTE SUB-ELEMENT

B. Solid Waste Sub-element

The services described herein are the responsibility of the Public Works Department.

1. Garbage Collection

The Village of Bal Harbour has a three member crew that conducts garbage collection of all of the single family and apartment buildings on Mondays, Wednesdays and Fridays. A second two-man crew collects container refuse from the hotels, condominium high-rises and from the commercial establishments every day of the week, year-round. The crews rotate in order to balance the workload.

Four rear loader compactor trucks (20 cubic yard capacity) are used. One truck is assigned special duty at the larger hotels; the fourth truck is a stand-by. They are all equipped for lifting the one- to three-cubic yard container.

TABLE 6.3

2. Trash Collection

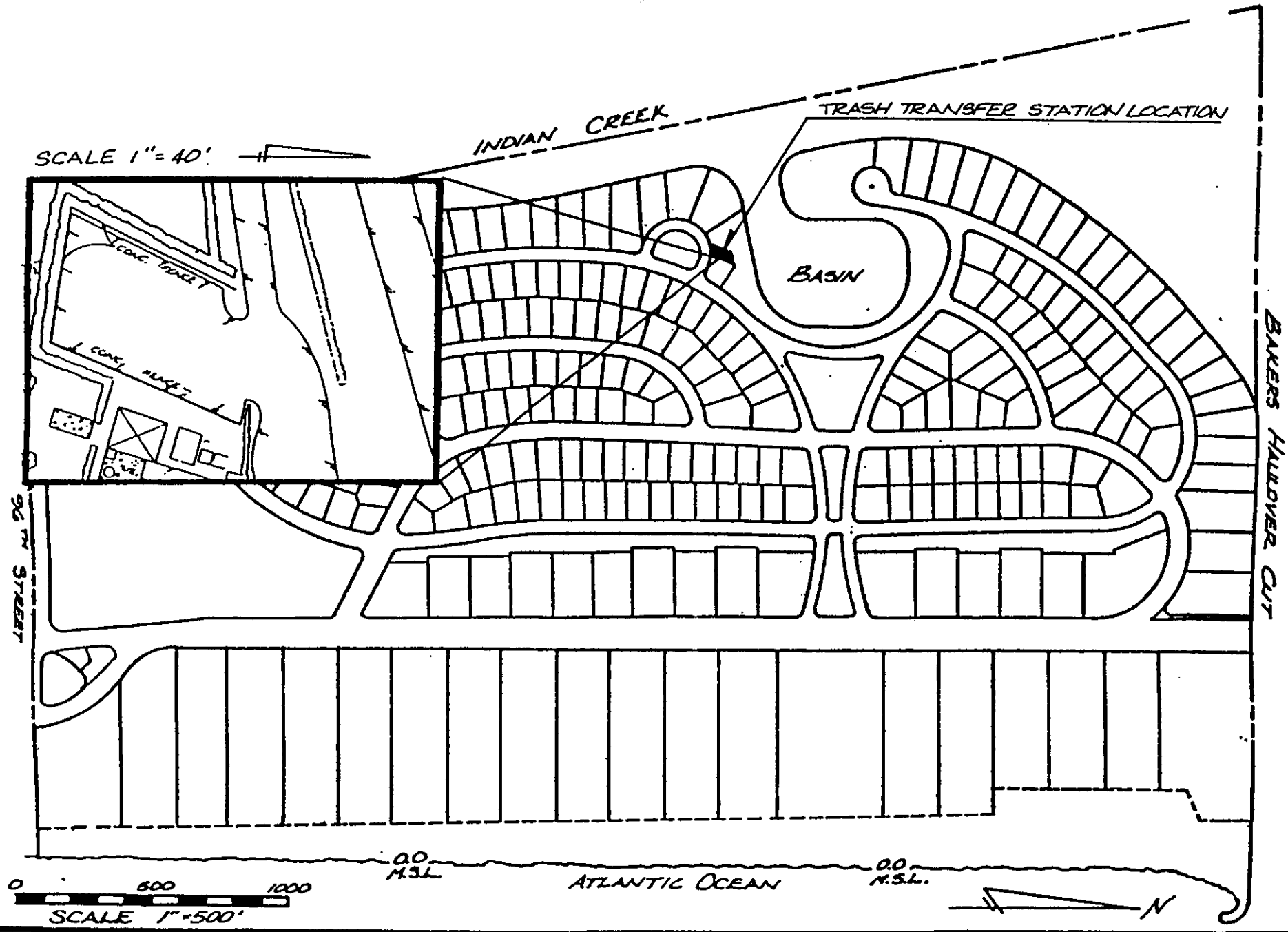
The Village maintains a trash collection point where residents can bring only yard clippings. The residential crew empties the trash collection station on Tuesdays and Thursdays. An open top dump truck fitted with a clam-shell is used to empty the trash station. Figure 6.3 shows the location and layout of the trash station

Special curbside pickups are provided upon citizen request and after an appointment is needed.

3. Hazardous Wastes

Some hazardous waste is produced by physicians offices and at the Village Public Works complex which is removed by private haulers. There are no industrial uses in the Village.

Local ordinance prohibits disposal of hazardous materials via household garbage or dumping at the trash station.



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TRASH TRANSFER STATION LOCATION AND SITE PLAN

4. Solid Waste Disposal

Approximately 80-90% of the solid waste collected by the Village is disposed of at the Metro Dade Northeast Transfer Station operated by the Dade County Public Works Department Solid Waste Division. Recycling separation occurs at this facility. From there it is transferred to the 58 Street Processing Facility. Refer to Figure 6.4 for the location of these facilities.

The 58 Street Processing facility is a resource recovery plant where the solid waste is shredded, slurried and burned to produce electricity. The residues are landfilled in a controlled facility.

5. Interagency Agreements

According to Dade County Code, Bal Harbour Is required to dispose of the solid wastes at the county-operated facilities. Tipping charges are assessed in accordance with the County's rate.

6. Capacity Assessment

a) Garbage Collection

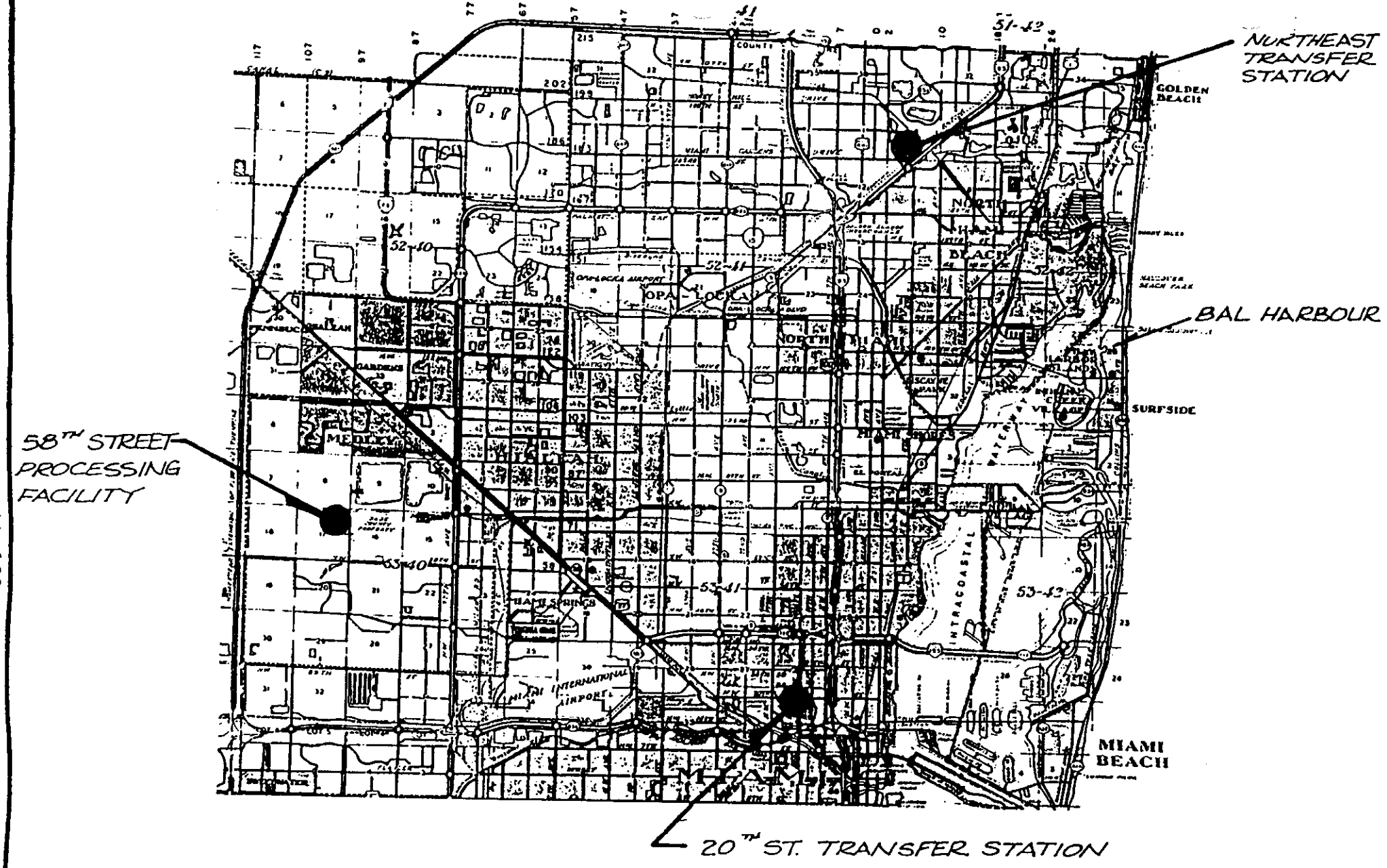
Bal Harbour is built-out and increases in volume of garbage will probably only result from per-capita increases. The two garbage collection routes are sufficient to meet the current and future needs of Bal Harbour.

The hotel garbage route makes between two and three trips to the dump daily: whereas the residential route makes between one and two.

b) Trash Collection

The trash collection point is centrally located and was completely rebuilt. Only yard waste is now allowed which significantly increased available capacity and solved overflow problems noted in previous years.

Peak day to average day volume is approximately 2:1.



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METRO DADE
SOLID WASTE DISPOSAL FACILITIES

7. Needs Assessment

The trash holding station was enlarged and is now limited to receiving only yard waste. No other needs are noted at this time.

8. Levels of Service

Table 6.3 contains the 1995 annual weights of garbage and trash collections. The garbage is further divided between the residential routes and the commercial routes that are described above. Based on these figures, the existing levels of service are calculated. The LOS are based on maximum day generation rates, which are estimated to vary from 1.5 times the average for garbage, to 2.0 times the average for trash.

This LOS analysis yields extremely high generation rates on a per capita equivalency basis for the single family garbage and the trash. This phenomena can be explained as follows:

a) Single family homes in high valve areas tend to generate higher amounts of solid waste due to more household purchases and the large amount of yard clippings/waste.

b. Trash is generated by Village forces as well as by residents. Also, gardeners who work in Bal Harbour may be bringing trash from outside the jurisdiction. This has been suspected, but has not been confirmed. Both factors increase the apparent per capita generation rate.

TABLE 6.3
REVISED 1995
SOLID WASTE GENERATION AND EXISTING LEVEL OF SERVICES

	Garbage in Tons per Month			Garbage	Trash	Total
	Single Family	West MF	OF & Comm	Subtotal	Tons/Mos.	Tons/Mos.
	81.41	11.44	235.59	328.44	90.34	418.78
Total/Year	976.89	137.28	2827.03	3941.20	1084.14	5025.34
Average	2.68 Tpd	.38 Tpd	7.74 Tpd	10.80 Tpd	2.97 Tpd	13.77 Tpd
LOS	28.71	1.50	3.03	33.51	1.36	34.87

Source: Village of Bal Harbour 1995

* LOS is given in pounds per capita per day as a generation rate, and is based on existing resident population of 3,248 and 1.5 factor for trash over the average day.

C. DRAINAGE SUB-ELEMENT

C. Drainage Sub-element

Maintenance of the drainage system is the responsibility of the Village's Public Works Department:

1. Natural Drainage

a) Runoff to Surface Waters

Overland runoff to surface waters occurs in the lands that are adjacent to the bay and the ocean. This runoff is insignificant in quantity and considered to be of good quality since it flows over grassy land, or beach sand. All other rainfall either percolates through the ground or is handled by a positive drainage system.

b) Soil Infiltration

A certain percentage of rainfall infiltrates the ground directly. The remaining runs off and is either ponded, flows to surface waters or is handled by a positive drainage system. The portion that ponds will either percolate into the soil matrix with time or evaporates.

c) Flooding

When surface runoff that ponds becomes excessive and a nuisance it is considered flooding. Ponding in grassy areas is not considered a nuisance unless the water stands for more than 24 hours. Ponding in paved areas is considered a nuisance if it is of sufficient depth to limit access, cause damage, or if it ponds longer than two hours.

d) Soil Matrix

Bal Harbour is generally manmade. Fill from the bay bottom was placed on top of the beach dunes and mangrove swamp to create dry land. The fill was contained by bulkheading the bay-front areas. The fill is comprised of a mix of bay-bottom silts, sands, gravel, shells and possibly limerock. As no attempt was made to demuck the mangrove swamps, the pre-development soil matrix of organic sediments is now buried beneath the fill. As a result, common subsidence of grassy and paved areas occurs. Since most foundations are either placed on firmer ground (coastal dunes) or on piles, settlement of structures has not been a problem.

The soil matrix described above has varying capacity for percolation and infiltration. Generally, the soil component is sand, and permits

from average to good percolation. The muck layers act as a hardpan, but it is not entirely impervious.

The groundwater at Bal Harbour is tidal brackish water.

2. Drainage System

A positive drainage system was provided for the streets and roadways of Bal Harbour when it was developed in the late 1940's. Catch basins and curb inlets were placed in the gutters, and these were drained to the bay. A few drains were placed across the dunes originally, but these have all been removed or otherwise abandoned.

The original drainage system proved over the years to be increasingly inadequate. As the Village was developed runoff increased and grades were modified. Other areas subsided and new low areas were created.

Drainage improvements have consisted of: (a) increasing the capacity of outfalls, (b) placing inlets and providing drainage to low points and (c) replacing damaged or corroded pipes which have collapsed.

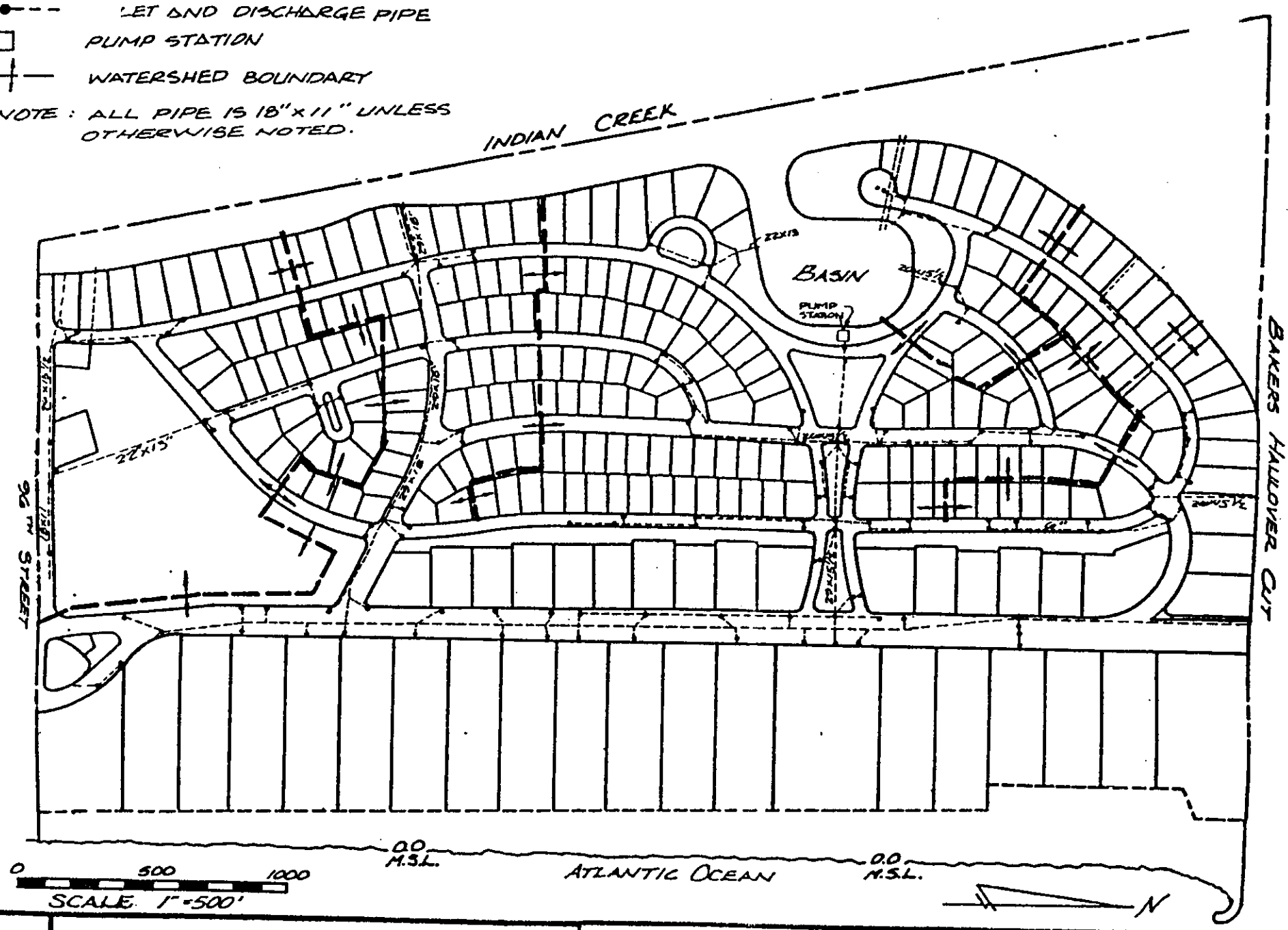
a) Existing System and outfalls, Overview

The stormwater collection system consists of curb Inlets and catch basins connected to a branch network of pipes which eventually discharge to the bay.

There were 12 direct outfalls originally but six are being capped and/or removed as part of major stormwater improvements being installed in 1996-97. Refer to Figure 6.5. One discharges water collected on the north side of 96 Street at the foot of the bride crossing Indian Creek. Another outfall collects all of Collins Avenue from 96 Street north to the Baker's Haulover Cut where it is discharged via an 84-inch diameter pipe. The remaining ten outfalls are from residential streets. One of these outfalls is comprised of a stormwater pumping station.

b) Inlet and Catch Basins Structures Drainage structures that formed part of the original drainage system were flat bottom structures made of clay brick with mortar filled joints. Cast iron gates and curb inlets were provided.

In 1982, when a major improvement program was constructed, the structures were prefabricated reinforced concrete, also flat-bottom style.



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DRAINAGE AREA MAP

There are no sump-bottom structures in the system. And none of the original outfall pipes were provided with pollution retardant structures.

The 1996-97 stormwater improvements will replace many of the inlet and catch basin structures in the northern two-thirds of the residential area west of Collins Avenue. Inlet sizes are being increased as well as upsizing pipes and/or repairing collapsing pipes and constructing a new pump station with pollution retardant features and an injection system. Extremely heavy storms will allow direct outfall to occur.

c) Pipe Materials, Conditions

The majority of pipes still in use today are part of the original drainage systems. The pipes are either round or elliptical corrugated steel, with zinc galvanizing and bituminous coating. The brackish environment that they exist in, has led to corrosion of the pipe material, and in some cases to cave-ins. Many of these pipes were also installed with minimal cover.

More recent improvements (1982) have incorporated aluminum alloy pipe or pipe having aluminized coatings. Practically all of these have consisted of smooth-lined helical corrugated round culvert pipe, and have been provided with select backfill material and adequate depth of cover. Some recent improvements have included polyethylene pipe, slip-lined into existing storm sewers.

The 1996-97 stormwater system improvements will replace and/or repair many pipes in the northern two-thirds of the residential area west of Collins Avenue. These will be mostly PVC material with some larger structures being Reinforced Concrete Piping (RCP).

d) Outfalls

Of the original twelve outfalls, two occur in the 96th Street and Collins Avenue road right-of-way; two occur within the Public Works compound; five occur at the marina; and the remaining occur between residences in drainage easements. The latter are relatively inaccessible for maintenance. Six outfalls have been either capped or will be with the 1996-97 stormwater system improvements. The main outfall from the existing pump station on Bal Bay Drive will be removed and a new outfall will be constructed.

e) Pumping Station

The existing stormwater pumping station is strategically located and handles approximately one fourth of the Village area west of Collins Avenue. The pump station is comprised of a single propeller pump, driven by gasoline engine.

The pump must be turned on manually. Since the need to operate them is not frequent, the wetwell serves as a grit settling tank. There are no provisions for easy pump out and cleanup. Therefore grit has collected over the years reducing the overall storage capability and possibly endangering the pumps by intaking excessible amounts of grit and other solids.

As part of the 1996-97 stormwater system improvement, the old pump station will be removed and a new much larger pumping station will be constructed. It is designed to handle 30,000 gallons per minute. The pump station will have pollution retardant features. The system will inject stormwater into eight (8) wells. Heavy storms will overflow to direct outfall pipes.

3. Flooding

a) Frequency, Magnitude

Frequent flooding has occurred in many of Bal Harbour's streets. Most of this flooding is considered to fall into the nuisance definition. The frequency is in some cases less than annual, or annually. This frequent flooding is attributed to two major causes: (1) development intensity over 40 years have increased the total runoff, decreased the time of concentration and may have also changed the drainage watershed areas; and (2) subsurface subsidence has created localized low points that currently collect water, when they once shed the water to other points.

The 1996-97 stormwater improvements should significantly decrease flooding by including larger inlets, pipes, pumping/discharge facilities and repairing of streets with better slopes.

The typically flat topography prevents flooding from being deeper than a few inches in the worst of cases.

b) Flood Plains

The Metropolitan Dade County Department of Environmental Resources Management's Water Control Division has established that the coastal areas of the county, including Bal Harbour, have a 10-year flood plain elevation of 5.0 feet above MSL, 1929. This criteria is used in establishing finished crown of roads and parking lots.

The Federal Emergency Management Agency's National Flood Insurance Program has published a Flood Insurance Rate Map for Bal Harbour and surrounding communities. A revised map was adopted in 1993. It establishes that most of the areas west of a line that is approximately 200 feet east of Collins Avenue falls in Zone AE, with a base flood elevation of 8.0. A narrow strip is now depicted along the Indian Creek seawall area as Zone AE, with a base flood elevation of 9.0. Only the area east of Collins Avenue differs, with zones varying from Zone X to AE to VE. The buildable areas east of Collins (lying landward of the Coastal Construction Control Line, CCCL) all fall in either Zone AE(8) or Zone X. See Figure 3.1 in the Future Land Use Element.

NOTE: Zone AE area areas where based flood elevations have been determined; Zone VE are coastal flood areas with velocity hazard (wave action), and have the base flood elevation determined; and Zone X are areas of 500-year flood, areas of 100-year flood with average depth of less than one foot, or areas outside of the 500-year flood plain.

c) Emergency Flood Evacuation

A comprehensive regional flood evacuation and storm emergency management plan has been developed by Metropolitan Dade County, and is participated in by all coastal municipalities, including Bal Harbour. A thorough discussion of this topic is contained in the Coastal Management Element of this Comprehensive Master Plan for Bal Harbour.

4. Performance Assessment

As mentioned above in this sub-element, limited ponding of some streets has occurred on a relatively frequent basis. From the standpoint of current conditions the ponding is the result of (a) lack of drainage system, (b) inadequately sized drainage system or ((c) improperly operated drainage system (pump station is not used, when it should). The 1996-97 stormwater improvements should resolve all significant flooding problems in the Village.

Drainage system performance may also be subject to the physical conditions of the pipe. A 1982 field and laboratory engineering evaluation as well as a 1991 study was conducted in order to ascertain the conditions of the then 35-year-old storm sewers. The principal aim of the study was to determine the degree of corrosion attach on the galvanizing and steel pipe walls. The study concluded that corrosion was primarily being caused to the pipes' interiors, and that the zinc galvanizing was virtually non-existent. Wherever the bituminous coating had been found present, the galvanizing was intact, but this was mostly found on the exterior of the pipes. It was also found that the pipes were very pitted and that the steel had corroded more than half of its original thickness. Furthermore, practically all of the pipe joints that were exposed for inspection were found to be severely corroded.

The theoretical performance of the drainage system was analyzed in a comprehensive manner in 1991. Observations of the system: performance indicated that outside of areas where ponding occurs due to the ground's topography, the second most prevalent cause of ponding is in areas where drainage systems do exist; leading to the conclusion that, for some reason or other, the storm pipes do not have sufficient capacity. The worst of these latter areas is the storm system that is tributary to the stormwater pumping station. The 1996-97 stormwater system improvements will solve those deficiencies.

Since 1987, there were several cases reported of pipes which collapsed. One was under a roadway; the other in a grassy area and not subject to traffic. These pipes were partially replaced.

5. Levels of Service

The current level of service provided for the Village's stormwater drainage is not known. As is pointed out in the Performance Assessment section, some areas pond while others don't. This suggests that LOS's vary. The 1991 drainage study identified what areas are deficient, and provided information such as that described in the Needs Assessment section below.

The effectiveness of existing drainage systems should be compared to the standard LOS's listed in Table 6.4 in determining deficiencies. The values are also applicable to the design of new drainage systems for public property and rights-of-way, as well as for private properties and parking lots.

6. Needs assessment

The entire Village area west of Collins Avenue was analyzed in a 1991 stormwater study which identified:

a) localized low points of frequent ponding, flooding and similar nuisance;
b) areas where ponding occurs although drainage facilities exist;
c) the theoretical pipe size that would be installed in place of existing drainage pipes; compare this with the size and theoretical capacity of the existing pipe;
d) the capacity and condition of the stormwater pumping station, and how it could be improved in order to better be of service during storm events;
e) the best location to install pollution retardant boxes, and to properly size these boxes;
f) what maintenance procedures need be followed in upkeeping the drainage system;
g) where pipe corrosion is the worst in order to implement a pipe replacement or rehabilitation program; and
h) where it would be best to relocate outfalls that presently exist between private homes.

The 1996-97 stormwater improvements will address these items. The balance of the Village should be analyzed during the 1995-2000 planning period.

7. Interagency Agreements

a) With the Florida Department of Transportation (FDOT) for the maintenance of the storm sewers for 96 Street
b) With the FDOT for the maintenance of storm sewers that serve Collins Avenue.

TABLE 6.4
MINIMUM DRAINAGE CRITERIA
(Standard Levels of Service for Drainage)

Part I: Storm Frequencies

Area Requiring Drainage	Frequency
Arterial Roadways	10-Year
Collector Roads	5-Year
Residential Streets	5-Year
Parking Lots	2-Year
Residential and Commercial Areas, unpaved	2-Year

Part II: Permissible Ponding

Area Under Consideration	Duration	Depth
Paved Surfaces	2-Hours	3-inches
Open Spaces	12-Hours	6-inches*

* Except for dry retention areas so designated and approved.

Note: Compliance with criteria other than the above which results in greater runoff may be necessary. Consultation with Dade County DERM, Dade County Public Works Department, South Florida Water Management District, and the Florida Department of Transportation may be necessary.

D. POTABLE WATER SUB-ELEMENT

D. Potable Water Sub-Element

Operation and maintenance of all facilities described in this sub-element are the responsibility of the Public Works Department.

1. Water Distribution System

   All areas of the Village are served by the potable water distribution system. The system was built in 1946, and is largely comprised of cast iron pipe. There were improvements made to the system in 1976 which went to better the balancing of pressures and to increase fire fighting capabilities at certain then-deficient areas

   The individual accounts are all metered.

   Fire hydrants are provided such that no property is more than 600 feet from a hydrant. Figure 6.6 shows the location of pipes and hydrants.

   All areas of the system are looped in order to provide balanced pressures throughout. Pipe sizes vary from 4 to 16 inches in size.

2. Water Pumping Station

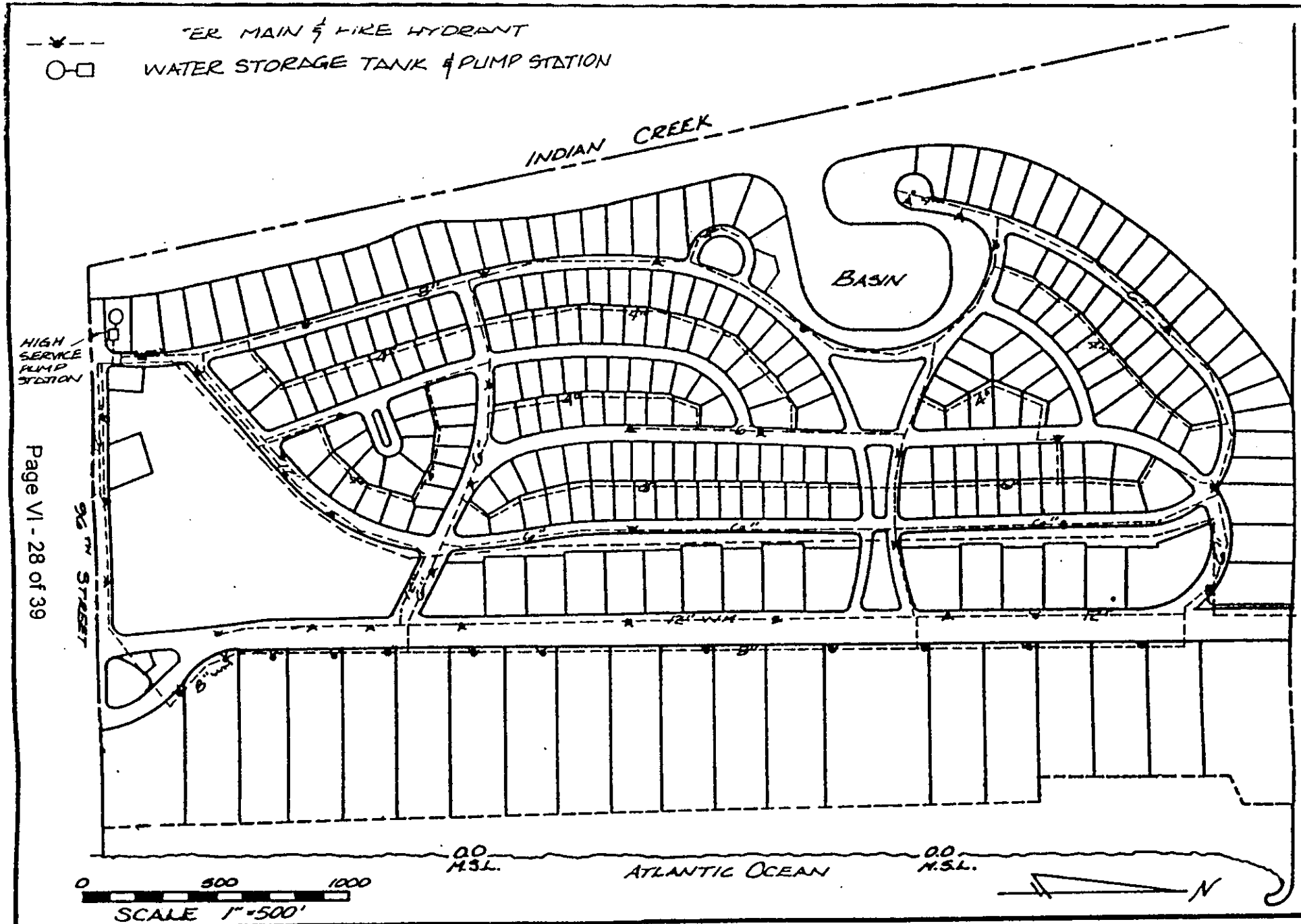
   High service pumping is provided by a pump station that is comprised of three vertical shaft turbine "pot" pumps. The pumps are sized in increasing capacity. The No. 1 pump provides for up to about average daily rate consumption (500 gallons per minute); the No. 2 pump more than doubles that capacity (to 1,200 gpm) to provide for peak hour demand; and the No. 3 pump is sized for fire fighting situations (to 2,000 gpm).

   Operating pressures are maintained by an automatic relief valve which recirculates water back to the storage tank. The pumps' operations are controlled by a system of pressure relays.

   The pump station is fitted with a stand-by generator.

3. Ground Storage Tank

   The pumps are fed from a 900,000 gallon ground storage tank. Normal operation calls for the tank water levels to fluctuate in the top three feet, thereby always having 770,000 gallons in reserve. The tank level is controlled by altitude valves.



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6.6	

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CONSULTING ENGINEERS INC.
329 PALERMO AVENUE, CORAL GABLES, FLORIDA 33134

WATER DISTRIBUTION SYSTEM

4. Water Supply

Water is provided to Bal Harbour via a new 30" water main constructed in 1989 on 96 Street that is operated by the Dade County Water and Sewer Authority Department (WASAD). This line also serves Bay Harbor Islands, Indian Creek Village and Surfside. The Village supply is metered by one 8-inch and one 6-inch parallel meters.

Check valves are provided to prevent backflow.

Figure 6.7 is a schematic diagram showing the relationship between these agencies.

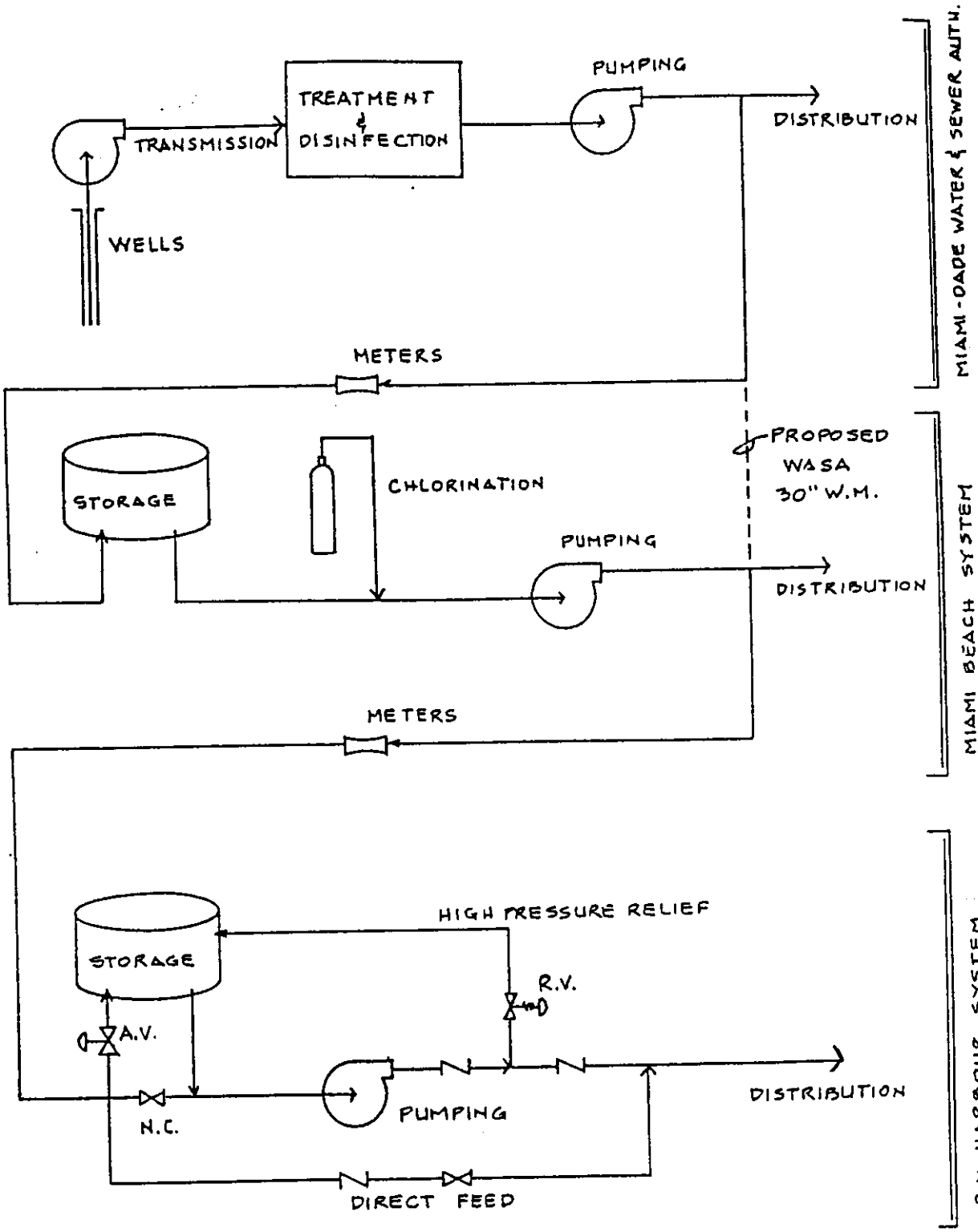
The increase in water flow quantity and pressure have solved all previous concerns. Some repumping is necessary during peak periods.

5. Water Quality

The water delivered by WASAD is potable and meets the requirements of the State DER and Metro Dade DERM. Chlorine levels are maintained sufficiently high that chlorination by Bal Harbour is not necessary. Bal Harbour has the capability to inject chlorine at the storage tanks influent and at the high service pumps' suction line coming from the tank. Chlorine levels are maintained high by lowering and raising the tank level twice per day, and emptying and refilling the tank once per week. In this manner re-chlorination is not necessary. However, recent EPA mandated lead/copper testing revealed that the lead action level was exceeded. The EPA's action level for lead is 0.015 mg/liter and for copper is 1.0 mg/liter. The Village has noted through testing that water provided by WASA entering the Village's system meets standards. Because most residences are very high quality with ornate and/or high quality fixtures which contain higher components of lead and copper, when water remains in the residence pipes for long periods of time chemical reactions result in water at the tap following non use periods exceeds action levels on occasion. The Village has been working with WASA to arrive at solutions to reduce the action levels. Formal public notice provisions have been instituted following initial discovery of the problem. Additional water treatment and public education for property owners to select fixtures with lower contents of lead and copper are being discussed. WASAD is studying the stabilization of water quality parameters and may provide corrosion control treatment in the future.

6. Water Pressure, Fire Fighting Capabilities

The distribution system and the high service pump have sufficient capacity to provide adequate pressures at all points of the distribution network.



A.V. = ALTITUDE VALVE
R.V. = RELIEF VALVE
N.C. = NORMALLY CLOSED

PROJECT BAL HARBOUR VILLAGE : POTABLE WATER SUBELEMENT

SCHEMATIC DIAGRAM ; INTER-AGENCY RELATIONSHIP | BY R.L.C.K | DATE 2.5.88

LUDOVICI & ORANGE · CONSULTING ENGINEERS | PN 8810 A | SHEET FIG G.7

7. Levels of Service

The basis for determining the demand for the water system and for establishing minimum capacity requirements comes from the levels of service standards that appear in Table 6.5. The standards provided include normal (non-emergency) operating conditions and emergency primarily fire flow demands.

8. Performance Assessment

The potable water supply system's components and their capacity and demand are summarized in Table 6.6. All systems have adequate capacity to meet the present and the projected future demands.

9. Interagency Agreements

Existing agreements exist with the following agencies:

- Miami Beach - for water supply.
- Miami-Dade Water and Sewer Authority - for future 30-inch supply line.

TABLE 6.5

WATERWORKS - POTENTIAL TOTAL REQUIREMENTS

Part I: Normal Water Demands

Contributing Land Uses	(Inventory) Demand	LOS	Avg Daily Flow Total Req'mt
Single Family Homes	203 units	400 gal/day	81,200
Condominium Units	1030 units	200 gal/day	206,000
Apartments	1634 units	200 gal/day	326,800
Hotel Rooms*	876 units	160 gal/day	140,160
Convention Halls*	3,000 persons	50 gal/c/day	150,000
Commercial	1,000,000 sq, ft.	0.1 gal/sq. ft.	100,000
Municipal	14,000 sq, ft.	0.1 gal/sq. ft.	1,400
Recreational	30,000 sq. ft.	0.1 gal/sq. ft.	3,000
Institutional	20,000 sq. ft.	0.1 gal/sq. ft.	2,000
			1,010,560 gallons

ADF = 1,010,560 gal/day = 702 gpm
Max. Day = 2,021,120 gal/day = 1,403 gpm
Peak = 2,526,400 gal/day = 1,754 gpm
LOS = established level of service

Source: Dade County Water and Sewer Authority (WASA) 1995
Village of Bal Harbour
CAS

Part II: Emergency Water Demands Contributing Land Uses

Contributing Land Uses	Fire Flow (gpm)*	Hydrant Spacing
Single Family	500 at 25 psi	750 feet
All Other Uses	750 at 25 psi	300 feet

*Single point demand in distribution system

TABLE 6.6

POTABLE WATER SYSTEM
Capacity - Demand Table

Component	Size	Capacity	Future Demand gpm Peak Hr.	Max Day	Avg. Rate
Supply Line	30"	12,000 gpm	1754	1,403	702
Service (Supply) Line	12"	2,000 gpm	1754	1,403	702
Storage Tank		900,000 gal		130,000 gal.	
Pump's Suction Pipes	Vary	6,000 gpm	5,000	2,000	1,000
Pump No. 1		500 gpm	N/A	N/A	702
Pump No. 2		1,200 gpm	1,754	1,403	702
Pump No. 3*		2,000 gpm	2,000	N/A	N/A
Distribution Pipes	4"	300 gpm	25		
	6"	700 gpm	150		
	8"	1,200 gpm	300		
	10"	1,900 gpm	400		
	12"	2,800 gpm	1,000		
	16"	5,000 gpm	2,000		

*Fire Pump

Source: Dade County Water and Sewer Authority (WASA) 1995
Village of Bal Harbour
CAS

E. NATURAL GROUNDWATER AQUIFER RECHARGE SUB-ELEMENT

E. Natural Groundwater Aquifer Recharge Sub-Element

1. Background, Geology, Groundwater

Bal Harbour exists partially over a sand barrier island, and partially over a mangrove swamp. The soils profile is highly variable, containing sand, muck, marls, and hydraulic fills over a weathered limerock substratum. Decomposed coral reef are also present. The limerock substratum is part of the Miami Formation, which in the area of Bal Harbour is approximately 20 to 40 feet deep.

The Miami Formation is the top formation of the Biscayne Aquifer, which is the sole source of freshwater withdrawn from wells in Dade County. The Biscayne Aquifer is approximately 200 feet deep in the area of Bal Harbour.

Because of Bal Harbour's location with respect to the Atlantic Ocean, the aquifer is intruded with salt water. There are no freshwater wells in Bal Harbour.

Groundwater is therefore brackish, and its level rises with the ocean's tides.

2 Groundwater Aquifer Recharge

The Biscayne Aquifer (surface aquifer) is recharged over the entire surface by rainfall. In the area of Bal Harbour the groundwater and the bay and ocean waters are all connected due to the high transmissivity (permeability) of the aquifer.

Where the ground surface is impervious, and manmade positive drainage has been provided, the groundwater is not directly recharged.

Because of Bal Harbour's relative low density, the ratio of land area that is impervious is estimated at approximately 0.4 based on the breakdown by land use shown on Table 6.7. It is estimated therefore that 60 percent of all rainfall is recharged to the groundwater.

3. Regulations Governing Drainage

There are no natural drainage facilities within Bal Harbour. Biscayne Bay functions as a discharge basin for some drainage systems. However, local drainage design follows criteria set forth by Chapter 24 of the Dade County Code. These regulations require that water quality control measures be included at every new discharge point into surface waters. Other less stringent regulations consist of Chapter 17-25 FAC (FDER) and Chapter 40E-

40 (SFWMD). Chapter 14-86 FAC governs Drainage Connections to lands that abut DOT rights-of-way.

TABLE 6.7

IMPERVIOUS LAND SURFACE

Use/Resource Category		Approx. Net Acres	Percent Impervious	Impervious Land Surface
1.a	Residential Low Density	61.79	25	15.45 Ac
1.b	Residential Medium Density	21.56	50	10.78
1.c	Residential High Density	51.75	75	38.81
2.	Commercial Use	16.85	90	15.17
3.	Industrial Use	0	0	0
4.	Agricultural Use	0	0	0
5.	Recreational Use	9.78	10	0.98
6.	Conservation Use	0	0	0
7.	Educational Use	0	0	0
8.	Municipal Use	1.86	50	0.93
9.	Open Space	8.13	0	0
10.	Vacant Land	9.45	0	0
11.	Historic resources	0	0	0
12.	Institutional Use	0.66	80	0.53
13.	Beaches and shores	28.62	0	0
14.	Bays and harbours	NI	0	0
15.	Wet lands	0	0	0
16.	Minerals extraction	0	0	0
17.	Streets and Highways	36.55*	50	18.28
	TOTAL	247.00		100.93 Ac
	RATIO:	100.93 / 247.00 = 40.9 percent		

NI=Not Included in Recharge Potential

F. GOALS, OBJECTIVES AND POLICIES

GOAL: Provide for high quality, efficient, reliable, safe and healthful sanitary sewers, solid waste, drainage, and potable water facilities and services to meet the needs of the present and future residents and visitors in a manner that will promote the public health and welfare, will protect public and private property, and preserve the natural environment.

Per 9J-5.011 (2) (b) 1.:

Objective: Correct deficiencies in capacity, enhance reliability and replace worn-out components of sanitary sewer system.

Policy: Continue program for pump stations' renovations.

Policy: The Village shall continue to correct sanitary sewer infiltration and inflow problems through implementation of the schedule of Capital Improvement Projects as indicated in the Capital Improvements Element and subject to financial feasibility.

Objective: Enforce adopted LOS standards for sanitary sewer facilities, solid waste facilities, drainage facilities and potable water facilities.

Policy: The Village adopts the following level of service standards

FACILITY	LOS TO BE MAINTAINED
A. Sanitary Sewer Facilities	Average sewage generation rate is 311 gallons per capita per day.
B. Solid Waste Facilities	Average solid waste generation rate is 8.6 lbs. per capita per day.
C. Drainage Facilities	Protection from the degree of flooding that would result for a duration of one day during a storm that statistically occurs once in five years.
D. Potable Water Facilities	Average water consumption rate is 321 gallons per E.R.U.
E. Local Roadways	LOS "D".
F. Collector/Arterial Roadways	LOS "D".
G. Parks and Recreation	2.75 acres per 1,000 population.
H. Stormwater Quality	Minimum standards as referenced in National Pollution Discharge Elimination Permit System (NPDES).

Objective: Correct capacity deficiencies, short-falls in reliability and existence of worn-out components of the storm drainage system. (See schedule in Capital Improvements Element)

Policy: Identify, quantify, rank and report on storm drainage systems improvements.

Policy: Prepare design memoranda to serve as a basis for authorization for preliminary and final engineering designs.

Policy: Periodically maintain catch basins and inlets and perform annual inspections of storm sewer pipes.

Objective 9J-5.O11 (2) (b) 2.: Provide potable water storage, pumping and distribution for maximum day, peak hour and fire emergency demands, to the levels established in the LOS.

Policy: Perform semi-annual leakage survey of water system to determine location and rate of unaccounted-for water.

Policy: Coordinate with Metro-Dade Fire Department to determine water distribution and pumping capabilities by performing annual fire flow tests at critical locations of the distribution network.

Policy: Coordinate with Dade County's WASA on water quality issues by monitoring water quality through testing and sampling at agreed upon schedules.

Policy: The Village adopts Dade County's WASA Water Quality Standards as they are the provider of potable water.

Policy: The Village adopts the Federal Environmental Protection Agency's Water Quality Standards for lead and copper which are as follows:

Lead	Action Level 0.015 mg/liter
Copper	Action Level 1.0 mg/liter

Policy: The Village will continue to monitor lead/copper levels with Dade County WASA and seek solutions to reduce action levels below accepted standards.

Policy: The Village will continue the implementation of WASA/EPA public notice procedures when water quality action levels are exceeded.

Policy: The Village will encourage residents to replace old fixtures and/or utilize new fixtures with low levels of lead and copper.

Objective 9J-5.011 (2) (b) 3.: Optimize use of existing facilities and discourage urban sprawl. Does not apply, as facilities will operate at their maximum (after deficiencies are corrected), and the Village is built out.

Objective 9J-5.011 (2) (b) 4.: Conserve potable water.

Policy: Adopt the water conservation programs of Miami-Dade Water and Sewer Authority and the South Florida Water Management District.

Policy: Operate the water pumping plant at the minimum pressure possible to minimize leakage of water through pipe systems, while maintaining optimum pressures necessary for effective operation, fighting fires, and preventing siphonage.

Objective 9J-5.011 (2) (b) 5.: Protect function of natural groundwater aquifer recharge. Does not apply, since Bal Harbour is in a coastal area where the aquifer is brackish and groundwater recharge is inconsequential.

Disposition of Policy Requirements in 9J-5.011(2)(c)

Policy 1. Addressed above.
Policy 2. LOS's are contained in the Support Documents sections of each sub-element.
Policy 3. Addressed above.
Policy 4. Does not apply, for the same reason as discussed above.
Policy 5. Village is part of Dade County NPDES permit subject to criteria; Village adopted Dade County standards.

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VII. COASTAL MANAGEMENT ELEMENT

COASTAL MANAGEMENT ELEMENT
OF THE
COMPREHENSIVE PLAN FOR
VILLAGE OF BAL HARBOUR
DADE COUNTY, FLORIDA

NOVEMBER, 1987
REVISED JUNE, 1988
AMENDED MARCH 18, 1997 (ORD. 410)
AMENDED DECEMBER 16, 1997 (ORD. 429)

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"Preparation of this Planning Document was aided through financial assistance received from the State of Florida under the Local Government Comprehensive Planning Assistance Program authorized by Chapter 86-187, Laws of Florida and the Local Government Evaluation and Appraisal Report Assistance Program authorized by Chapter 93-206, Laws of Florida and administered by the Florida Department of Community Affairs."

Table of Contents

NOTE: Following Section 15 is letter of 2 November, 1988 responding to DCA's comments of 14 October, 1988.

SECTION 1: INTRODUCTION

1.1 Plan Purpose

The Local Government Comprehensive Planning Act of 1975 (LGCPA Chapter 163, Florida State Statutes) requires that each county and incorporated municipality in the State of Florida prepare and adopt a Comprehensive Master Plan to guide and control their future growth and development. Local Units of government located in the coastal area are required to include a Coastal Management Element in their Comprehensive Plans. This document is designed to fulfill this requirement.

The purpose of this element is to plan for and, where appropriate, restrict development activities where such activities would damage or destroy coastal resources, and protect human life and limit public expenditures in areas that are subject to destruction by natural disasters.

1.2 Scope

The Coastal Management Element contains the following data and analyses:

- Current land use.
- Future land use.
- Inventory and analysis of the impacts of development and redevelopment on natural and cultural resources.
- Water quality assessment.
- Infrastructure analysis.
- Natural disaster planning.
- Public access facilities.
- Management goals, objectives and policies.

1.3 Coordination With Dade County Plan

The preparation of this plan has been coordinated with the Dade County Coastal Management Element Plan to insure consistency of intent and policy.

SECTION 2: PLANNING AREA

2.1 Boundaries of Planning Area

The Bal Harbour Planning Area of Dade County is shown on Map 2.1. Basically the area is bounded on the north by Baker's Haulover Cut/Inlet, on the east by

the Atlantic Ocean, on the south by 96th Street and the west by Indian Creek and Biscayne Bay.

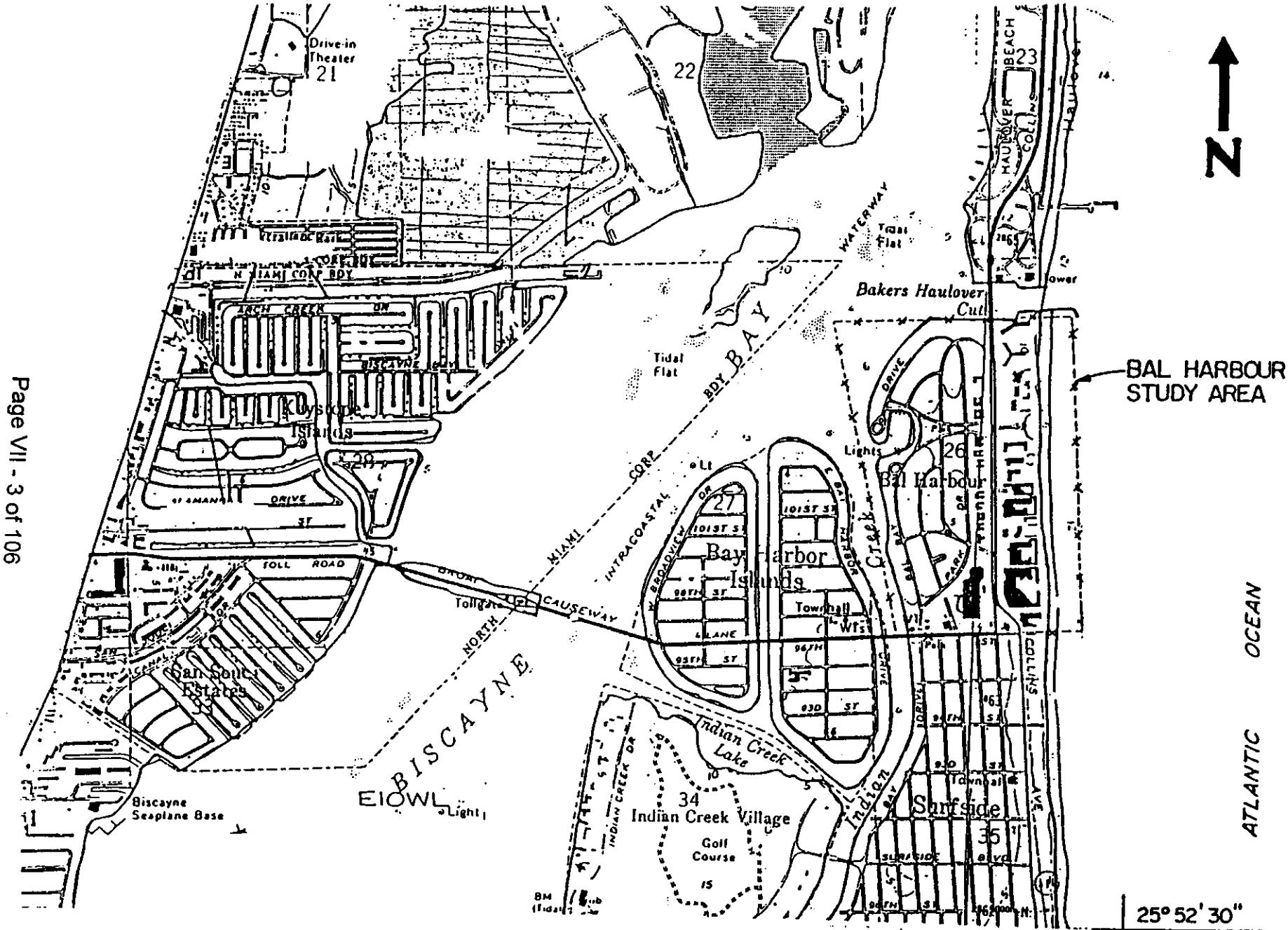
2.2 Brief History of Bal Harbour Village

Until 1930 the area that now comprises the Village was an uninhabited barrier beach backed by a mangrove swamp. Before the Village was incorporated, the land was owned by a group of Detroit industrialists. The group included the Graham Brothers, who at one time manufactured Dodge trucks and later the popular Graham-Paige car; the Fisher Brothers of the Fisher Body Company; and the Briggs family.

Operating under a corporation named "Miami Beach Heights, Inc.," the developers leased the entire area of what is now Bal Harbour Village to the U.S. Government for one dollar during World War I. Here, over two million men were trained. They were quartered in Miami Beach hotels. The entire area was fenced in and, in addition to rifle ranges, mess halls, etc., a prisoner of war camp was erected on the site where the prestigious Bal Harbour Shops are now located. Other portions of the land were used for radio towers and a tent city for training purposes.

After the war, the Corporation regained possession of the land and proceeded to develop the Village. The Corporation had retained the services of the Harland Bartholomew firm of St. Louis, before the war. This firm conceived the present layout of Bal Harbour and recommended comprehensive zoning that was adopted and adhered to.

In 1945 without a building in existence in Bal Harbour other than the barracks left by the U. S. Military, the Village was incorporated. However, Florida law required 25 male voters be residents in order to form a municipality. In order to comply with this State law, Miami Beach Heights, Inc. converted the barracks into apartments. Military personnel and their families who were looking for reasonable accommodations moved in and the Village of Bal Harbour was formed.



MAP 2.1 : BAL HARBOUR VILLAGE STUDY AREA

SECTION 3: NATURAL RESOURCES OF THE BAL HARBOUR AREA

3.1 General

This section concentrates on the biological resources of the Bal Harbour Village area. Other sections of this plan provide detailed discussions of other important natural resources. The ecology of Biscayne Bay and Indian Creek is discussed in the estuarine pollution section (Section 5). Beach and dune systems are discussed in Section 6 following. Extraction of mineral resources does not occur in the Bal Harbour Village Planning Area, except for the occasional dredging of sand to renourish the beach or to maintain navigation channels. Air quality and potable water supply are outside the scope of this element. However, a brief addressment of water supply is given in Section 11, Village Infrastructure.

3.2 Vegetative Cover and Wetlands

3.2.1 Historical Perspective

Before the development of Bal Harbour Village, the area consisted of a beach dune complex facing the Atlantic Ocean backed by mangroves on tidal creeks confluent with Biscayne Bay. A Florida State Land Survey map dated 1870 shows the estuarine shoreline of Bal Harbour lined with mangroves. A 1914 Dade County map shows the same features as the earlier land survey map. By 1925 Baker's Haulover Cut had been dredged by local interests and the mangroves along most of the Bal Harbour shoreline had been cut and the area filled for land development thereby eliminating wetlands. Ultimately the entire sound front area of Bal Harbour Village was bulkheaded. Indian Creek remains as the only saltwater creek opening at both extremities to Biscayne Bay. Also, due to extensive development, the original vegetative cover at Bal Harbour has been almost entirely replaced with secondary cover of tropical and subtropical plants introduced and cultivated by man. The natural dunes and coastal strand ecological zones were eliminated by development actions and/or beach erosion. A low profile dune has been created by man as part of a recent beach renourishment project.

3.2.2 Vegetative Cover

Vegetative cover at Bal Harbour consists of the natural beach/dune community and the urban landscape cover introduced by man.

The beach dunes on the beachfront at Bal Harbour are vegetated by salt tolerant plants such as coconut palms, sea oats, railroad vine, sea rocket, and sea grapes. Landward of the dunes such vegetation as saw palmetto, marlberry, myrsine, sea grapes, tie tongue, wildcoffee, white stopper, spanish stopper, blolly, cocoa plum and shrub verbena predominate in areas not artificially

cultivated. Vegetation in the urban developed areas landward of the beachfront consist of multiple varieties of palms, as well as decorative ornamental plants such as hibiscus and bougainvillea all introduced by man. The vegetative cover types are depicted on Map 3.2.2.1.

3.2.3 Aquatic and Terrestrial Wildlife

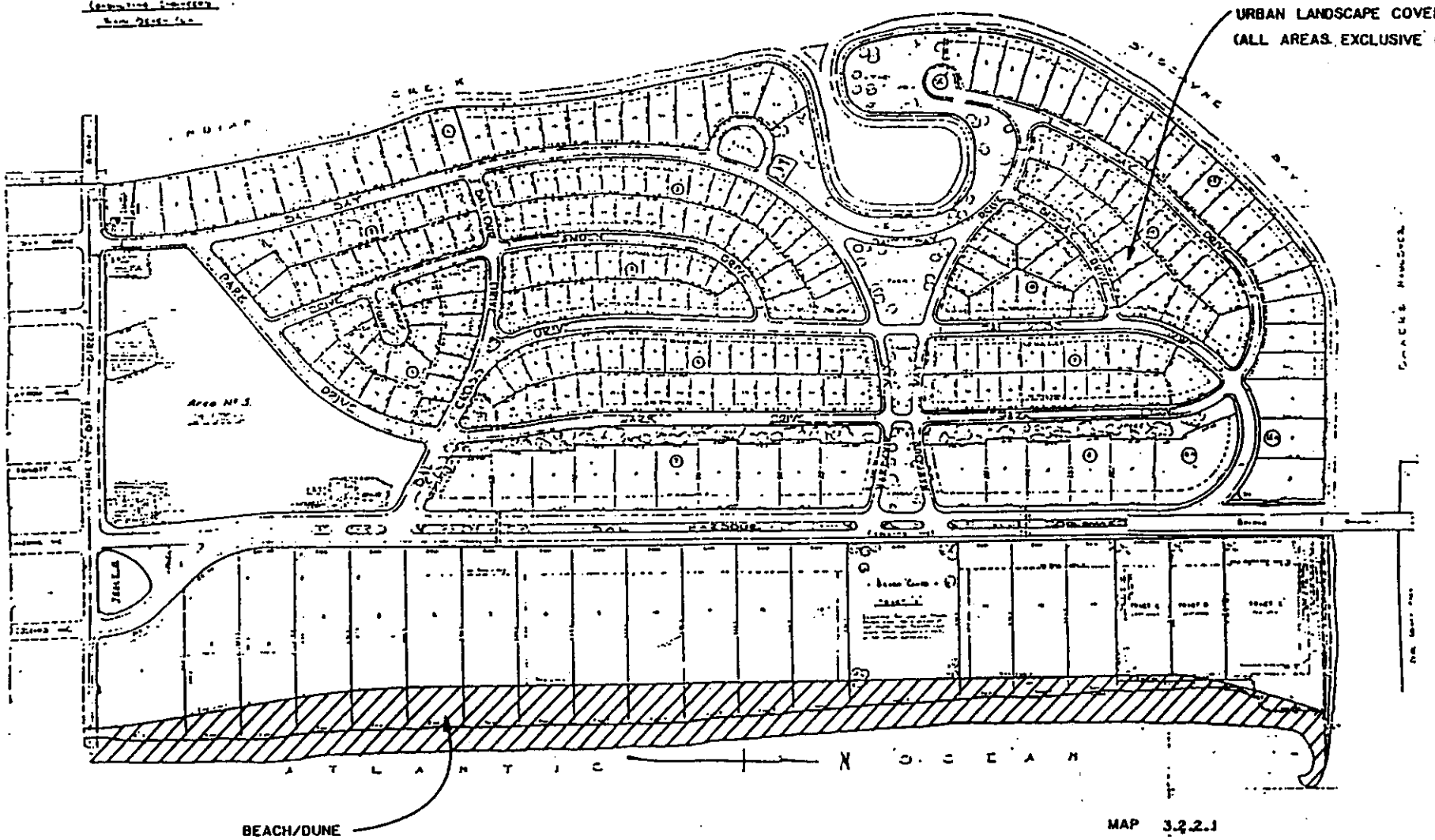
The tables in Appendix A list the wildlife which can be expected to occur on the land, in the adjacent bay waters and in the Atlantic Ocean. The species lists presented herein were prepared by the Florida Fish and Game Commission. Due to extensive development not all of the land based species will find suitable habitat at Bal Harbour.

The beach at Bal Harbour provides a potentially important nesting area for green sea turtles and loggerhead sea turtles. In addition, leatherback and hawksbill sea turtles may use the beach for nesting sites. Other animals inhabiting beach and fordune areas are semipalmated plover, piping plover, black-bellied plovers, ruddy turnstone, willet, least sandpiper, western sandpiper, sanderling, common tern, least tern, royal tern, black skinner, herring gull, laughing gull, ring-billed gull, and old field mouse. The secondary dunes are habitat for the old-field mouse, anoles, coachwhip and racer.

The open waters of Biscayne Bay, the nearshore waters of the Atlantic Ocean, and Baker's Haulover Inlet connecting these two waterbodies are inhabited by numerous fish. The tables in Appendix A list the fish known to inhabit the area and the suffix after the common name indicates which waterbody they commonly inhabit. Within the Bay itself many of the fish are associated with the seagrass beds, especially as juveniles. The seagrass beds are also important nursery areas for shrimp, stone crabs, spiny lobsters, and blue crabs. The seagrass beds provide grazing areas for seaturtles and manatees.

In the nearshore Atlantic Ocean, the most significant habitat are the limestone reefs. These reefs are colonized by various corals, sponges, tube worms and anemones. These reefs are inhabited by numerous species of invertebrates and fishes. In deeper water, fish normally associated with the Caribbean are common, examples include angel fishes, butterfly fishes, and damsel fishes. Nearer the shore, the most numerous fish in the surf affected reefs are hairy blenny, molly miller, spottail pinfish, pork fish, and sailor's choice.

BAL HARBOUR



MAP 3.2.2.1

VEGETATIVE COVER

Between the reef tracts are bottom areas covered with sand and shell. These areas are inhabited by burrowing organisms such as scallops, clams, and sand dollars, and a large variety of fish including stingrays, batfishes, searobins, eels, and flatfishes. In the surf zone the most common fishes are lizard fishes, croakers, thread fins, and pompanos

In addition to the general habitat and wildlife associations discussed above, the Bal Harbour study area contains habitats used by several endangered or threatened species. Table 3.2.3.1 lists these species and their special status as determined by the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service. The reason each species is imperiled and therefore given special status varies with the species. However, the principle cause is generally the loss of suitable habitat.

Map 3.2.3.1 shows the generalized wildlife habitats in the Bal Harbour area.

TABLE 3.2.3.1
ENDANGERED OR THREATENED SPECIES
BAL HARBOUR VILLAGE AREA

Common Name	Status-FGFWFC	Status-USFWS
Fishes		
Snook	SSC[1]	NL
Rivulus	SSC	NL
Reptiles		
Leatherback	E	E
Gopher Tortoise[2]	SSC	NL
Green Turtle	E	E
Hawksbill	E	E
Loggerhead	T	T
Atlantic Ridley	E	E
Atlantic Salt Marsh Snake	E	T
Indigo Snake[2]	T	T
American Crocodile[2]	E	E
American Alligator	SSC	T
Birds		
Brown Pelican	T	E
Little Blue Heron	SSC	NL
Reddish Egret	SSC	NL
Snowy Egret	SSC	NL
Louisana Heron	SSC	NL
Wood Stork[3]	E	UR
Roseate Spoonbill	SSC	NL
Bald Eagle[3]	T	E
Peregrine Falcon[3]	E	E
American Kestrel (F.s. paulus only)	T	NL
American oystercatcher	SSC	NL
Roseate Tern	T	NL
Least Tern	T	NL
Burrowing Owl[3]	SSC	NL

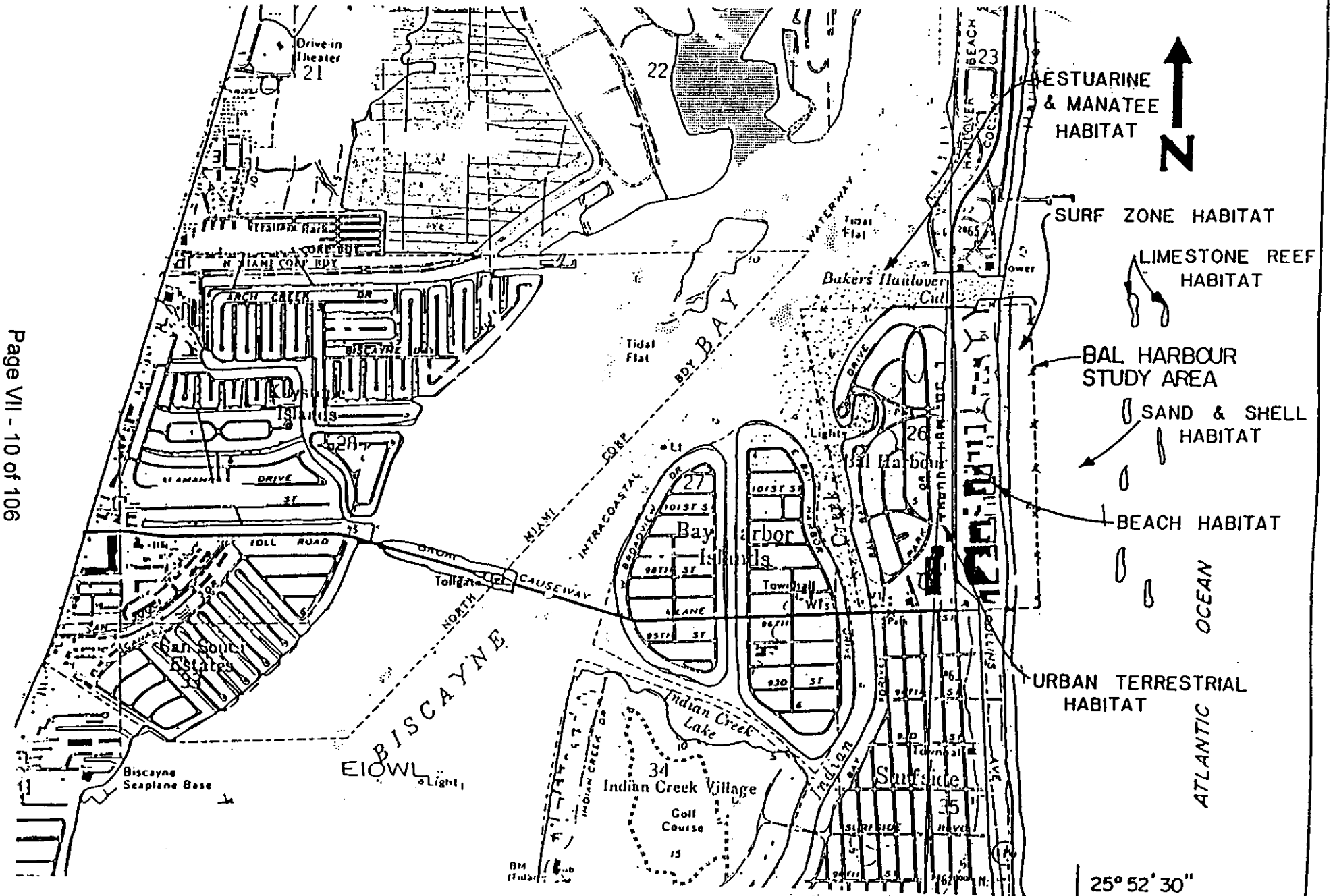
Mammals		
Black Bear[2]	T	NL
River Otter[2]	NL	UR
Panther[2]	E	E
Bobcat[2]	NL	UR
Manatee	E	E
Sperm Whale[3]	E	E
Sei Whale[3]	E	E
Finback Whale[3]	E	E
Humpback Whale[3]	E	E
Atlantic Right Whale[3]	NL	E

[1] E - Endangered; T - Threatened; SSC - Species of Special Concern; NL - Not Listed; UR - Under Review.

[2] Formerly occurred; no longer inhabits study area.

[3] Transient visitor to planning area.

Sources: Florida Game and Freshwater Fish Commission (FGFWFC)
U.S. Fish and Wildlife Service (USFWS)



MAP 3.2.3.1 : GENERALIZED WILDLIFE HABITATS, BAL HARBOUR AREA

SECTION 4: LAND USE INVENTORY AND ANALYSES

4.1 Existing Land Use

Bal Harbour Village consists of about 250 acres of land. The existing land uses at Bal Harbour Village are shown on Map 4.1.1. The land uses depicted on the map are basically self explanatory and consist of the following classes: low density residential (up to 6 units/acre), medium density residential (up to 35 dwelling units/acre), high density residential/resort (up to 55 dwelling units/acre), commercial, municipal, recreational, open space, beachfront, bay bottom, institutional and streets and highways. The acreages of land associated with each of these classes are indicated in Table 4.1.1. The largest percentage of the area (21.6 percent) is devoted to low density residential use with high density uses running a close second at 18.1 percent.

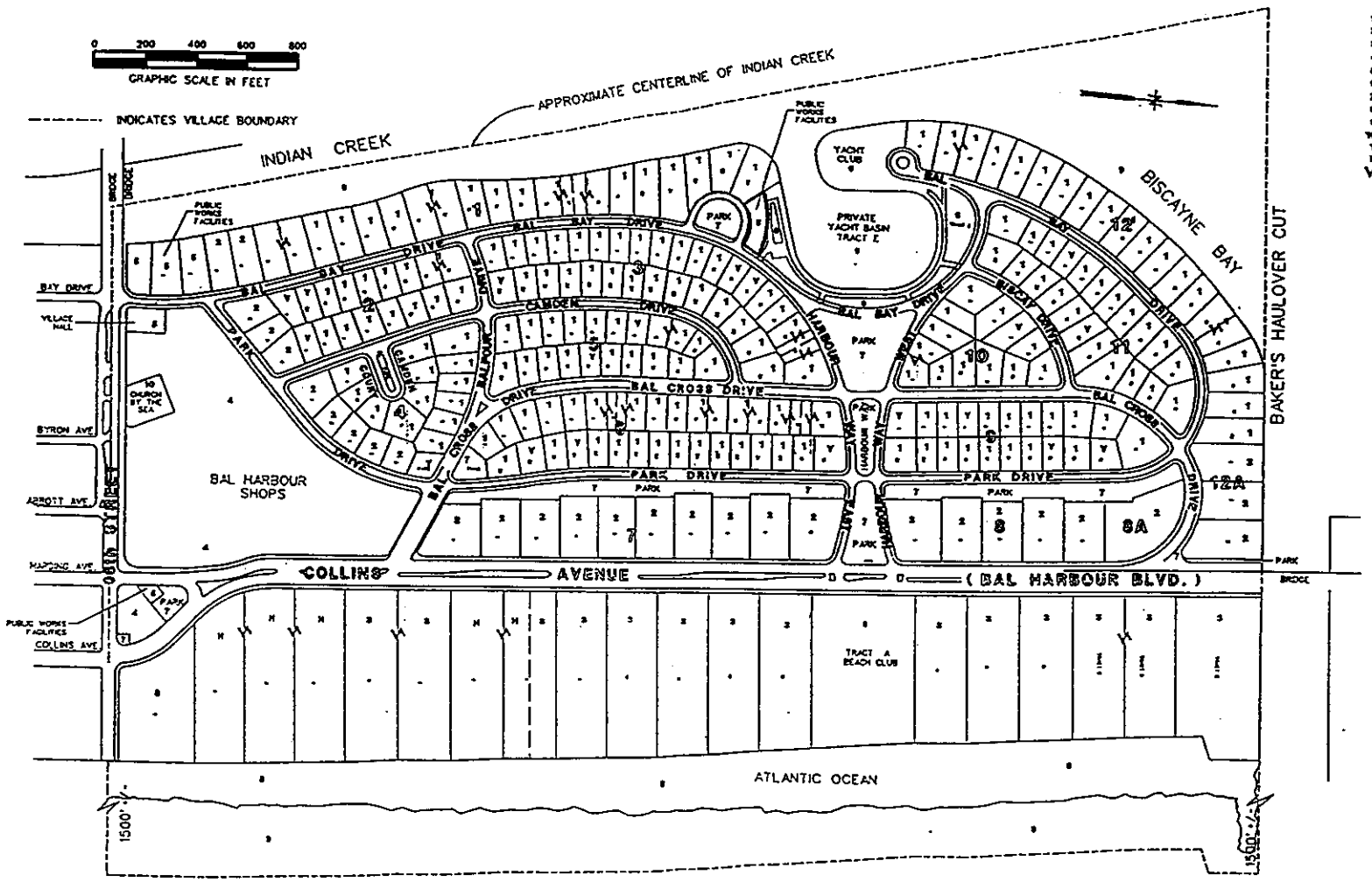
4.2 Water-Dependent and Water-Related Uses

The following water-dependent uses occur at Bal Harbour: water dependent recreation (swimming beach), fishing pier (jetty at Haulover Inlet) and a private marina. In addition, the water-related uses of commercial resort hotels and waterfront parcels/recreation areas including a beachfront jogging path occur at Bal Harbour. These features are shown on Map 4.2.1.

4.3 Future Land Use/Development Potential

Bal Harbour Village is completely developed. Only a very few (1995 total of 16) vacant residential lots remain to be developed in the low density zone. In the high density zone paralleling the beachfront there are no undeveloped parcels of land. The only tract on the oceanfront which could be developed is owned by the Bal Harbour Beach Club. This tract called Tract "A" consisting of 5.2 acres was reserved for use as the Club determined for a period of not more than twenty (20) years from January 1, 1945 and for other purposes. Now that the reserve period has lapsed it is possible it could be sold for development. A pending sale and probable development are imminent.

The potential future development of this tract will provide the Town an opportunity to negotiate with developers for additional public beach access points and possibly off-street parking to supplement that which currently exists.



MAP 4.1.1

"PREPARATION OF THIS MAP WAS AIDED THROUGH FINANCIAL ASSISTANCE RECEIVED FROM THE STATE OF FLORIDA UNDER THE LOCAL GOVERNMENT EVALUATION AND APPRAISAL REPORT ASSISTANCE PROGRAM AUTHORIZED BY CHAPTER 93-206, LAWS OF FLORIDA, AND ADMINISTERED BY THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS."

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 West McNab Road, Pompano Beach, Florida 33069

BAL HARBOUR VILLAGE

EXISTING LAND USE MAP
AUGUST 1995

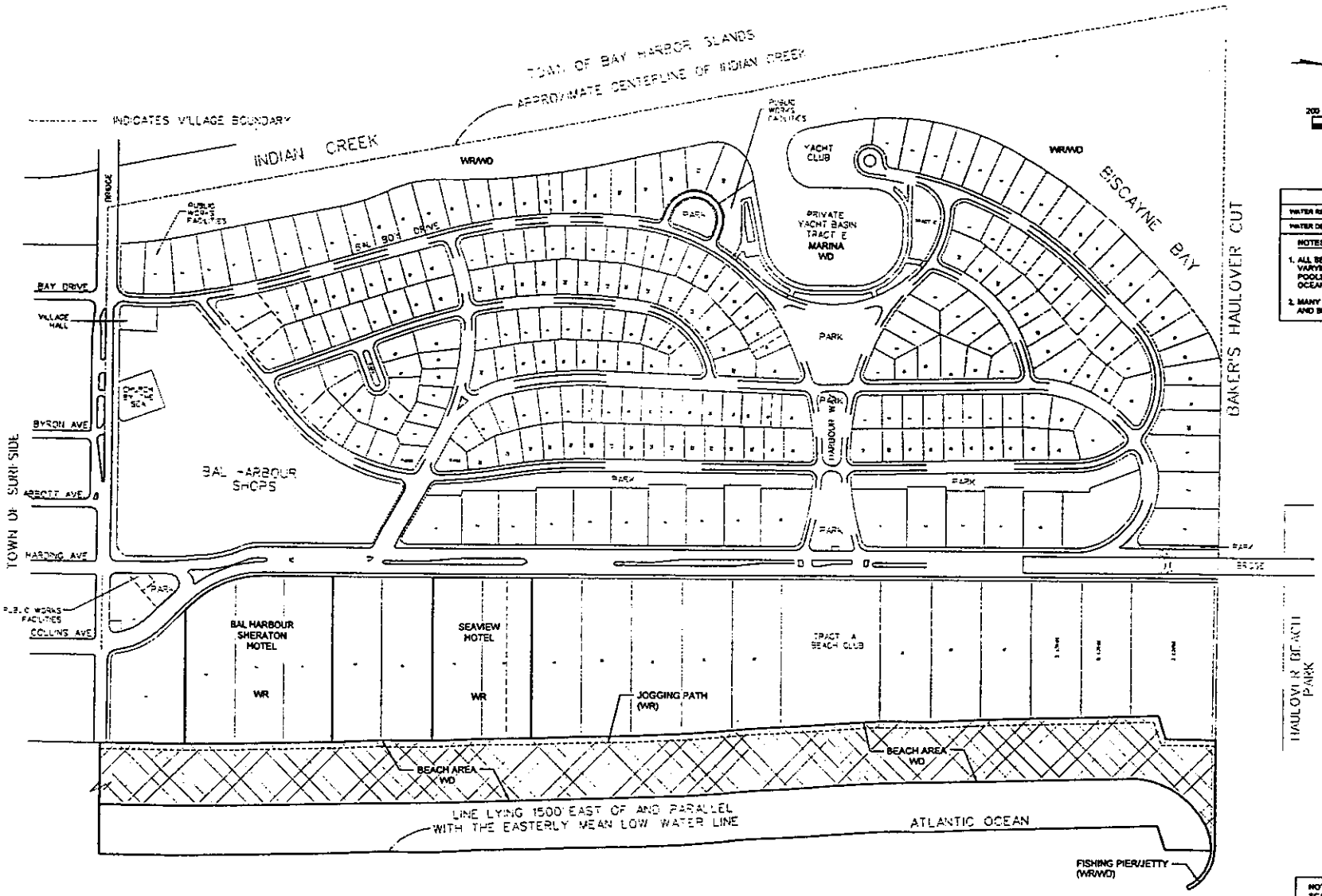
SCALE 1"=200'
94-125

SHEET

TABLE 4.1.1
Existing Land Uses, Historical And
Natural Resources of Bal Harbor

	Percent of Land Use /Resource Category	Approx. Net Acres	Jurisd'l Percent	Dry
1.a.	Residential Low Density	60.4	14.06	25.02
1.b.	Residential Medium Density	21.56	4.91	8.73
1.c.	Residential High Density	55.63	11.77	20.95
2.	Commercial Use	17.50	3.83	6.82
3.	Industrial Use	0	0	0
4.	Agricultural Use	0	0	0
5.	Recreational Use	9.78	2.22	3.96
6.	Conservation Use	0	0	0
7.	Educational Use	0	0	0
8.	Municipal Use	1.86	0.42	0.75
9.	Open Space	8.13	1.85	3.29
10.	Vacant Land	4.69	2.15	3.83
11.	Historic Resources	0	0	0
12.	Institutional Use	0.66	0.15	0.26
13.	Beaches and Shores (Recreation)	28.62	6.51	11.59
14.	Bays and Harbors	192.56	43.81	N.I.
15.	Wetlands	0	0	0
16.	Minerals Extraction	0	0	0
17.	Streets and Highways	36.55	8.32	14.80
	TOTAL	437.94	100	100

N.I. = Not Included in 247.00 acres of dry land.
Source: CAS 1995



200 100 0 200 400
GRAPHIC SCALE
1" = 200'

LEGEND	
WATER RELATED USE	WR
WATER DEPENDENT USE	WD

NOTES:

1. ALL BEACHFRONT DEVELOPMENTS HAVE VARYING RECREATIONAL FACILITIES SUCH AS POOLS, DECKS, CABANAS, ETC. ALONG THE OCEANFRONT. (WR)
2. MANY RESIDENCES ADJOINING INDIAN CREEK AND BISCAYNE BAY HAVE BOAT DOCKS. (WR/WD)

NOTE:
SCALES SHOWN ON PLANS ARE FOR FULL SIZE 24" BY 36" PRINTS. CRAIG A. SMITH & ASSOCIATES OFFICIAL ISSUE 11" BY 17" PRINTS ARE EXACTLY HALF SIZE. ANY OTHER REPRODUCTION SHALL MAKE THE PRINTS NOT TO SCALE.

NO	DATE	REVISION	BY

Designed: MM 2/97
Drawn: BAB 2/97
Checked: MM 2/97

APPROVED BY: _____ DATE _____

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 West Mcnab Road - Pompano Beach
Florida 33069 (954) 782-4222

PREPARED FOR
BAL HARBOUR VILLAGE

MAP 4.2.1
WATER DEPENDENT & WATER RELATED USES

SCALE: 1"=200'
PROJECT NUMBER: 95-0239
SHEET NUMBER: 1 / 1

4.4 Zoning

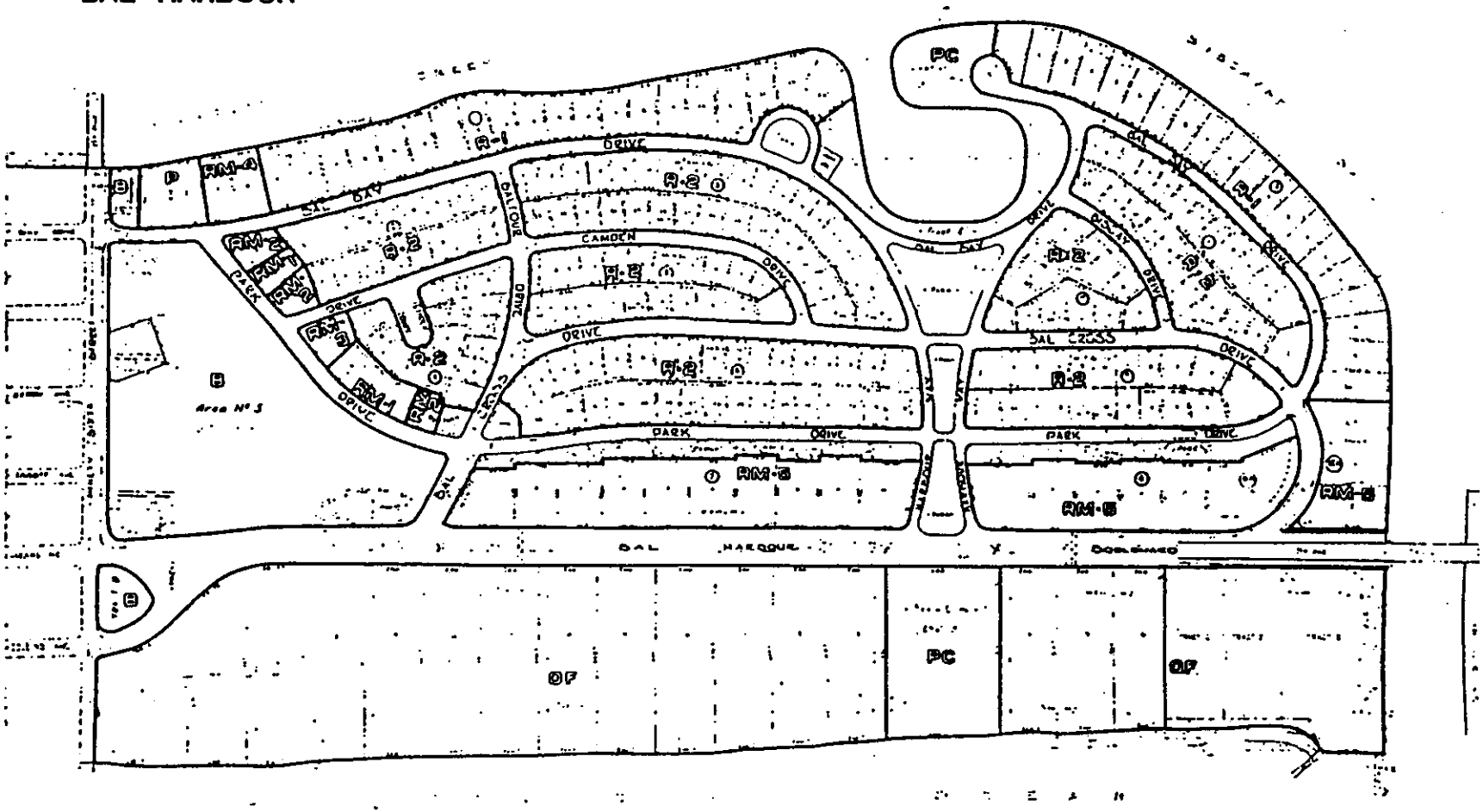
The Village of Bal Harbour passed and adopted a zoning ordinance on 29 June 1974. Section 4 of the ordinance established eleven (11) zoning districts in order "to regulate and restrict the construction, reconstruction, alteration, location and use of buildings, structures, land and water, for trade, profession, residence, or other purposes, and the location thereof, and to regulate the size of buildings and other structures hereafter erected or altered, to regulate and determine the size and dimensions of yards, courts and other open spaces and to regulate and limit the percentage occupancy and the density of population[1]." The Village of Bal Harbour is divided into the following districts:

Symbol	Districts
R-I	Single Family Residential
R-2	single Family Residential
PC	Private Club
RM-1	Multiple Family Residential
RM-2	Multiple Family Residential
RM-3	Multiple Family Residential
RM-4	Multiple Family Residential
RM-5	Multiple Family Residential
OF	Ocean Front
B	Business District
P	Off-Street Parking

The districts are shown on the zoning map (see Map 4.4.1).

[1] Source: Zoning Ordinance, Bal Harbour village, Florida 1987

BAL HARBOUR



MAP 4.4.1

ZONING DISTRICTS

R-1	Single Family Residential
R-2	Single Family Residential
PC	Private Club
RM-1	Multiple Family Residential
RM-2	Multiple Family Residential
RM-3	Multiple Family Residential
RM-4	Multiple Family Residential
RM-5	Multiple Family Residential
OF	Ocean Front
B	Business
P	Off Street Parking

Town of Bal Harbour Village, Florida
Zoning District Map

Jan 27 1977

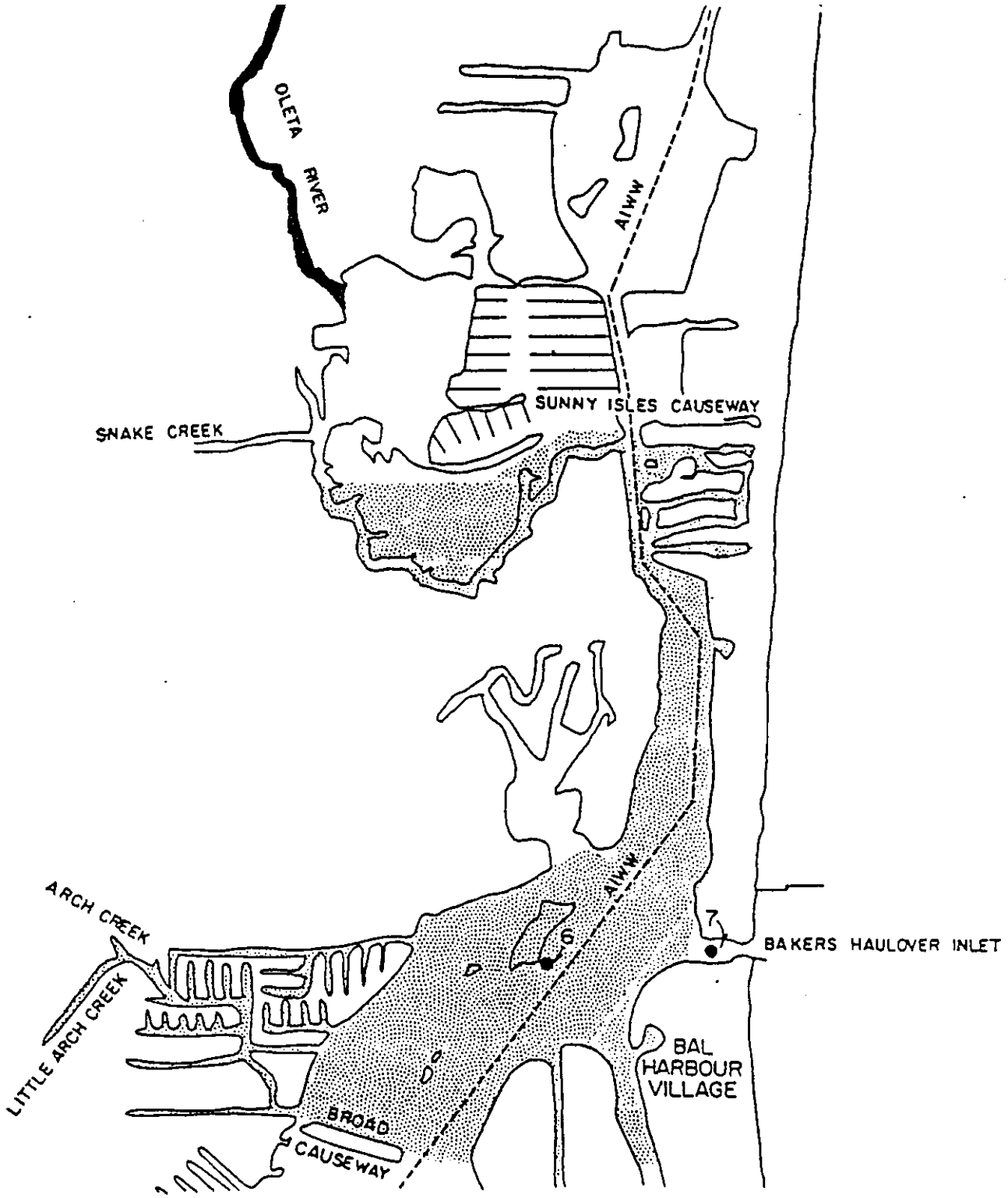
SECTION 5: ESTUARINE WATER QUALITY/POLLUTION AND SHORELINE DEVELOPMENT

5.1 General

The Bal Harbour Village Planning Area contains a part of Biscayne Bay, a large estuary which stretches from north Miami to Key Largo. Biscayne Bay is connected to the Atlantic Ocean in the area through Baker's Haulover Cut. The segment of the Bay contingent with the study area is a part of Unit No. 1 of the Biscayne Bay Aquatic Preserve (Chapter 16Q-18, Florida Administrative Code). This aquatic unit covers an open water area of 3.5 square miles and includes all submerged lands and publicly owned parcels on islands within the Preserve. This unit extends from Sunny Isles Causeway on the north to Broad Causeway on the south (see Map 5.1.1).

Circulation in this segment of the Bay is governed primarily by flow into and out of Haulover Cut. Approximately half of the water that enters this aquatic unit on an incoming tide is flushed back out into the Ocean on the outgoing tide. The remainder begins a slow (approximately two week) period of flowing in a generally southerly direction until it is finally washed out Government Cut. The Snake Creek Canal which discharges an average of 248 million gallons per day through the S-29 structure on the west side of Maule Lake, is the major source of freshwater flowing into Unit 1. Other freshwater sources are the Oleta River, Arch Creek and Little Arch Creek.

This section is devoted to discussion of estuarine water quality, pollution and regulations governing estuarine shoreline development at Bal Harbour Village.



AQUATIC PRESERVE MANAGEMENT AREA

MAP 5.1.1
UNIT I, BISCAYNE BAY AQUATIC PRESERVE

• 6 D.E.R. WATER QUALITY SAMPLING STATION LOCATION

SOURCE: BISCAYNE BAY AQUATIC PRESERVE MANAGEMENT PLANT (DRAFT)
METRODADE COUNTY PLANNING DEPARTMENT (1986)

5.2 Water Quality Standards

Water quality standards applicable to the estuarine waters of the study area are summarized in Table 5.2.1.

5.3 Water Quality/Existing Conditions

The Department of Environmental Resources Management of Metropolitan Dade County has been monitoring the waters of Biscayne Bay including the Bal Harbor Village area with physical, chemical and biological indicators since 1979. Samples are collected monthly at 48 stations distributed throughout the Bay. Two (2) of the stations (numbered 6 and 7) are located in the immediate vicinity of Bal Harbour Village. Their approximate positions are shown on Map 5.1.1 above. Table 5.3.1 summarizes the data of record for the period of March 1979 through December 1984[1] for the two (2) pertinent stations. Data as current as 1994 indicates similar findings. The results indicate good to excellent water quality in general. All parameters are within water quality standards. These results can be attributed in part to the good flushing characteristics afforded by Baker's Haulover Cut.

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1. Latest available published information as of this writing.

TABLE 5.2.1

APPLICABLE DADE COUNTY AND FLORIDA STATE WATER QUALITY STANDARDS FOR BISCAYNE[1]

A. Dade County (Chapter 24 Dade County Code)

• Ammonia (mg/L)	0.5 as N
• Coliform organisms (MPN/100 ml)	1,000
• Copper (mg/L)	0.4
• Dissolved Oxygen (mg/L)	5 during at least 10 hours per 24-hour period, never less than 4, unless acceptable data indicate that the natural background dissolved oxygen is lower than the values established herein
• Iron (mg/L)	0.3
• Lead (mg/L)	0.35
• Turbidity (JCU)	50, except after heavy rains
• Zinc (mg/L)	1.0

[1] Source: Biscayne Bay and Miami River: A Water Quality Summary (1987) Department of Environmental Resources Management, Metropolitan Dade County, Miami, Florida.

B. State of Florida (Chapter 17-3 Florida Administrative Code)

• Cadmium (ug/L)	5.0
• Copper (mg/L)	0.015
• Dissolved Oxygen (mg/L)	Shall not average less than 5 in a 24-hour period and shall never be less than 4
• Fecal Coliform (MPN or MF/100 ml)	Shall not exceed a monthly average of 200, nor exceed 400 in 10 percent of the samples, nor exceed 800 on any one day
• Iron (mg/L)	0.3
• Lead (mg/L)	0.05

B. State of Florida (Chapter 17-3 Florida Administrative Code), Continued

• Nutrients	In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance of natural populations of aquatic flora or fauna
• Total Coliform (MPN or MF/100 ml)	Shall not exceed a count of 1,000 as a monthly average, nor exceed 1,000 in more than 20 percent of the samples examined during any month, nor exceed 2,400 at any time
• Turbidity (NTU)	29 above background
• Zinc (mg/L)	1.0

TABLE 5.3.1

PREVAILING WATER QUALITY VALUES IN BISCAYNE BAY FOR 1979-84

Sampling Station ID No.	Salinity (o/oo)	D.O. (mg/L)	Turbidity (NTU)	TNR (mg/L)	Color (PCU)	Cadmium (PCU)	Copper (ug/L)	Iron (ug/L)	Lead (ug/L)	Zinc (ug/L)	Ammonia (mg/L N)	Nitrate (mg/L N)	Phosphate (mg/L P)	Total Coliform Median (/100 ml)	Total Coliform Maximum (/100 ml)	Fecal Coliform Median (/100 ml)	Fecal Coliform Maximum (/100 ml)
6	33	6	1	3	5	0.03	0.7	4	0.5	10	0.08	0.02	<.010	10	220	2	53
7	34	6	2	3	5						0.06	0.01	<.010	8	300	2	285

Source: Biscayne Bay and Miami River; A Water Quality Summary (1987). Department of Environmental Resources Management, Metropolitan Dade County, Miami, Florida.

5.4 Sources of Pollution

5.4.1 Known Point Sources of Estuarine Pollution

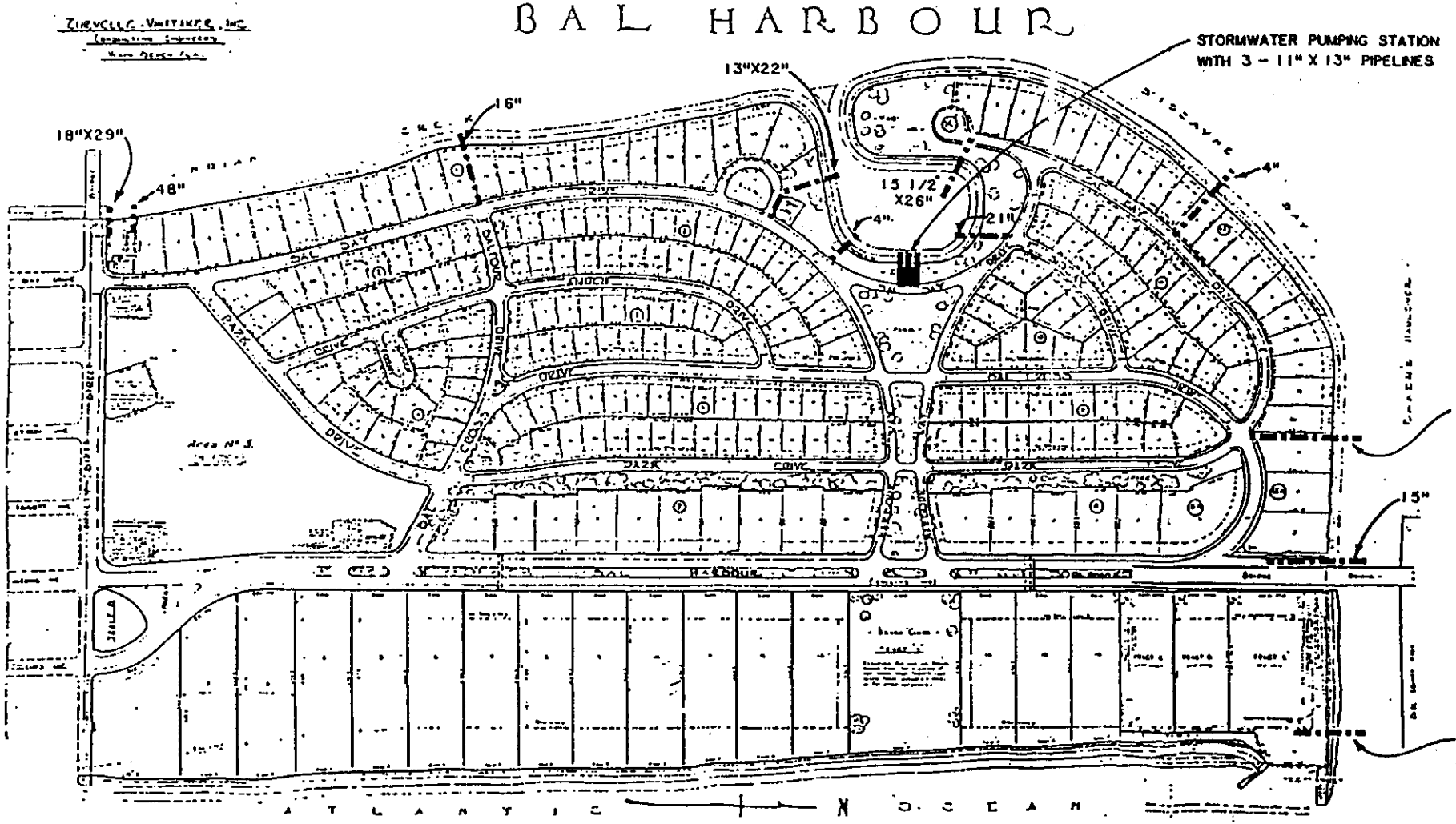
The Biscayne Bay Aquatic Preserve Management Plan identifies some 115 stormwater outfalls greater than twelve (12) inches in diameter that drain into Aquatic Unit 1 of Biscayne Bay. The second largest in the area, a 54-inch storm drain is located in Bal Harbour Village at Haulover Cut. The locations of all known stormwater outfalls at Bal Harbour Village are shown on Map 5.4.1.1.

5.4.2 Non-Point (Diffuse) Sources of Estuarine Pollution

The Metropolitan Dade County 208 Plan completed in 1980 identified stormwater runoff as the principle source of non-point source pollution. Recent research has established that the first flush associated with rainfall and runoff carries pollutants to surface waters. Specific pollutants in stormwater include petroleum residues from parking lots and streets, animal feces, pesticides, herbicides, silt, etc.

In addition to stormwater runoff, marinas such as the Bal Harbour Yacht Club Marina could be viewed as a non-point source of estuarine pollution due to historic problems such facilities have had with spills of petroleum products, disposal of untreated sewage from "marine heads", and concentrations of heavy metals in bottom sediments. However, the Bal Harbour Yacht Club Marina does not have a fuel dock and so the potential for petroleum product spills should be minimal.

Specific data on the degree of pollution from such non-point sources of pollution at Bal Harbour is not available.



MAP 5.4.1.1

LOCATIONS OF STORMWATER OUTFALLS AT BAL HARBOUR VILLAGE

5.5 Impact of Proposed Land Uses and Facilities on the Estuary

5.5.1 New Point and Non-Point Sources of Pollution

In view of the fact that Bal Harbour Village is nearly 100 percent developed, no new point or non-point sources of pollution are anticipated. The level of use of the marina is expected to remain at or near the current level. The estuarine bottom under the marina can be expected to remain contaminated from hydrocarbons and heavy metals associated with vessels moored at the marina.

5.6 State, Regional, and Local Regulatory Programs to Reduce Estuarine Pollution

State pollution regulation is largely vested in the Florida Department of Environmental Protection (FDEP). The FDEP regulates dredge and fill of waters of the State and adjacent wetlands. Dredge and fill permitting is done in accordance with similar federal permitting. FDEP also regulates discharges of pollutants into natural or artificial bodies of water. FDEP establishes water quality standards, sets minimum treatment requirements, issues permits, licenses operations of wastewater treatment plants, administers construction grants for sewage treatment plants and regulates discharges of stormwater. A special permit program can be used to obtain long term permits for dredging deep water ports.

FDEP and the water management districts regulate the withdrawal, diversion, storage and consumption of water, with the water management districts responsible for most of the permitting and operational aspects.

FDEP certifies the siting of power plants and must consider the cooling water needs and environmental impacts of the proposed power plant.

The FDEP is also involved in controlling estuarine pollution. The FDEP is responsible for selling or leasing State owned submerged lands if the sale or lease is "not contrary to the public interest." The proposed use of the conveyed or leased submerged land must not "interfere with the conservation of fish, marine or wildlife, or other natural resources." Deeds or leases may contain restrictions on dredging and filling.

The FDEP is also responsible for managing the aquatic preserves around State. These preserves are State owned submerged lands which the State wishes to maintain in "an essentially natural condition." Special requirements pertain to the sale or lease of State owned submerged land within the aquatic preserves. A management plan for each preserve has or will be prepared. Such a plan has been prepared for the Biscayne Bay Aquatic preserve which includes the estuarine waters surrounding Bal Harbour Village.

The FDEP also regulates exploration, drilling, and production of oil, gas, or other petroleum products, including drilling in estuaries.

The FDEP is responsible for the prevention and control of pollutants spilled into or upon coastal waters, estuaries, tidal flats, beaches, and lands adjoining the seacoasts of the state.

FDEP is the chief land purchasing agent and land manager for the State. The State, through several land acquisitions programs, often purchases environmentally sensitive lands which are vital for estuarine water quality.

Bal Harbour cooperates with the FDEP in coordinating the issuance of dredge and fill permits. Bal Harbour delegates the treatment and disposal of wastewater to the Miami Dade Water and Sewer Authority. Thus, the Village's involvement with the FDEP is only indirect in this case.

The Federal Department of Environmental Protection initiated the National Pollution Discharge Elimination System (NPDES) which requires significant improvements to stormwater discharges which affect water pollution. The NPDES permit will take effect October 1, 1996 within Bal Harbour. The permit conditions will require the elimination and/or replacement of outfalls, monitoring systems, litter control and improved water quality review procedures.

5.7 Estuarine Shoreline Development Controls

In an effort to preserve the basic qualities, characteristics, and the natural, recreational and aesthetic values of the Biscayne Bay shoreline, Dade County passed the Biscayne Bay Shoreline Development Review Ordinance (Dade County Ordinance No. 85-14) in 1985. This ordinance was a direct outgrowth of the Biscayne Bay Management Plan. The ordinance is designed to achieve the following objectives:

a. To preserve or enhance the natural, aesthetic and recreational values of the Biscayne Bay area; and

b. To encourage the best use of the water and shoreline area for the benefit, use and enjoyment of residents of and visitors to Metropolitan Dade County; and

c. To provide the maximum amount of public visual and physical access to the water through the provision of mixed use facilities and places open to the public at large, such as walkways, boardwalks, plazas and observation areas along the shoreline; and

d. To encourage new shoreline development along the waterfront to respect the coastal environment, and to orient or re-orient shoreline uses and buildings to the water; and

e. To avoid monotony in building heights and widths and appearances along the developed areas of shoreline and, above all, to avoid further walling off of the shoreline through appropriate site preparation and landscape design; and

f. To prevent the siting of uses along the bayshore that are incompatible with adjacent in-water and developed areas; and

g. To encourage the retention and use of native plant materials along the shoreline; and

h. To provide landscaping in the viewing corridors and shoreline setback areas that focuses views toward the water; and

i. To create or recreate over the next few decades a natural soft edge and greenbelt-like quality along the bay shoreline; and

j. To plan and design new developments or make improvements to existing developments in a manner that will enhance the view and enjoyment of the water and shoreline area from the street, from the water, from within the development and overlooking the development; and

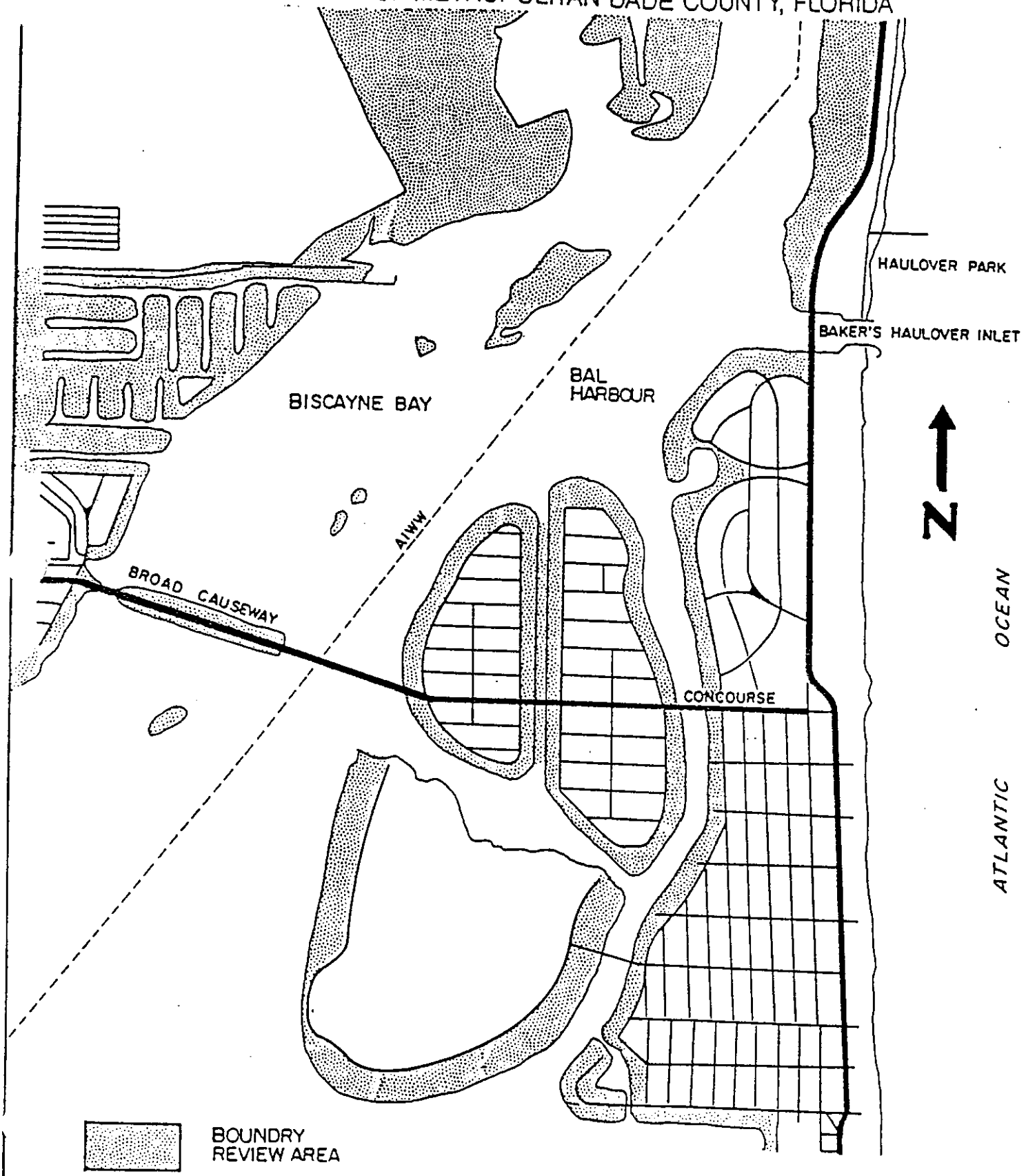
k. To encourage the integration of existing historic structures and features in new shoreline developments.

The ordinance established a boundary of applicability adjacent to estuarine waters. All proposed development within the designated boundary area must be reviewed by a shoreline development review committee for consistency with the ordinance. The shoreline development review boundary applicable to the Village of Bal Harbour is shown on Map 5.7.1. This review process applies to proposed development actions which fall within the following thresholds:

a. Residential developments except single family or duplex, and all business, commercial, industrial, recreational, entertainment, cultural and governmental uses that directly abut the shoreline within the Shoreline Development Review Boundary; or

b. Residential developments except single family or duplex, and all business, commercial, industrial, recreational, cultural, entertainment and governmental uses that occur on a minimum of one acre or which have 30

SHORELINE DEVELOPMENT REVIEW BOUNDARY AS DEFINED AND REFERENCED IN SECTION 2 (10) OF THE ORDINANCE AMENDING CHAPTER 33D (BISCAYNE BAY MANAGEMENT) OF THE CODE OF METROPOLITAN DADE COUNTY, FLORIDA



MAP 5.7.1

units or more, and are located within the Shoreline Development Review Boundary but not abutting the shoreline; or

c. Standard form coastal construction activities as described in Chapter 24 of the Dade County Code, which meet or exceed one of the following thresholds:

(1) Boat docking facilities containing at least 50 new or additional slips, or

(2) Boat docking facilities other than single family residential which do not meet the side setback or exceed the waterward projection criteria as set forth in Section D-5 of the Metropolitan Dade County Public Works Manual as may be amended or supplemented from time to time, or any comparable section of a municipal code or public works manual, or

(3) The installation or construction of structure(s) other than floating docks, or

(4) The installation or construction of a fixed structure(s) above proposed or existing docks or piles requiring a Class 1 Coastal Permit public hearing.

d. Plans for any site or area which lies wholly or partially within the Shoreline Development Review Boundary.

The review committee is charged with ascertaining whether a proposed project is consistent with the Dade County Comprehensive Development Master Plan, the Biscayne Bay Aquatic Preserve Act (Florida Statutes, Chapter 258.165) and applicable county or municipal codes, as well as the provisions of the ordinance itself. Section 8 of the ordinance contains certain criteria which must be satisfied in order for a project to be approved, namely:

(1) Minimum Shoreline Setbacks

A minimum shoreline setback of twenty-five (25') feet for structures not exceeding thirty-five (35') feet in height. For building elevations exceeding 35 feet, the minimum setback will be increased by fifty percent of the additional height of the building up to a maximum setback of seventy-five (75') feet.

No buildings, accessory uses or above-grade structures except public walkways are allowed in the setback area.

(2) Visual Corridor

An unimpeded visual corridor to Biscayne Bay of 20 percent of the width of the lot (up to 100 feet maximum) is to be provided on one side of the parcel. In any case the minimum visual corridor is set at 20 feet. Parcels located adjacent to streets dead-ending on the shoreline are given credit for half of the right of way in calculating the visual corridor width if facilities such as docks, piers or observation decks open to the general public are provided with appropriate provisions for their maintenance.

(3) Side Setbacks and Side Street Setbacks

No structures other than those that are below grade are permitted to be closer than twenty-five (25') feet to the side property line(s) or side street property line(s) provided that the shoreline setbacks and visual corridors required are adhered to.

The ordinance does allow exceptions to these criteria in cases where they may conflict with existing county or municipal codes. Also, exemptions are granted to development actions covered under a county and locally approved redevelopment plan adopted in accord with Florida Statutes S.163.330 et seq. and projects approved prior to the adoption of the ordinance. However, modifications or amendments to such prior approved projects must meet the spirit and intent of the ordinance.

SECTION 6: BEACH AND DUNE SYSTEMS

6.1 General

Bal Harbour has 4,477.53 linear feet of sandy beach along the Atlantic Ocean. Beach width averages 200 feet. Figure 6.1.1 shows a typical 1986 beach profile at the approximate midpoint of the beach located about 2,200 feet south of the jetty at Baker's Haulover Cut. The natural dune system at Bal Harbour was destroyed during the development process as discussed in the following section. Presently, the beach is backed by a manmade dune averaging twelve (12) feet (MSL) in height.

6.2 Historical Perspective

According to information compiled by the Jacksonville District of the U. S. Army Corps of Engineers the Dade County shoreline from Baker's Haulover Cut to Government Cut has undergone several advances and recessions over the period of 1867 to the present. During the period 1867 to 1919, the shoreline from Government Cut to Baker's Haulover Inlet advanced an average of 168 feet. This same reach receded an average of 107 feet over the period 1919 to

1928. Then the shoreline in the area advanced about 52 feet during the period 1927-28 to 1961. Thus, for the period 1867 to 1961, the shoreline in the area receded and advanced in almost equal distribution. Shoreline positions in the period beginning in 1928 were influenced to a large degree by the practice of installing seawalls seaward of the shoreline, and backfilling behind the wall. The shoreline was thus advanced to the extent that the wall was located seaward of the existing shoreline. By the early 1960's the shoreline at high tide was generally located at the toe of the collective bulkheads at Bal Harbour, only a low tide beach remained. The introduction of these vertical structures along the active beach zone increased the erosion rate since reflected wave energy emanating from these structures steepened the offshore slopes fronting these structures allowing higher wave energy to reach them.

With the beginning of the real estate boom in south Florida and at Bal Harbour Village, the delicate balance existing between the natural erosive and accretive forces was upset. To accommodate and maximize oceanfront development, many natural dunes were destroyed to make way for hotels, boardwalks, roads, and houses. In many places, dunes were bulldozed away merely to provide picture window views of the ocean. Although natural dunes erode during storms, they are basically a reservoir of sand which absorbs the energy of waves and surges which overtop the berms. Therefore, this unchecked development resulted in the destruction of the last natural line of defense against the waves and surges generated by storms.

With reduced beach areas and more erosive forces at work, an attempt was made to stabilize the rapidly developing oceanfront by constructing groins. These steel and timber walls were built out into the longshore currents in the hope of reducing erosion of the diminishing precious sand as it moved along the beach. These efforts were unsuccessful as they prevented any new supply of sandy materials from reaching the beach.

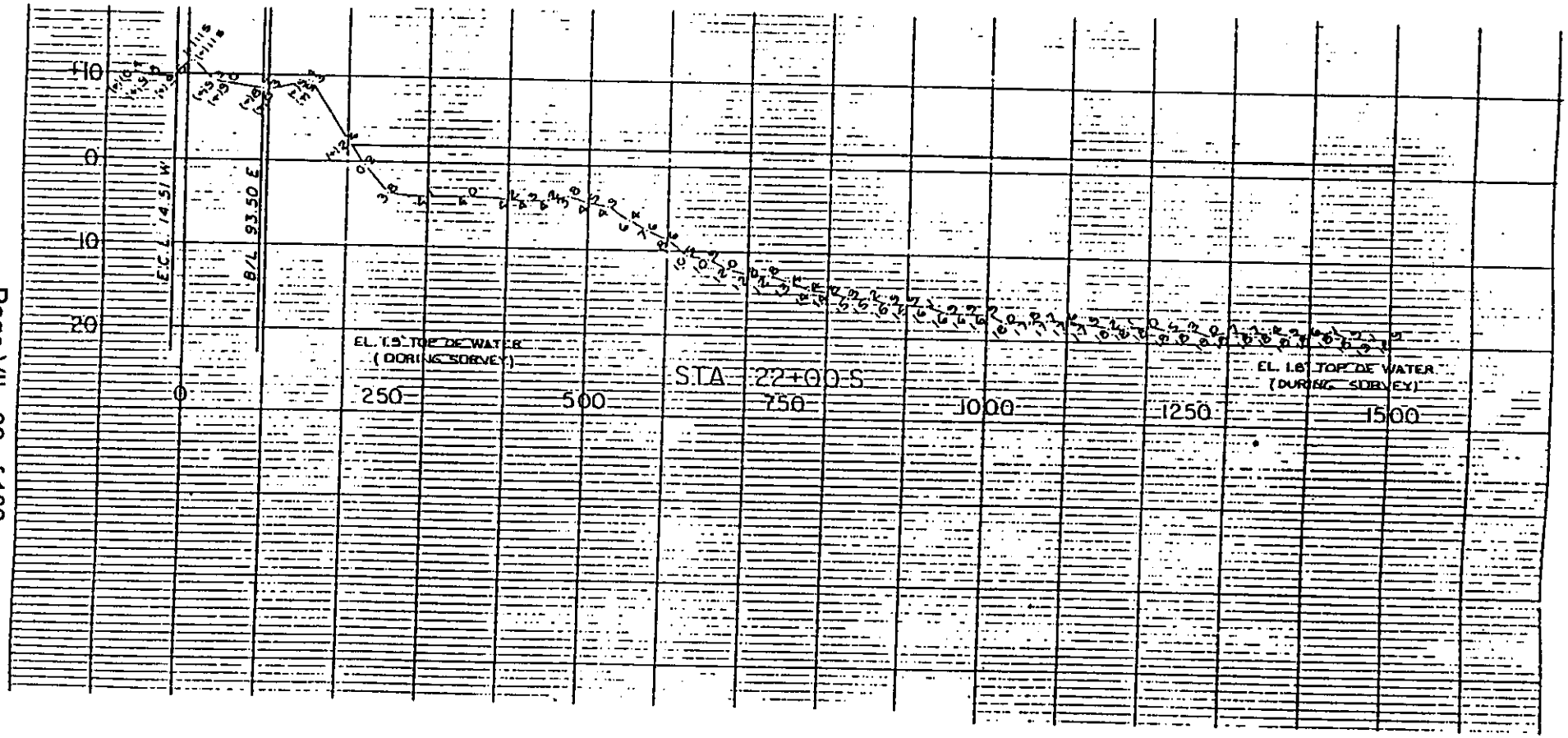


FIGURE 6.1.1

TYPICAL BEACH PROFILE 1986

BAL HARBOUR VILLAGE

To stabilize ocean entrances along the eastern Florida coast, jetties were built and navigation channels deepened to aid larger and more numerous commercial and recreational craft to harbor. In every instance, these harbor structures interrupted the alongshore movement of sand thus reducing the amount of available material to nourish downdrift beaches. This resulted in a deficiency of material reaching the Dade County coastline. This condition was aggravated with the construction of Baker's Haulover Inlet in 1925 by local interests. This artificial cut was made to provide navigable access as well as to reduce the pollution levels of North Biscayne and Dumbfoundling Bays. Since its construction, little, if any, material has been transported across the inlet to nourish the shoreline extending south to Government Cut. The construction of Government Cut has not been detrimental to the adjacent beach to the north (Miami Beach). Since its construction, larger amounts of material were impounded in this location. However, these long jetties and deep navigation channels have starved the adjacent shores to the south of sand and these shores have eroded.

6.3 Beach Renourishment

In an effort to control erosion at Bal Harbour, several beach nourishment fills were made by local interests and/or the Corps of Engineers over the period of September 1960 to July 1969. These actions are summarized in Table 6.3.1. A total of approximately 320,000 cubic yards of sand was placed on the beach during this period. Also, a concrete membrane, rubble-mound groin 140 feet long was installed by Dade County in 1960 about 300 feet south of the south jetty at Baker's Haulover Inlet. The groin was installed to assist in anchoring the beach fills deposited south of the inlet and to reduce the amount of material entering the inlet during flood tides and periods of drift reversal. This effort was basically unsuccessful due mainly to the fact that the material dredged from the inlet and sound was fine sand easily suspended by dynamic wave action and carried offshore by currents.

In March 1967, the U.S. Army Corps of Engineers completed a cooperative beach erosion control study and an interim hurricane survey of the Dade County Beaches. According to a syllabus of the study prepared by the Corps, the purpose of the beach erosion and hurricane protection study was to determine the most practicable and economic method of restoring adequate recreational and protective beaches and providing continued stability of the ocean shore from Government Cut to the north county line in Dade County, Florida, and to develop an adequate plan of protection against hurricane tidal flooding in the area between Government Cut and Baker's Haulover Inlet.

TABLE 6.3.1
HISTORY OF BEACH NOURISHMENTS
BAL HARBOUR, DADE COUNTY, FLORIDA[1]

Period of Activity From	To	Quantity of Sand Nourishment (Cost/CY)	Contracting Agency	Remarks
9/21/60	11/12/60	86,000 cy	Dade County	Bal Harbour reimbursed Dade Co. in amount of $80,000
3/27/61	-	29,000 cy (N/A)2	Dade County	Paid for by Dade County ($18,000)
3/17/63	3/30/63	50,000 cy @ ($0.80/cy)	Dade County	Bal Harbour paid $20,000; Dade County paid $20,000
12/64	1/65	18,000 cy (N/A)	U.S. Army Corps of Engineers	County Paid 50%
8/16/68	10/68	106,247 cy @ ($1.00/cy)	Bal Harbour Village	Bal Harbour paid $106,274 plus engineering
7/25/69	-	Approx. 30,000 cy (N/A)	U.S. Army Corps of Engineers & Bal Harbour Village	Spoil from Inland Waterway (not charged)
1989[3]	---	Unknown		Dade County
1994[3]	---	Unknown		Dade County

Total Quantity = 319,247 cy (not including 1989 and 1994 projects)

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1 Source: Henry von Oesen and Associates, Inc./Zurwelle-Whittaker, Inc., December 1970. Preliminary Engineering Report, Beach Restoration Project, Bal Harbour Village, Florida, Annex D.

2 N/A = Information not available.

3 CAS/Corp of Engineers 1995

The Corps found that the shoreline in the study area had been eroded by ocean wave action and currents and that dune protection from a major storm was lacking. A severe hurricane crossing the area on a critical path could cause a major flood disaster. Improvement of the shore and dunes was needed to provide adequate beach erosion control and hurricane protection. Because of the very limited natural supply of beach material reaching the area, periodic beach nourishment would be required.

The study disclosed that the most practicable plan of improvement to serve the dual purpose of beach erosion control and hurricane protection would involve artificial placement of fill to form a protective beach and dune for the reach between Government Cut and Baker's Haulover Inlet, and a protective beach only for Haulover Beach Park. The considered plan of improvement for the reach between Haulover Beach Park the north county line was not economically justified and adoption of a federal project therefore was not warranted. The improvements considered for the reach between Government Cut and Baker's Haulover Inlet and for Haulover Beach Park were economically justified for adoption of a Federal project. The plan of improvement for the two latter reaches involved placement of an estimated quantity of about 14,800,000 cubic yards of fill. Stability of the shore would be accomplished by periodic replenishment of losses. The estimated total first cost, exclusive of preauthorization studies, in 1967 dollars, was $29,500,000. The annual cost of periodic nourishment was estimated at $488,000. An additional amount of fill needed landward of the project limit was judged to be a non-Federal requirement and thus to be assumed by the local units of government.

Early implementation of the Corps' Dade County project was subsequently delayed by the lack of appropriation of federal funds and the apparent lack of interest by the other participating local units of government. In recognition of the dire need to proceed with a beach renourishment project, the Village of Bal Harbour took the initiative to expand the scope of the Corps study. The Village authorized the coastal engineering consulting firm of Henry von Oesen and Associates, Inc. of Wilmington, N. C. and a locally based joint venture partner, Zurwelle-Whittaker, Inc. of Miami Beach, to investigate suitable sources of the sand needed for renourishment, an effective method of containment once placed, a refinement of estimated quantities and construction cost estimates. Also included in the scope of work was the development of a financial plan to fund the project and a proposed schedule of construction. The investigations led to the publication of the following reports:

- Examination and Report, Beach Erosion, Bal Harbour Village, Florida (March 1970) Note: This report developed the overall project concept.

- Preliminary Engineering Report, Beach Restoration Project, Bal Harbour Village, Florida (December 1970) Note: This report provided details relative to the source of sand, preliminary design of an anchor jetty at Baker's Haulover Inlet, an implementation plan/schedule, and a funding program.

The investigative work summarized in these reports indicated that the best source of borrow material for renourishment was the nearshore oceanic bottom fronting the Village of Bal Harbour. This source had the general composite physical characteristics (grain size and sorting action) of the native beach sands. These characteristics were deemed vitally necessary to develop a beach fill with a maximum life span. The study also presented a design concept for a curved jetty extension at Baker's Haulover Inlet. The State of Florida and Dade County assured Bal Harbour Village that they would cooperate and participate in the project. Plans were reviewed and approved by the State, County and the Corps of Engineers.

The renourishment project began in 1973 with placing an estimated 1,625,000 cubic yards of beach fill, extended back to the existing bulkheads. The south jetty at Baker's Haulover Inlet was extended to a length of about 800 feet with a curved end section. Also, five adjustable groins were constructed in the fill section to help retain beach nourishment materials in the renourished Bal Harbour frontage. A 1,200-foot transition fill on the south end was included in the project to encourage a normal drift line and adjustment during the resorting processes and throughout the life of the project.

Existing drainage structures, groins and pipelines on the beach were removed. Prior to the project, approximately fifty pipelines discharged storm and cooling water onto the beach from bulkheads. The discharge of these waters across the beach had contributed substantially to the loss of material on the beach. They were replaced by an interceptor pipeline to discharge all drainage into the inlet.

The jetty was included as a containment structure for the north end of the beach fill. It was designed to limit the erosion effects of tidal flows through Baker's Haulover Inlet. The outer 300 feet curves southward to deflect alongshore currents and to encourage a circular movement that will dissipate these currents and minimize sand loss. It extended seaward sufficiently to reach the toe of the fill.

The jetty was also designed to protect the north end of the project from northeast wave attack and to divert currents generated by southerly winds in order to contain the beach fill materials and prevent them from being transported around the jetty and into the inlet. It is constructed of stone with a steel sheet pile core.

The stone materials used to construct the jetty were granite shipped from Georgia by rail to Miami and delivered by truck directly to the site. The armor stone was in the 16 to 20-ton range and the underlayment stone was in the 6 to 10-ton range. The jetty was designed to withstand a 15-foot wave.

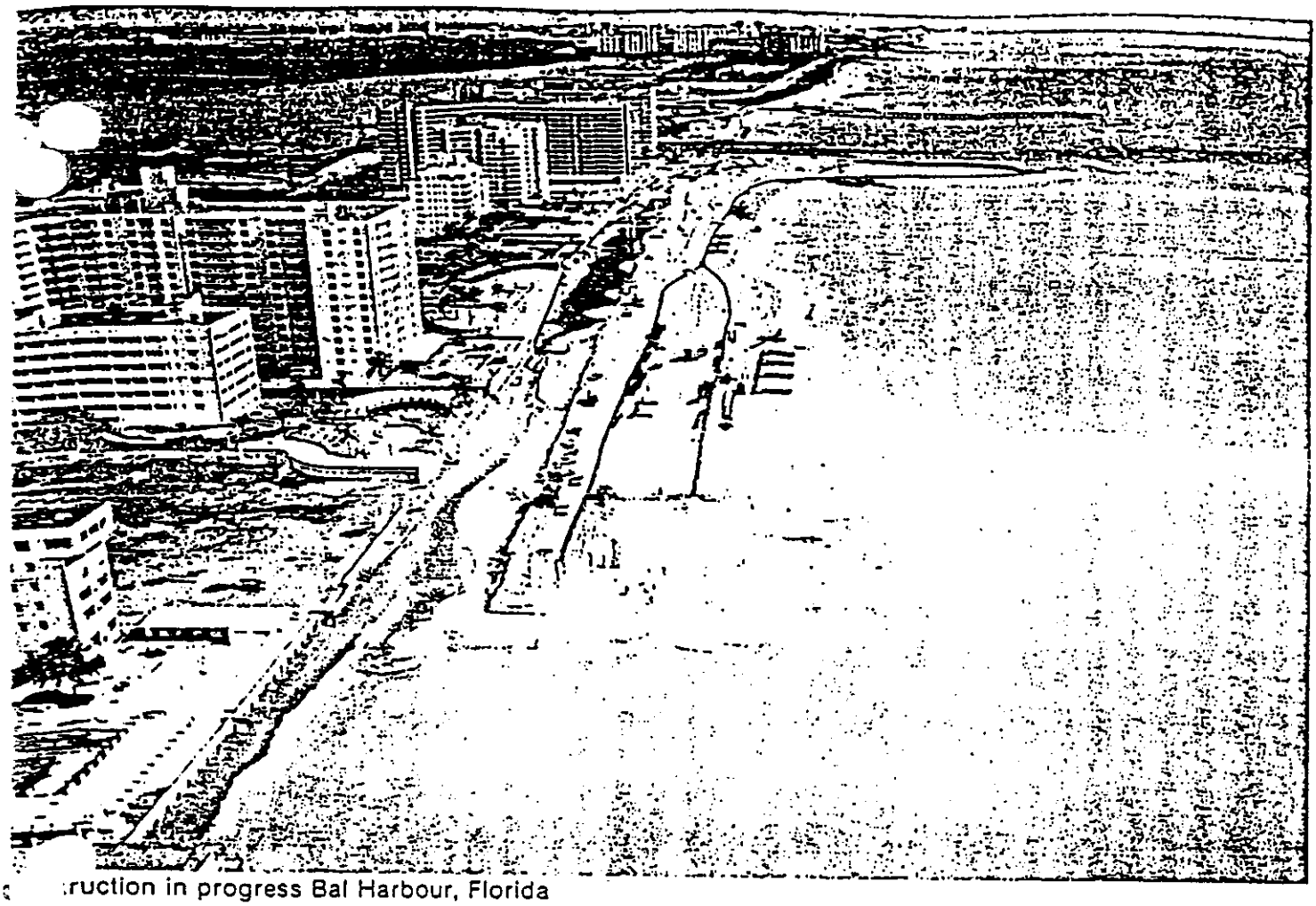
The groins on the project were placed at about 800-foot intervals. They are of the King-pile adjustable type and average about 350 feet in length. They have a base panel of concrete, with timber panels above to ensure an adjustable height of 8 feet. The purpose of the groin field is to retard the erosion from winter storm waves and yet allow a reasonable transport during the resorting process which occurred initially in the fill and during the follow-on seasonal accretion (summer) periods. Each groin has a circular stone mat at its outer end to minimize the scour normally occurring at the end of such structures.

The Village received about $1.4 million from State and County sources and the Village initially provided the remainder of the funds required to construct the project. The Village subsequently received reimbursement from Federal sources amounting to sixty percent of eligible costs of the project (approximately $2.8 million) because of its overall consistency with the authorized federal project. The Village provided all access improvements to the new beach at an estimated cost of $100,000 and paid the cost of groin construction (about $300,000). The total project cost was $5,500,000. Figure 6.3.1 shows two photos of the project - one taken while construction was in progress and one immediately following project completion in 1975.

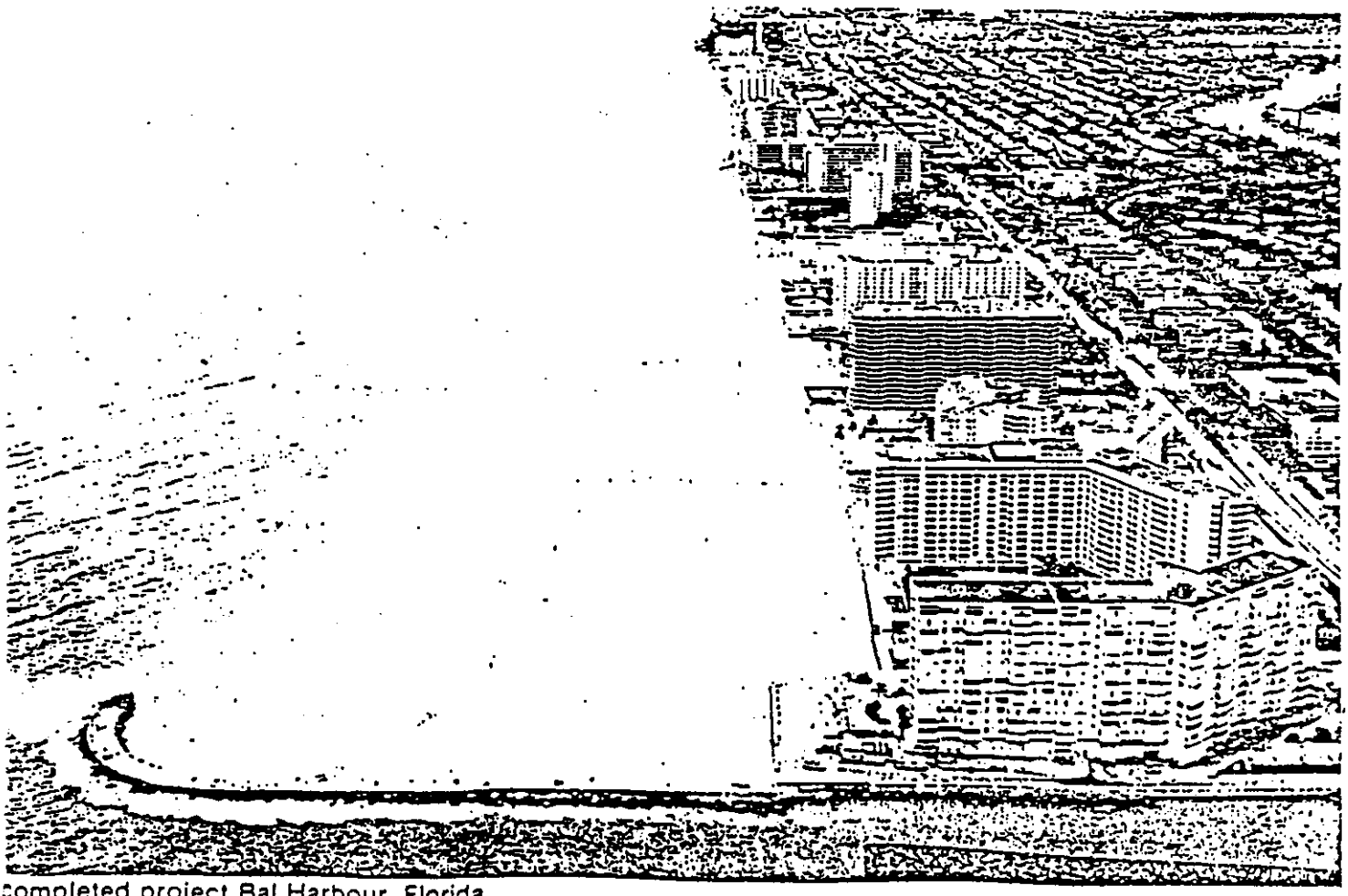
The beach has held up extremely well since construction was completed with minimal sand losses. The curved jetty has proved to be successful in impounding material and protecting the project fill from the erosive effects of Baker's Haulover Inlet.

In I987, repairs were completed to the south jetty at the inlet to prevent the movement of water and the piping of sand through the jetty. This work was completed at a cost of $202,020.

As indicated above, periodic supplemental renourishment of the beach would be required to maintain the beach profile. A supplementary renourishment was completed by the U.S. Army Corps of Engineers in 1989 with another 1000' section near the Bal Harbour Sheraton Hotel received another supplement in 1994.



ruction in progress Bal Harbour, Florida

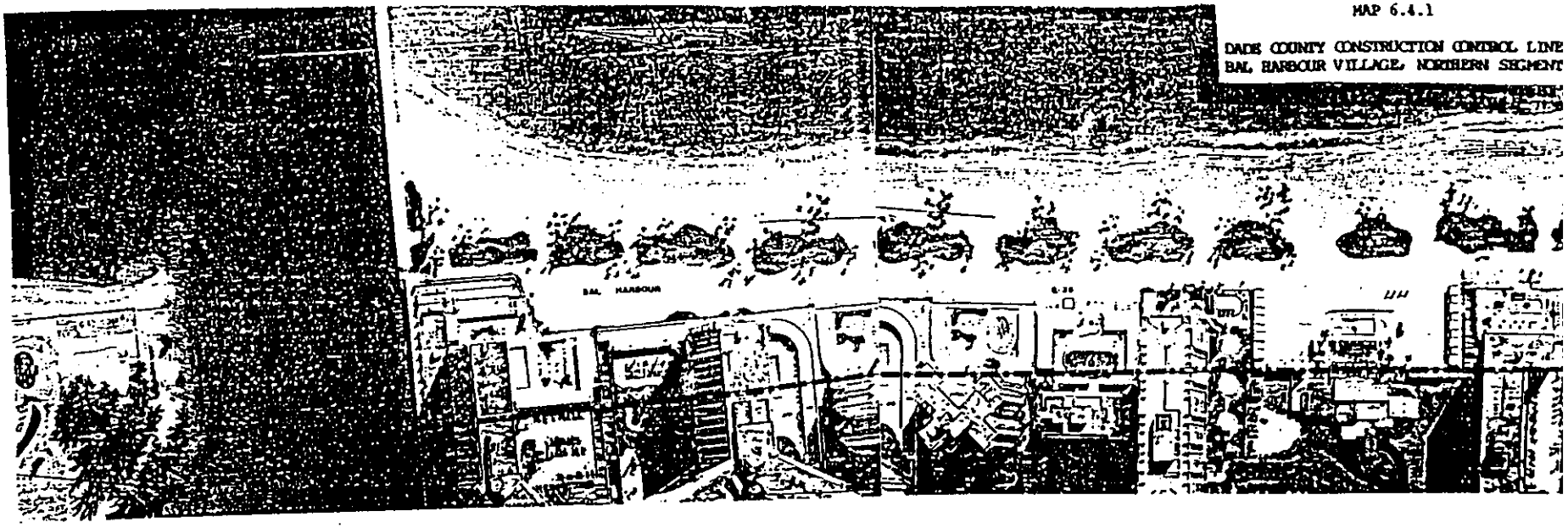


completed project Bal Harbour, Florida

6.4 Analysis of Beach and Dune Protection Measures

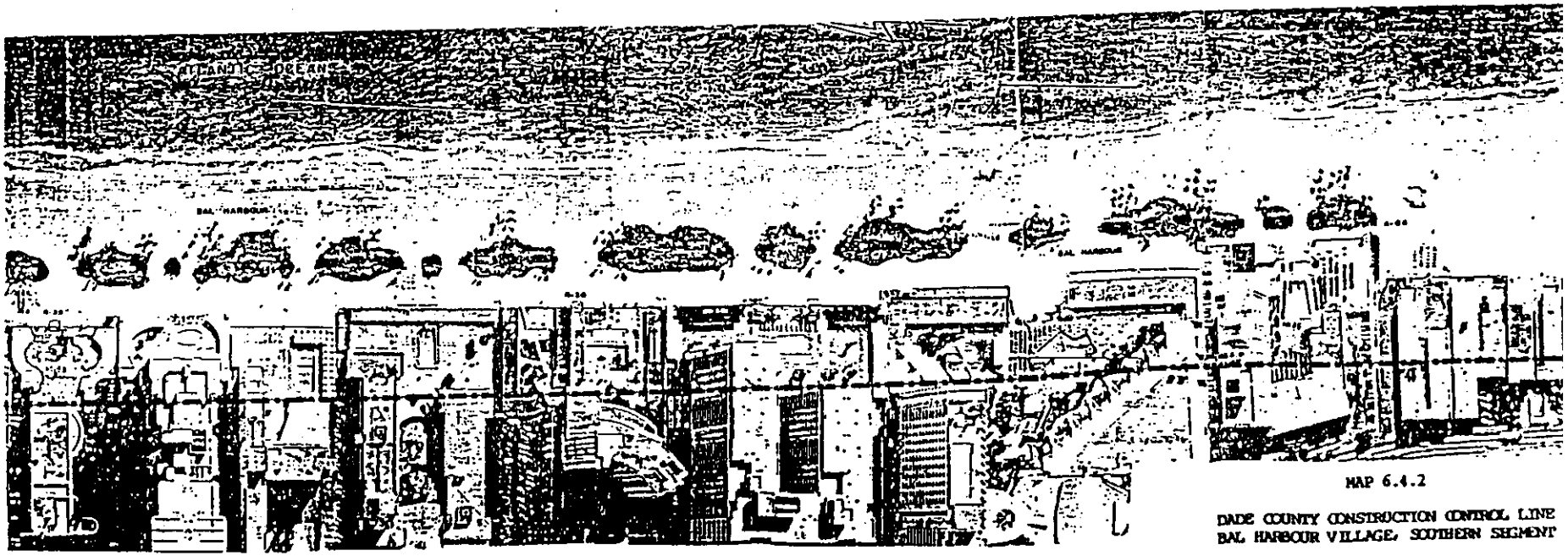
Beach and dune protection at Bal Harbour Village is currently handled jointly by state and county governments. The State, acting through the Department of Environmental Protection, Division of Beaches and Shores, administers the coastal construction control line program and thirty-year erosion setback. FDEP regulates all development seaward of the coastal construction control line to ensure that the proposed development has minimal impact on the beach and dune system and can survive a major storm. As a part of the coastal construction permitting process thirty years worth of erosion must be considered, and Florida law prohibits (with limited exceptions) construction of buildings that will be in the water in thirty years. FDEP's jurisdiction is limited to areas seaward of the coastal construction control line. The control line for Dade County was set in 1981 and is shown on Maps 6.4.1 and 6.4.2. State law also prohibits driving on beaches and dunes and the destruction or removal of dunal vegetation.

These beach and dune protection measures appear to be adequate for the near term and are working well at Bal Harbour. However, beach erosion will continue to occur. Some of the erosion is temporary, caused by large storms and much of the lost beach is built back naturally. However, because of an apparent recent trend of sea level rise, the shoreline, will also tend to erode slowly due to the influence of this factor. Recently published studies on sea level rise indicate that a current rise of about 0.01 feet per year will occur on the South Atlantic Coast of North America. At this rate, the average sea level at Bal Harbour Village will only be 0.3 feet higher in the year 2017 should the current trend continue. Thus, the action of waves and currents will be the principal cause of beach erosion for the foreseeable future. The state and county's beach and dune protection regulations are based upon the coastal construction control line, which is static and whose location was determined by storm surge calculations. Because of its relative insignificance, sea level rise is not factored into the calculations. The recently enacted thirty-year erosion setback helps counteract the static nature of the coastal line. In the future, the control line may have to be reset if the state does not adopt a policy of support of beach renourishment to counteract long-term erosion problems. The political consensus does not appear to exist for a retreat strategy, other than occasional resetting of the control line and the resulting landward siting of consequent buildings.



MAP 6.4.1

DADE COUNTY CONSTRUCTION CONTROL LINE
BAL HARBOUR VILLAGE, NORTHERN SEGMENT



MAP 6.4.2

DADE COUNTY CONSTRUCTION CONTROL LINE
BAL HARBOUR VILLAGE, SOUTHERN SEGMENT

Looking forward, it is expected that the beach at Bal Harbour will erode imperceptibly due to sea level rise. Storms will cause short-term rapid erosion, but these shoreline changes are usually naturally self-correcting. Baker's Haulover Inlet will continue to interrupt the natural flow of sand and cause locally severe erosion problems. To protect man-made structures from storm induced and inlet-caused severe erosion and to try to forestall the long term effects of sea level rise, a continued use will be made of beach nourishment. Most of the cost of these expensive beach nourishment projects will be paid for with public funds. The most serious beach management problem the Village will face in the long term is preserving the beach when erosion begins to affect structures built near the current control line. The Village is thus committed to a future of continued beach renourishment. In recognition of this fact, the Village must continue to sequester funds in a capital reserve account to cover the local share of the cost of such projects.

SECTION 7: ARCHAEOLOGICAL AND HISTORIC RESOURCES

7.1 Archaeological Resources

Contacts with the Dade County Division of Historic Preservation reveal that there are no known or documented archaeological sites at Bal Harbour Village. It is possible that pre-colonial Indians used the Bal Harbour area as a base for food gathering and fishing, but all traces of such, if once present, were obliterated during the early stages of the development of the Village in the early 1920's.

Contacts with the Florida Division of Historic Preservation reveal that there are no known underwater archaeological resources (shipwrecks) in the Bal Harbour Village Area.

7.2 Historic Resources

The Dade County Division of Historic Preservation indicates that there are no historic sites or structures at Bal Harbour. All surviving development is post World War II. No sites or structures at Bal Harbour are listed in the National Register of Historic Places.

SECTION 8: HURRICANE PREPAREDNESS EVACUATION

8.1 Hurricane and Tropical Storm Vulnerability

Bal Harbour Village is vulnerable to tropical storms and hurricanes. By definition, tropical cyclones include tropical storms (storms with winds from 38 mph to 73 mph), hurricanes (storms with winds from 74 mph to 123 mph) , and great hurricanes (with winds over 124 mph). Hurricanes usually commence over warm waters in the tropics and contain low-pressure centers with surrounding

counterclockwise winds. Hurricanes affecting Dade County develop in the Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea during the summer and fall months. Severe storms occur most frequently during September and October; these usually develop in the eastern Atlantic.

Throughout the past century South Florida has been struck by more hurricanes than any other area of equal size in the United States (see Figure 8.1.1). South Florida also has been impacted by more of the great hurricanes per unit length of coastline than any other area of the country. During the period of 1886 to 1970, tropical storms with sustained winds over 38 mph occurred on the average of every 5 years. Storms of hurricane strength occurred every 6 years. Great hurricanes occurred every 14 years. Hurricane frequency cycles have been mapped and show that there are periods in which hurricane tracks concentrate on Florida. However, they are not useful in forecasting hurricanes.

Three major forces cause most of the damage due to hurricanes: the winds, the storm surge, the torrential rains or a combination of these. Wind has long been recognized as a major destructive force associated with the passage of hurricanes. The force of the wind is often used to characterize hurricane intensity. The force exerted by winds increases with the square of the wind speed, rather than in a direct proportion. Therefore, a 150 mph wind exerts four times as much force as a 75 mph wind.

The Saffir/Simpson Scale[3] is used by the National Hurricane Center to give public officials a continuing assessment of the potential for wind and storm-surge damage. Scale numbers are made available to public officials within 72 hours of storm landfall. Scale assessments are revised regularly as new observations are made. The central pressure, wind speed, storm tide and damage expected from each category storm is shown in Table 8.1.1. A description of each hurricane category follows:

- Category No. 1 - Winds of 75 to 95 miles per hour. Damage primarily to shrubbery, trees, and unanchored mobile homes. Some damage to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

- Category No. 2 - Winds of 96 to 110 miles per hour. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major damage to buildings. Coastal roads and low-lying escape routes inland cut by rising water two to four hours

[3] The Saffir/Simpson Hurricane Scale was developed by Mr. Herbert Saffir, Consulting Engineer, Dade County, Florida and Dr. Robert H. Simpson, Simpson Weather Associates, Charlottesville, Virginia.

before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings.

- Category No. 3 - Winds of 111 to 130 miles per hour. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Serious flooding at coast and many smaller structures near coast destroyed; large structures near coast damaged by battering water and floating debris. Low-lying escape routes inland cut by rising water three to five hours before hurricane center arrives.

- Category No. 4 - Winds of 131 to 155 miles per hour. Shrubs and trees blow down; all signs down. Extensive damage to roofing materials, windows and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water three to five hours before hurricane center arrives. Major erosion on beaches.

- Category No. 5 - Winds greater than 155 miles per hour. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residential and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction to mobile homes. Low-lying escape routes inland cut by rising water three to five hours before hurricane center arrives.

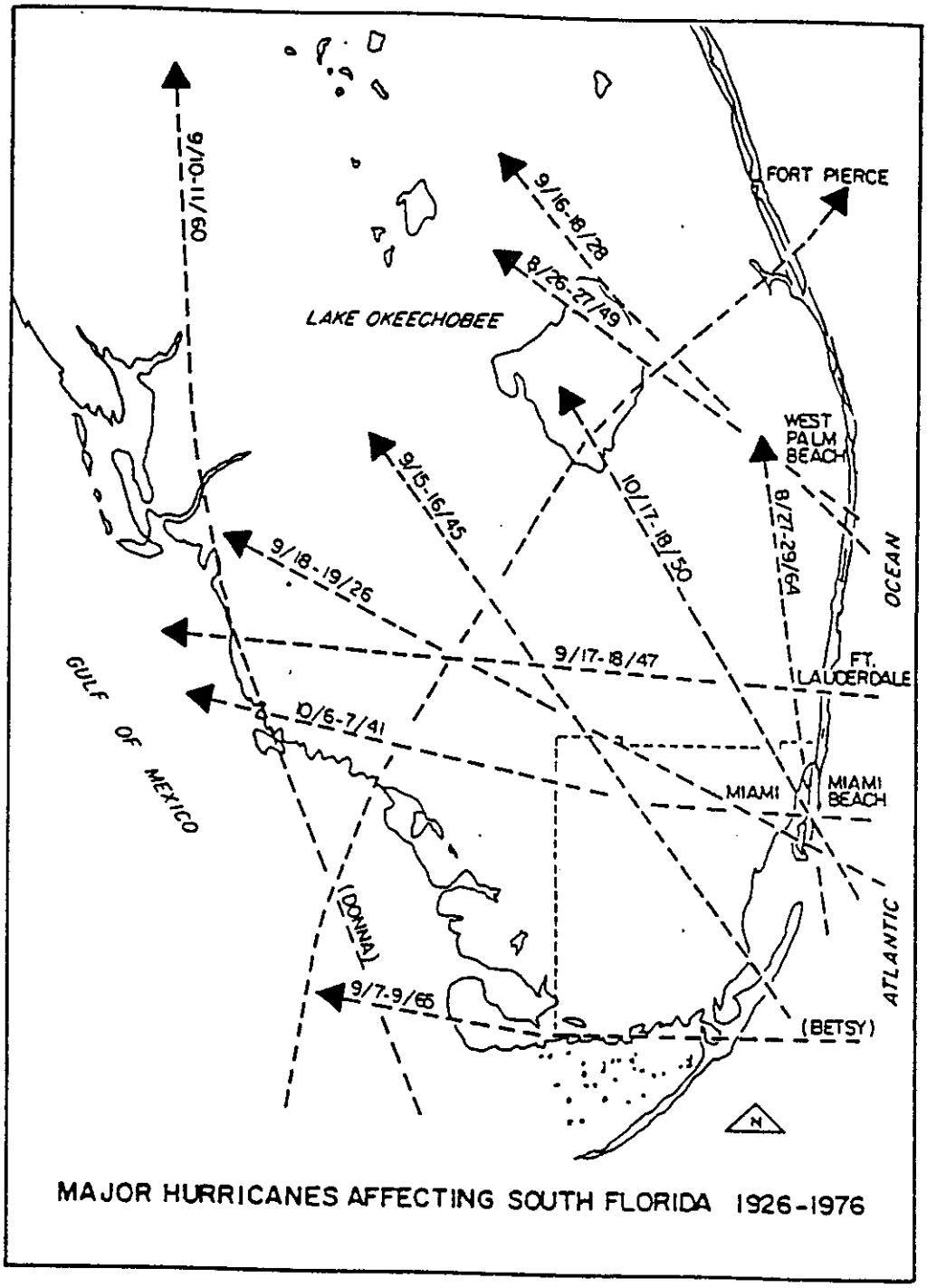

9/10-11/60
9/16-18/28
8/26-27/49
FORT PIERCE
LAKE OKEECHOBEE
WEST PALM BEACH
9/15-16/45
10/17-18/50
8/27-29/64
OCEAN
9/18-19/26
9/17-18/47
FT. LAUDERDALE
GULF OF MEXICO
10/6-7/41
MIAMI
MIAMI BEACH
(DONNA)
9/7-9/65
ATLANTIC
(BETSY)
N
MAJOR HURRICANES AFFECTING SOUTH FLORIDA 1926-1976

FIG. 8.1.1

Table 8.1.1

SAFFIR/SIMPSON SCALE
OF HURRICANE INTENSITY

Scale Number	Central Pressure Millibars	Inches	Winds (MPH)	Storm* Tide (Ft.)	Damage
1	>980	>28.94	74- 95	4-5	Minimal
2	965-979	28.50-28.91	96-110	5-7	Moderate
3	945-964	27.91-28.47	111-130	7-10	Extensive
4	920-944	27.17-27.88	131-155	9-13	Extreme
5	<920	<27.17	155+	15+	Catastrophic

*Adjusted to Dade County using Engineers Technical Data Report - (includes astronomical high tide).

The South Florida Building Code was designed and adopted in the wake of the massive damage wrought by the 1926 and 1928 Miami and West Palm Beach Hurricanes. The South Florida Building Code requires that in addition to the buildings themselves, all attached objects must also withstand hurricane winds. Buildings erected in conformity with this code have since been withstanding hurricane winds without serious damage. However, the major destructive force associated with the landfall of hurricanes, the hurricane tide has been inadequately addressed in coastal planning and building codes. A storm of hurricane intensity, moving toward or crossing a coastline, will always be accompanied by tides above normal. The above-normal tide or storm tide results from the compounding of a storm surge with the astronomical tide. The volume of water pushed across a coastline as a storm surge is a function of the barometric pressure at the storm center, the storm center direction of forward movement, the maximum sustained windspeeds, the configuration of the coastline, and the configuration or slope of the sea bottom.

8.2 Record Hurricane Tidal Floods and High-Water Marks

According to data compiled by the U.S. Army Corps of Engineers since 1925, tidal flooding from hurricane-generated tides and wave action has occurred in the study area on numerous occasions, five of which were significant--in l926, 1935, 1945, 1947, and 1950. The most severe and extensive flooding occurred during the hurricane of September 1926 (a Category 4 storm). While detailed accounts are sparse, all reports indicate that Miami Beach (and presumably Bal Harbour also) was entirely inundated; at the height of the tide the ocean reportedly extended to Miami 3-1/2 miles across the bay. Flooding on the island reached depths up to 3 feet with water ponded to about elevation 12 feet near the ocean.

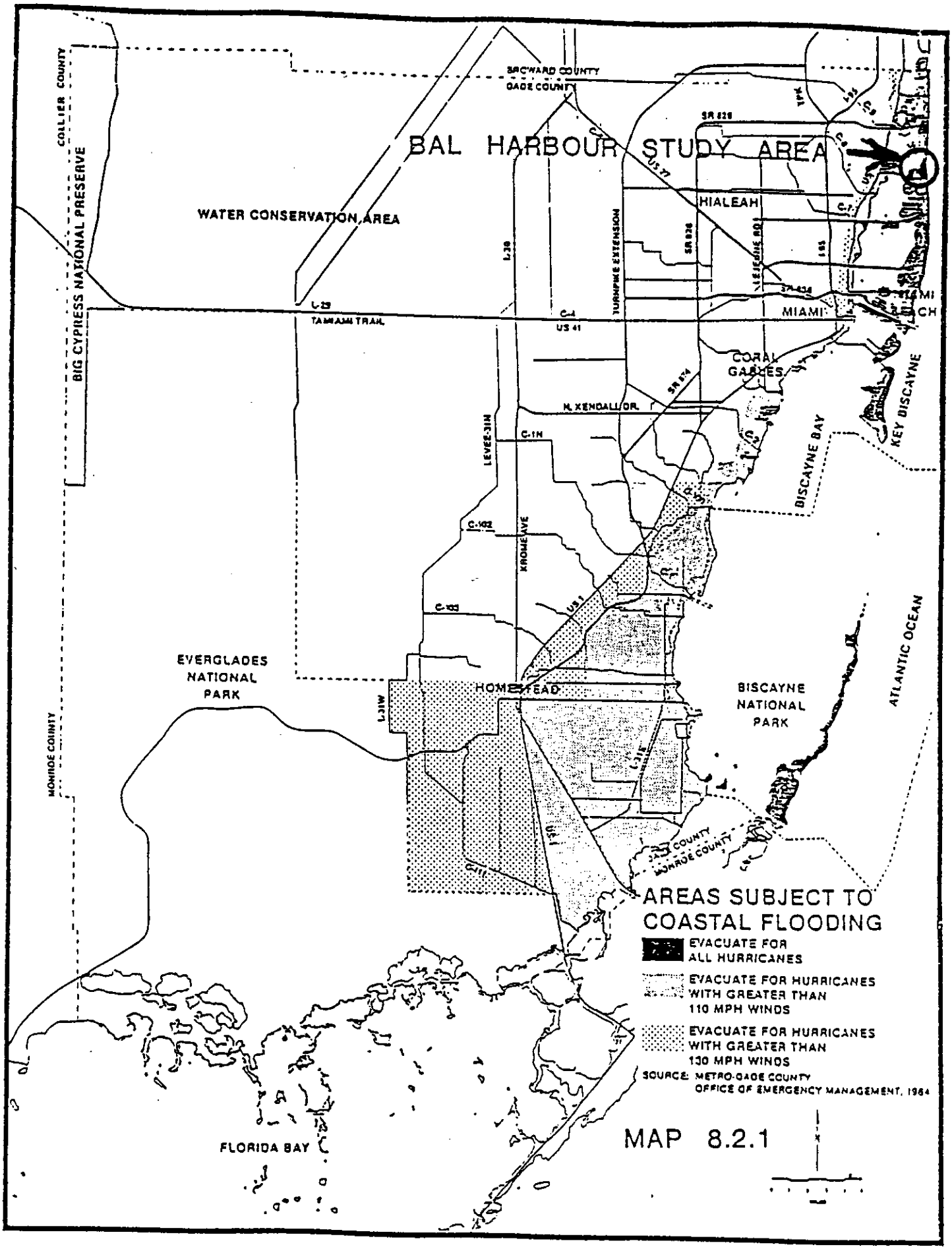
Detailed surveys of high-water marks on the barrier island were made after the storm by the then City Engineer of Miami Beach. The high-water marks were taken in several east-to-west profiles across the island. The marks generally parallel the variation in land configuration and point up the major difference between tide heights in the ocean along shore or in inlets and water levels measured on land. High-water marks observed on land show ponding behind the beaches caused by wave run-up. Those high-water marks were usually higher than tide heights recorded on tide gauges in front of the seawalls or dunes. Wave run-up and overtopping washed many thousand yards of sand over the beach, depositing it in the lower floors of buildings and on lawns and streets for a distance of I,000 feet back of the beach. In the November 1935 hurricane, flooding did not approach that of 1926 either in depth or lateral extent. Again, details are sparse; however, flooding 1 to 3 feet deep was reported in some areas of Miami Beach. Water marks recorded at Baker's Haulover Inlet were at 7.2 feet (MLW). A water mark of 10 feet (MLW) was recorded on Collins Avenue (Highway A1A) at Surfside Beach.

During the 1945 hurricane a water mark of 5.6 feet (MLW) was recorded at the junction of Collins Avenue (Highway A1A) and 96th Street, Bal Harbour. The October 1950 hurricane was a small but violent storm. The center passed over Miami on a path similar to that of the 1926 hurricane. Because of its small diameter the damaging effects of this hurricane did not approach those of 1926. The peak hurricane tide, however, occurred simultaneously with normal high tide in the ocean and was a responsible factor for flooding of Miami Beach up to 4-foot depth in some areas. Many of the larger beach-front hotels sustained water damage in lobbies and lower floors and damage to seawalls and appurtenant structures.

Based on the above information, all of the Bal Harbour Village area is subject to coastal flooding during any hurricane as indicated on Map 8.2.1.

8.3 Hurricane Protection Afforded by the Bal Harbour Beach Restoration Project

The beach and dune restoration project at Bal Harbour (see Section 6.3 above) affords considerable protection from the effects of hurricanes. The following scenario based on the U. S. Army Corps of Engineers publication entitled "Our New Beach - How It Works" explains how the project is designed to work:


BAL HARBOUR STUDY AREA
COLLIER COUNTY
BIG CYPRESS NATIONAL PRESERVE
WATER CONSERVATION AREA
BROWARD COUNTY
DADE COUNTY
HIALEAH
MIAMI
CORAL GABLES
TAMIAMI TRAIL
US 41
US 1
TURNPIKE EXTENSION
LEVEE-31N
C-1N
C-102
C-103
KROME AVE
HOMESTEAD
EVERGLADES NATIONAL PARK
BISCAYNE NATIONAL PARK
BISCAYNE BAY
KEY BISCAYNE
ATLANTIC OCEAN
MONROE COUNTY
FLORIDA BAY
AREAS SUBJECT TO COASTAL FLOODING
EVACUATE FOR ALL HURRICANES
EVACUATE FOR HURRICANES WITH GREATER THAN 110 MPH WINDS
EVACUATE FOR HURRICANES WITH GREATER THAN 130 MPH WINDS
SOURCE: METRO-DADE COUNTY OFFICE OF EMERGENCY MANAGEMENT, 1984
MAP 8.2.1

The Bal Harbour beach project consists of three components which act in concert as defenses against the effects of coastal storms:

Component 1: The foreshore beach slope

Component 2: The beach berm

Component 3: The dune

The first defense against normal wave action or that emanating from weak storms is the shallow sloping project foreshore and nearshore slopes which are depicted in Figure 8.3.1. These shallow slopes dissipate the energy or weaken the force of the deepwater waves. The primary agent of littoral transport is the breaking wave. The shallow seaward slopes afforded by the project causes the incoming wave trains to break as they begin to feel bottom. After breaking, the water travels forward as a foaming turbulent mass, expending its remaining energy in a rush up the beach slope. Falling back seaward under the influence of the force of gravity, the water then runs back down the beach slope with sediments (sand) which have been placed in suspension during breaking. These sediments are deposited in the calmer and deeper water found a short distance offshore and begin to build an offshore bar. This offshore bar causes subsequent incoming wave trains to break farther offshore where the energy is dissipated and in this way an equilibrium condition is reached and no additional erosion takes place. The material eroded from the foreshore and inshore slope equals the material deposited in the offshore bar as illustrated in the figure.

As conditions deteriorate, larger waves approach the shoreline. If the onshore winds are of sufficient magnitude, surges can also be expected to occur. These larger waves when accompanied by surges, tear at the nearshore slopes and beach berm and deposit larger amounts of material in the offshore bars. These large offshore bars trip the subsequent deepwater wave trains. The broken waves reform again in the regeneration area indicated in Figure 8.3.2 and may break and reform again several times before finally rushing up the foreshore. With each successive break, energy is dissipated until sufficient material is deposited offshore to stabilize the shoreline recession taking place.

After the passage of storms, or the storm season, the majority of material deposited offshore is returned to the beach by normal swell and wave action. The remaining material transported out of the active zone (fines), or transported out of the project area by longshore currents, is replaced during periodic nourishment operations which will be conducted approximately every five years or as needed.

While the gently sloping beach and the beach berm are the outer line of defense to absorb most of the wave energy and surges affecting the project coastline, the

hurricane dune is the last zone of defense in absorbing the energy of the waves and surges that succeed in overtopping the beach berm (Figure 8.3.3). The dune provides the large reservoir of sand needed to help build the offshore bar necessary to stabilize the storm induced shoreline recession (Figure 8.3.3, beach berm and dune have been cut back) and acts as a levee to minimize or prevent flooding damages to adjacent developments (notice how surge and wave run-up could overtop the existing seawall depicted in this figure were it not for the presence of the dune). The process by which this is accomplished is similar to the Component 2 response previously discussed.

Should a major hurricane impact the beach of Bal Harbour, considerable erosion will take place which may require an immediate need for a supplementary renourishment project to restore the protective aspects of the overall project. Should a second severe storm occur in rapid succession prior to the implementation of supplementary renourishment, the protective dune could be breached, resulting in severe flooding and structural damage due to dunal overtopping.

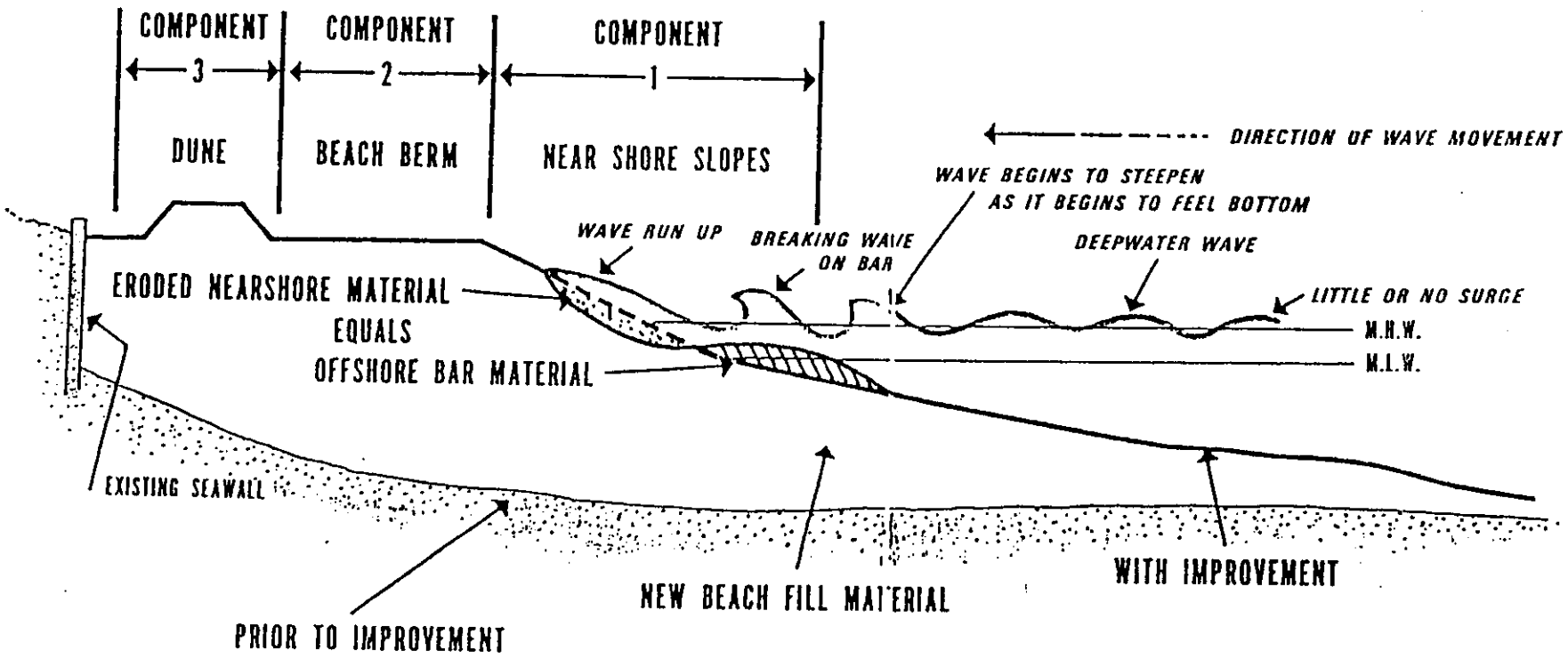


FIGURE 8.3.1

COMPONENT 1 RESPONSE TO: NORMAL WAVE CONDITIONS AND WEAK STORMS

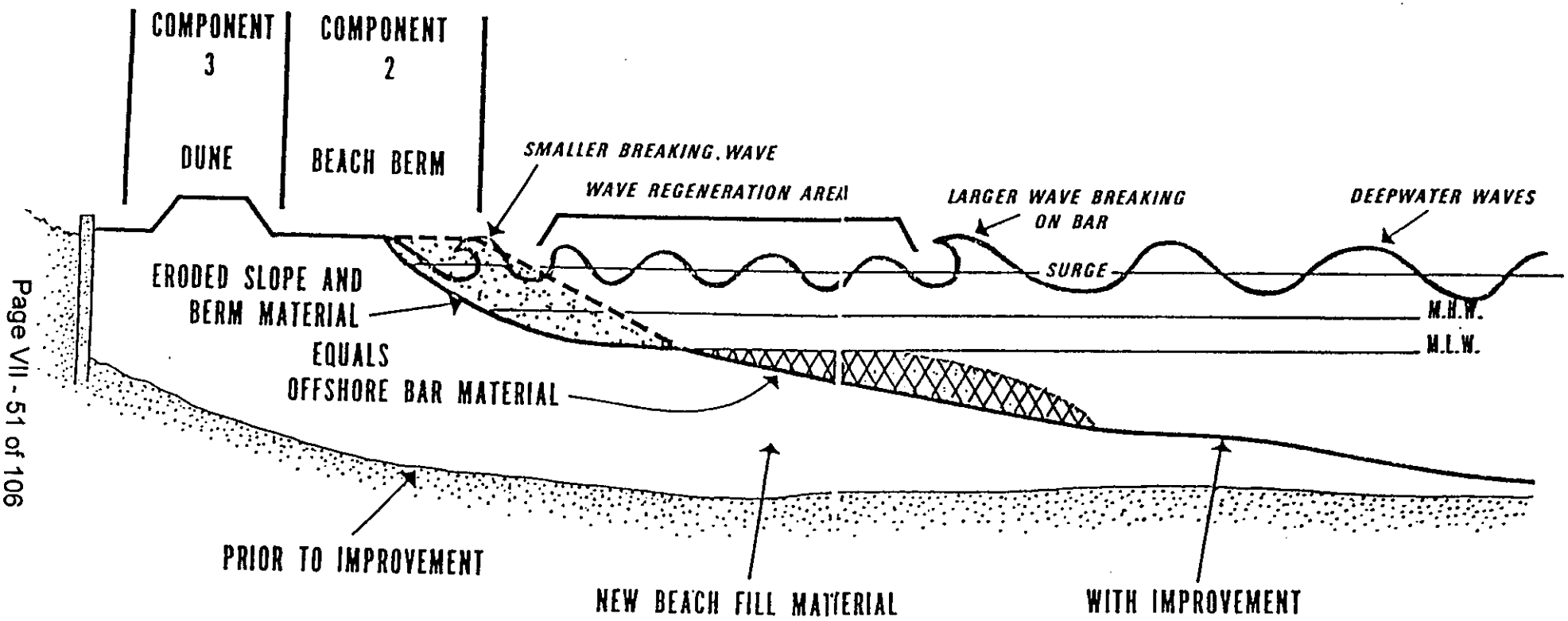


FIGURE 8.3.2

COMPONENT 2 RESPONSE TO:
WEAK HURRICANE SURGE
AND WAVES, TROPICAL STORMS,
NORTH EAST STORMS

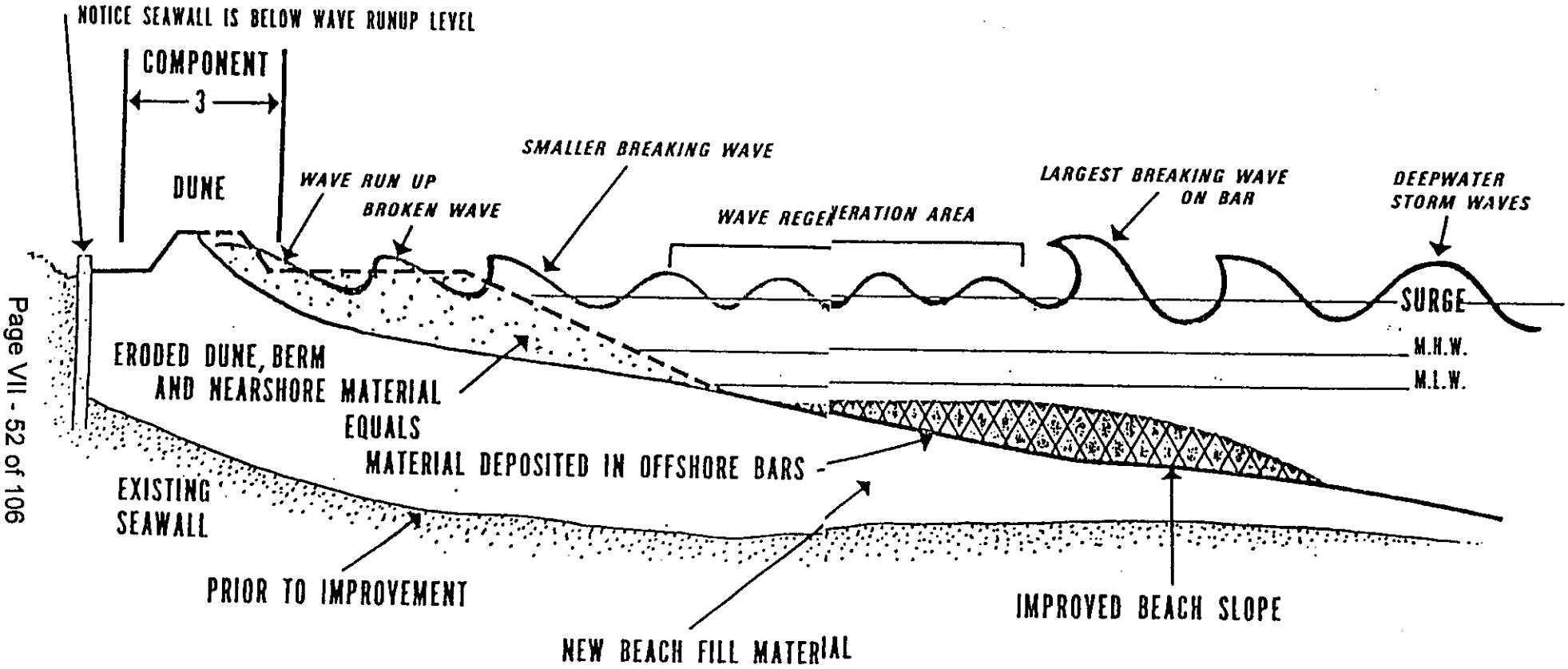


FIGURE 8.3.3

COMPONENT 3 RESPONSE TO: MAJOR HURRICANE SURGE AND WAVES

In recognition of the destructive potential of this natural phenomenon and that its local probability of occurrence is greater than anywhere else in the continental United States, prudent future land use planning at Bal Harbour must consider the destructive forces and the potential dangers to life and property posed by these storms. In recognition of these potential dangers, Bal Harbour Village in cooperation with Dade County has developed a Hurricane Procedure as a part of the Dade County Emergency Operations Plan. These procedures are outlined in the following section.

8.4 Hurricane Procedure

8.4.1 General

Detailed procedures are set forth in the publication entitled, "Metropolitan Dade County Emergency Operations Plan, Section 1 - Hurricane Procedure" prepared by the Office of Emergency Management, Metropolitan Dade County as summarized in the following subsections. This document is updated periodically by Dade County in coordination with local governments.

8.4.2 Concept of Operations

According to the Plan as formulated, the Dade County Manager, as Chief Executive Officer, is the incident commander for hurricane response. In order to effectively manage hurricane response an incident command structure has been developed to serve under him. Representatives of each municipality work through the Assistant County Manager who serves as a liaison officer at the Metro Emergency Operations Center in Miami.

Should a hurricane threaten the area and a hurricane watch is issued by the National Hurricane Center, all departments begin to implement their written hurricane procedures and closely monitor the progress of the storm. Contacts are initiated between Bal Harbour Village and the Emergency Operations Center which begins 24 hour operations. The Director of Emergency Management and his staff have the responsibility to advise the public of the necessity of being prepared to evacuate low-lying areas that are in danger of being flooded from high tides, excessive rain or both.

8.4.3 Evacuation Requirements

The Hurricane Procedure Plan identifies the areas within Dade County that require evacuation during hurricanes. A total of 47 evacuation zones have been identified based on predictive analyses of traffic volumes on designated evacuation routes and other storm risk factors. Figure 8.4.3.1 shows the evacuation zones. Bal Harbour Village is located in Zone 6. Zones 1 through 25 may require evacuation due to the storm tide. Zones 26 through 47 will

experience inland flooding normally associated with heavy rains and winds but will not be affected by the hurricane storm tide.

All residents east of Collins Avenue are in imminent danger from the hurricane stormtide. The more severe the storm the more intense the threat to life. Thus, the plan calls for all residents in Zones 1 through 7, which are east of the Atlantic Intracoastal Waterway, to evacuate in any hurricane.

8.4.4 Evacuation Decision Making Process

Several steps are involved in reaching the decision to evacuate and which areas to evacuate. Some considerations are shown in Figure 8.4.4.1. The basic steps are outlined below:

- Step 1: When the National Hurricane Center assigns a Saffir/Simpson category number to a hurricane, that category becomes the cornerstone of future decisions relative to the storm. Clear and constant information from the National Hurricane Center is necessary to determine if the storm appears to be on a landfall, parallel, or exiting tract.

- Step 2: Determine the extent of expected damage and more clearly define expected wind speed, arrival time of gale force and hurricane winds and storm tide heights. The time of arrival (in hours before eye landfall) of gale force winds and surge inundation for Bal Harbour for various category hurricanes are shown in Table 8.4.4.1.

- Step 3: Adjust the evacuation times based on the specific storm. The evacuation time components are illustrated in Figure 8.4.4.2 and explained in Table 8.4.4.2.

- Step 4: Notify all agencies when an evacuation order time is established so that may make necessary adjustments.

- Step 5: Issue the evacuation order.

In essence, the more intense the storm, the longer the lead time necessary to successfully evacuate residents from the danger zone. In some cases, it may be necessary to issue an evacuation order to residents of Bal Harbour 36 to 48 hours before the expected landfall for an intense storm. The probability of expected landfall in Dade County may be as low as 20 percent at this time.

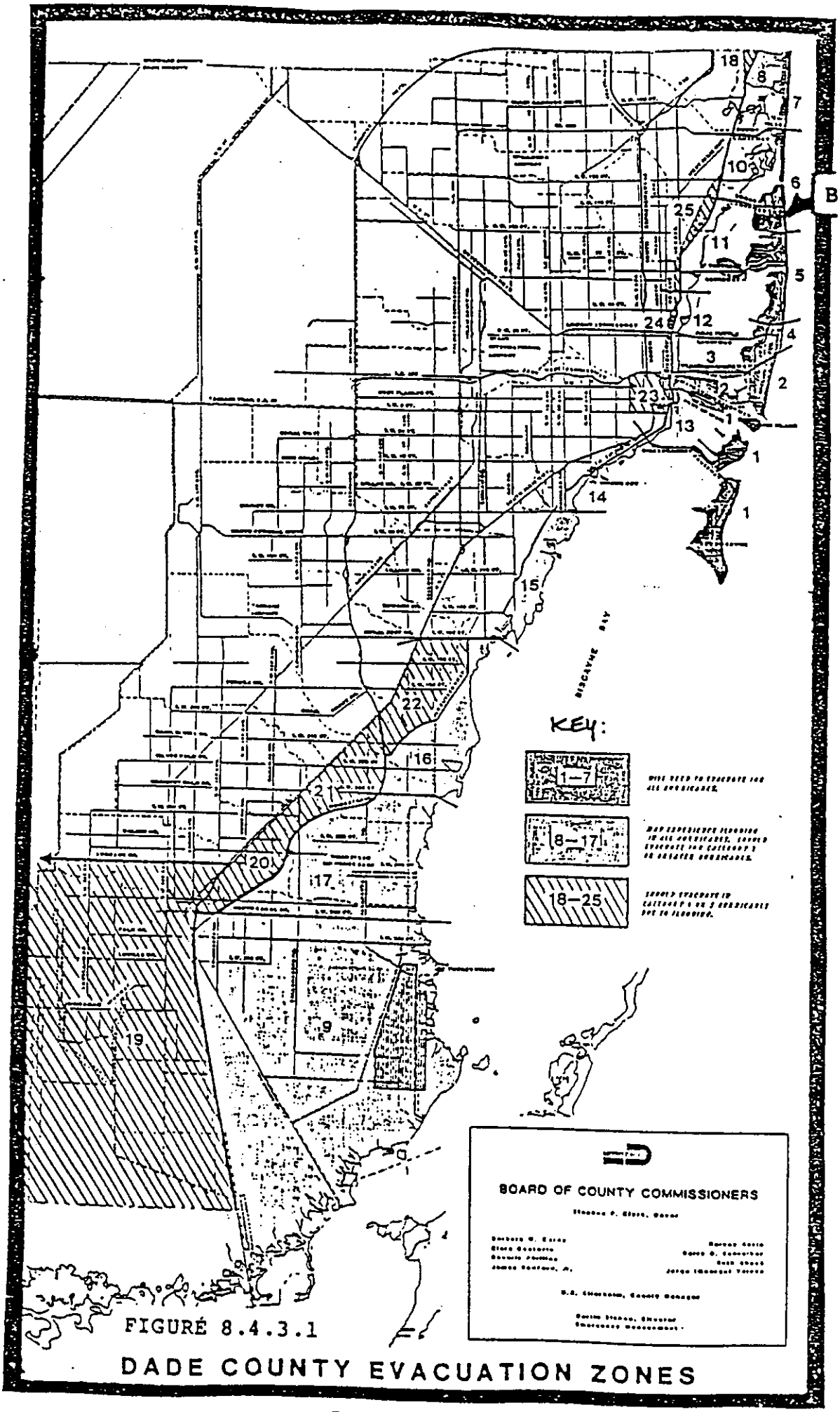
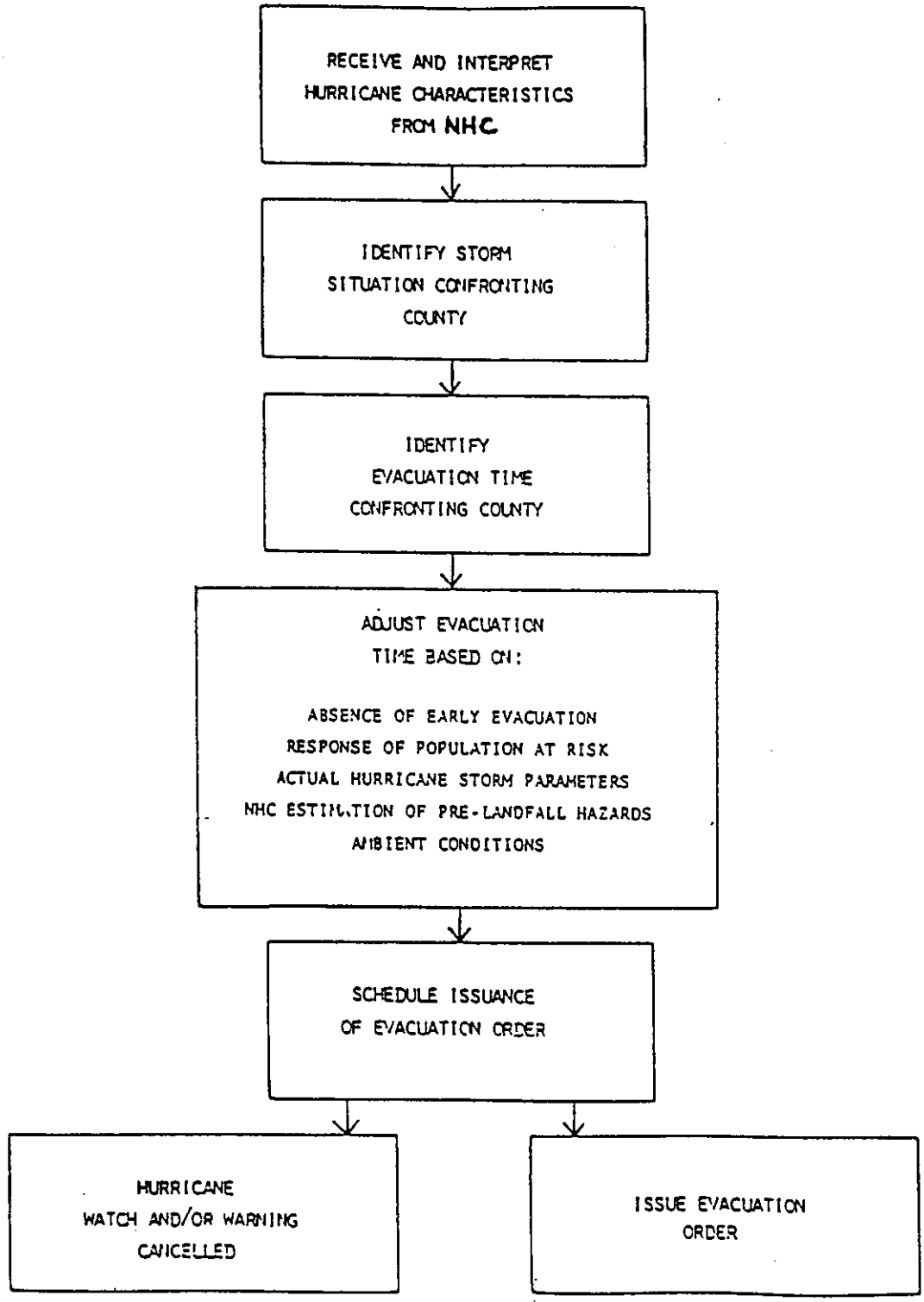


FIGURE 8.4.3.1

DADE COUNTY EVACUATION ZONES

FIGURE 8.4.4.1

FRAMEWORK FOR EVACUATION DECISION MAKING



8.4.5 Hurricane Evacuation Levels

The Hurricane Procedure Plan establishes various evacuation levels based on recent tropical storm experience. The levels build upon one another to allow for a staged evacuation. For example, a Level One evacuation for the Florida Keys may be implemented the day before it becomes necessary to evacuate in Dade County. A Level Two evacuation may be ordered for Dade County and then followed by a Level Three, etc., to prevent overcrowding of the Dade County roadway systems.

Descriptions of the levels are found in Table 8.4.5.1. Announcements of evacuations are made by zip code and geographic location to assure residents are properly notified. Bal Harbour Village residents will be affected by Evacuation Level 2 and up.

TABLE 8.4.4.1

BAL HARBOUR VILLAGE
ROADWAY POINT PRE-LANDFALL HAZARD TIMES
FOR VARIOUS CATEGORY HURRICANES[1]

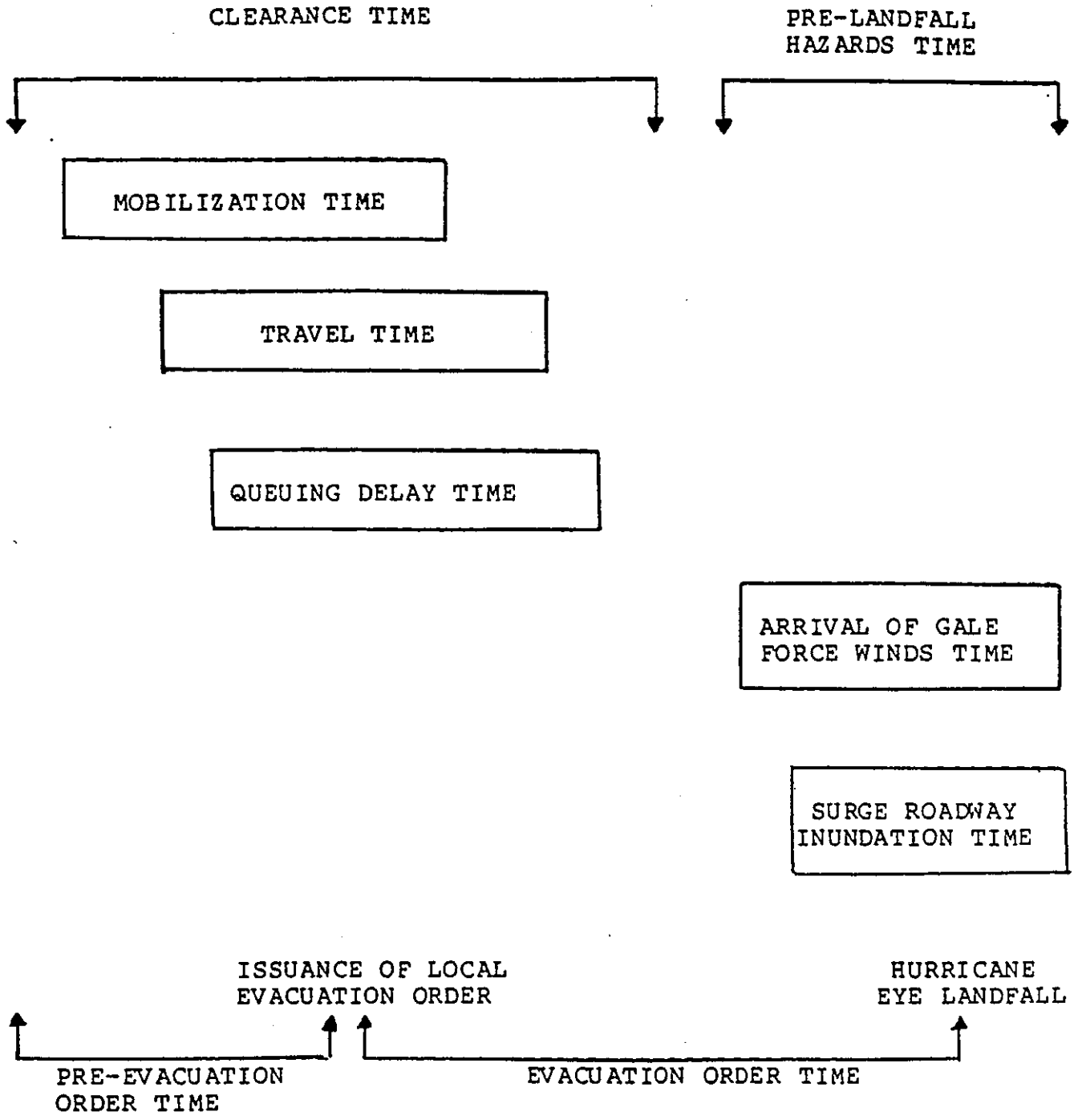
	Time of Arrival (In hours Before Landfall) of:			
	Gale Force Winds		Surge Inundation	
Location	Cat. 1-3[2]	Cat. 4-5[2]	Cat. 1-3[2]	Cat. 4-5[2]
Intersection of Collins Avenue & 96th Street, Bal Harbour	6.5 - 9.5 Hours	10.5 - 11.5 Hours	1.5 Hours	1.0 - 1.5 Hours

[1] Source: Lower Southeast Florida Hurricane Evacuation Study

[2] See Table 8.1.1 for Saffir/Simpson Scale of hurricane intensity

FIGURE 8.4.4.2

EVACUATION TIME COMPONENTS[1./2./]



1./ For definitions see Table 8.4.4.2.
2./ Source: Metro Dade Hurricane Procedure Plan.

TABLE 8.4.4.2

DEFINITIONS OF EVACUATION TIME COMPONENTS

- Clearance Time is the time required to clear all vehicles evacuating in response to a hurricane situation from the roadways. Clearance time begins when the first evacuating vehicle enters the road network (as defined by a hurricane evacuation behavioral response curve) and ends when the last vehicle reaches it's destination. Clearance time includes the time required by evacuees to secure their homes and prepare to leave (referred to as mobilization time), the time spent by evacuees traveling along the road network (referred to as travel time), and the time spend by evacuees waiting along the road network due to traffic congestion (referred to as queuing delay time). Clearance time does not relate to the time any one vehicle spends traveling on the road network.

- Pre-Landfall Hazards Time is the time frame immediately before hurricane eye landfall within which evacuation should not be carried out due to the effects of the arrival of sustained gale force winds (39 mph).

- Post-Evacuation Order Clearance Time is the clearance time remaining after the evacuation order is issued. This time component added to the pre-landfall hazards time results in evacuation order time.

- Pre-Evacuation Order Time refers to a period of time prior to issuance of the evacuation order in which a certain percent of evacuees have already left home and entered the road network.

- Evacuation Order Time is the time in hours before hurricane eye-landfall by which the evacuation must be given to allow all evacuees time to reach their chosen destinations.

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[1] See Figure 8.4.4.2 for relationship of components.

[2] Source: Metro-Dade Hurricane Procedure Plan.

8.4.6 Hurricane Refuges

8.4.6.1 Policy

Hurricane refuges (shelters) are provided to protect persons who have no other place of safe haven from hurricane winds or storm tide flooding. Refuges are provided primarily by Dade County Public Schools and are managed by the principal, a cafeteria manager, and custodial staff. American Red Cross supplements the school staffing. Each hurricane season the Office of Emergency Management will publish an official Dade County Hurricane Refuge list that has been coordinated with all agencies, and should be considered the official county reference.

8.4.6.2 Locations of Refuges for Bal Harbour Village

The following hurricane refuges are provided for Zone 6 including Bal Harbour Village (see Figure 8.4.6.1 for locations).

North Miami Junior High School (Refuge No. 6A)

- Address: 13105 N.E. 7th Avenue
- Route to Refuge: Broad CSWY join 125 St.; West to Northeast 7th Avenue; North to Refuge.
- Capacity: 500 persons

TABLE 8.4.5.1

DADE COUNTY HURRICANE EVACUATION LEVELS

Level of Evacuation	Description/Affected Zip Codes
• Level One Evacuation	Evacuation for Monroe County residents only.
• Level Two Evacuation	All residents east of Collins Avenue, all residents on Key Biscayne and all mobile home residents must evacuate. Residents east of US 1 in North Dade, Biscayne Blvd., S. Bayshore Dr., and Old Cutler Road or the Turnpike Extension in the south end of the County may experience flooding. Affected Zip Codes In Numerical Order: 33139 East of Collins Avenue 33140 East of Collins Avenue 33141 East of Collins Avenue 33149 All 33154 East of Collins Avenue 33160 East of Collins Avenue
• Level Three Evacuation	All residents east of the Intracoastal Waterway, all residents of Key Biscayne (Evacuation Zones 1-7) and all Mobile Home residents must evacuate. Affected Zip Codes In Numerical Order: 33131 East of Intracoastal Waterway 33132 East of Intracoastal Waterway 33139 All 33140 All 33141 All 33149 All 33154 All 33160 East of Intracoastal Waterway

Level of Evacuation	Description/Affected Zip Codes
• Evacuation Level Four	All residents of Biscayne Blvd., S. Bayshore Dr., Main Highway, Ingraham Hwy, Old Cutler Rd., Homestead Turnpike Ext., and US 1 (Evacuation Zones 1-17) and all mobile home residents must evacuate. Affected Zip Codes In Numerical Order: 33032 East of Turnpike Extension 33033 East of Turnpike Extension 33035 All 33039 All 33129 East of S. Bayshore Drive 33131 East of Biscayne Boulevard 33132 East of Biscayne Boulevard 33133 East of S. Bayshore Drive 33137 East of Biscayne Boulevard 33138 East of Biscayne Boulevard Affected Zip Codes In Numerical Order: 33139 All 33140 All 33141 All 33143 East of Old Cutler Road 33149 All 33154 All 33156 East of Old Cutler Road 33157 East of Old Cutler Road 33158 East of Old Cutler Road 33160 All 33161 East of US 1 33180 East of Biscayne Boulevard 33181 All 33189 East of Old Cutler Road 33190 East of Old Cutler Road

Level of Evacuation	Description/Affected Zip Codes
• Evacuation Level Five	All residents east of Dixie Hwy., Biscayne Blvd. and Florida East Coast Railroad in north end of the County; residents south of I-395, north of S.W. 8th Street and east of S.W. 12th Avenue in the downtown area; residents east of US 1 to SW. 296th Street (Avocado Dr.); and all residents south of S.W. 296th Street (Evacuation Zones 1-25) and all mobile home residents must evacuate. Affected Zip Codes In Numerical Order: 33030 South of Avocado Drive 33032 East of US 1 33033 All 33034 All 33035 All 33039 All 33128 All 33129 East of South Bayshore Drive 33130 All 33132 All 33133 East of South Bayshore Drive 33136 South of 1-395 33137 East of F.E.C. RR Tracks Affected Zip Codes In Numerical Order: 33138 East of F.E.C. RR Tracks 33139 All 33140 All 33141 All 33143 East of Old Cutler Road 33149 All 33154 All 33156 East of Old Cutler Road 33157 East of US 1 33158 East of Old Cutler Road 33160 All 33161 East of F.E.C. RR Tracks 33170 East of US 1

Level of Evacuation	Description/Affected Zip Codes
Evacuation Level Five	33180 All 33181 All 33189 East of US 1 33190 All

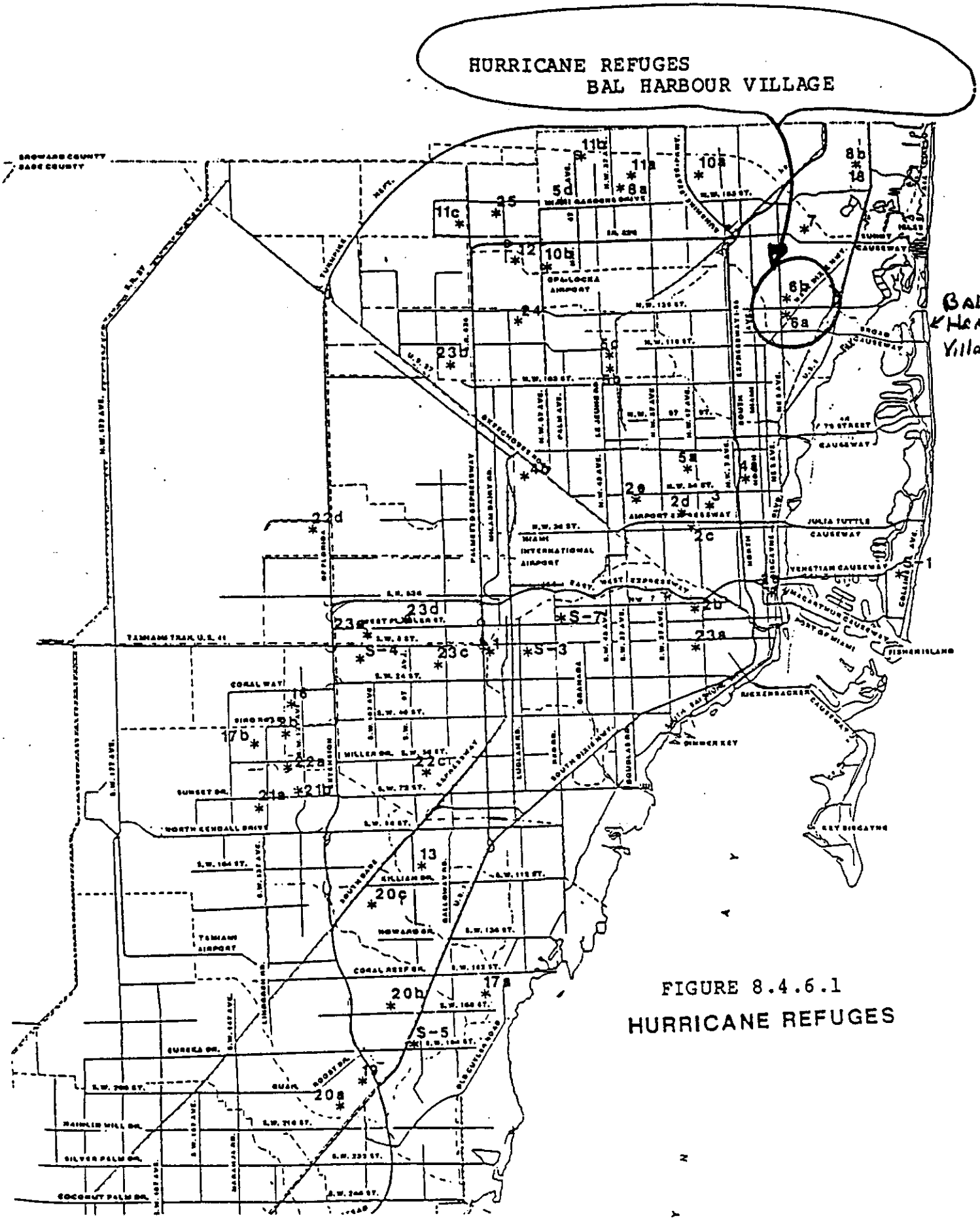


FIGURE 8.4.6.1
HURRICANE REFUGES

North Miami Senior High (Refuge No. 6B)

- Address: 800 N.E. 137th Street
- Route to Refuge: Broad CSWY joint N.E. 125th Street; West to N.E. 8th Avenue; North to Refuge
- Capacity: 2,000 persons

It is expected from statistical studies that approximately 15 percent of the residents of Zone 6 will use these refuges during a Category 1 - 3 storm. Higher percentages (up to 25 percent) will use the facilities during a Category 4 - 5 storm. The remainder of the populace will be accommodated by friends and relatives or in motels/hotels. The total capacity of the designated refuges for Zone 6 is 2,500 persons. Fifteen percent of the zone population is 2,264 persons. Thus, the facilities appear to be adequate for Category 1 - 3 storms, but overcrowding will occur for severe storms unless additional refuges are designated.

To assist residents who are without their own transportation to the refuge the following Metrobus Hurricane Pickup Point has been designated for Bal Harbour Village:

Pickup Point No.	Location	Refuge Designation
6a-1	Bal Harbour City Hall 655-96th Street	North Miami Junior-High School (6A), 13105 N.E. 7th Ave.

Designations may be altered due to operational requirements. Additional pickup points may be serviced by request to the Metro EOC once a group has formed.

8.4.7 Bal Harbour Hurricane Evacuation Information

8.4.7.1 Population at Risk

The population a risk at Bal Harbour Village and in need of evacuation during a hurricane event consists of two component groups - the permanent (resident) population and the seasonal (visitor) population. Day visitors would not be included in the population at risk as they would logically not be present during the approach of a severe storm. The seasonal population would be associated with the hotels at Bal Harbour.

Based on 1990 census data updated to 1995, Bal Harbour Village has an estimated permanent population of 3,248 persons[2]. The Village has a total complement of 876 hotel rooms[2]. Assuming an average summer occupancy rate

of 58.5 percent and an average of 1.5 persons per occupied hotel room[3], a total of 769 persons constitute the average seasonal visitor population. Thus, the total population in need of evacuation will consist of 4,017 persons. This is the population at risk. However, behavioral studies indicate that only 15 percent of the evacuating population will use the designated hurricane shelters.

Thus, for Bal Harbour Village, approximately 602 persons will need to be evacuated to the designated shelters. The others will seek accommodations elsewhere.

[1] Source: 1995 EAR-CAS.
[2] Source: 1995 EAR-CAS.
[3] Source: Technical Data Report - Lower Southeast Florida Hurricane Evacuation Study (June 1983).

8.4.7.2 Transportation and Hazard Constraints on Evacuation Routes

The principal evacuation route from Bal Harbour Village to the mainland and the designated shelters is Broad Causeway. The evacuation route over this causeway is constrained by the estimated two-way capacity of the roadways connecting it to the mainland expressway system such as Northeast 125 Street with a capacity of only 2,720 vehicles per hour. The structuring of traffic movement on this evacuation route is necessary to improve capacity and to minimize clearance times. Evacuees should be channeled into this designated corridor regardless of final destinations. Since traffic signals along this east-west route do not provide the necessary "green time" required in an evacuation situation, the use of police officers to control the key intersections will maximize the traffic flow. All draw/swing bridges needed for evacuation should be locked in the "down" position during a hurricane warning. Also, the payment of tolls by evacuation traffic should be suspended during the evacuation procedure.

It is also recommended that at least two traffic control personnel be positioned at each key intersection so that one can assist disabled vehicles as needed. A tow vehicle should also be positioned at each critical link to facilitate the removal of immobilized vehicles. Roadways that historically experience flooding due to rainfall alone should be monitored for vehicle distress and help.

8.4.7.3 Special Needs of Elderly, Handicapped and Hospitalized

As there are no hospitals, clinics or elderly care facilities at Bal Harbour, the population with special needs will consist mainly of the elderly and handicapped. In fact, census tract analyses show that in 1990 the median age of permanent residents in the general area of Bal Harbour Village was 69.70 years old. Dade County maintains a listing of persons requiring evacuation assistance which is forwarded to the Village upon need.

Metrobus will provide transportation to the designated public refuges for the needy. At this time there is only one designated pick-up point for residents of Bal Harbour, namely at Bal Harbour City Hall, 655 96th Street. However, if desired by local citizens and Village officials, additional locations may be designated following a more detailed survey of needs. Pick-up points must include the following:

Easy access (for residents and bus drivers)

Sheltered waiting area

Access to telephone

Designated contact person

The best location for a pick-up point is normally in a condominium with a large elderly population requiring this assistance. The Dade County Office of Emergency Management should be notified of the designation of any additional pick-up points.

Special transportation assistance is available for those residents needing wheelchair or stretcher transportation to a public refuge. Persons requiring this assistance must fill out a card entitled, "If You Need Special Help In An Emergency" (see Figure 8.4.7.1), and register with the Office of Emergency Management so that arrangements can be made.

The Office of Emergency Management maintains the following telephone lines to assist residents with information about hurricane plans and procedures:

596-8700 General Information (normal business hours)

596-8735 Hurricane Hotline (this number is answered during business hours and is manned on a 24-hour basis during an emergency)

The need for neighborly assistance is critical to the safe evacuation of the transportation-dependent residents. Measures to improve the participation of citizens in hurricane evacuations include:

Train citizen coordinators or officials of homeowner or tenant associations to identify people with special needs and organize neighborhood self-help activities; and

Establish a public education program to disseminate emergency preparedness information to the general public; and

Enlist the assistance of the Dade County Office of Emergency Management to coordinate volunteer agencies in a disaster.

8.4.7.4 Measures to Maintain or Reduce Hurricane Evacuation Times

The following measures are recommended to maintain or reduce hurricane evacuation times from Bal Harbour Village:

The Village of Bal Harbour should undertake a public education effort, encouraging all residents of the Village to develop a personal, family or peer group hurricane plan.

Thirty-six (36) hours before hurricane landfall (at the time a Hurricane Watch is issued) all persons, including tourists and visitors who have no compelling reason to remain at Bal Harbour should be encouraged to evacuate the area for the mainland and/or to exercise their option to seek safety in secure locations.

Immediately following the issuance of a Hurricane Watch all residents should be instructed to follow the guidelines for securing their residences, preparing for a hurricane, and to evacuate to the mainland as soon as possible.

Bal Harbour should cooperate with the Dade County Office of Emergency Management in the issuance of media releases and protective action recommendations to the public over local radio and TV stations. Such releases should include closing notices, traffic control measures, shelter openings and fuel availability reports.

IF YOU NEED SPECIAL HELP IN AN EMERGENCY

105.01-120 Rev. 1/85

PLEASE FILL OUT THIS CARD AND PLACE IN MAIL.

YOUR NAME: (LAST) (FIRST) (MI)	YOUR AGE:	SEX: ☐ M ☐ F
YOUR ADDRESS: (STREET) (CITY) (ZIP CODE)	YOUR TELEPHONE #:	
YOUR DOCTOR: NAME:	DOCTOR'S PHONE:	
MEDICATION YOU USE: (PLEASE LIST)		
EMERGENCY CONTACT: NAME: RELATIONSHIP:	PHONE:	

YOUR SPECIAL CONDITION:

☐ EYESIGHT ☐ HEARING ☐ SPEECH ☐ MENTAL ☐ RESPIRATORY

☐ WALKING ☐ OTHER: (PLEASE EXPLAIN)

SPECIAL ASSISTANCE YOU WILL NEED: (CHECK ONE)

☐ ADDRESS OF PICK-UP POINT ☐ WHEELCHAIR PICK-UP ☐ STRETCHER ☐ OXYGEN

☐ DIALYSIS ☐ OTHER: (PLEASE EXPLAIN)

WHAT AGENCIES HELP YOU NOW:

FOR EMERGENCY MANAGEMENT USE ONLY! /ZONE: /PICKUP BY: /CONFIRMED BY:

COMMENTS: /CONFIRMED DATE:

REGISTRATION

Emergency Management is required by law to register People With Special Needs (PSN). We need home health agencies to assist us in identifying people in the community who need our assistance. We categorize PSN in 3 groups, people who need help but aren't in a designated evacuation area, people who need help and can go to public shelters; and people living anywhere in the community who are on IV Drips, Respirators, etc. who need to be cared for in a hospital.

Home Health Agencies should completely fill out registration cards on their clients (zip codes are essential) and note which category people fall into. We accept registration cards year round. We would appreciate that registration of clients be as complete as possible by June so that we can run computer sheets for you to verify in August.

EVACUATION

Anyone living in a designated evacuation zone (generally described as east of U.S.1 or S. Dixie Hwy - Emergency Management will determine specific zone) or mobile home will be ordered to evacuate. Persons not living in these areas but requiring electricity and/or constant care need to be evacuated to a medical facility. Evacuation orders will be broadcast on TV and radio stations.

TRANSPORTATION

Those people that can go to public shelter and need transportation will be picked up by Dade County. Those persons that need to go to a hospital will need to arrange their own transportation. If the attending nurse can transport the client to the hospital they will be providing a much needed service.

SHELTER

Public shelters are operated by the Red Cross in Public Schools. Shelters provide safe refuge from the storm's fury and some food service. There are no no creature comforts and no individualized attention at public shelters. Some clients might find public shelter very uncomfortable.

SECTION 9: POST DISASTER PLANNING CONCERNS AND COASTAL HIGH-HAZARD AREAS

9.1 General

Following a major natural disaster, such as a hurricane, there is a period devoted to damage assessments, cleanup and rebuilding. The typical reaction is to rebuild everything to the condition that existed before the storm. Rebuilding to pre-storm conditions may be imprudent and result in repeated damage to the same structures. The special vulnerability of certain areas to damage by hurricanes or other storms should not be ignored, rather it should be used to revise land use and capital facilities plans in order to make the community safer and reduce the inconveniences and dislocation caused by storms. In order to respond quickly after a storm with alternative land use and capital facility plans, it is necessary to examine in advance the areas, structures, and facilities most likely to be damaged and provide alternates to current land use plans and facility sites which can be adjusted following a storm event.

This section of the Coastal Management Element is devoted to post disaster planning including discussions of damage assessment and cleanup procedures, as well as post-disaster redevelopment alternatives with special attention to the high hazard area of Bal Harbour Village.

9.2 Damage Assessment and Federal Disaster Assistance Program

Damage assessment is an operation which will begin during the recovery stage, specifically during restoration. It is an important step in restoring the community to normal by providing the mechanism for federal financial assistance, which is necessary for long term recovery. The extraordinary expenses incurred by the Bal Harbour and Dade County governments may in some cases be reimbursed by the Federal Emergency Management Agency (FEMA). The cost to local residents in personal and business property damage may make them eligible for federal assistance in the form of government sponsored loans.

In order to qualify for federal assistance, the community must have suffered damage that will allow a declaration of emergency by the Federal Emergency Management Agency (FEMA), or a disaster declared by the President. It is the responsibility of local government to estimate initial damage in order to trigger federal response. Once that federal response is assured, additional and more specific damage estimates are necessary. Guidelines for estimating the damage and a basic organization and structure to accomplish that objective are presented in Annex E of the Hurricane Procedure Plan.

The Metro-Dade Public Works Department has been designated as the coordinating agency for damage assessment. As necessary, the Director of

Public Works or his representative may require the use of assets from multiple agencies to accomplish this task; the scope of which will become apparent as initial assessments are reviewed.

County agencies which will be called upon to assist in various phases of damage assessment are:

- Metro-Dade Building and Zoning Department
- Metro-Dade Cooperative Extension
- Metro-Dade Aviation Department
- Metro-Dade General Services Administration
- Metro-Dade Environmental Resources Management
- Metro-Dade Housing and Urban Development
- Metro-Dade Water and Sewer Department
- Metro-Dade Transit Authority
- Metro-Dade Solid Waste Collection
- Metro-Dade Park and Recreation Department
- Dade County Public Schools
- Dade County Chapter, Red Cross

While these County agencies complete damage assessments and provide teams to assess community damage, it is the responsibility of each municipal government to conduct damage assessments within their jurisdictions. This is accomplished through close cooperation and coordination with the County to insure that the methodology for such assessments, scope and documentation are consistent so that federal funds are obtained in a timely manner.

Two types of federal assistance are authorized; emergency and permanent. Emergency work includes efforts to save lives, protect property, and maintain operation of essential facilities until permanent restoration can be made. Permanent work involves actions necessary to repair, restore, reconstruct or replace public and certain private non-profit facilities damaged or destroyed by the hurricane.

After a declaration of emergency is issued by the Governor, as an Executive Order under Florida Statute 252, the Governor requests the President to declare the area a disaster area. Under Public Law 93-288, FEMA is responsible for administering the assistance program. Damage must be severe enough to indicate effective response is beyond the capability of Dade County or the Village of Bal Harbour.

Federal disaster grants administered by FEMA can take several forms, namely, categorical grants, flexible funding grants or a grant-in-lieu option.

Categorical grants are issued based upon the estimated cost of restoring facilities to their pre-hurricane conditions and are designed as follows:

- To restore projects on a project-by-project basis.

- For all debris clearance and emergency work on project applications for which the approved amount is over $25,000.

- For all private non-profit facilities for which applications must be submitted by a municipality. Reimbursement is through a "government sponsor" except for debris removal, in which case reimbursement is made directly to the private/non-private organization.

Flexible funding grants may be selected in lieu of categorical grants when the applicant wishes to repair or restore certain selected public facilities or to construct new public facilities designed to better meet the needs of the community.

However, such funds may not be used to repair facilities not damaged by the disaster or to accomplish maintenance.

The grant-in-lieu option is a variation of the categorical grant. An applicant who desires to construct a larger or more elaborate replacement in lieu of authorized work may apply for a grant equal to the estimated amount required for repair or replacement of the facility to predisaster condition.

Federal grant assistance is provided on the basis of a Project Application submitted by Dade County and each municipality and approved by the Governor's authorized representative and the FEMA Regional Director. To obtain approval of a Project Application assurance must be conveyed to FEMA that funds are available in accordance with the 75 percent federal/25 percent state and local political subdivision cost-sharing obligation. This assurance is conveyed in two contractual modes:

- When the Project is signed

- By contractual agreement between the state and Dade County or municipality defining the cost-sharing obligation each will underwrite. The percentage underwritten by each is arrived at by negotiations between the state and Dade County or municipality

A detailed survey will be made at each damage site and a Damage Survey Report (DSR) will be completed detailing the scope of work required and the estimated costs of restoration. A sample DSR form is included here as Figure

9.2.1. These DSR's become a basic part of the Project Application, which must be filed within 30 days following an emergency declaration by the President or within 90 days of a major disaster declaration, unless time limits the initiation and completion of various types of projects.

Prior to submitting a Project Application to the Metro-Dade Public Works Department for forwarding through the Metro-Dade Office of Emergency Management to the Florida Bureau of Emergency Management, the applicant **MUST** have defined the percentage of the cost-sharing obligation it has agreed to underwrite.

The Project Application is then, after review and recommendations by state, forwarded to FEMA. FEMA then reviews and analyzes each application and then returns it approved, approved subject to revisions, or disapproved. Once approved a change in the scope of work is permitted, but an interim inspection may be required. An appeal procedure exists for cases in which a state or local government believes that the decision rendered by FEMA was unjustified. The appeal is made in writing by the state (or if the state refuses, by the, applicant) to the FEMA Regional Director. If the Regional Director denies said appeal, the state (or applicant) may then appeal to the FEMA Director, whose decision is final.

Throughout the entire process each applicant must maintain accurate records of activities and expenditures. These records are subject to state/federal audit and are the basis for the reimbursement of incurred costs. In the event problems arise during reconstruction, the applicant must immediately notify the Office of Emergency Management. The Office will then notify the Florida Bureau of Emergency Management and request that an interim inspection of the problem site be conducted by state and/or federal authorities. State/federal authorities may also request an interim inspection to determine the progress of a project and to check the completeness and validity of the original DSR. A supplementary DSR may be filed with the state if the cost or scope of work has significantly changed. The supplementary DSR is forwarded to the state through the Office of Emergency Management.

Final inspection will be conducted to verify the completion of work, as approved by FEMA. The applicant will then submit through the Office of Emergency Management a request for final payment to the Florida Bureau of Emergency Management. The state will audit all claims for reimbursement and when documentation is in order, forward to FEMA the request for final payment.

ADDRESS _____

OWNER _____ PHONE _____
B L W H

TYPE

☐ (A) BUSINESS — IF BUSINESS OR GOVERNMENT, WHAT TYPE

√ ☐ (B) RESIDENCE _____

_____

☐ (C) GOVERNMENT _____

EMPLOYEES _____ INSURED YES/NO

DAMAGE

☐ (D) MINOR windows broken, loose boards, etc.

√ ☐ (E) MODERATE fire and smoke damage, paint peeling, roof damage

☐ (F) MAJOR structural failure of roof, walls, etc.

☐ (G) TOTAL shell only, walls down

FROM

☐ (1) WIND

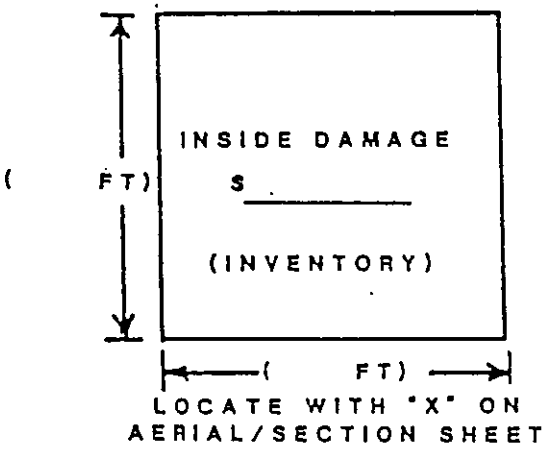
☐ (2) FLOOD.

√ ☐ (3) RAIN

☐ (4) FIRE

☐ (5) LOOTING

☐ (6) OTHER



CONDITON OF SURROUNDING AREA _____

_____

_____

COMMENTS _____

_____

SURVEYOR _____ DATE TIME _____

EOC USE ONLY

SQUARE FEET _____

DAMAGE $ _____

ASSESED VALUE $ _____

METRO DADE

METROPOLITAN DADE COUNTY, FLORIDA

DAMAGE SURVEY REPORT (DSR) # _____

ATTACH PHOTO

FIGURE 9.2.1

9.3 Post Disaster Planning Concerns Relative to the High Hazard Area

The area of Bal Harbour village which is projected to experience the most severe damage is the high-hazard area. In the case of Bal Harbour Village, this area consists of the area seaward of the Coastal Construction Control Line (CCCL) (see Maps 6.4.1 and 6.4.2 above).

Existing structures in this area include portions of several high rise hotels and condominiums, as well as, such ancillary structures as cabanas, pools, decks, tennis courts, parking lots and seawalls. Also included is a jogging path and the restored public beach seaward of the collective historic bulkheads.

Following the passage of a storm there will be pressure to reconstruct all of these structures to their pre-storm condition. Appropriate facilities for this high hazard area for which there is absolute consensus of propriety would be public beach access facilities, recreation facilities (pools, jogging paths, tennis courts, etc.) and renourished beach. However, with respect to damaged structures used for habitation, several options are available to the Village.

The first item which must be decided is the threshold of damage beyond which the Village will start to consider alternatives to the existing situation. Damage equal to or greater than 50 percent of the value of the structure is the standard used by the National Flood Insurance Program and is the possible standard for the Village to use. Once a structure suffers damage greater than 50 percent of its value, the Village would require the Owner to rebuild landward of the existing structure. Structures seaward of the control line should be considered to be rebuilt landward of the control line unless the Village and state permitting agencies approve otherwise. The Village could also consider buying the most severely damaged structures and their lots. Since the majority of the vulnerable structures are concrete and steel high rise structures, the cost would be prohibitively high making this option impractical.

In recognition of the need to establish a firm yet reasonable policy relative to reconstruction, it would appear that the following option should be considered:

Threshold of Damage: 50 percent of the value of the structure coupled with the undermining of or irreparable damage to the foundation of that portion of the structure seaward of the coastal construction control line.

More than likely it would take a very severe (Category 5) storm to create this situation and it is only under this extreme circumstances that a retreat posture should prevail. It should be noted here that in a severe storm all of the existing ancillary structures seaward of the coastal construction control line will likely suffer extensive damage. No doubt swimming pools will be filled with sand and

debris, cabanas will be destroyed and tennis courts obliterated. Also first floor lobbies of hotels will be flooded and filled with sand, glass windows will be broken and electrical equipment damaged. Thus after the storm, decisions will need to be made as to how the structures will be reconstructed. Firm policies along these lines need to be developed (see Section 14 below).

The public beach is certain to be damaged (eroded) in any storm. Maintenance of the beach is a joint effort by Bal Harbour Village, Dade County and the U.S. Army Corps of Engineers. The options are to renourish the beach and repair the groins (if damaged) or to do nothing and allow the eroded beach to rebuild itself by natural processes.

The Village of Bal Harbour (and presumably) the other joint entities are committed to a policy of renourishment. Thus, following the passage of a severe storm the beach will be renourished. Such a project will be jointly funded by the participants and it should be included in any request for Federal Disaster Assistance in view of its important function in hurricane protection.

SECTION 10: PUBLIC ACCESS

10.1 Inventory of Existing Facilities

Public access facilities at Bal Harbour Village which provide access to the public beach consist of 96th Street extension and ramp to the beach and a concrete fenced access ramp to the beach at Baker's Haulover Inlet. Public parking facilities are provided at this latter location in two lots located under Baker's Haulover Bridge. In the northern lot there are 40 spaces, two (2) of which are reserved for the handicapped. In the southern lot there are 20 spaces, two (2) of which are for handicapped use. At the 96th Street access point, there are twelve (12) public parking spaces provided at the bank located in the triangle formed by 96th Street, Collins Avenue and Harding Avenue. Thus, at Bal Harbour there are a total of 72 public parking spaces associated with two beach access points. There are no public access points to Indian Creek or Biscayne Bay.

Although limited, these parking spaces should accommodate more than 1,100 beachgoers in a day assuming four (4) persons per vehicle and a turnover factor of four. However, it should be pointed out that some of the available spaces, particularly those at the bank, will be used by persons not using the beach and that the demand will not be uniform through the day. Persons using the spaces provided at the inlet often fish from the jetty or use the beach jogging path rather than using the beach for swimming or sunbathing.

Bal Harbour also has a private marina located on Indian Creek. This facility serves the needs of the yacht club members and is not available to the general public. The existing facility is apparently meeting current private needs in this

area, however. Public access facilities at Bal Harbour are depicted on Map 10.1.1

10.2 Analysis of Future Needs

Existing public access facilities at Bal Harbour are limited. This situation exists partly due to the manner in which the Village was developed, i.e., as a luxury private development. Opportunities to improve the situation at this juncture are also limited. Nevertheless, future development of the remaining oceanfront tract noted in Section 4.3 above or the potential redevelopment of other tracts will provide opportunities for the Village to negotiate for other access points and parking spaces if possible within the overall context of a future development proposal. The Village should set a goal of at least one (1) additional beach access point with associated public parking to augment existing facilities.

In view of the level of development at Bal Harbour, it is not realistic to anticipate any future access facilities to Biscayne Bay or the establishment of any future public marinas or boat ramps. However, it should be noted that an excellent public access facility to both the beach and bay exist just north of Bal Harbour at Haulover Inlet Beach Park. This facility will continue to meet the regional needs for public access to area waters.

SECTION 11: VILLAGE INFRASTRUCTURE

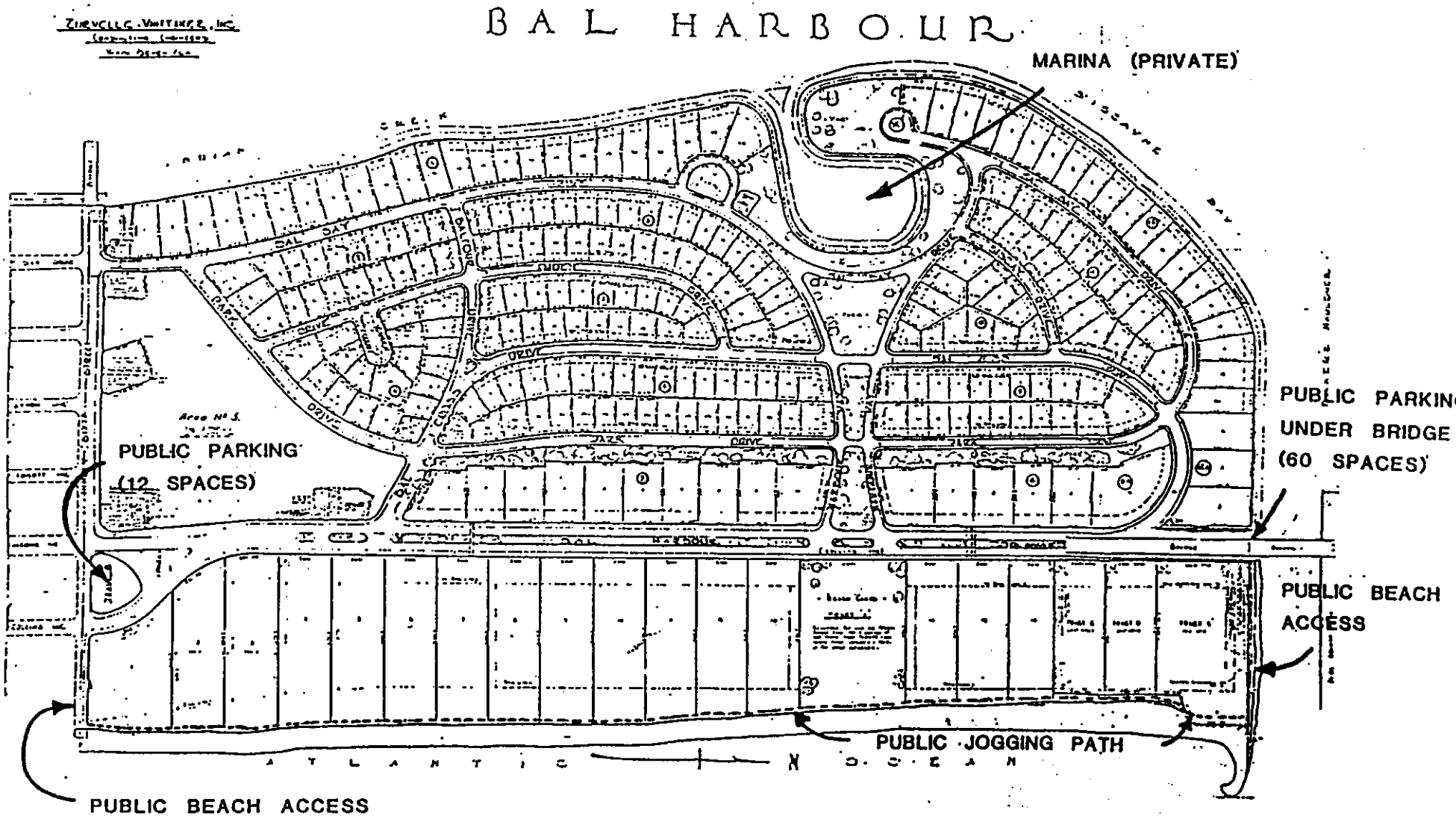
11.1 General

The following summarizes the existing and needed infrastructure serving the Village of Bal Harbour. This information is analyzed in greater detail in the Transportation Element; General Sanitary Sewer, Solid Waste, Drainage and Potable Water Element; and in earlier sections of this element, as applicable.

11.2 Existing Facilities

11.2.1 Roads, Bridges and Causeways

In Bal Harbour the main arterials serving the Village are 96th Street and Collins Avenue (State Road A1A). Both of these routes are on the State/Federal Aid Systems. In Dade County the operation of all public traffic facilities (streets and highways) are the responsibility of Metro Dade County Department of Public Works and/or Florida Department of Transportation.



MAP 10.1.1.. PUBLIC ACCESS.. FACILITIES

Ninety-Sixth Street begins at the Ocean and extends across the south boundary of the Village (being the north boundary of Surfside), to the Indian Creek Bridge, Bay Harbor Islands, and continues westerly to the mainland and via 125th Street to 1-95. In Bal Harbour the route has a variable width, but provides substantially two lanes of traffic flow in each direction with a fifth lane for turning movements. It was recently upgraded to be symmetrical with the bridge and to have a uniform width to Harding Avenue. It serves the City Hall and main entrance of the Bal Harbour Shopping area. Collins Avenue (SR A1A) also known as Bal Harbour Boulevard, is a six lane divided parkway from the bridge over Haulover Cut south to the Surfside City limits. It provides local service to the hotels along the ocean as well as providing north-south arterial service from Miami Beach to North Miami Beach. All other internal streets are privately owned/maintained.

The adjacent communities needs for access concentrate on out-of-village traffic on the two arterial streets. Any restriction of flow would affect these adjacent communities. The recent upgrading of 96th Street resulted from normal traffic growth and the expansion of the Bal Harbour shops. These recent improvements are expected to be adequate for the foreseeable future.

The non-automobile traffic options include bicycle, pedestrians, and bus. The first two are very localized. The third, mass transit, provides interurban service to adjacent areas within Dade County. Future improvements in Mass Transit will exert only nominal impact on circulation in Bal Harbour, however, a continuation of no less than present levels of service is necessary for tourist and employees of the hotels and shops.

Off-street parking has been required for many years. The major businesses, the hotels, shops and bank all have off-street parking facilities. Current requirements are adequate for provisions of parking spaces.

11.2.2 Sanitary Sewer Facilities

Sanitary sewage is collected in the Village collection system and pumped via forcemain to the City of Miami Beach and thence to the Central Dade County Wastewater Treatment Facility located on Virginia Key for treatment and disposal. Existing facilities are deemed adequate.

11.2.3 Potable Water System

The Village of Bal Harbour purchases its water in bulk from the Miami Dade Water and Sewer Authority via the City of Miami Beach System. The Village maintains a 900,000 gallon ground storage reservoir located at the intersection of 96th Street and Bal Bay Drive and a water distribution system consisting of mains, valves, services, meters, blowoffs, hydrants, etc. The average daily

demand is around 1.46 million gallons (MG). The resort sector on the waterfront has the greatest demand for water averaging 70 percent of the total demand. Existing facilities are deemed adequate to meet current and future demand.

11.2.4 Drainage System

Bal Harbour has a substantially complete stormwater drainage system throughout the community. Runoff is transmitted to Baker's Haulover Inlet and Indian Creek. The beach restoration project completed in 1975 eliminated stormwater discharges to the Atlantic Ocean. The Village is essentially flat, filled land, averaging five to six feet above mean sea level. Existing drainage systems exclusively serve arterial and Village streets providing reasonable runoff and access during flood conditions. The overwhelming majority of stormwater is absorbed directly into the sandy soil.

The gravity drainage system is supplemented by a stormwater pumping station located at the Yacht Basin which evacuates collected stormwater to Indian Creek during flood periods.

The existing system is deemed adequate.

11.2.5 Solid Waste Management

Solid waste is collected by the Village Public Works Department and trucked directly to the County Resource Recovery Facility located at 6690 NW 97th Avenue in Miami.

11.2.6 Shore Protection Structures and Beach Renourishment Projects

Maintenance of the collective bulkheads along the soundfront are the responsibility of individual property owners. The Village of Bal Harbour is responsible for approximately 270 linear feet of this bulkhead which represents the sound frontage of the Public Works Compound. The bulkhead is comprised of 8-foot wide U-shaped concrete panels, tied back with 30-foot long steel rods to concrete deadmen. The wall is topped with a concrete cap. This concrete cap is in varying degrees of deterioration and is slated for replacement. Considerable improvements are located near the seawall including a ground storage reservoir, garbage pick-up vehicle parking area and the west wing of the Public Works Building. To prevent a possible failure of the bulkhead, a bulkhead capital improvements project has been proposed including a new concrete cap, the installation of concrete batter piles and the placement of boulder rip-rap along the waterward face of the bulkhead.

The steel sheet pile bulkhead along Baker's Haulover Inlet is owned and maintained by Dade County. The County also retains a 50-foot easement on either side of this bulkhead segment to facilitate periodic maintenance.

The ownership and maintenance of the beach restoration project at Bal Harbour is vested jointly in three entities by contract: the U.S. Army Corps of Engineers, Dade County and Bal Harbour. The seawalls which front on the project are owned and maintained by the individual property owners.

11.2.7 Public Educational Facilities

The Village of Bal Harbour is a planned community nearly fully developed. No large tracts of land remain in the Village except for the Beachfront Ocean Club site which is 5.5 acres in size. This tract is scheduled for redevelopment to a high rise residential development in the near future. In 1995 the Florida Legislature enacted Florida Law 95-341 which amended Chapter 163 F.S. to require local governments to identify lands within a community upon which public schools could be constructed and list in the Land Use Element in what categories schools are permitted. This would be impractical for the Village at this stage of the community's development. No land is available and the average age of residents is nearly 70 years old. The expenditure of public monies on educational facilities on a narrow barrier island would conflict with state statutes and South Florida Regional Planning Council Policies on expenditures of public monies in coastal areas such as Bal Harbour. In light of the above, the Village has no ability to comply with the new planning law provision.

11.3 Future Needs

In view of the high degree of development at Bal Harbour, future needs are centered around the maintenance, repair or upgrading of existing infrastructure as detailed above. Detailed descriptions of each project and detailed breakdowns of the cost estimates are found in the appropriate element of the Comprehensive Plan or in the above subsections.

Relative to beach renourishment, the U.S. Army Corps of Engineers has plans to continually renourish the beach at Bal Harbour when funding and sand source issues are resolved. The dynamic nature of the beach will require periodic renourishments and maintenance. Local cost shares for such will continue to come from the room tax fund established for this purpose.

11.4 Special Restrictions on Siting of Future Facilities

The Florida Legislature has enacted a coastal infrastructure policy, banning the use of State funds to build facilities in coastal high-hazard areas, unless such expenditures are consistent with the local comprehensive plan. Through a series of convoluted cross references and consistency requirements, the revised planning laws require that local comprehensive plans limit development in coastal high-hazard areas.

At Bal Harbour, the only facilities in high hazard areas called for in this element of the comprehensive plan are structures such as jetties and groins. Such facilities are necessary to protect the beach from rapid erosion due to normal littoral forces and periodic storms. Also consistent with the State's coastal infrastructure policy would be participation in future beach renourishment projects at Bal Harbour Village.

SECTION 12: SPECIAL COASTAL PLANNING EFFORTS

12.1 General

The Bal Harbour Village area has been included in a special multidiscipline planning effort entitled, Biscayne Bay Aquatic Preserve Management Plan. This plan represents an attempt to bring some consistent management to Biscayne Bay.

It is important to consider this document because none of the Village's coastal resources are isolated from influences beyond Village boundaries. Events in other areas of Dade County and adjacent counties can have substantial impacts on resources in the Bal Harbour Village area, especially the beach and bay areas.

The Biscayne Bay Aquatic Preserve Management Plan was developed by the Metropolitan Dade County Planning Department with the assistance of a Citizen Advisory Committee to guide decision making in the aquatic preserve. The preserve consists of eight units plus the Miami River as listed below.

Unit(s)	Area of Coverage
I	Sunny Isles to Broad Causeway (Including Bal Harbour Village)
II	Broad Causeway to 79th Street Causeway
III	79th Street Causeway to Julia Tuttle Causeway
IV	Julia Tuttle Causeway to Venetian Causeway
V & VI	Venetian to MacArthur Causeways and the Port of Miami
VII	Port of Miami to Rickenbacker Causeway
VIII	Rickenbacker Causeway to Biscayne National Park Boundary
Special Unit	The Miami River

The plan identifies several management opportunities relating to water quality, resource conservation, providing public access, and improving public safety within each unit. The following recommendations regarding water quality are the only ones directly applicable to Bal Harbour Village:

- Storm Water Outfalls. From the standpoint of size alone, two outfalls should receive priority for phasing out, or redesign to minimize the negative impacts of the first one inch of runoff on the waters of the Preserve: a 66-inch drain into Arch Creek and a 54-inch drain in the Bal Harbour area[1]. There are more than 100 outfalls greater than 12 feet in diameter that empty into Unit I. Those that drain large areas of heavily traveled roadways should receive priority for retrofitting if they are not already scheduled to be upgraded as part of planned roadway improvements.

- Heavy Metals. The high levels of chromium, cadmium, copper, zinc and lead in oysters in the adjacent to Unit I are indications of pollution. Possible sources include stormwater runoff and boat bottom paints. The sources and impacts of pollution should be identified.

SECTION 13: PLAN SUMMARY AND IDENTIFICATION OF SIGNIFICANT ISSUES

The Coastal Management Element of the Comprehensive Plan for the Village of Bal Harbour covers that portion of Dade County bounded on the north by Baker's Haulover Inlet, on the east by the Atlantic Ocean, on the south by 96th Street and on the west by Indian Creek and Biscayne Bay. The area encompasses about 250 acres of land which is nearly 100 percent developed. The

[1]Note: This may have reference to the 48-inch beachfront interceptor drain into Haulover Inlet. Phase out or redesign of this system is not possible at this time.

predominant land uses are low, medium and high density residential/resort. The major water-dependent use is water oriented recreation. The major land use issues revolve around how best to develop the last remaining oceanfront tract in the high density zone and the future redevelopment of other existing developed tracts.

The major natural habitat of the coastal area found at Bal Harbour is the coastal beach strand and dune system complex fronting on the Atlantic Ocean. The major land mass is dominated by man influenced habitat including maintained greenspace.

Waters in and around Bal Harbour enjoy good to excellent water quality mainly as a result of the flushing action afforded by Baker's Haulover Inlet. Principal sources of pollution include stormwater runoff and marinas (petroleum products and heavy metals from bottom paints). However, there is no evidence of permanent environmental degradation from these sources.

The beach at Bal Harbour is subject to erosion due to storms. A recent beach restoration project has been successful in slowing the erosion effects of Baker's Haulover Inlet. Nevertheless, periodic renourishment of the beach will be required. The Village of Bal Harbour is committed to a policy of continued renourishments on an as needed basis so as to maintain the economic vitality of the community and to mitigate the impacts of coastal storms.

Due to the recent history of and the nature of development of Bal Harbour, the Village does not have any archaeological or historic sites which require preservation.

Bal Harbour is vulnerable to even minimal hurricanes with Saffir/Simpson scale categories of one or greater. All residents of Bal Harbour will need to evacuate for all hurricanes. Bal Harbour and Dade County have an adequate evacuation plan with assigned shelters to accommodate evacuees. To simplify evacuation procedures, Dade County has developed several levels of evacuation based on zip codes.

Bal Harbour has portions of nearly all habital structures east of Collins Avenue seaward of the coastal construction control line. In the aftermath of a severe hurricane or northeaster storm, decisions will need to be made on whether or not to reconstruct such facilities to their pre-storm condition. The Village needs to set a threshold of damage beyond which an alternate redevelopment policy would go into effect. Damaged structures exceeding this threshold will have to be reconstructed landward of the coastal construction control line unless otherwise approved by the Village and state permitting agencies.

Public improvements including parking are limited. Due to the nature and extent of development of Bal Harbour, most of this public access need, will of necessity, have to be met by other adjacent areas including the Haulover Inlet Park. Nevertheless, the Village needs to seek out opportunities to increase public access as a facet of future development or redevelopment.

Bal Harbour's infrastructure is deemed adequate for existing and near term future needs. The significant issue in this area will be the maintenance of these facilities at a high level of quality under the stress of continued use.

Bal Harbour Village is included in the Biscayne Bay Aquatic Preserve Management Plan. The Plan contains recommendations relative to the improvement of water quality which should be incorporated into this element.

The Village of Bal Harbour's solutions to the key issues identified above and the issues identified by the State of Florida in Paragraph 163.3177(6)(g) and Section 163.3178, Florida Statutes, are contained in the following section.

SECTION 14: GOALS, OBJECTIVES AND POLICIES

GOAL 1: BALANCING GROWTH, REDEVELOPMENT AND COASTAL RESOURCES

The natural resources of the Bal Harbour Village area shall be preserved, protected, or enhanced as the development proposed in the Future Land Use Element occurs.

Objective 1.1 - Protecting Native Vegetation and Wetlands: Each development or redevelopment proposed at Bal Harbour shall protect, conserve o enhance native vegetation wherever such exists to the maximum practical extent.

- Policy 1.1.01: The Village will protect and re-establish very rare and exceedingly rare native plants in the common greenspace areas where practical and encourage a like effort for all privately held lands.

- Policy 1.1.02: The Village will maintain the beach dune vegetation plantings and re-establish these vital vegetative associations if destroyed by a future coastal storm.

- Policy 1.1.03: Native vegetation shall be used to meet the landscaping requirements of local land development regulations, and shall be used in any required buffers, setbacks, and open spaces.

- Policy 1.1.04: Exotic plant species shall be removed from development sites during construction, and appropriate measures will be taken to prevent increased soil erosion.

Objective 1.2 - Protection of Wildlife: To the maximum extent possible, Bal Harbour Village shall protect species with special status from adverse impacts caused by development or redevelopment.

- Policy 1.2.01: Village development regulations shall include protection of sea turtle nesting areas by prohibiting the disturbance of nests, restricting beach cleaning activities in nesting seasons, and where feasible, controlling the emission of light from structures on or adjacent to the beach.

- Policy 1.2.02: Beach renourishment projects shall protect sea turtle nesting areas by limiting construction in such areas to fall, winter and spring months, or by collecting eggs from identified nests, incubating them, and releasing the hatchlings.

- Policy 1.2.03: In order to protect manatees, boating speed limits shall be set in designated manatee critical habitat, in waters less than four feet deep and in seagrass beds proximate to the Bal Harbour area.

- Policy 1.2.04: Offshore reefs which are biologically active shall be located and protected during any sand mining operations required for future beach restoration projects.

Objective 1.3 - Estuarine Water Quality: The Village of Bal Harbour shall take appropriate steps to maintain or improve estuarine water quality.

- Policy 1.3.01: New boat basins shall be prohibited, marinas and other multi-slip docking facilities shall use docks extending out to water no less than four feet deep at mean low tide, and dredging for marinas or multi-slip docking facilities shall be restricted to limited channels for launching boats or changes to existing boat basins to correct environmental problems.

- Policy 1.3.02: Dredging of the existing marina basin shall be prohibited, unless a detailed study of contaminates in the sediments is performed and adequate safeguards to prevent release of any contaminants are provided. All contaminated dredged materials shall be disposed of at safe upland sites.

- Policy 1.3.03: In order to reduce non-point source pollutant loadings, the Village will continue to enforce adopted stormwater management regulations which require retention, detention or infiltration of runoff prior to discharge to estuarine waters.

- Policy 1.3.04: In order to reduce non-point source pollutant loadings and improve the functioning of the municipal drainage system, dumping of debris, of any kind including yard clippings and trimmings, into drainage ditches and stormwater control structures is prohibited. The Village shall utilize fines, modify solid waste collection schedules, and initiate a public information program to help discourage future illegal dumping in drainage facilities.

- Policy 1.3.05: The village shall establish a periodic inspection program for stormwater control structures to insure their proper functioning and maintenance.

Objective 1.4 - Water Dependent/Water-Related Land Uses: Bal Harbour Village shall provide criteria or standards for prioritizing shoreline uses, giving priority to water dependent uses.

- Policy 1.4.01: In the cases of any redevelopment proposals, appropriate shoreline land uses shall be designated either recreation, conservation, or residential.

- Policy 1.4.02: Water-related uses associated with any future redevelopment shall be built on uplands. Dredging and filling of wetlands or open water in order to accommodate water-related uses shall not be allowed.

- Policy 1.4.03: Any future new marinas and multi-slip docking facilities shall conform to the following criteria:

    a. Public use marinas shall be allowed only in the Business (B) zoning district;

    b. Non-public use marinas or multi-slip docking facilities shall be allowed only in residential zoning districts and then only if use of docking facilities are limited to use by residents;

    c. Marinas and multi-slip docking facilities must provide vehicular parking and sewage pumpout facilities;

    d. All parking, dry storage, and non-water dependent facilities must be built on existing uplands;

    e. Marinas and multi-slip docking facilities shall prepare hurricane plans which describe measures to be taken to minimize damage to marina sites, neighboring properties, and the environment; this hurricane plan shall be reviewed and approved by the Emergency Management Director/Building Inspector;

    f. Marina or multi-slip docking facilities shall comply with the other policies of this plan;

g. Marinas or multi-slip docking facilities which propose to disturb or destroy wetlands or grassbeds shall demonstrate an economic need and viability for the proposed docking facilities and shall provide for use by the general public;

h. Dry slip use shall be maximized in order to minimize impacts on water quality, and minimize the areas extent of disturbance of the estuary; and

i. Fueling facilities associated with marinas shall be designed to contain spills from on-land equipment and shall be prepared to contain spills in the water.

Objective 1.5 - Beach and Dunes: Bal Harbour Village shall protect the beach and dunes, establish construction standards which minimize the impacts of man-made structures on the beach and dune systems and restore the beach and dunes which have been altered by storms or other man induced actions.

- Policy 1.5.01: Enforce Development Restrictions Seaward of the CCCL. No uses other than certain water dependent uses shall be located seaward of the coastal construction control line, such as beach and dune restoration and revegetation activities, beach renourishment, walkways, dune crossovers, snow fences, or other Village approved beach and dune protection devices. All such development shall demonstrate compliance with best management principles and practices for respective activities and shall first receive permits from other public agencies having jurisdiction. Notwithstanding, the Village will permit a structure on a lot of record where the State permitting Agencies has approved the construction of the structure. The Village shall continue to forward all applications for construction seaward of the Coastal Construction Control Line (CCCL) to the State Department of Environmental Protection for jurisdictional action. Following such action, any construction permitted by the State shall comply with best management principles and practices for respective activities and shall first receive permits from all other public agencies having jurisdiction.

- Policy 1.5.02: Construction of ancillary non-habitable structures such as pools, cabanas, tennis courts, etc., shall be allowed seaward of the coastal construction control line provided such structures are designed either to be sacrificed to intense storms

or constructed to withstand wave forces on the order of 1,000 psi.

- Policy 1.5.03: Reconstruction or repair of the existing groin field and bulkheads at Bal Harbour shall be permitted. However, construction of any new groins or bulkheads seaward of the coastal construction control line shall be prohibited.

- Policy 1.5.04: A dune preservation zone shall be established by the development regulations to protect the primary dune through prohibitions on excavations, destruction of native vegetation, and activities which affect the natural fluctuation of the dunes. Any structures in this zone must be elevated on pilings and nothing beneath the structure shall interfere with the movement of the sand.

- Policy 1.5.05: Vehicular traffic on the beach and in primary dunes shall be prohibited.

- Policy 1.5.06: The Village shall support the beach renourishment projects currently recommended by the U.S. Army Corps of Engineers, and will continue to act as local sponsor.

- Policy 1.5.07: The Village shall request that the Florida Department of Environmental Protection re-establish the coastal construction control line every five years. The placement of the line should take into consideration the protection afforded by Beach restoration projects.

GOAL 2: <u>REDUCING VULNERABILITY TO HURRICANES</u>

People and property in Bal Harbour Village will be protected from the effects of hurricane storm damage.

Objective 2.1 - Hurricane Evacuation: Bal Harbour Village shall work cooperatively with Dade County to maintain or reduce hurricane evacuation times.

- Policy 2.1.01: In order to prevent unnecessary evacuees crowding roads and shelters, the Village shall prior to hurricane season, notify each household of their need to evacuate at various threat levels; hotels, apartments, and condominiums shall post this notification conspicuously in each unit. Each new

dwelling unit shall be provided with this information when the certificate of occupancy is issued, and this information shall be passed on to the new residents.

- Policy 2.1.02: The Village shall work with Dade County to identify new shelters equal to the current shelter capacity to provide overflow accommodations in the case of a severe storm.

Objective 2.2 - Hazard Mitigation and Coastal High-Hazard Areas: The Village of Bal Harbour shall ensure that building, development and redevelopment activities are carried out in a manner which minimizes the danger to life and property from hurricanes. Development within coastal high-hazard areas shall be restricted and public funding for facilities with coastal high-hazard areas shall be curtailed.

- Policy 2.2.01: The hazard mitigation section of the Dade County Hurricane Procedure Plan shall be reviewed and updated on a 5-year basis. In the rewrites, the Emergency Management Director shall identify specific actions that could be implemented to reduce exposure to natural hazards.

- Policy 2.2.02: The Coastal High Hazard Area (CHHA) shall encompass the entire Village as currently defined by Florida Statutes.

- Policy 2.2.03: Village funded facilities shall not be built in the coastal high-hazard area, unless the facility is for public access or resource restoration.

- Policy 2.2.04: By 1998, the areas existing between the eastern boundaries of all platted lots according to the plat of "Ocean Front Section of Bay Harbor" as recorded in Plat Book 44, at page 27, of the Public Records of Dade County, Florida, shall be rezoned as recreation.

- Policy 2.2.04.01: The Village shall discourage any future proposed land use amendment which would increase the adopted intensity of development within the Coastal High Hazard Area.

- Policy 2.2.04.02: The Village encourages the implementation of measures to reduce exposure to hazards and protect human life into all applications for new development or redevelopment.

- Policy 2.2.05: The Village shall adopt all current and future amendments to the 1986 edition of the South Florida Building Code.

Objective 2.3 - Post-Disaster Redevelopment: Bal Harbour Village shall provide immediate response to post-hurricane situations in concert with a post-disaster redevelopment plan which will reduce or eliminate the exposure of human life and public and private property to natural hazards.

- Policy 2.3.01: The current Dade County Hurricane Procedures Plan shall be modified to comply with the policies under this objective, and shall contain step-by-step details for post-disaster recovery operations.

- Policy 2.3.02: After a hurricane but prior to re-entry of the population into evacuated areas, the Village Council shall meet to hear preliminary damage assessments, appoint a Recovery Task Force, and consider a temporary moratorium of building activities not necessary for the public health, safety, and welfare.

- Policy 2.3.03: The Recovery Task Force shall include the Building Inspector, Emergency Management Director, Public Works Director, and other Village staff members as directed by the Village Council. Staff shall be provided by the departments whose directors sit on the Task Force. The Task Force shall be terminated after implementing its responsibility under Policy 2.3.06.

- Policy 2.3.04: The Recovery Task Force shall review and decide upon emergency building permits; coordinate with Dade County, State and Federal officials to prepare disaster assistance applications; analyze and recommend to the Village Council hazard mitigation options including reconstruction or relocation of damaged public facilities; develop a redevelopment plan; and recommend amendments to the comprehensive plan, Dade County Hurricane Procedure Plan, and other appropriate policies and procedures.

- Policy 2.3.05: Immediate repair and cleanup actions needed to protect the public health and safety include repairs to potable water, wastewater, and power facilities; removal of buildings and/or vegatative debris; stabilization or removal of structures

about to collapse; and minimal repairs to make dwellings habitable such as minor roof repairs and other weather proofing/security measures. These actions shall receive first priority in permitting decisions. Long term redevelopment activities shall be postponed until the Recovery Task Force has completed its tasks.

- Policy 2.3.06: The Recovery Task Force shall propose comprehensive plan amendments which reflect the recommendations in any interagency hazard mitigation reports or other reports prepared pursuant to Section 406 of the Disaster Relief Act of 1974 (PL 93-288).

- Policy 2.3.07: If rebuilt, structures which suffer damage in excess of fifty (50) percent of their appraised value shall be rebuilt to meet all current requirements, including those enacted since construction of the structure.

- Policy 2.3.08: Structures which suffer recurring damage to pilings, foundations, or loadbearing walls shall be required to rebuild landward of their current location, to modify the structure to structurally enhance the structure, institute other mitigation measures or delete the areas most prone to damage.

- Policy 2.3.09: Repair or reconstruction of the existing seawalls at Bal Harbour must be accompanied by beach fill.

- Policy 2.3.10: Following a natural disaster and prior to the implementation of long-term redevelopment, the Village shall do the following; Based upon the damage assessment report prepared by the Metro Dade Public Works Department, the Village shall consult with its Public Works officials and consultant engineer to evaluate options for damaged public facilities including abandonment, repair in place, relocation, and repair with structural modification, to determine the most strategic approach to long-term development. The evaluation shall include but not be limited to issues pertaining to damage caused by natural disaster, cost to construct repairs, cost to relocate, cost to structurally modify, limitations of right-of-way, and maintenance costs.

- Policy 2.3.10.1: That portion of a structure seaward of the Coastal Construction Control Line (CCCL) Structures existing within the Coastal High Hazard Area (CHHA) which has been shown to be susceptible to storm damage and which suffers repeated recurring damage (damage in excess of 50% of current replacement cost of construction) to pilings, foundations, or load bearing walls, shall be modified in accordance with the most recent South Florida Building Code requirements. This may include, but is not limited to, retrofitting, stormproofing and other structural upgrades to structures.

- Policy 2.3.10.2: Structures which are damaged in excess of fifty percent (50%) of their current replacement value shall be required to be rebuilt to meet all current construction land development requirements as determined by the Village Building Official.

- Policy 2.3.10.3: The physical Post Disaster Redevelopment Plan is to rebuild the Village in accordance with the original Master Development Plan. The operational Post Disaster Plan will be prepared by May 31, 1998 and reviewed and updated annually prior to each hurricane season.

- Policy 2.3.10.4: By 1998 the City The Village shall develop and adopt utilize the following detailed criteria to distinguish between immediate repair and clean up actions and long-term redevelopment subsequent to a natural disaster. In the interim, immediate repair shall include public infrastructure for public safety such as water, wastewater, and roadways.

  Potable Water Facilities:

  Immediate repair shall include; implementation of necessary actions, including but not limited to, repairing or replacing water lines and pumping facilities to insure a closed system, proper disinfection, and sufficient pressure to meet demands for fire flow and domestic water (for consumption purposes only), the utilization of auxiliary pumps and electrical generators.

Long-term redevelopment shall include; implementation of the necessary actions to return the Village's water distribution system to at least its condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Wastewater Facilities:

Immediate repair shall include; implementation of necessary actions, including but not limited to, repairing or replacing wastewater lines and pumping facilities, utilization of auxiliary pumps and electrical generators, methods to remove and treat raw sewage to avoid discharge of raw sewage into adjacent water bodies and onto land.

Long-term redevelopment shall include; implementation of necessary actions to return the Village's sanitary sewer system to at least it's condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Drainage Facilities:

Immediate repair shall include; implementation of necessary actions, including but not limited to, the removal of sand and debris from drainage structures, pumping of stormwaters, utilization of temporary electrical generators, to insure function of the system to address potential flooding.

Long-term redevelopment shall include implementation of actions necessary to return the Village's stormwater system to at least its condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Roadway Facilities:

Immediate Repair:

Primary actions shall include, but not be limited to, removal of sand and debris from State Road A1A (Collins Avenue) and 96th Street and needed stabilization to allow access for emergency vehicles.

Secondary actions shall include removal of sand and debris from local roadways to facilitate access for emergency vehicles.

Long-term redevelopment shall include coordination with the Florida Department of Community Affairs Division of Emergency Management, Department of Transportation (FDOT), Dade County, and private property owners to accomplish necessary actions to restore the Village's roadway system (public and private) respectively to at least their condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Bridges:

Immediate repair shall include coordination with the FDOT, federal government, and Dade County to ensure the operation of at least one bridge to facilitate access to the Village.

Long-term redevelopment shall include coordination with FDOT to restore damaged bridges to at least their condition prior to the onset of natural disaster. This may include relocation of facilities, retrofitting, stormproofing and other structural upgrading.

Habitable Structures:

Immediate repair shall include removal of debris and vegetation; stabilization or removal of structures about to collapse and minimal repairs to make dwellings and other structures habitable, such as minor roofing repairs and other weatherproofing/security measures. In these instances, building permits shall not be necessary prior to performing the work but retroactive permits shall be required in accordance with the provisions set forth in Ordinance No. 92-99 of Dade County, Florida (Exhibit 1).

Long-term redevelopment activities shall include normal construction activities for rebuilding and/or substantial structural repairs in accordance with the South Florida Building Code and other limitations contained within the Village's Comprehensive Plan and Land Development Regulations.

- Policy 2.3.10.4.a.: The process for making long-term redevelopment decisions in post disaster periods shall be consistent with the following general guidelines and principles for the relocation, removal or modification of damaged structures:

  1. The Village adopts the following definitions for making decisions pertaining to redevelopment in the CHHA. Based upon the following definitions, all rebuilding activities shall be subject to Coastal Construction Code Standards and CHHA limitations:

     a) "Repair" means the restoration of a portion of the structure, including the foundation of the structure, to its original design configuration of an equivalent structural standard. Repair of a structure assumes that a significant portion of the structure, including its foundations, remains intact. If the supported structure or its foundation has collapsed to the point that either the supported structure or the foundation requires substantial rebuilding, then such activity shall not constitute repair. If a structure, as a result of damage to either the supported structure or the foundation, is no longer habitable, such structure shall be presumed to require substantial rebuilding.

     b) "Rebuilding" means any construction activity, including alteration of an existing foundation, which would result in increased structural stability such that the survivability of the structure during a coastal storm is increased. Rebuilding shall also include any construction activity which, as noted above, involves the substantial rebuilding of either the supported structure or the foundation of the structure.

  2. Rebuilding (as defined above) activities will be in accordance with DEP's requirements for development seaward of the Coastal Construction Control Line, and all structural requirements of the South Florida Building Code. Further, prior to approving such redevelopment activities, the Village shall require the applicant to provide documentation that the structure being built is as landward as possible from the FEMA V-Zone and Coastal Construction Control Line. The

applicant shall provide proof that the structure cannot be moved any further landward on the lot without causing harm to public health and safety. The Village may vary building setback requirements in order to accomplish the intent of this policy.

3. The Village shall keep a record of all repairs and rebuilding activities. Structures may not be rebuilt (as defined above) more than twice in any 100-year period in the Velocity (V or VE) Zones.

- Policy 2.3.11: The Village shall maintain a contingency fund equal to 25 percent of the value of public facilities in the CHHA in order to cover the local government's match for disaster assistance grants.

- Policy 2.3.12: The Village shall identify land and structures in the CHHA, inventory their assessed value, judge the utility of the land for public use and make recommendations for acquisition when post-disaster opportunities arise. Because of the extremely high land and existing structure costs in the Village, should acquisition opportunities arise, the Village will explore funding options such as grants and/or loans.

- Policy 2.3.13: When undertaking post-disaster redevelopment activities, development permits may be waived for short term recovery measures such as: emergency repairs to streets, water, electricity or other utilities to restore service; removal of debris; and public assistance matters including temporary shelter or housing.

- Policy 2.3.14: Repair and Clean Up. In planning post-disaster redevelopment activities, factors to be considered in order to protect the public health and safety shall include:

1. Repairs to potable water, wastewater and power facilities.
2. Removal of debris.
3. Stabilization or removal of structures in a perilous condition.
4. Minimal repairs to make structures habitable.

These considerations shall receive first priority in determining the appropriateness of emergency building permits. Long-term redevelopment activities shall be postponed until the Recovery Task Force has coordinated immediate repair and clean-up operations.

- Policy 2.3.15: Permitting Decision Priorities. Immediate recovery actions needed to protect the public health and safety shall take priority in permitting decisions following hurricane or other storm events or other natural disasters. Such priority actions will include, but not be limited to: debris removal; roadway and infrastructure repair; water use restrictions, if necessary; access restrictions, if required to protect lives or property, and other similar activities needed to assure the safe movement of people, goods and supplies within the impacted area. Long term repair or recovery actions, such as relocating infrastructure, rebuilding of damaged structures and the like, will be distinguished from the short-term actions herein described.

- Policy 2.3.16 The applicable provisions of the South Florida Building Code, as it exists in August 1997, relating to hurricane precautions, inspections and permitting are hereby adopted by reference.

- Policy 2.3.17 The Village adopts the following criteria relating to consideration of relocating public infrastructure, cognizant of the Village's geographic limitations and development status:

  1. The land upon or under which the infrastructure existed is gone or reconfigured so that replacement is not possible technically or financially as determined by the Village Council.

  2. The cost of repairs or retrofitting versus relocation costs.

  3. Opportunities arising out of acquisition of land by the Village or other governmental entity.

- Policy 2.3.18 Notwithstanding the preceding policies, no regulation, permitting procedure or post disaster redevelopment planning shall be approved or applied to property, as the case may be, so as to constitute a taking or inordinately burden an

existing use of real property or a vested right to a specific use of real property within the meaning of the Bert J. Harris, Jr., Private Property Rights Protection Act, Chapter 95-181, Laws of Florida, codified as Section 70.001, Florida Statutes.

- Policy 2.3.19 The Village recognizes that certain vested development rights may exist for property within the Village. The Village will consider such_claims after petition is made to the Village and, after due public hearings, the Village Council may grant approval to the request. The documentation for a claim shall follow the procedures found in Section 2-114.1, Code of Metropolitan Dade County, Florida.

GOAL 3: PUBLIC ACCESS

The amount of public access to coastal resources shall be increased as opportunities permit.

Objective 3.1 - Providing Adequate Public Access: Existing shoreline access shall be retained and maintained and Bal Harbour Village shall endeavor to establish at least one additional public beach access point as circumstances permit.

- Policy 3.1.01: Existing access for the public to the beach shall be maintained by any new development or redevelopment. New beachfront development shall show on their site plan existing beach access ways and the proposed development shall continue that access way, relocate it on the site, or donate it to the Village. Creation of new public access points shall make the development eligible for credits toward additional building height or similar site development concessions.

- Policy 3.1.02: Public access to the renourished beach shall be maintained by the Village.

- Policy 3.1.03: All future public access facilities shall include parking facilities wherever feasible.

- Policy 3.1.04: The Village shall accept donations of shoreline lands suitable for use as public access facilities.

GOAL 4: INFRASTRUCTURE

Public facilities shall be adequate and available to serve the residents and visitors to Bal Harbour Village.

Objective 4.1 - Levels of Service: The level of service standards described elsewhere in this Comprehensive Plan for facilities at Bal Harbour Village and the additional standards under this objective shall be applied whenever development orders or permits are requested.

- Policy 4.1.01: Future beach renourishment projects shall meet the following level of service standards.

  a. Beach fill must include a protective berm high enough to prevent flooding by a ten-year storm event, and

  b. beach renourishment projects shall have a design life of at least five years.

  c. beach renourishment materials should be obtained from suitable offshore sources and should approximate the physical characteristics of the natural beach materials.

- Policy 4.1.02: Future developments and redevelopments must demonstrate they will not impact the renourished beach in a manner which would reduce the level of service provided by the renourished beach.

Objective 4.2 - Required Improvements, Timing and Funding: All public facilities shall be available at least by the time they are needed to serve new development or redevelopment.

- Policy 4.2.01: Developments which would impact existing facilities by reducing the level of service below acceptable levels, and which are to be built prior to the availability of scheduled facility improvements shall pay for such impacts.

- Policy 4.2.02: New or improved roads in Bal Harbour shall include turn lanes, parking lanes, or other paved areas which can be used to increase the number of traffic lanes for hurricane evacuation.

GOAL 5: INTERGOVERNMENTAL COORDINATION TO PROTECT COASTAL RESOURCES

Bal Harbour Village will work cooperatively with Dade County and adjacent municipalities on coastal resource management issues so as to address area natural systems on a systemwide basis regardless of political boundaries.

Objective 5.1 - Coordinating With Local Governments: An intergovernmental coordination mechanism shall be established in order to manage coastal resources affecting or affected by governments other than Bal Harbour Village.

- Policy 5.1.01: The Village of Bal Harbour shall develop joint planning and management programs with Dade County and adjacent municipalities for mosquito control, beach renourishment, hurricane evacuation and reconstruction, provision of public access, provision of infrastructure, special area planning, controlling stormwater, and coordinating efforts to protect species with special status.

- Policy 5.1.02: Bal Harbour Village shall forward copies of its Comprehensive Plan and future development proposals to potentially affected municipalities or Dade County for review and comment.

Objective 5.2 - Coordinating With Existing Resource Protection Plans: The Village shall implement appropriate portions of existing resource protection plans which address Biscayne Bay and the public beach.

- Policy 5.2.01: The Village of Bal Harbour shall continue to carry out its responsibilities under the Biscayne Bay Aquatic Preserve Management Plan.

- Policy 5.2.02: The Village shall forward all development proposals slated for location adjacent to the aquatic preserve to the Florida Department of Environmental Protection for its review and comment.

- Policy 5.2.03: The Village shall cooperate with state and regional efforts to coordinate management of Biscayne Bay including participation in watershed committees, basinwide stormwater planning, and development of best management practices.

- Policy 5.2.04: The Village shall assist Dade County in the protection of regionally significant coastal resources.

Disposition of Policies in 9J-5.012 (3)(c)

Policy	9J-5.012 (3)(c)1.:	Included
Policy	9J-5.012 (3)(c)2.:	Included
Policy	9J-5.012 (3)(c)3.:	Included
Policy	9J-5.012 (3)(c)4.:	Included
Policy	9J-5.012 (3)(c)5.:	Included
Policy	9J-5.012 (3)(c)6.:	Not Applicable - No Redevelopment Areas
Policy	9J-5.012 (3)(c)7.:	Included
Policy	9J-5.012 (3)(c)8.:	Included
Policy	9J-5.012 (3)(c)9.:	Included
Policy	9J-5.012 (3)(c)10.:	Included
Policy	9J-5.012 (3)(c)11.:	Not Applicable - No Historic Properties
Policy	9J-5.012 (3)(c)12.:	Not Applicable - No Ports
Policy	9J-5.012 (3)(c)13.:	Included
Policy	9J-5.012 (3)(c)14.:	Included
Policy	9J-5.012 (3)(c)15.:	Included

SECTION 15: BIBLIOGRAPHY

The following published and unpublished information and reports were used in the preparation of this report:

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- Florida Department of Community Affairs, Bureau of Local Resource Planning (May 1987) Model Coastal Management Element.
- Henry von Oesen and Associates, Inc. (March 1970) Examination and Report, Beach Erosion, Bal Harbour Village, Florida.
- Henry von Oesen and Associates, Inc. and Zurwelle-Whitaker, Inc. (December 1970) Preliminary Engineering Report, Beach Restoration Project, Bal Harbour Village, Florida.
- Metropolitan Dade County (1985) Biscayne Bay Shoreline Development Review Ordinance (Dade County Ordinance No. 85-14).
- Metropolitan Dade County Department of Environmental Resources Management (1979) Dade County Area Wide Water Quality Management Plan.
- Metropolitan Dade County Department of Environmental Resources Management (July 1987) Biscayne Bay and Miami River: A Water Quality Summary.
- Metropolitan Dade County Office of Emergency Management (May 1987 and 1995) Metro - Dade County Hurricane Procedure.
- Metropolitan Dade County Planning Department (July 1979) Comprehensive Development Master Plan for Metropolitan Dade County, Miami Florida.
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- Secretary of the Army (June 26, 1959). A Letter From the Chief of Engineers, Department of the Army, Dated May 27, 1959, Submitting a Report On A Survey of Baker's Haulover Inlet, Florida. U.S. Government Printing Office, Washington, DC.

- Secretary of the Army (June 27, 1968). A Letter From the Chief of Engineers, Department of the Army, Dated March 30, 1967, Submitting a Report On A Cooperative Beach Erosion Control Study and an Interim Hurricane Survey of Dade County, Florida. U. S. Government Printing Office, Washington, DC.

- Secretary of War (March 30, 1946). A Letter From the Chief of Engineers, Department of the Army, Dated December 19, 1945, Submitting a Report On a Cooperative Beach Erosion Study of Baker's Haulover Inlet, Florida. U.S. Government Printing Office, Washington, DC.

- University of Florida, Department of Coastal and Oceanographic Engineering (May 1981). Coastal Construction Control Line Study for Dade County, Florida.

- U.S. Army Corps of Engineers, Jacksonville District (undated) Our New Beach, How it Works, Dade County Beach Erosion Control and Hurricane Protection Project.

- Craig A. Smith & Associates, Inc. 1995 Evaluation and Appraisal Report (EAR) and 1997 EAR-Based Amendments.

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805 NORTH THIRD STREET P.O. DRAWER 2087 WILMINGTON, NORTH CAROLINA 28402

November 2, 1988

Ms. Carole S. Morris
Village Clerk/Acting Village Manager
Bal Harbour Village
655 Ninety-Sixth Street
Bal Harbour, FL 33154

Re: Addressment of Comments on
Coastal Management Element (CME) of
Comprehensive Plan

Dear Ms. Morris:

Reference is made to your letter of October 17, 1988, and to the attached comments on the subject plan from the Florida Department of Community Affairs.

We have reviewed the comments and following are our responses which are keyed to DCA's listing of same:

A.1 Hurricane Evacuation Routes

The only designated hurricane evacuation route from Bal Harbour Village is 96th Street. Data and analysis of this route are presented in Sections 8.4.3 through 8.4.5 of the CME. Table 8.4.4 presents the roadway point pre-landfall hazard times for various category hurricanes which are used as a basis for adjustments to evacuation times.

A.2 Roadway Flooding

This is a general recommendation which was carried over from the Metro-Dade Hurricane Procedure Plan. It does not imply that there are in fact such conditions on 96th Street. However, a detailed investigation and inventory of such flooding potential was beyond the scope of this study.

A.3 Hurricane Evacuation

Page 13-2 has been revised to indicate that all residents of Bal Harbour Village will be required to evacuate for all hurricanes (see copy attached hereto).

The following responses address goals, objectives and policies.

A.4 Redirection of Population Away From Coastal High Hazard Areas

Policy Statements 2.2.02, 2.2.03, and 2.2.04 are designed to fulfill this requirement. Implementation of such policies will effectively direct the population away from the high hazard areas at Bal Harbour Village.

A.5 Level of Service Standards and Phasing of Infrastructure

Virtually all infrastructure is already in place at Bal Harbour Village due to its high degree of development as indicated in Section 4.3 of the CME. However, Policy Statements 4.2.01 and 4.2.02 address these issues within this context, which is deemed adequate under the circumstances.

A.6 Designation of Coastal High Hazard Areas and Limitation of Development Therein

Policy Statements 1.5.01, 1.5.02, 1.5.07, 2.2.02, 2.2.03, 2.2.04, and 2.2.05 effectively address these issues. Additional policy statements would be redundant.

I trust that the above meets your needs. Please contact us if we may be of further service or if you have any questions.

Thank you.

Sincerely yours,

HENRY VON OESEN AND ASSOCIATES, INC.

William E. Burnett, Env. Planner

WEB/GGB
Enc.

VIII. CONSERVATION ELEMENT

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VIII. CONSERVATION ELEMENT

A. BACKGROUND

1. Environmental Setting

Bal Harbour is situated on a coastal barrier island. The easterly corporate limit is the Atlantic Ocean mean high water line. The westerly corporate limit falls within the water bodies: Indian Creek and Biscayne Bay. The north Village boundary is a physical bulkhead which lies on the south edge of Baker's Haulover Cut.

2. Current Situation

The land of the Village has no natural plant and animal communities. Land was created by clearing and grubbing of the estuarine zone landward of the original barrier island and filling within the concrete bulkhead which defines the north and west existing upland.

B. INVENTORY AND ANALYSIS

1. Water Resources

a. Surface Waters: There are none.

b. The Village's Flood Insurance Rate Map was last updated by the Federal Emergency Management Agency (FEMA) in 1993. The Village now is designated within three (3) Flood Zones with some additional minimum elevation requirements. The majority of the Village is within Zone AE (EL.8). A narrow strip along Indian Creek from the 96th Street Bridge to the Baker's Haulover Cut Bridge is within Zone AE (EL.9). Approximately the eastern one-half of the oceanfront lots to the top of the normal dune line is within Zone X which is defined as being outside the 500 year floodplain. Seaward of Zone X are narrow bands of Zone AE (EL 7) and two VE Zones (EL.11 and EL.10) which are coastal flood and velocity hazard areas.

c. Groundwater: As the site is a coastal barrier island groundwater consists of a variable thin lens of freshwater grading to brackish and saline at increasing depth.

2. Flora and Fauna

   a. Inventory: Predevelopment communities were eliminated during the land development phase. Present species are landscape vegetation and birds.

   b. Aquatic and terrestrial wildlife are listed in Article 3.2.3 of the Coastal Management Element.

3. Air Quality: According to the Dade County Department of Environmental Resources Management, the County including Bal Harbour, has generally good air quality. The County was previously designated by EPA as non-attaining its standards for carbon monoxide. Present ozone levels within the County now comply with EPA standards and the non-attainment status was lifted in April 1994.

4. Commercial Valuable Minerals: There are none.

5. Commercial Uses of Natural Resources: There are none.

6. Conservation and Recreational Uses of Natural Resources: Refer to Section 10 of the Coastal Management Element.

7. Development Pressures and Pollution: The Village is built out. No land development will occur. Occasionally a new building is constructed on a vacant lot.

8. Hazardous Wastes: Dade County Department of Environmental Resources Management has no record of hazardous waste sites or violations within the Village. The Village is completely sewered--there are no septic tank discharges.

9. Water Use

   a) Water Resources: There are no fresh water sources. The Village buys water from Miami-Dade Water and Sewer Authority Dept. Water uses are limited to potable and irrigation uses -- there are no industrial or agricultural demands.

   b) Demand:

      1) Current demand: for year ending August, 1995 the average day quantity metered from WASAD was 1.46 mgd compared to 1.48 mgd in 1987.

2) Projected demand: only modest increase of about 2% is expected in the next five years.

c) Water Conservation: the Village water distribution system is in good condition with respect to unaccounted for water. Irrigation systems are metered separately and thus billed for. Residents do not have flat-rate billing therefore there is a disincentive to wasteful use. The Village cooperates with the South Florida Water Management District in times of regional water shortage.

C. GOALS, OBJECTIVES, POLICIES

1. CONSERVATION GOAL

Protect and conserve: Water resources: the quality of the waters of Indian Creek and Biscayne Bay within the boundaries of the Village; air; and trees.

Objective 9J-5.013 (2) (b) 1. Protect air quality.

Policy: Cooperate with Metro-Dade county air-quality enhancement programs.

Objective 9J-5.013 (2) (b) 2. The Village shall coordinate with DERM, the State of Florida and the Federal Government to protect the waters of the Atlantic Ocean, Bakers Haulover Cut, Indian Creek and Biscayne Bay through participation in the National Pollutant Discharge Elimination System permit.

Policy: Cooperate with other governmental units in specific programs of water quality enhancement.

Policy: The Village shall continue to comply with all requirements of the Dade County National Pollutant Discharge Elimination System permit.

Policy: Install oil and grease separators on all subsequent drainage system improvements.

Policy: Conserve fresh water resources by continuing to enforce Section 21-7 of the Village Code, Water Shortage Plan which mandates cooperation with the South Florida Water Management District when latter declares a water shortage emergency.

Policy: Renewal of Occupational Licenses (annually) of all businesses within the Village having the potential to generate Hazardous Waste shall be coordinated with Dade County's Department of Environmental Resources Management.

Policy: The Village shall at least annually publish instructions and information pertaining to the proper disposal of Hazardous Wastes in the Village's Newsletter.

Policy: The Village shall require that all companies that engage in business that generate, transport or dispose of hazardous waste materials, obtain proper licensing from the Department of Environmental Resources Management prior to the Village issuing annual Occupational Licenses.

Objective 9J-5.013 (2) (b) 3. Regulate trees and other landscaping

Policy: Enforce Dade County's Chapter 18A Landscape Code until such time as the Village adopts separate regulations.

Policy: By 1997 adopt landscaping regulations customized for Bal Harbour utilizing Dade County's regulations as minimum standards.

(other requirements are not applicable as the Village has no minerals and native vegetative communities)

Objective 9J-5.013 (b) 4. Protect such limited wildlife and animals as exists in the Village.

Policy: Continue to enforce Chapter 5, Animals and Fowl, of the Village Code which has established the Village as a sanctuary and which proscribes deprivation of sustenance of shelter to any animal.

Disposition of policy requirements:

Policy 9-J5.013 (2) (c)	1. provided above.
Policy 9-J5.013 (2) (c)	2. not appropriate; no minerals.
Policy 9-J5.013 (2) (c)	3. not appropriate; no native veg. communities.
Policy 9-J5.013 (2) (c)	4. provided above.
Policy 9-J5.013 (2) (c)	5. provided above to extent practicable.
Policy 9-J5.013 (2) (c)	6. provided above to extent practicable.
Policy 9-J5.013 (2) (c)	7. not appropriate; no natural reservations.
Policy 9-J5.013 (2) (c)	8. not appropriate; no unique veg. communities.
Policy 9-J5.013 (2) (c)	9. Not appropriate; no environmentally sensitive lands.
Policy 9-J5.013 (2) (c)	10. provided above.
Policy 9J-5.013 (3) (a)	Not appropriate; no wetlands in Village.
Policy 9J-5.013 (3) (b)	Not appropriate; no wetlands in Village.

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IX. RECREATION AND OPEN SPACE ELEMENT

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IX. RECREATION AND OPEN SPACE ELEMENT

A. Existing Recreation and Open Space

1. The City of Bal Harbour has approximately 86 acres of land devoted to recreational and/or open space uses. These lands are comprised of:

a) Recreational Use	9.78 acres
b) Open Space	8.13 acres
c) Beaches and Shores	28.62 acres
d) Bays and Harbours	39.67 acres
TOTAL	86.2 acres

Source: CAS 1995

2. The recreational use is of 9.78 acres and is comprised of over 5 acres of active recreational use, with direct frontage on the Atlantic Ocean. This facility has 5 tennis courts, and 1,800 s.f. pool, and oceanfront sundeck and Cabana area, a restaurant and meeting area, an attendant accessways, parking and passive open space. Also included in the recreational use acreage is a marina which fronts on the intracoastal waterway. This facility has approximately 43 wet boat slips, a marina building, a restaurant, an office, a meeting room and attendant accessways, parking and passive open space. Both of these facilities are privately owned and operated by residents of Bal Harbour.

3. The open space acreage of 8.1 acres is comprised of passive open space, a portion of which serves to visually and physically connect the beachfront recreation facility, and the marina facility. The remaining open space is comprised of a linear park (which also serves as a landscaped buffer) between the single family residences, and the apartment/condominiums which front on Collins Avenue to the east. Also included are 5 smaller isolated green areas. These open space areas are also privately owned by residents of Bal Harbour.

4. The beaches and shores acreage of 28.62 acres is comprised of a strip of land running north from 96th Street to Bakers Haulover Cut, between the privately owned beachfront hotels, and the Atlantic Ocean. This beachfront land is state owned, maintained by the Village of Bal Harbour, and is freely accessible to the public. Dune landscape plantings and a jogging/pedestrian pathway have been installed along the full length of this beach area. This pathway serves to encourage and expand the use and accessibility of this area for all water oriented recreation use. Also included in this area is an active and much utilized fishing area which runs

along the bulkhead of Bakers Haulover Cut, including the seaward jetties. This area is accessed by a large public parking area located immediately under the Bakers Haulover Bridge. This parking area also has access to and services the above mentioned beach area.

5. The bays and harbours acreage of 39.7 acres is comprised of a portion of Indian Creek, Bakers Haulover Cut, and is available and readily accessible to the public for all types of water oriented recreational needs.

6. In addition to the recreation and open space available within the Village of Bal Harbour as outlined above, a 177 acre county owned park exists immediately to the north of Bakers Haulover Cut, which borders the Village of Bal Harbour to the north. This park is readily available to pedestrian and vehicular traffic from Bal Harbour, and offers a public marina, boat launching site, restaurant, fishing pier, picnic areas, sunbathing/beach, and ocean walk and many passive areas.

B. Current Needs

1. The recreational and open space needs of the Village of Bal Harbour are currently being met by the above outlined private and public facilities.

2. The current Dade County standards for local park needs is 2.75 acres of public parks and other recreational open space uses per 1,000 persons. These standards are outlined in the Dade County Comprehensive Development Master Plan adopted in 1979, and revised in 1981. This would require a total of 8.37 acres of creditable recreation and open space acreage. Bal Harbour currently provides approximately 37.57 acres of publicly and privately owned beach, parks and recreation area (publicly owned beach = 28.62 acres) + 50% (17.91 acres of privately owned recreation and Open space) creditable parks and recreation acreage. Therefore, Bal Harbour offers 11.9 acres of public and private recreational (inclusive of publicly owned beaches designated as recreation) and open space per 1,000 persons.

3. According to the 1990 Census , Bal Harbour has a total population of approximately 3,045 people. Of this total, approximately 1,923 persons are 65 years of age or older (63%). Because of this, the need for active recreation facilities is very small. The percentage of persons 65 years of age or older has been decreasing. A 10% drop in the number of persons in the 65 years of age or older category has been observed between 1980 and 1990.

4. Nearly all single family residences and oceanfront multiple family development have private recreation facilities such as swimming pools,

tennis courts, etc. which provides active facilities for residents.

C. Future Needs

1. The Village of Bal Harbour is essentially a "built-out" community with virtually no open land which could support new development. Because of this, the Village is not expected to increase or decrease its population by any significant amount in the future

2. Based on existing County criteria, the existing active and passive recreation facilities offered by the Village, the close proximity of a large county park, the age of the general population and the essentially "built-out" conditions of the existing acreage, it is logical to conclude that the existing recreation and open space needs of the Village are adequate if not superior to that of the County as a whole, and that no additional future recreation needs are required.

D. GOALS, OBJECTIVES, POLICIES

1. RECREATION AND OPEN SPACE GOAL 1

Maintain the existing park, open space, and recreation facilities and make selected improvements.

Objective IX-1:

Do periodic routine maintenance and repairs on public facilities.

Policy: Each year project maintenance and repair expenses and budget required funds.

Policy: Plan and schedule required work and assign required personnel and equipment.

Objective IX-2: Preserve, protect and enhance the beachfront area as the major attraction for recreation and open space.

Policy: Maintain current access and seek additional access to the beach.

Objective IX-3: The adopted level of services (LOS) for the provision of recreation and open space is 2.75 acres per 1,000 persons within the Village.

Policy: Tailor recreational and open spaces uses credits to meet the needs of the residents of the Village recognizing that a majority of land areas are privately owned.

2. RECREATION AND OPEN SPACE GOAL 2

Coordinate public and private resources to provide improvement to existing passive open space

Objective IX-4: The Village shall ensure the continued maintenance of public and private recreational and open space area so as not to allow the existing high quality of these areas to be lessened.

Policy: The Village shall continually monitor both public and private recreation and open space areas for needed maintenance and notify the respective property owners of needed actions.

Policy: The Village shall review needed maintenance programs for public recreation and open spaces during the Village's annual budget review process and shall maintain at least the existing funding level for maintenance.

Disposition of 9J-5 mandated objectives and policies:

Objective 9J-5.014 (b) 1. not applicable as public access to beaches and recreation sites exists.
Objective 9J-5.014 (b) 2. see Goal 2 above and its objective.
Objective 9J-5.014 (b) 3. see Goal 1 above and its objectives.
Objective 9J-5.014 (b) 4. not applicable as open space requirements are met and there is no significant unimproved acreage within the Village.

X. INTERGOVERNMENTAL COORDINATION ELEMENT

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X. INTERGOVERNMENTAL COORDINATION ELEMENT

A. GOVERNMENTS PROVIDING SERVICE

The following is an inventory of adjacent governments and other units of local government providing services but not having regulatory authority over land use.

For each is described briefly the existing coordination mechanisms by way of indicating the subject, nature of relationship, and office with primary coordination responsibility.

1. Units of Metropolitan Dade County:
   a. Fire Department
      (1) Subject: Fire fighting service.
      (2) Nature of relationship: County provides fire fighting service.
      (3) Coordinating mechanism: Interagency agreement.
      (4) Office with primary coordination responsibility: Chief of Police.
      (5) Effectiveness: Satisfactory, no change needed.

   b. Tax Assessor
      (1) Subject: Tax roll preparation and tax collection.
      (2) Nature of relationship: Provides collections of Village's ad-valorem taxes.
      (3) Coordinating mechanism: Interagency agreement.
      (4) Office of primary coordination responsibility: Village Clerk.
      (5) Effectiveness: Satisfactory, no change needed.

   c. Water and Sewer Authority Dept.
      (1) Subject: Water supply and sewage disposal.
      (2) Nature of relationship: Village is a bulk quantity customer for water and sewer.
      (3) Coordinating mechanism: Interagency agreement.
      (4) Office with primary coordination responsibility: Contracts Office of WASAD.
      (5) Effectiveness: Satisfactory, no change needed.

   d. Metrobus
      (1) Subject: Public bus transportation.
      (2) Nature of relationship: Passive beneficiary.
      (3) Coordinating mechanism: None.
      (4) Office with primary coordination responsibility: None.
      (5) Effectiveness: Satisfactory, no change needed.

e. Elections Dept.
   (1) Subject: Voting.
   (2) Nature of relationship: Elections Dept. provides voting equipment and tabulates results.
   (3) Coordinating mechanism: Joint coordination.
   (4) Office with primary coordination responsibility: Village Clerk.
   (5) Effectiveness: Satisfactory, no change needed.

f. Metro Fire Rescue
   (1) Subject: Emergency rescue service.
   (2) Nature of relationship: County provides rescue service.
   (3) Coordinating mechanism: Interagency agreement.
   (4) Office with primary coordination responsibility: Chief of Police.
   (5) Effectiveness: Satisfactory, no change needed.

g. Police Department bomb squad
   (1) Subject: Public safety.
   (2) Nature of relationship: County gives bomb disposal service.
   (3) Coordinating mechanism: Interagency agreement.
   (4) Office with primary coordination responsibility: Chief of Police.
   (5) Effectiveness: Satisfactory, no change needed.

h. Dade County Planning Department
   (1) Subject: Comprehensive master planning.
   (2) Nature of relationship: Review of Comprehensive master plan.
   (3) Coordinating mechanism: Formal procedures prescribed by State Law.
   (4) Office with primary coordination responsibility: Village Manager
   (5) Effectiveness: Satisfactory, no change needed.

2. Units of the State of Florida

a. Florida Dept. of Health and Rehabilitative Services - water system sampling.
   (1) Subject: Public health.
   (2) Nature of relationship: Passive. HRS make random independent water quality checks.
   (3) Coordinating mechanism: Not applicable.
   (4) Office with primary coordination responsibility: Village Manager
   (5) Effectiveness: Satisfactory, no change needed.

b. South Florida Water Management District
   (1) Subject: Water conservation during regional droughts.
   (2) Nature of relationship: Cooperate with water shortage program.
   (3) Coordinating mechanism: Formal procedure prescribed by State law and administrative regulations.
   (4) Office with primary coordination responsibility: Village Manager.
   (5) Effectiveness: Satisfactory, no change needed.

c. South Florida Regional Planning Council
   (1) Subject: Comprehensive master planning.
   (2) Nature of relationship: Review of Comprehensive master plan.
   (3) Coordinating mechanism: Formal procedures prescribed by State Law.
   (4) Office with primary coordination responsibility: Village Manager
   (5) Effectiveness: Satisfactory, no change needed.

d. Florida Inland Navigation District
   (1) Subject: Shoreline facilities: jetty, groin, bulkhead.
   (2) Nature of relationship: Provides grants.
   (3) Coordinating mechanism: Formal procedures prescribed by State Law.
   (4) Office with primary coordination responsibility: Village Manager.
   (5) Effectiveness: Satisfactory, no change needed.

e. Florida Department of Transportation
   (1) Subject: State roads A-1-A (Collins Ave.) and 922 (96th Street).
   (2) Nature of relationship: Village provides landscape maintenance for DOT.
   (3) Coordinating mechanism: Informal agreement.
   (4) Office with primary coordination responsibility: Village Manager.
   (5) Effectiveness: Satisfactory, no change needed.

3. Units of the Federal Government

There are no federal government units with which the Village needs to coordinate.

4. Town of Surfside and City of Miami Beach.
   (1) Subject: Sewage disposal.
   (2) Nature of relationship: Joint use of common sewage force main. This joint use is governed by an intergovernmental agreement. Each government notifies the other of proposed changes in operation and the details are worked out cooperatively.
   (3) Coordinating mechanism: Interagency agreement.
   (4) Office with primary coordination responsibility: Village Manager.
   (5) Effectiveness: Satisfactory, no change needed.

B. ANALYSIS

1. Effectiveness of existing coordination mechanisms.
   Existing coordination methods work well.

2. Specific problems and needs within each of the comprehensive plan elements which would benefit from improved or additional intergovernmental coordination and means for resolving same.

   (a) Investigation of conditions of force main shared by Surfside and Bal Harbour, and resolution or past limitations on pumping abilities.

3. Needs for coordination with other governments for growth.
   The Village is built-out city. No growth other than filling-in of vacant lots will occur. Adjacent municipalities likewise are built-out. Adjacent land to the north is public (County) park. No possibilities exist for growth in this part of the County hence no coordination is needed with other governments.

C. GOALS, OBJECTIVES, POLICIES

1. INTERGOVERNMENTAL COORDINATION GOAL:

Use the processes of intergovernmental coordinating to complement Village-provided services and as a mechanism for cooperating with neighboring municipalities.

Objective X-1:
Maintain existing intergovernmental agreements for services to the Village.

Policy: Manager shall monitor agreements for renewals and necessary modification and advise the Council.

Policy: Council shall provide required authorizations to the Manager.

Objective X-2:
Coordinate with the School Board and other units of local government on comprehensive planning matters which affect the Village.

Policy: Participate in informal workshops and meetings.

Policy: Resolve conflicts through the Regional Planning Council's mediation process.

Policy: Coordinate and provide Village information with providers of services and adjacent communities.

Objective X-3: Coordinate with adjacent communities on development matters which are judged by the Village to have impacts outside of the Village Limits.

Policy: Develop criteria for judging developmental impacts that may affect adjacent communities in accordance with provisions in Chapter 163 and Rule 9J-5.

Policy: Contact adjacent community's if adopted threshold is reached according to adopted standards.

Objective X-4: Coordinate with appropriate state, regional, county or other agency responsible for establishing level of service standards on their facilities within the Village.

Policy: Monitor adopted LOS by other agencies.

Objective X-5: Ensure that Village impacts primarily stormwater runoff, affecting adjacent waterways are coordinated with and consistent with adopted management plans for those areas and applicable permit conditions.

Policy: Coordinate with adjacent communities and Dade County on issues affecting waterways.

Policy: Follow NPDES permitting and reporting requirements.

Objective X-6: Recognize those regionally significant resources and facilities in the adopted South Florida Regional Planning Council's Strategic Regional Policy Plan.

Policy: By 1998, or when otherwise required by state statutes, identify all resources and facilities which are felt to affect the Village and establish a monitoring and resolution process to settle disputes.

Disposition of Policies Stated in Rule 9J-5.015

Policy 9J-5.015 (3) (c) 1.: Addressed above.
Policy 9J-5.015 (3) (c) 2.: Addressed above.
Policy 9J-5.015 (3) (c) 3.: Addressed above.
Policy 9J-5.015 (3) (c) 4.: Not applicable, no lands available.
Policy 9J-5.015 (3) (c) 5.: Addressed above.
Policy 9J-5.015 (3) (c) 6.: Addressed above.
Policy 9J-5.015 (3) (c) 7.: Addressed above.
Policy 9J-5.015 (3) (c) 8.: Not applicable, none in jurisdiction.
Policy 9J-5.015 (3) (c) 9.: Not applicable, none in jurisdiction.

XI. CAPITAL IMPROVEMENTS ELEMENT

CAPITAL IMPROVEMENTS ELEMENT

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CAPITAL IMPROVEMENTS ELEMENT

INTRODUCTION

1. Purpose: To comply with the requirements of Rule 9J-5, Florida Administrative Code (FAC) for preparation of a Capital Improvements Element for the Village. Rule 9J-5 addresses the socio-political and infrastructure elements of local governments. As to these elements, Rule 9J-5 prescribes planning, programming and budgeting requirements for local governments the aim of which is to quantify needs, determine dollar costs and sources of funding, develop local objectives and policies, and to set a time schedule for implementation of the needed improvements. This Capital Improvement Element serves to demonstrate the degree to which the Village can fund the costs of proposed improvements.

2. Prior planning documents:

   a. "Comprehensive Planning Report, The Town of Bal Harbour Village, Dade County, Florida", Joseph F. Rice, P.E., April 1979.

   b. "5 Year Evaluation and Appraisal Report (EAR) for the Village of Bal Harbour, Dade County, Florida.", Reynolds, Smith and Hills Architects, Engineers, Planners, Inc. undated, issued circa 1986.

   c. "Village of Bal Harbour Final Comprehensive Master Plan 2 December 1988", Ludovici & Orange Consulting Engineers.

3. Description of the Village:

   Bal Harbour Village is a small town of 287 acres situated on SR A1A in Dade County. The Atlantic Ocean is on the east, the Indian Creek and Biscayne Bay is on the west, Town of Surfside on the south, and Baker's Haulover Cut on the north. It is nominally built-out. Infrastructure is in place for the entire area within the corporate limits. Vacant developable land consists of isolated vacant platted lots. There is no room for additional growth other than via improvements to these isolated lots.

   Fire service is provided by Metro-Dade County. Police service is provided by the Village. The Village owns and operates its water distribution system. This system includes a booster pump station, ground storage tank, and distribution piping. It buys water wholesale from Miami - Dade Water and Sewer Authority Department. (WASAD). The Village owns and operates its sewage collection system. This system includes gravity sewers, two pump stations, and force mains. Sewage disposal is provided by WASAD under a service contract.

INVENTORY

Comparison was made to the adopted Comprehensive Plan and the 1995 EAR to evaluate success and failure with current 9J-5 requirements with respect to comprehensive plan elements and updated community needs.

1. NEEDS DERIVED FROM ELEMENTS

The adopted Comprehensive Plan elements list several needed improvements. In addition, the community is desirous of making several new improvements. The following table identifies these capital improvement needs.

TABLE 11.1
BAL HARBOUR VILLAGE CAPITAL IMPROVEMENTS 1995-2000 SUMMARY

PROJECTED IDENTIFIER		TARGET YEAR	ESTIMATED COST. (THOUSANDS)
1.	Wastewater system	1995 - 2000	295.0
2.	Stormwater system	1995 -2000	3,800.0
3.	Beach area improvements	1995 -2000	200.0
4.	Potable water system	1995 -2000	600.0
5.	Misc. improvements	1995 -2000	2,550.0
			7,445.0

These improvements are described in Exhibit "A" attached to this element.

2. FINANCIAL RESOURCES

This is an inventory of the sources of funding available to the Village.

a. LOCAL SOURCES

(1) PROPERTY TAXES

Property taxes are based on a mileage rate per $1000 of assessed value. This rate is applied to the total taxable value of all real property and other tangible personal property. Based on policies set by the Village Council these taxes may be used to fund both operating costs and capital projects.

CURRENT STATUS: The property tax is the major source of revenue for the Village. It accounts for 36% of the annual budget. The current millage rate is set 3.04 (FY 94-95). The tax yield for FY 94-95 is expected to be $2,149,232 from a tax base of $706,994,175. The Village's level of assessment is 100%.

(2) PUBLIC UTILITY USER CHARGES

These charges produce revenue from the operation of the Village-owned water and sewerage systems. A portion of these revenues is paid to WASAD in return for wholesale water and for sewage disposal. These revenues also fund portions of the Public Works Department expense and repairs and replacements.

CURRENT STATUS: These revenues make up 24% of the Village revenue. The yield for FY 94-95 is projected to be $1,460,000.

(3) OTHER TAXES, FEES AND CHARGES

(a) Resort tax. Hotel rooms and food and beverage sales are subject to a 3% resort tax. These funds can be used to provide tourism-related capital improvements.

CURRENT STATUS: The resort tax provides 19% of Village revenue. The tax yield for FY 94-95 is expected to be $1,111,500.

(4) SPECIAL SOURCES OF REVENUE

(a) Licenses and Permits. The Village charges occupational license fees to all businesses operating in its jurisdiction and charges building permit fees on all construction.

CURRENT STATUS: Occupational licenses provide 4.57% Village revenue. The yield for FY 94-95 is expected to be $194,900.

(b) Charges for services. The Village charges for certain services, the principle of which is a 24-hour guard service for its residents.

CURRENT STATUS: For the FY 94-95 this activity will provide revenues of $27,080 which is .63% of the Village's total revenue.

(c) Fines and forfeitures. Fines are levied through the County Court system and the Village for false burglar alarms, traffic violations and the like.

CURRENT STATUS: For FY 94-95 this will provide revenues of $67,000 which is 1.57% of Village total revenue.

(d) Miscellaneous revenue. Interest on bank accounts and investments.

CURRENT STATUS: For FY 94-95, this source will provide revenues of $749,961 which is 17.57% of total Village revenue.

(e) Borrowing. The Village normally does not resort to general obligation borrowing. Instead it uses short-term bank financing. The Village currently has an outstanding loan debt which was for the wastewater pump station renovations.

b. STATE SOURCES OF REVENUE

(1) The Village receives intergovernmental revenue from the State and County in the form of D.O.T. maintenance reimbursement, cigarette tax, Florida Revenue sharing, liquor licenses, local government half-cent sales tax, gasoline tax rebates, and County-levied licenses.

CURRENT STATUS: The intergovernmental revenues for FY 94-95 are expected to provide $219,841 which is 4% of total revenue.

c. FEDERAL AND STATE GRANTS AND LOANS

(1) The South Florida Water Management District (SFWMD): A one time grant of $150,000 towards Stormwater improvements is expected in 1995.

3. LOCAL POLICIES AND PRACTICES

Practices that guide the timing and location of construction, extension of increases in capacity of each public facility:

a. Timing: this is a function of the need for replacements.

b. Location: Governed by existing facilities, i.e., the Village is built out. When the Village was designed, all the land areas were pre-determined.

As to practices that guide the timing and location of capital improvements to public facilities to support efficient land development and goal objectives, and policies of the future land use element:

a. Timing: The Village was laid out and infrastructure built all at one time. Thus the notion of "location" is irrelevant.

b. Location: The notion of "location" is irrelevant; see preceeding paragraph.

C. ANALYSIS

1. FISCAL ASSESSMENT

This section analyzes the Village's ability to fund the improvements in Table I. The purpose is to determine whether sufficient revenue will be available within the existing budgeting framework used by the Village.

This assessment process consists of estimating future receipts and then balancing these against anticipated expenditures for capital improvements thus revealing surpluses and shortfalls.

a. Accounting System

The Village records financial transactions in individual accounts called "funds". Records of each fund provide a complete accounting. The following are brief descriptions of the funds the Village has established for capital improvement financing.

GENERAL FUND: This is the basic operating fund of the Village. All add valorem tax revenues not required to be accounted for in other funds are accounted for in this one.

ENTERPRISE FUND: These are those used to account for services operated and financed similar to private business. Presently the Village maintains enterprise funds for sanitary sewer and potable water. Revenues are generated through user charges and connection fees. Amounts generated in excess of annual capital and operating expenditures are held in reserve to offset future capital and operating costs.

TOURISM FUND: The fund sources is a tax on hotel room rentals, and food and beverage consumed on the premises. Its purposes: (1) to promote tourism through special events, public relations, and advertising; (2) to fund a reserve for beach maintenance. Thirty Three and One Third (33 1/3%) percent of the tax goes for beach maintenance, the balance for tourism.

b. Projected Revenues

TAX BASE, INCLUDING NEW CONSTRUCTION (MILLIONS):

1995	1996	1997	1998	1999	2000
$ 707	$ 717	$ 727	$ 737	$ 747	$ 757

PROJECTED AD VALOREM TAX YIELD (MILLIONS):

1995	1996	1997	1998	1999	2000
$ 2.12	$ 2.33	$ 2.40	$ 2.47	$ 2.54	$ 2.62

PROJECTED REVENUES, ENTERPRISE FUND (MILLIONS):

1995	1996	1997	1998	1999	2000
$ 1.46	$ 1.82	$ 1.85	$ 1.87	$ 1.90	$ 1.90

PROJECTED REVENUES, TOURISM FUND (MILLIONS):

1995	1996	1997	1998	1999	2000
$ 1.11	$ 1.15	$ 1.15	$ 1.15	$ 1.15	$ 1.15

MISCELLANEOUS REVENUES, (MILLIONS):

1995	1996	1997	1998	1999	2000
$ 1.59	$ 1.64	$ 1.69	$ 1.77	$ 1.86	$ 1.95

TOTAL PROJECTED REVENUES (MILLIONS):

1995	1996	1997	1998	1999	2000
$ 6.28	$ 6.94	$ 7.09	$ 7.26	$ 7.45	$ 7.62

Table 11.2 indicates the expected revenues available to the Village to finance capital improvements for the years 1995 - 2000. These amounts are represented in 1995 dollars.

TABLE 11.2
REVENUE PROJECTIONS AVAILABLE FOR CAPITAL IMPROVEMENTS

FUND	1995	1996	1997	1998	1999	2000
General Fund	408	414	420	426	432	438
Enterprise Fund	275	288	288	288	288	288
Tourism	370	383	383	383	383	383
	1.05	1.08	1.09	1.10	1.10	1.11

c. Projected Expenditures

TABLE 11.3
REVENUE PROJECTIONS - SCHEDULED CAPITAL IMPROVEMENTS BY FUNDS

FUND	1995	1996	1997	1998	1999	2000	TOTAL
General Fund	1,100	1,100	133	267	133	0	2,733
Enterprise Fund	235	250	0	10	200	200	895
Tourism	808	808	150	267	150	33	2,216
	2,146	2,160	283	544	483	233	5,845

Notes: Some funds have reserve funds for the anticipated expenses. The Village may need to investigate further borrowing to cover short term capital costs.

d. Debt Service Expenditures

TABLE 11.4
PROJECTED DEBT SERVICE EXPENDITURES

FUND	1995	1996	1997	1998	1999	2000
General Fund	0	0	0	0	0	0
Enterprise Fund	44.8	44.8	44.8	44.8	44.8	44.8
Tourism	0	0	0	0	0	0
	44.8	44.8	44.8	44.8	44.8	44.8

e. Expenditure projections. The following table shows expenditure for each year for each category of capital improvements.

TABLE 11.5
EXPENDITURE PROJECTIONS - CAPITAL IMPROVEMENTS ELEMENT

	1995	1996	1997	1998	1999	2000	TOTAL
Wastewater System	175	190	40	50	40	40	535
Potable Water System	100	100	0	0	200	200	600
Beach Area	33	35	33	33	33	33	200
Stormwater System	1,100	1,100	400	400	400	400	3,800
Miscellaneous Imp.	775	775	250	500	250	0	2,550
	2,143	2,160	683	943	883	633	7,445

f. Assessment. The following table compares projected expenditures compared with the anticipated funds availibilities. The purpose is to indicate shortfalls.

TABLE 11.6
FISCAL ASSESSMENT (THOUSANDS)
Expenditures in this table are the sum of Tables 11.3 and 11.5

FUND	1995	1996	1997	1998	1999	2000	TOTAL
General Fund							
Revenues	408	414	420	426	432	438	2,538.0
Expenditures	1,100	1,100	533	667	533	400	4,333
Balance	(692)	(686)	(113)	(241)	(101)	38	(1,795)
Enterprise Fund							
Revenues	275	288	288	288	288	288	1,715.0
Expenditures	275	290	40	50	240	240	1,135
Balance	0	(2)	248	238	48	48	580
Tourism							
Revenues	370	383	383	383	383	383	2,285.0
Expenditures	808	808	150	267	150	33	2,216.0
Balance	(438)	(438)	233	116	233	350	69.0

The fiscal assessment in Table 11.6 indicates that sufficient funds will not be available to make certain improvements without obtaining other sources of money, such as loans. The Village has been reserving funds for several years to utilize for capital expenditures, particularly those anticipated to be spent from General Fund sources. The Beach Renourishment Reserve Fund presently has $740,000. General Reserve Funds presently total $1,306,000 and a surplus fund balance of $1,570,000 exists. Therefore, the Village will have sufficient funds available from a variety of sources to fund the listed capital improvements.

2. SHORTFALLS AND RECOMMENDATIONS

General funds cannot be used to fund capital improvements of the enterprise and tourism type. So, to make up the shortfalls of the enterprise and tourism funds the Village proposes to borrow from its other assets or from commercial loan sources as it has for the previous wastewater system improvements. The Village will consider interest-bearing loans from its general fund surpluses, from its pension fund, and from its beach reserve fund to the enterprise fund.

D. GOALS, OBJECTIVES, AND POLICIES

GOAL:

The Village shall continue to preserve and enhance its quality-of-life ambiance in order to provide residents a clean, safe, and stable environment and to attract American and international visitors who appreciate seaside elegance and cosmopolitan shopping.

OBJECTIVE 1

Capital improvements will be put in place to correct performance and reliability deficiencies of the drainage and sewerage systems. These improvements are to be effected in accord with the 5-year schedule of this element. this schedule sequences the improvements by priority rank.

OBJECTIVE 2

Capital improvements will be put in place to enhance the aesthetic and public safety features of the Village. These improvements are to be effected in accord with the 5-year schedule of this element.

OBJECTIVE 3

The Village shall preserve and maintain the Atlantic Ocean Beach through, continued coordination with Dade County's Department of Environmental Resource Management (DERM) , Army Corp of Engineers, FDEP and establishment of an annual review of the status of the beach.

Policy:
The Village shall coordinate with Dade County, the State of Florida and the federal government to annually review the status of the Atlantic Ocean Beach.

Policy:
The Village's Annual Review of the status of the Atlantic Ocean Beach shall include and not be limited to trends in erosion/accretion and status of beach renourishment projects.

Disposition of 9J-5 mandated Objectives:

Objective 9J-5.016
(b) 2. This is not applicable as the Village does not have the authority to subsidize development anywhere.

Objective 9J-5.016
(b) 3. This is irrelevant as there are no occasions for land use decisions because the Village is totally zoned and totally built out.

Objective 9J-5.016
(b) 4. This is irrelevant for same reason as 3. above.

Objective 9J-5.016
(b) 5. The Village shall review its Code and may elect to enact additional rules to require property developers to pay requisite cost shares of improvements occasioned by their proposals.

Disposition of policies per 9J-5.016 (3) (c):

Policy 9J-5.016
(c) 1. By 1999, criteria shall be established to evaluate capital improvements. These criteria shall consider elimination of public hazards, elimination of existing capacity deficits, budgetary impacts, the accommodation of additional facility demands occasioned by new residential construction, means for determining financial feasibility.

Policy 9J-5.016
(c) 2. Annually apply adopted criteria established setting forth the management of debt financing for capital improvements.

Policy 9J-5.016
(c) 3. Guidelines for determining thresholds for repair and replacements shall be developed by 1999.

Policy 9J-5.016
(c) 4. The Village adopts the following level of service standards.

FACILITY	LOS TO BE MAINTAINED
A. Sanitary Sewer Facilities	**Average sewage generation rate is 311 gallons per capita per day.**
B. Solid Waste Facilities	**Average solid waste generation rate is 8.6 lbs. per capita per day.**
C. Drainage Facilities	**Protection from the degree of flooding that would result for a duration of one day during a storm that statistically occurs once in five years.**
D. Potable Water Facilities	**Average water consumption rate is 321 gallons per E.R.U.**
E. Local Roadways	**LOS "D".**
F. Collector/Arterial Roadways	**LOS "D".**
G. Parks and Recreation	**2.75 acres per 1,000 population.**
H. Stormwater Quality	**Minimum standards as referenced in National Pollution Discharge Elimination Permit System (NPDES).**

Policy:
The Village shall continue to ensure the adequacy of LOS for the provision of all public facilities through the continued implementation of the Village's Concurrency Management System as adopted in Bal Harbour Village Ordinance No. 356 as may be amended from time to time and as required by the Village's Land Development Code.

Policy 9J-5.016
(c) 5. The Village shall provide public facilities to serve developments (residential construction) permitted prior to adoption of this plan.

Policy 9J-5.016
(c) 6. (Not appropriate as public facilities are deemed adequate for present projects.)

Policy 9J-5.016
(c) 7. Not appropriate as Village presently has a capital budgeting component of its budget.

Policy 9J-5.016
(c) 8. Village will consider adopting a mechanism for assessing re developments their pro-rata share of costs required to maintain level of service standards.

Policy 9J-5.016
(c) 9. Village shall maintain fiscal consistency with respect to capital improvements vis-à-vis the policies of their plan elements.

E. IMPLEMENTATION

1. 5-YEAR SCHEDULE OF IMPROVEMENTS

The five-year schedule of improvements detailed in Exhibit "A", following page, sets out the phasing and year-by year implementation of the capital improvements program developed herein. This schedule is based on the foregoing analysis of projected revenues and debt servicing expenditures, and on borrowing of additional funds to accommodate the estimated shortfalls in general fund and enterprise fund revenues.

2. MONITORING AND EVALUATION

As with any other plan, this one must be managed within the context of future conditions which may diverge from those anticipated at present. Periodic review of programmed actions will be required in order to detect incipient slippage's and impending problems. This routine program management will be done by the Village Manager and the Village Finance Director assisted by engineering and legal consultants where appropriate.

The Manager will report quarterly to the Village Council on consultant, staff, and construction progress on the various projects. These reports will also identify problems which may require policy decisions by the Council.

EXHIBIT "A"

SCHEDULE OF CAPITAL IMPROVEMENTS 1995-2000

		Years	Est. Cost
A.	Wastewater System		
	1. Finalize inspection & repairs	1995	$60,000
	2. Replace broken pipes	1995-1996	$150,000
	3. 96th Street force main relocation	1996	$60,000
	4. Manhole inflow seals	1996	$15,000
	5. Replace wastewater alarm system	1998	$10,000
	6. Collins Avenue force main repairs	2000	$240,000
B.	Potable Water System		
	1. Repair/Replace water mains & fire hydrants	1995-1996	$200,000
	2. Collins Avenue water main replacement	1999-2000	$400,000
C.	Beach Improvements		
	1. Jogging path repairs	1995-2000	$50,000
	2. Beach renourishment reserve	1995-2000	$150,000
D.	Stormwater Management System		
	1. Westside pipes/pumps/well	1995-1996	$2,200,000
	2. Balance of Village improvements	1997-2000	$1,600,000
E.	Miscellaneous Improvements		
	1. City Hall ADA Repairs	1995-1996	$50,000
	2. Collins Avenue Landscaping Improvements	1995-1996	$1,500,000
	3. Collins Avenue street lights & bus shelters	1997-1998	$500,000
	4. 96th Street landscape/street lights/shelters	1998-1999	$500,000
	TOTAL		$7,445,000

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XII. COMPREHENSIVE PLAN IMPLEMENTATION

XII. COMPREHENSIVE PLAN IMPLEMENTATION

A. DISCUSSION ON APPLICATION

The intent of Chapter 163 of Florida's Statutes and that of Chapter 9J-5 of Florida's Administrative Code is to provide a mechanism, the CMP, which sets forth guidelines for the following:

1. Policies for local governmental services
2. Uniform management of growth
3. Protection of public investments in infrastructure and facilities
4. Provide for the public welfare through the forethought and foresight of coordinated planning
5. Provide for intergovernmental and interagency coordination of efforts
6. Provide for advance control of the budgetary process and the management of public funds
7. Provide for public participation in the planning for its own future quality of life
8. Provide guidelines for evaluation of the quality of public services
9. Serve as the depository of baseline data of statistical nature on the demographics, and the needs of the people under its jurisdictional limits.

B. IMPLEMENTATION

Local government, and Bal Harbour, will benefit from the CMP by adopting and implementing its stated goals, policies and objectives. Further, Bal Harbour will monitor the effectiveness of the CMP, and of its implementation; and will adjust, modify and revise the CMP as necessary to better improve its services, be more efficient in the management of public funds, and be more responsive to the needs of its community.

The following areas of the public service and administration will be affected by this CMP:

1. The Public Works Department
2. The Finance Department
3. The Building and Zoning Department
4. The Village Manager's Office
5. The Village Council

C. CITIZEN PARTICIPATION

To provide for and encourage public participation in the comprehensive planning process the Village will adhere to the public participation procedures approved by the Village Council according to Resolution No. 359 adopted June 21, 1988.

D. UPDATING BASELINE DATA

The Village will review and update as necessary the baseline data contained within the Bal Harbour Comprehensive Land Use Plan. In addition, those objectives that are amenable to measurement will be identified. This will be continual monitoring process thus serving the needs of the five-year planning periods as well as the longer term.

E. ACCOMPLISHMENTS

The evaluation report for the five-year planning periods will document achievements by presenting the degree to which goals, objectives and policies have obtained for the various elements of the plan.

F. OBSTACLES ENCOUNTERED

Certain impediments to achievement of goals and objectives may arise in the course of the five-year planning periods. Circumstances which have presented obstacles to execution of the various policies will be noted and analyzed for the purpose of indicating appropriate corrective and analyzed for the purpose of indicating appropriate corrective measures. These will form the basis for the plan modifications.

G. NEW OR MODIFIED GOALS, OBJECTIVES, AND POLICIES

Pursuant to the indications of the preceding section the Village will review the status of baseline data and objectives monitoring and encountered obstacles. These data and circumstances will be analyzed for determining the need for new or modified goals, objectives, and policies. Appropriate revisions and modifications will be generated as part of the five-year update.

H. MONITORING AND EVALUATION METHODS

Listed below are monitoring and evaluation measures for each element of the Bal Harbour plan.

1. FUTURE LAND USE

Objective: Coordinate future land uses with availability of facilities and services.

Monitoring and Evaluation: Building permits: Number of developments not permitted due to inadequate facilities or services; and number which augmented capacity of facilities and services.

Objective: There shall be no land uses that are inconsistent with community's character and with future land uses.

Monitoring and Evaluation: Number of developments or redevelopments which required modification to comply with future land use map or which made modification of the land use map necessary.

Objective: Protect natural and historical resources.
Monitoring and Evaluation: Number of developments not permitted because of potential adverse impacts. Number of project requiring mitigation of impact on natural or historical resources.

Objective: Require provisions for hurricane preparedness and evacuation.
Monitoring and Evaluation: Number of new developments or redevelopments which incorporate hurricane preparedness procedures which provide for protection of life and property in their plans.

Objective: Comply with the Florida State and regional plans.
Monitoring and Evaluation: Evaluation of the effectiveness of state and regional plans of providing for local needs; number of comprehensive plan modifications made necessary by implementation of state or regional plans.

Objective: Ensure availability of land for public facilities and support utilities.
Monitoring and Evaluation: Number of access utility easements requested and granted.

Objective: Encourage use of innovative land development techniques.
Monitoring and Evaluation: Passage of ordinances permitting mixed use and PUD re-developments.

2. TRANSPORTATION

Objective: Provide for a safe and efficient motorized transportation system.
Monitoring and Evaluation: Number of traffic accidents in each of the roadway classifications.

Objective: Coordinate with metropolitan planning organization, public transportation agencies, Florida DOT, and any regional resource management plan.
Monitoring and Evaluation: Number of project planned for by the metropolitan planning organization and the DOT and constructed with the Village limits.

Objective: Protect present and future public rights-of-way from building encroachment.
Monitoring and Evaluation: Number of enforcement actions taken to prevent or remove encroachments.

Objective: Provide for a safe, convenient and energy efficient multi-modal transportation system.

Monitoring and Evaluation: Frequency and timeliness of scheduled bus service to all land uses and to accommodate the special needs of the transportation disadvantaged.

Objective: Coordinate with Dade County to provide efficient public transit services to all land uses and to accommodate the special needs of the transportation disadvantaged.

Monitoring and Evaluation: Number of respondents annually requesting transportation assistance.

3. HOUSING

Objective: Require the elimination of substandard housing conditions and for the structural and aesthetic improvements of existing housing.

Monitoring and Evaluation: Results of survey to determine overall compliance rate by existing structures to the criteria to be set by the Architectural Review Board.

Objective: Provide for the conservation of historically significant structures, and for the rehabilitation or demolition of deteriorated housing.

Monitoring and Evaluation: Results of survey to determine overall compliance rate by existing structures to the criteria to be set by the Architectural Review Board.

4. SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER, GROUNDWATER AQUIFER RECHARGE

Objective: Correct deficiencies in capacity, enhance reliability, and replace worn-out components of sanitary sewer system.

Monitoring and Evaluation: Number of projects carried out compared to those identified by this element and proposed in the CIE.

Objective: Correct capacity deficiencies, shortfalls in reliability and existence of worn-out components of the storm drainage system.

Monitoring and Evaluation: Number of projects carried out compared to those identified by this element and proposed in the CIE.

Objective: Provide potable water storage, pumping and distribution for maximum day, peak hour and fire emergency demands, to the levels established in the LOS.

Monitoring and Evaluation: Number of and results of water system surveys as to residual pressures, available flows and estimates of unaccounted-for water.

Objective: Conserve potable water.
Monitoring and Evaluation: Number of times emergency conservation measures were put into effect.

5. CONSERVATION

Objective: Protect air quality by controlling emissions.
Monitoring and Evaluation: Number of violation notices issued by DERM within the Village.

Objective: Protect the waters of Indian Creek and Biscayne Bay within the boundaries of the Village.
Monitoring and Evaluation: Number of oil and grease separators installed in new drainage improvements.

6. RECREATION AND OPEN SPACE

Objective: Do periodic maintenance and repairs on public facilities.
Monitoring and Evaluation: Frequency and duration of service-outages occasioned by lack of maintenance and repairs.

Objective: Preserve, protect and enhance the beachfront area.
Monitoring and Evaluation: Maintain current access and seek additional access points; maintain dune landscape area.

Objective: Maintain the adopted LOS for parks and open space acreage.
Monitoring and Evaluation: Acreage of parks and open space versus population needs.

7. INTERGOVERNMENTAL COORDINATION

Objective: Maintain existing intergovernmental agreements for services to the Village.
Monitoring and Evaluation: Number of agreements in force at any time as a percentage of agreements in force as of this writing.

Objective: Coordinate with other units of local government on comprehensive planning matters that affect the Village.
Monitoring and Evaluation: No practical measure is feasible.

ATTACHMENT TO
COMPREHENSIVE MASTER PLAN
BAL HARBOUR VILLAGE

Consistency of the Local Comprehensive Plan for Bal Harbour Village with the State of Florida Comprehensive Plan.

In line with Rule 9J-5.021(4), F.A.C., the following goals and policies of the State Comprehensive Plan Chapter 187.201, Florida Statutes, are addressed in the Bal Harbour Comprehensive Plan as tabulated below.

STATE PLAN CONSISTENCY TABLE

BAL HARBOUR COMPREHENSIVE PLAN ELEMENT INDEX

TITLE	NUMBER
FUTURE LAND USE	III
TRANSPORTATION	IV
HOUSING	V
SAN. SEW., SOLID WASTE, DRAINAGE, POTABLE WATER, & NATURAL GROUNDWATER AQUIFER RECHARGE CONSERVATION	VI
COASTAL MANAGEMENT	VII
CONSERVATION	VIII
RECREATION AND OPEN SPACE	IX
INTERGOVERNMENTAL COORDINATION	X
CAPITAL IMPROVEMENTS	XI

STATE COMPREHENSIVE PLAN ITEMS			BAL HARBOUR COMPREHENSIVE PLAN		
Section	Short Description		Element	Section	Page(s)
187.201(5)	HOUSING				
	(a)	Goal:	V	V-I	V-9
	(b)	Policies:			V-9
187.201(8)	WATER RESOURCES				
	(a)	Goal:	VIII	VIII-C	VIII-3
	(b)	Policies:			VIII-3
187.201(9)	COASTAL AND MARINE RESOURCES				
	(a)	Goal 3:	VII	VII-14	VII-87
	(b)	Policies:			VII-87

STATE COMPREHENSIVE PLAN ITEMS		BAL HARBOUR COMPREHENSIVE PLAN		
Section	**Short Description**	**Element**	**Section**	**Page(s)**
187.201(10)	NATURAL SYSTEMS AND RECREATION LANDS			
	(a) Goal 1:	VIII	VIII-C	VIII-3
	(b) Policies:			VIII-3
187.201(11)	AIR QUALITY			
	(a) Goal:	VIII	VIII-C	VIII-3
	(b) Policies:			VIII-3
187.201 (13)	HAZARDOUS & NON-HAZARDOUS MATERIALS AND WASTES			
	(a) Goal:	VIII	VIII-C	VIII-3
	(b) Policies:			VIII-3
187.201(16)	LAND USE			
	(a) Goal:	III	III-J	III-20
	(b) Policies:			III-20
187.201(12)	PUBLIC FACILITIES			
	(a) Goal:	VI, XI	VI-F, XI-D	VI-36, XI-9
	(b) Policies:			VI-36, XI-9
187.201(20)	TRANSPORTATION			
	(a) Goal:	IV	IV-GOP's	IV-38
	(b) Policies:			IV-38
187.201(21)	GOVERNMENTAL EFFICIENCY			
	(a) Goal:	VI, X, XI	VI-F, X-C,	VI-36, X-4,
	(b) Policies:		XI-D	XI-8
187.201(24)	TOURISM			
	(a) Goal:	III	III-J	III-20
	(b) Policies:			III-20
187.201(26)	PLAN IMPLEMENTATION			
	(a) Goal:	X	X-C	X-4
		XII	XII-B	XII-1

STATE COMPREHENSIVE PLAN ITEMS		BAL HARBOUR COMPREHENSIVE PLAN		
Section	**Short Description**	**Element**	**Section**	**Page(s)**
	(b) Policies:	X	X-C	X-4
		XII	XII-D-H	XII-1

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