



# City of Naples

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COUNCIL MEMBERS	M	S		A
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DISCUSSION OF ESTABLISHMENT OF AN HISTORIC DISTRICT IN THE CITY OF NAPLES (Cont) ITEM 2 (Cont)

the County to finish the work in this area which would cost approximately \$3,000 whether it is done now or later under an independent agreement. City Attorney Rynders expressed his belief that there would be no problem to "piggy-back" on the County's contract. Community Development Director Barry indicated his support of the program and Mr. Richardson voiced his approval. City Manager Jones noted that the expenditure could be made administratively after a consensus of Council, and although Council action would be necessary for the transfer of funds at the end of the year. Mr. Werndli informed Council that the State would hold a public hearing on any district that was nominated for historic designation. Mayor Putzell confirmed that it was the consensus of Council to proceed with the survey and nomination of historic sites by Florida Preservation Services for between \$3000-\$4000 and to make application for the grant for the planning element of the historic resources in the comprehensive plan. In response to Mr. Crawford, Mr. Werndli answered by stating that an owner could build anything he wished if an historical site were destroyed by storm. He did not, however, know whether individual historic sites or replacement structures would be exempt from flood level requirements in coastal areas.

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DISCUSSION OF ESTABLISHMENT OF A ZONING BOARD OF APPEALS ITEM 3

Community Development Director Barry reviewed the information in his memo dated May 15, 1986 (Attachment #3). During discussion of the suggestion, it was the consensus of Council not to change the function of the Planning Advisory Board at this time.

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CONTINUATION OF DISCUSSION OF GOALS AND OBJECTIVES. Pursuant to discussion at Council Workshop of May 14, 1986 ITEM 4

City Manager Jones asked Council for their thoughts on future projects for use in preparing the 86-87 operating budget and capital improvement components. Mr. Richardson suggested that the staff prepare a list that the Council members can use as a reference, but City Manager Jones also indicated his desire to know what items Council might have more interest in instituting or completing. He further suggested that Council check the past four years of the Capital Improvement Plan to see if they wanted to re-prioritize some items. Mr. Graver noted some tentative plans to upgrade and/or expand the City's parks. The City Manager said he would prepare a tentative list for Council to discuss at a later workshop.

\*\*\*  
ADJOURN: 11:42 a.m.

\_\_\_\_\_  
 Edwin J. Putzell, Jr., Mayor

Janet Cason  
 City Clerk

Ellen P. Weigand  
 Deputy Clerk

These minutes of the Naples City Council approved 1111 16 1986

Supplemental attendance list - Workshop Meeting, 05/27/86

Phillip Werndli  
J. Sandy Scatena  
Robert Schroer

Harry Cunningham  
Robert Ott

Dr. Mark Benedict  
Charles Andrews

News Media

Hilary Hutchison, TV-9  
Marty Bonvechio, Naples Daily News

Beverly Cameron, WINK TV-11

Other interested citizens and visitors

Community Development Director Barry reviewed the information in his memo dated May 15, 1986 (Attachment #3). During discussion of the suggestion, it was the consensus of Council not to change the function of the Planning Advisory Board at this time.

CONTRIBUTION OF DISCUSSION ON GOALS AND OBJECTIVES PERTAINING TO DISCUSSION AT COUNCIL WORKSHOP OF MAY 14, 1986

City Manager Jones asked Council for their thoughts on future projects for use in preparing the 85-86 operating budget and capital improvement programs. Mr. Richardson suggested that the staff prepare a list that the Council members can use as a reference. But City Manager Jones also indicated his desire to know what items Council might have more interest in initiating or completing. He further suggested that Council check the past four years of the Capital Improvement Plan to see if they wanted to re-prioritize some items. Mr. Carter noted some tentative plans to upgrade and/or expand the City's parks. The City Manager said he would prepare a tentative list for Council to discuss at a later workshop.

ADJOURN 11:42 a.m.

Janet Carson  
City Clerk

Ellen P. Weisand  
Betsy Clark

These minutes of the Naples City Council approved



# City of Naples

## MEMO

TO: HONORABLE MAYOR AND MEMBERS OF COUNCIL  
FROM: CITY MANAGER FRANKLIN C. JONES  
SUBJECT: REPORT ON BEACH REPLENISHMENT  
DATE: MAY 22, 1986

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Attache for your information is the report we received recently from Dr. Albert C. Hine. We will have a brief discussion of the report during the workshop on Tuesday, the 27th, and a more lengthy presentation when Dr. Hine appears before Council in the future.

Sincerely,

*Franklin C. Jones*  
Franklin C. Jones  
City Manager

FCJ/tan  
enc.

ASSESSMENT OF DREDGING ACTIVITY  
AT GORDON PASS  
AND ADJACENT BEACH REPLENISHMENT  
NAPLES, FLORIDA

Albert C. Hine  
Associate Professor  
Department of Marine Science  
University of South Florida  
140 7th Ave South  
St. Petersburg, FL 33701

Christopher P. Jones  
Coastal Eng. Specialist  
336 Weil Hall  
University of Florida  
Gainesville, FL 32611

Objectives and Purpose

The senior investigator (ACH) was contacted by the City Manager of Naples, FL, Mr. Franklin Jones, to provide advice to the City concerning three problems/questions:

1. Where to place dredge spoil material during future dredging operations at Gordon Pass?
2. Should a jetty or terminal groin be placed on the north side of Gordon Pass?
3. What should be a general strategy in maintaining and/or improving the present beach north of Gordon Pass?

Mr. Christopher P. Jones, a coastal engineering specialist, was contacted by Dr. Hine to provide advice from the engineering point of view, specifically concerning structures. It is our contention that the expertise of both a coastal geologist and engineer are needed to adequately address beach and tidal inlet problems.

The purpose or intent was not to duplicate existing studies, but to examine and synthesize the appropriate scientific data previously published to address the three above-mentioned objectives. Thus, no field work was conducted; no laboratory measurements were made. We essentially wanted to reinterpret what was

already known to make the best possible recommendations to the City concerning the specific problems it is facing.

### Data Base Utilized

After having examined a large number of documents provided to us by the City Engineer and The Collier County Conservancy as well as our own resources, we found that the following sources of information were the most helpful:

1. U.S. Army Corps of Engineers, 1972, Draft Beach Erosion Control Study Collier County, Florida: Serial No. 9.
2. Walton, T., 1973, Littoral drift computations along the coast of Florida by means of ship wave observations: Coastal and Oceanographic Engineering Laboratory Technical Report No. 15, University of Florida, Gainesville, 97 p.
3. Naples Beach Study Report, August 1980, Suboceanic Consultants, Inc.
4. Natural Resources of Collier County; Coastal Barrier Resources, 1984, Technical Report No. 84-2, Parts 1-5; Natural Resources Management Department, Collier County Government Complex, Naples FL.

In addition, we talked extensively with Dr. Mark Benedict of The Collier County Conservancy. We also visited the office of Mr. Ed Proffitt, Natural Resources Management Department. Finally, we visited Gordon Pass on the ground from the north side and flew over this inlet and the adjacent barrier island system from a light aircraft. Attached to this report are copies of slides taken on that April 30, 1986 overflight. The dredging operation was plainly visible.

### Pertinent Geologic/Engineering Background and Setting

1. Net longshore sand transport is to the south in the Naples Beach/Gordon Pass/Keewaydin Island area. All studies indicate this. Values range from 32,000 to 86,000 cu. yds./yr. See Tables 1 and 2 (labelled A, B attached to text) from Walton (1973), Figure 3 (labelled C) from Naples Beach Study Report (1980), and Figure 7 (labelled D) from Natural Resources of Collier County (1984).

2. Gordon Pass is trapping between 11,000 and 35,000 cu. yds./yr of sand (Table 3 of Walton, 1973, labelled E, and Figure 3 of the Naples Beach Study Report, 1980).

3. Since 1968, approximately 690,200 cu. yds. of sand have been dredged from Gordon Pass (1968-8,800 cu. yds.; 1970-181,400 cu. yds.; 1980-235,000; 1986-265,000 cu. yds. projected). This averages 23,622 cu. yds./yr of sand removed from the Pass. This average does not include the latest, projected value. All dredged material has been placed in the beach zone at northern Keewaydin Island including sands from the present dredging operation.

4. Gordon Pass has increased in size since 1940. At that time, the width of the inlet was 140 ft. By 1970, the width was 400 ft. By 1980 the width was 500 ft. Extensive inner bay dredging and the added discharge of the Golden Gate Canal caused this enlargement of the inlet (Naples Beach Study Report, 1980, p. 42). This enlargement of the tidal prism (volume of water coming in/out of an inlet), which was responsible for the widening of the inlet, also increased its sand trapping capacity. The Naples Beach Study Report (1980, Fig. 3) estimates that 35,000 cu. yds./yr of sand are trapped by Gordon Pass. This is about 11,400 cu. yds./yr more sand than is artificially bypassed on an annual basis by the dredging operations.

5. The present size of the ebb-tidal delta shoal (seaward shoal associated with a tidal inlet) is 580,000 cu. yds. (our own measurement-unfortunately, we were unable to show how this shoal has grown through time due to lack of appropriate survey data).

6. The present size of the ebb-tidal delta associated with Big Marco Pass, located approximately 11 miles to the south has approximately 15,000,000 cu. yds. of sand (our own measurement).

7. These ebb-tidal deltas probably represent the only good source of beach replenishment material as the inner continental shelf is either rocky or covered with inappropriate material such as clays or muddy sands (see Fig. A-1, labelled F attached to back of this text, U.S. Army Corps of Engineer Report, 1972).



8. The beach north of Gordon Pass has remained relatively stable since 1885. Portions of this beach have even accreted seaward (see Fig. 20, labelled G, of Natural Resources of Collier County, 1984). However, the beach south of Gordon Pass along Keewaydin Island has been much more unstable over the same time frame. There are distinct zones of erosion and accretion located in the center of the island which have persisted through time. However, near Gordon Pass on the north and Little Marco Pass on the south, the shoreline has undergone widespread fluctuations and represents highly unstable areas. It is possible that some of the more recent erosion along Keewaydin Island has resulted from the increased sand trapping ability of Gordon Pass indicated in item #4 immediately above.

9. Figure 1 (labelled H) of the Natural Resources of Collier County, 1984 summarizes shoreline changes for the entire County (see also Fig. 1, Naples Beach Study Report, 1980). Note that in the Gordon Pass area, the beach to the north of the Pass (Naples Headland) is rated as either stable or accreting. The beach south of the Pass extending about 50% of the way down Keewaydin Island is rated as having massive fluctuations or moderate recession.

#### Conclusions and Recommendations

Based upon the pertinent available facts and observations cited above, we have made the following conclusions and recommendations:

1. In view of the relatively unstable nature of the beaches on Keewaydin Island compared to the Naples Headland (not including the beaches immediately south of Doctors Pass) all sands removed from the natural bypass system at Gordon Pass during future, major dredging operations and placed along the beach to the north would probably cause more erosion and instability along the beaches south of the Pass. However, some sand could be placed to the north to alleviate minor, local erosion problems--see item #8 below.

2. The amount of sand that has been dredged from Gordon Pass during each of the past two operations (average is 250,000 cu. yds.) would make a new beach/berm 5 feet above sea level, 75 feet wide, extending down to -20 feet depth, and slightly less than a mile long. This is approximately one-half the length of the suggested beach promised by the Save Our Sand group.

3. The volume of sand needed to produce a beach of similar width and height but over 2 miles in length (dimensions suggested by the Save Our Sand group) would exceed the total volume of sand residing in the ebb-tidal delta shoal located just seaward of Gordon Pass. Removing this sand body for beach replenishment purposes would create severe erosion problems in the immediate vicinity of the inlet.

4. Since the beaches along Naples have been stable, are sufficiently wide, and appear to satisfy most public recreational needs, there is no overwhelming reason to begin a beach replenishment project similar to or larger than the ones mentioned in items #2 and 3 immediately above. Additionally, since the uplands behind the beach are topographically low, these areas would be flooded during all but minor storms, regardless of beach width. A widened beach would provide some protection during storms to those structures located immediately behind the berm, however.

5. If a major replenishment of the Naples beaches is desired, the only suitable source of the needed volume of sand would be the ebb-tidal delta shoal associated with Big Marco Pass located about 11 miles to the south. We have no figures, but undoubtedly this would be an expensive operation. As mentioned earlier, Gordon Pass could not provide such a volume of material. In addition, vibracores taken just seaward of the Naples beaches clearly show the absence of beach quality sands.

6. A new, relatively impermeable terminal groin located on the north side of Gordon Pass, extending out to a point in line with shoreline to the north, would provide some stability to the beach in the immediate area of the Pass. This structure would trap some sand that would have been transported into the Pass. The volume trapped would have little effect on the Pass or the beaches located to south on Keewaydin Island. However, the newly widened beach on the north side of the Pass probably only would extend north to the first seawall. A terminal groin or jetty extending seaward a distance equal to the existing south jetty could significantly impede the sand bypassing the system and would cause erosion to the south. Such a lengthened jetty would not add much to the northern beaches (little influence beyond the first seawall to the north) and would not be justified as far as stabilizing the inlet is concerned.

7. The City should be encouraged to build new sand dunes and pursue a dune revegetation program. The dunes will provide some measure of protection during smaller storms and will add to the esthetic nature of the shoreline. This would help to restore the natural view and soften the appearance of the seawalls/groins and other hardened beach structures. Dr. Mark Benedict of the Collier County Conservancy is an expert coastal plant ecologist and botanist and should be consulted in such matters.

8. Placement of sands at a few select locations may be warranted where the beach is narrow and where recreational demand is high. Such sands could come from Gordon Pass during the next dredging. However, the volume moved to the north should probably not exceed 10,000 cu. yds /yr or 50,000 cu.yds. over a 5 year period between dredging events. The rationale for this figure is that it represents approximately the volume of sand trapped by Gordon Pass after dredging operations have artificially bypassed the 23,622 cu. yds./yr. We view this figure as a maximum volume of sand that could be transferred to the north.

#### List of Tables and Figures

- A. Table 1 from Walton (1973)
- B. Table 2 from Walton (1973)
- C. Figure 3 from Naples Beach Study Report (1980)
- D. Figure 7 from Natural Resources of Collier County (1984)
- E. Table 3 from Walton (1973)
- F. Figure from U.S. Army Corps of Engineers (1972)
- G. Figure 20 from Natural Resources of Collier County (1984)
- H. Figure 1 from Natural Resources of Collier County (1984)

TABLE 1

COMPARISON OF ANNUAL AVERAGE NET LITTORAL DRIFT RATES AS ESTIMATED BY THE U.S. ARMY  
CORPS OF ENGINEERS AND AS CALCULATED IN THE PRESENT STUDY

Location	Estimated by Corps of Engineers		Computed Using SS&D Data	
	Annual Average Net Drift Rate in Cubic Yards Per Year + 10 <sup>3</sup>	Direction	Annual Average Net Drift Rate in Cubic Yards Per Year + 10 <sup>3</sup>	Direction
<u>Atlantic Coast</u>				
St. John's River	500	South	257	South
St. Augustine Inlet	400-500	South	293	South
Ponce de Leon Inlet	500	South	76.7	South
Canaveral Harbor	350	South	241	South
Sebastian Inlet	-	South	12.8	South
Fort Pierce Inlet	200-250	South	53.0	South
St. Lucie Inlet	230	South	94.1	South
Lake Worth Inlet	230	South	336	South
Hillsboro Inlet	120	South	315	South
Port Everglades	50	South	259	South
Miami Harbor Entrance	10	South	363	South
<u>Lower Gulf Coast</u>				
Gordon Pass	66	South	71.2	South
Ft. Myers Beach	22	North	21.9	North
Venice Inlet	40	South	86.9	South
New Pass	40	South	27.5	South
Anna Maria Island	-	North	0-80.3	South
Treasure Island	50	South	(44.1)-109.6	South
Clearwater Pass	10	South	(58.4)-73.0	South
<u>Upper Gulf Coast</u>				
Perdido Pass (Ala.)	65 (a)	West	76.7	South
Pensacola Pass	65	West	274	West
East Pass	150	East	292	West
			254	West

11 1/4° Range

Parantheses ( ) indicate a drift rate in the opposite sense of the recorded direction.

(\*) This drift rate is quoted as 130 x 10<sup>3</sup> cubic yards per year in summarized drift rates given in Table Reference [1], but given correctly as 65 x 10<sup>3</sup> in latter portion of the volume.

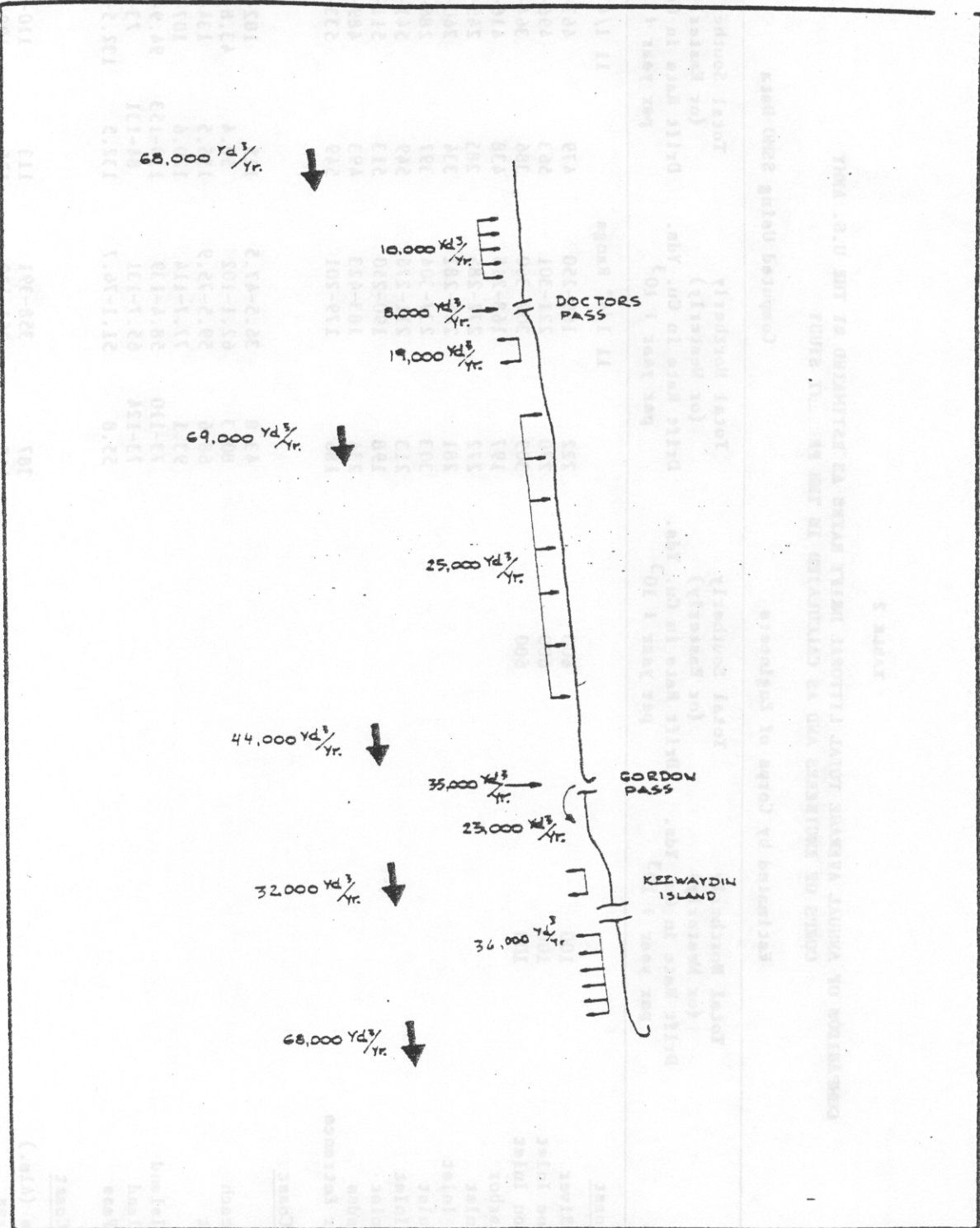
A.

TABLE 2

COMPARISON OF ANNUAL AVERAGE TOTAL LITTORAL DRIFT RATES AS ESTIMATED BY THE U.S. ARMY  
CORPS OF ENGINEERS AND AS CALCULATED IN THE PRESENT STUDY

Location	Estimated by Corps of Engineers			Computed Using SSMO Data		
	Total Northerly (or Westerly) Drift Rate in Cu. Yds. per year $\times 10^3$	Total Southerly (or Easterly) Drift Rate in Cu. Yds. per year $\times 10^3$	Total Northerly (or Westerly) Drift Rate in Cu. Yds. per year $\times 10^3$	Total Southerly (or Easterly) Drift Rate in Cu. Yds. per year $\times 10^3$	11 1/4° Range	
<u>Atlantic Coast</u>						
St. John's River	100	600	222	169-250	479	467-490
St. Augustine Inlet	100	600	270	221-301	563	496-572
Ponce de Leon Inlet	100	600	309	307-360	386	364-488
Canaveral Harbor			197	168-215	438	416-445
Sebastian Inlet			272	272-285	285	245-391
Fort Pierce Inlet			281	245-281	334	260-387
St. Lucia Inlet			303	237-304	397	286-414
Lake Worth Inlet			213	211-276	549	541-562
Hillsboro Inlet			198	190-250	513	511-587
Port Everglades			234	183-423	493	489-496
Miami Harbor Entrance			186	179-201	549	533-571
<u>Lower Gulf Coast</u>						
Gordon Pass			43.8	36.5-47.5	115	102-130
Ft. Myers Beach			80.3	62.1-102	58.4	43.8-62.1
Venice Inlet			68.6	59.5-75.9	155.5	134-168
New Pass			93.1	77.7-114	120.6	107-139
Anna Maria Island			73-110	58.4-139	110-153	94.9-168
Treasure Island			73-124	65.7-131	84-131	73-139
Clearwater Pass			55.8	51.1-76.7	132.5	132.5-142
<u>Upper Gulf Coast</u>						
Perdido Pass (Ala.)			387	358-391	113	110-124
Pensacola Pass			417	361-429	125	109-127
East Pass			361	321-409	107	102-126

(B.)



SAND BUDGET (1968-1980)  
FIGURE 7

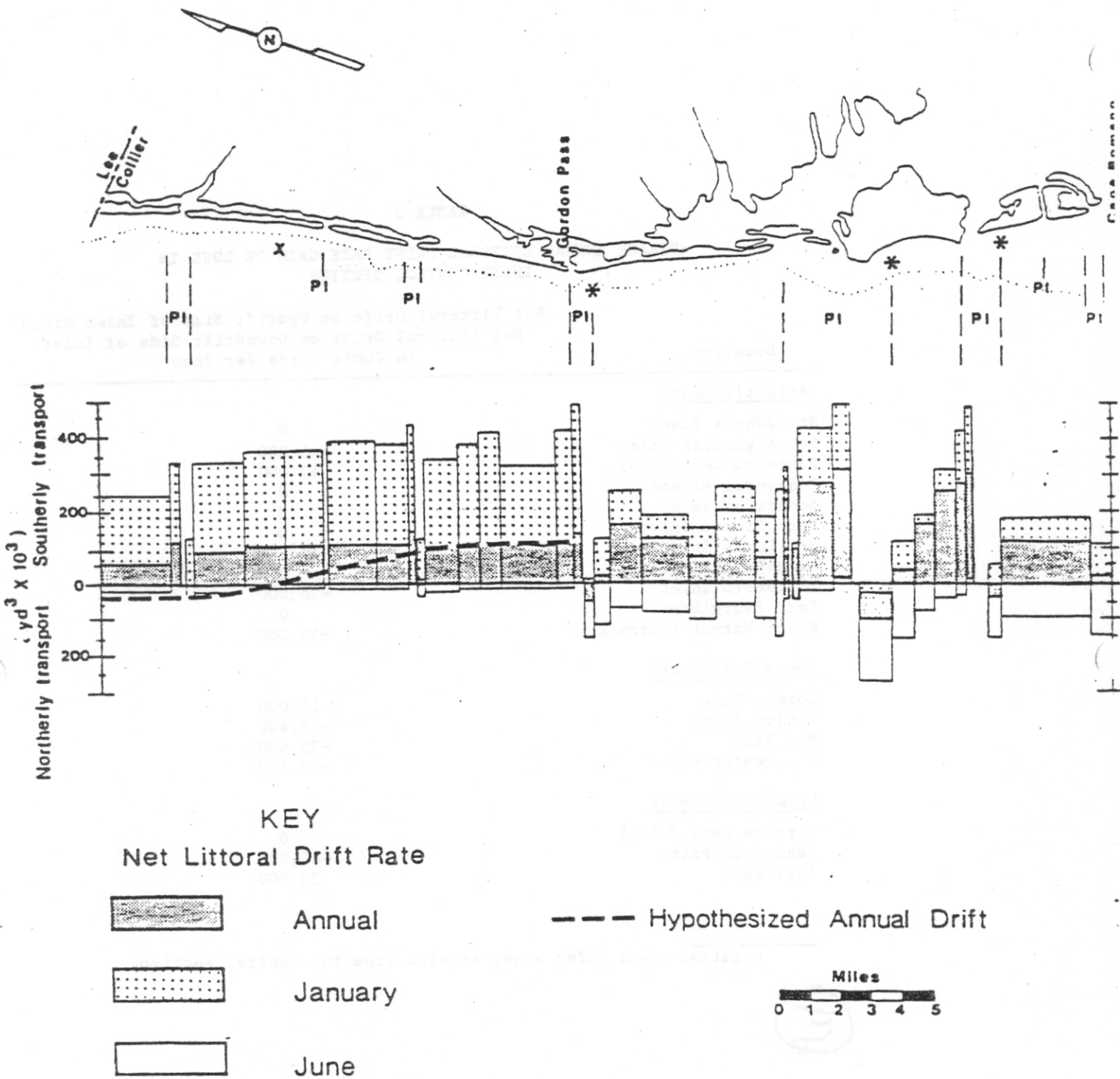


Figure 7. Theoretical net littoral drift rates: Collier County. The graphed values represent thousands of cubic yards of sand in transport. Also represented are tidal pass influenced zones (PI), substantiated littoral drift divides (\*), and a hypothesized net annual drift divide (X). Note the variation in littoral drift rates between the north and south County.

(D.)

**TABLE 3**

**AVERAGE ANNUAL LITTORAL DRIFT RATE GAIN OR LOSS IN INLET CONTROL SECTION**

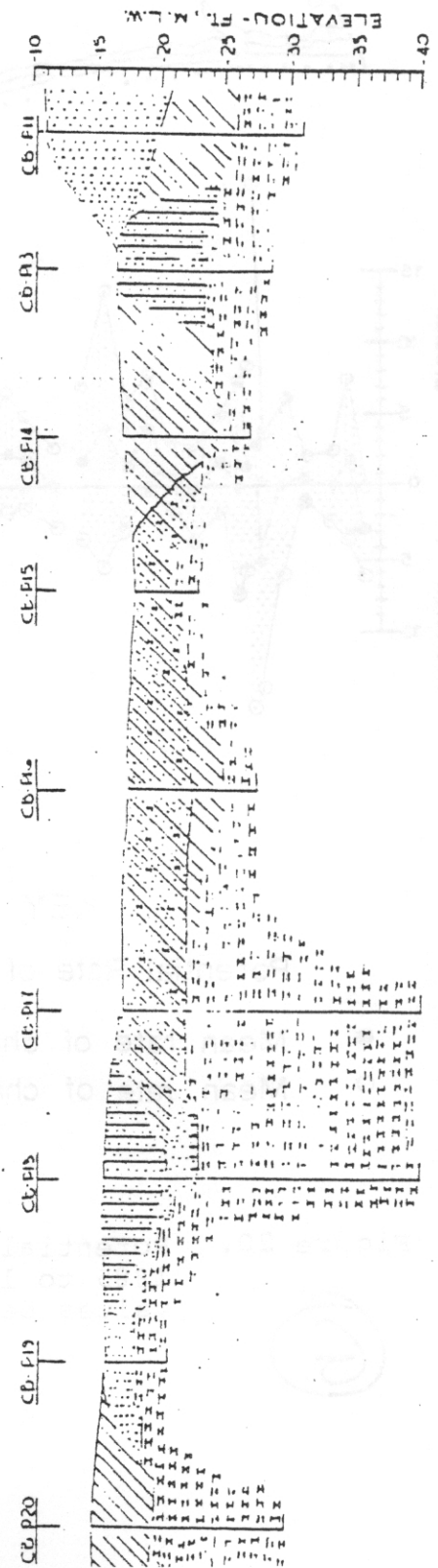
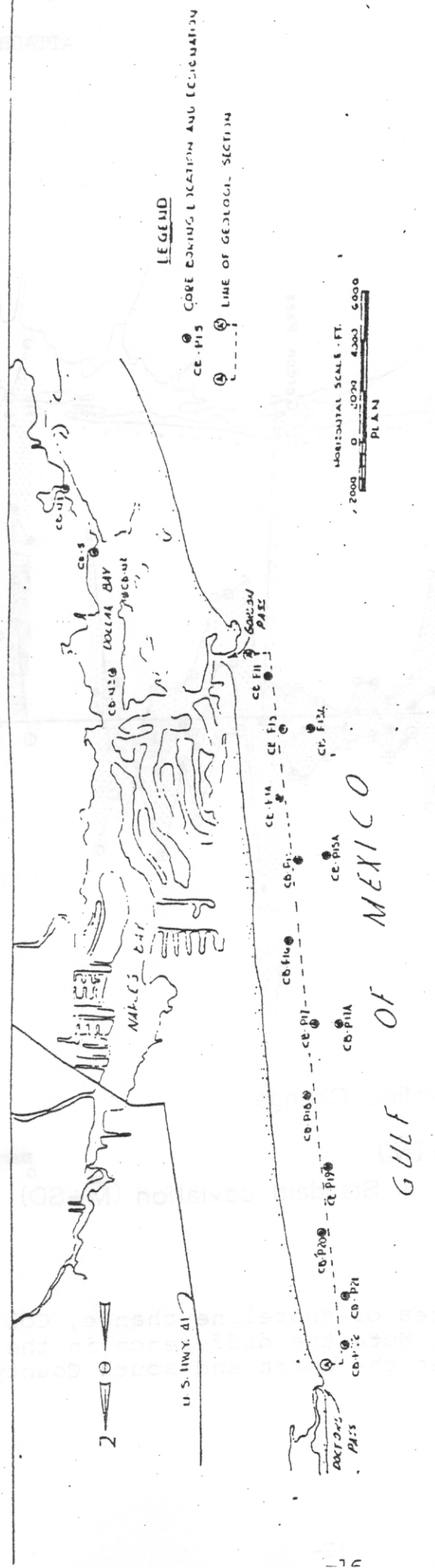
Net Littoral Drift on Updrift Side of Inlet Minus  
Net Littoral Drift on Downdrift Side of Inlet  
in Cubic Yards Per Year

Location	
<u>Atlantic Coast</u>	
St. John's River	0
St. Augustine Inlet	-46,000
Ponce de Leon Inlet	47,000
Canaveral Harbor	0
Sebastian Inlet	0
Fort Pierce Inlet	0
St. Lucie Inlet	12,400
Lake Worth Inlet	0
Hillsboro Inlet	-20,000
Port Everglades	0
Miami Harbor Entrance	-55,000
<u>Lower Gulf Coast</u>	
Gordon Pass	11,000
Venice Inlet	- 5,400
New Pass	-35,600
Clearwater Pass	- 3,500
<u>Upper Gulf Coast</u>	
Perdido Pass (Ala.)	0
Pensacola Pass	-40,000
East Pass	33,000

Negative signs infer a net erosion from the control section.

(E)





**NOTES**

1. (P), (M), ETC. REFERS TO THE CODES OF ENGINEER'S UNIFIED SOIL CLASSIFICATION SYSTEM
2. ROCK SAMPLES COLLECTED IN ACCORDANCE WITH ASTM-D-1-80.

**LEGEND**

- ▨ SAND, FINE GRAINED (SP)
- ▨ SAND, CLAYEY (SC)
- ▨ CLAY, SANDY (CS)
- ▨ LIMESTONE, SOFT, CHALKY, SLAKES ON EPP-75004

(E)

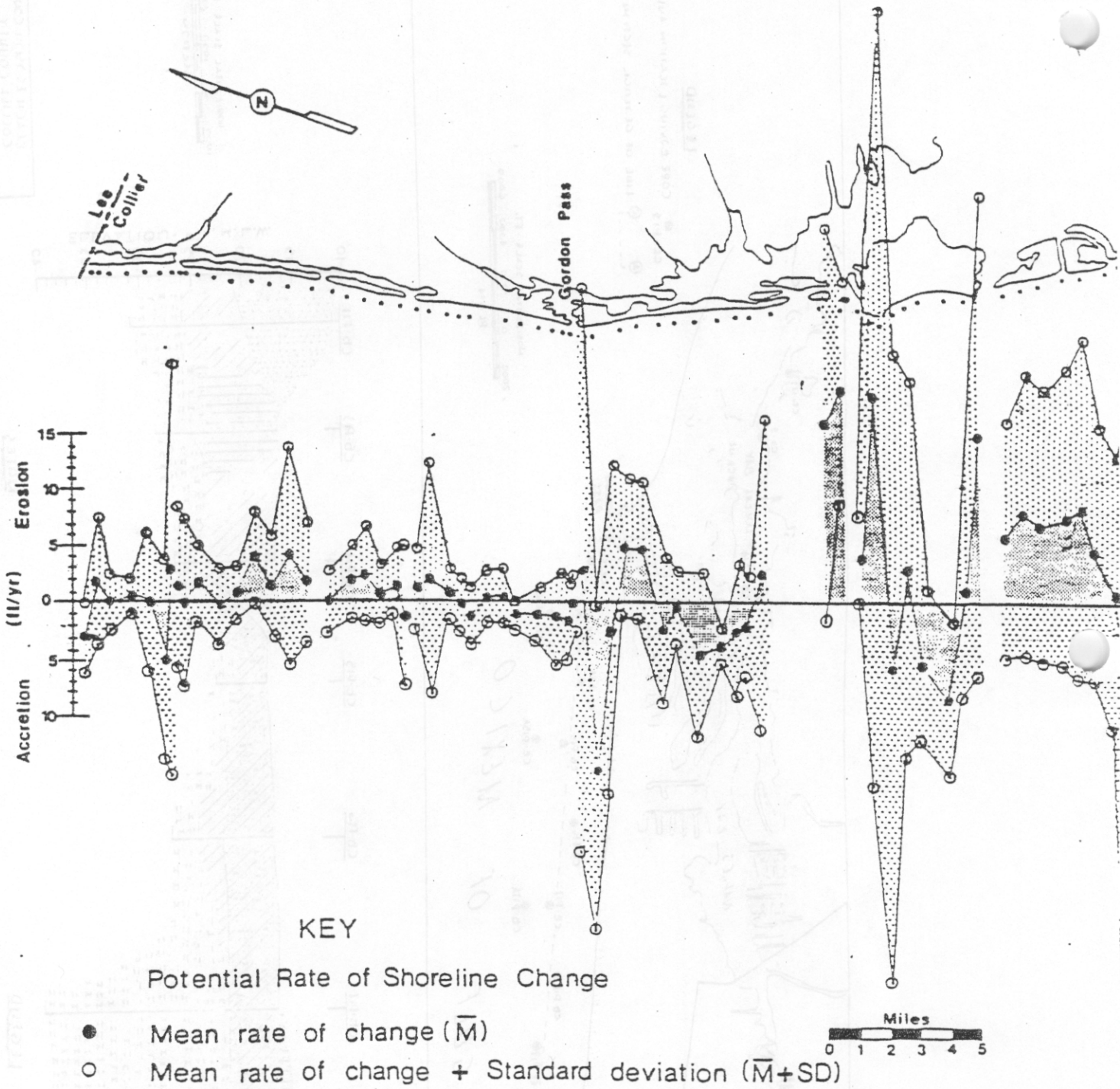


Figure 20. Potential rates of shoreline change, Collier County: 1885 to 1981. Note the difference in the range of values between the north and south County.

6.

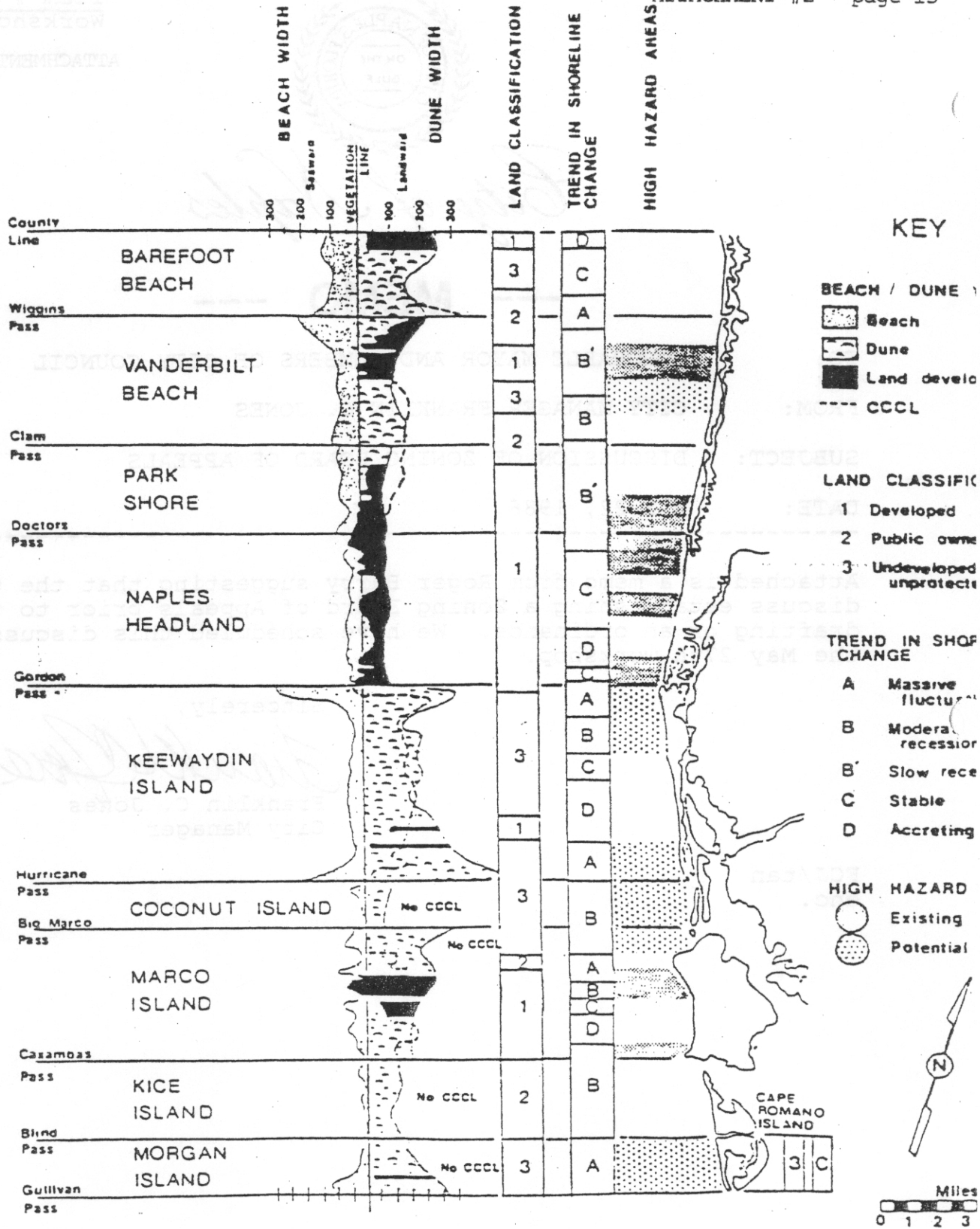


Figure 1. Collier County barrier coastline: an overview of resource land use, dynamics, and erosion hazards.

(H.)



# City of Naples

## MEMO

TO: HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: CITY MANAGER FRANKLIN C. JONES

SUBJECT: DISCUSSION OF ZONING BOARD OF APPEALS

DATE: MAY 22, 1986

Attached is a memo from Roger Barry suggesting that the Council discuss establishing a Zoning Board of Appeals prior to the drafting of an ordinance. We have scheduled this discussion at the May 27th workshop.

Sincerely,

Franklin C. Jones  
City Manager

FCJ/tan  
enc.



*City of Naples*



--- MEMO ---

TO: Frank Jones  
 FROM: Roger J. Barry  
 SUBJ: Ordinance Establishing a Zoning Board of Appeals  
 DATE: May 15, 1986

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As you know, some members of City Council have suggested that the PAB accept more responsibility by taking more final actions on zoning ordinance related petitions.

At the present time, the only final action permitted to be taken by the PAB involves the approval of a General Development Site Plan (GDSP). All other petitions are referred to the City Council for final action.

The PAB has discussed this idea and they find it acceptable under certain circumstances. They feel that there should be a 4/5's vote of the PAB membership on a petition for such a vote to be considered final; the petitioner, the PAB or the City Council should have the ability to have any petition considered by the City Council; and only special exception (proposed to be changed to "conditional use" permits), non-conformity and variance petitions would be subject to final action by the PAB. Change of Zone, Comprehensive Plan Amendment, Zoning Ordinance text amendments and Subdivision petitions would still require final action by the City Council.

In order to accomplish this an ordinance must be adopted that would establish a Zoning Board of Appeals.

Under the provisions of the charter, the PAB may only act in an advisory capacity but the same members, acting as a Zoning Board of Appeals, could take such final actions.

I believe this matter should be discussed at a City Council Workshop and if the City Council agrees that we should proceed with the idea they could then direct the City Attorney to prepare the appropriate ordinance.

Please advise.

RJB:jhh