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DETAILED PROJECT REPORT
ON
EMERGENCY SHORELINE PROTECTION
SECTION 14

BOGGY BAYOU
VALPARAISO, FLORIDA



**US Army Corps
of Engineers**

Mobile District

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report consists of a feasibility analysis for shoreline protection to preclude possible destruction of a public road and utilities, for a distance of about 700 feet, along the western shore of Boggy Bayou at Valparaiso, Florida. The report recommends the construction of a stone revetment with an earthfilled embankment.		



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Background. In a resolution passed by the City Commission of the City of Valparaiso, Florida, on 8 March 1982, the Corps of Engineers was requested to study the erosion problem along approximately 3/4 mile of the southwest shoreline of Boggy Bayou fronting Bayshore Drive. The initial study was conducted under Section 103 of the River and Harbor Act of 1962, as amended. The District Engineer recommended protective works along 700 feet of shoreline of Boggy Bayou along Bayshore Drive. This recommendation was approved by CESAD-PD-P on 28 March 1985 and funding for preparation of plans and specifications was approved contingent on obtaining assurance from the City of Valparaiso for funding the non-Federal cost share. On 3 September 1985 and on 13 December 1985, the City of Valparaiso stated that the current financial situation did not allow funding of the City's cost share, but asked that the project be deferred and kept on the open projects list. Since a section of the road and adjacent utilities are subject to extensive damage from hurricane associated erosion, it was determined, based on technical guidance provided by the South Atlantic Division in May 1986, that eligibility criteria had been met to qualify the proposed project as an emergency shoreline project under Section 14 of the Flood Control Act of 1946. By 5 December 1986 letter, the City was informed that the cost sharing rules had been changed by the Water Resources Development Act of 1986, and that the cost share to the City would be 5 percent of the cost of construction plus lands, easements, and rights-of-way. If the total of these items did not come to 25 percent of the cost of construction, then the City would have to make an additional cash contribution to bring the non-Federal share to 25 percent. By letter dated 13 January 1987, the City of Valparaiso requested that the Mobile District resume work on the project.

Study Results. Alternative plans to prevent the shoreline erosion consisted of a stone revetment (Plan 1) and a timber bulkhead with riprap toe (Plan 2B). Evaluation of these two alternatives and the without project condition (no action plan) resulted in selection of the stone revetment as the best plan to prevent the shoreline erosion. The stone revetment plan will protect the critical 700 foot reach of the shoreline with a stone dike along the waters edge constructed to elevation 3.0 National Geodetic Vertical Datum (NGVD). An earthen embankment with maximum slope of 1 vertical to 2 horizontal will be constructed behind the dike. Revetment will be placed on the slope to elevation 6.0 NGVD and the bank will be planted with grass from the revetment to the top of the slope.

Views of Sponsor: The City of Valparaiso fully supports this project and has approved a draft cost sharing agreement and

furnished a letter of intent to fund the non-Federal costs for this project.

Views of Federal, State, and Regional Agencies: All views of the agencies on this project were either favorable or offered no objection.

Status of Environmental Coordination. The Environmental Assessment was prepared in 1984. The Section 404(b)(1) Evaluation was prepared and approved by District Engineer on 19 January 1985. The Finding of No Significant Impact (FONSI) was completed and approved by District Engineer on 19 January 1985. The Water Quality Certification by the State of Florida was issued on 18 November 1985. These documents were prepared for the original plan done under Section 103 of the Flood Control Act of 1962, as amended. The plan presented in this report (Section 14 of the Flood Control Act of 1946, as amended) is smaller than the original plan and the State of Florida does not require revision of the Water Quality Certification. However a revised FONSI was prepared and approved by the District Engineer on 18 July 1989.

Economics of the Recommended Plan. The benefits consist of a summation of the value of the land protected from erosion (\$700/yr.), plus the annual value of the cost for road relocation (\$116,500), and traffic diversion costs during construction of relocated road (\$1,000), which total \$118,200. The annual charges associated with the proposed plan (Plan 1) amount to \$19,900. The benefit-to-cost ratio is 5.9 for Plan 1, with net NED benefits of \$98,300.

Cost Sharing By the City of Valparaiso. The financial costs to the City of Valparaiso based on April 1990 prices are estimated as follows:

Construction Cost	\$174,300
Relocations Cost	<u>34,100</u>
Total Project Cost	\$208,400

Cash Contribution by City of Valparaiso

5 Percent Total Project Cost of \$208,400	\$10,400
Relocations Cost	<u>34,100</u>
Subtotal	\$44,500

Additional Cash Contribution During Construction	
25% x \$208,400 = \$52,100 - \$44,500 =	<u>\$7,600</u>
Total Contribution	\$52,100

Total Cash Contribution	\$10,400 + \$7,600 =	\$18,000
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In addition the City will be responsible for maintenance of the project which is currently estimated to be \$1,300 per year. There will be a final financial accounting based on actual construction costs for the project and the actual relocation costs paid by the City. The above estimates will be adjusted based on the above guidelines and actual prices.

Conclusion. Information from local residents and historical shoreline data indicates that the erosion rate of the shoreline within the study area is approximately three tenths of a foot per year. In some areas, erosion has caused the shoreline to approach to within a few feet of the edge of Bayshore Drive. A severe storm could cause failure of portions of the street and adjacent utilities at anytime. Based upon the investigations conducted during this study, the annual benefits attributable to shore protection will exceed the cost of construction and maintenance of the recommended plan. Any adverse social, cultural, aesthetic, and environmental impacts will be mitigated by beneficial effects.

Recommendation. Protective works along 700 feet of shoreline of Boggy Bayou are needed to preclude possible destruction of public access road and utilities. It is recommended that Plan 1 consisting of a stone revetment with an earth-filled embankment be constructed, with such modifications as at the discretion of the Chief of Engineers may be advisable, at an estimated construction cost of \$174,300 (Apr 90 Prices). This recommendation is made with the provision that, prior to the implementation, the local sponsor will agree to provide a cash contribution for project construction presently estimated at \$18,000, and to pay for relocations currently estimated at \$34,100.

Detail Project Report
Emergency Shoreline Protection, Section 14
Boggy Bayou, Valparaiso, Florida

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GENERAL

In a resolution passed by the City Commission of the City of Valparaiso, Florida, on 8 March 1982, the Corps of Engineers was requested to study the erosion problem along approximately 3/4 mile of the southwest shoreline of Boggy Bayou fronting Bayshore Drive. A copy of the 9 March 1982 letter from the administrative assistant conveying the resolution is contained in Appendix B.

STUDY AUTHORITY

The study was conducted under the authority of Section 14 of the Flood Control Act of 1946, as amended. The initial investigation was done under the authority of Section 103 of the River and Harbor Act of 1962, as amended. Since a section of the road and adjacent utilities are subject to extensive damage from hurricane associated erosion, it was determined based on technical guidance provided by the South Atlantic Division in May 1986, that eligibility criteria had been met to qualify the proposed project as an emergency shoreline project under Section 14.

DESCRIPTION OF STUDY AREA

The City of Valparaiso is in Okaloosa County on the west bank of Boggy Bayou, an embayment which indents the north shore of Choctawhatchee Bay about 10 miles northeast of Fort Walton Beach, Florida. The area is shown on Plate 1. Boggy Bayou is about 3.2 miles long and one-half mile wide with depths varying from 13 feet near the head of the bayou to about 22 feet at its mouth on Choctawhatchee Bay. Its length is oriented in a northwest-southeast direction. A portion of the city is located on a peninsula which extends southerly along the west side of Boggy Bayou such that the shoreline of the bayou forms generally the southwestern, southern and eastern boundaries of the city. Bayshore Drive, a paved street with concrete curb and gutter, extends generally parallel to the shoreline along the entire perimeter of the peninsula and provides access to both the bayou and private residences located on the opposite side of the street. Sanitary sewer, water, and overhead power lines parallel the street. The sewer and water lines are generally on the bayou side of the street throughout the study area. A sewage lift station is located at the northwest corner of Lincoln Park. The original study area (see next section, Problems and Requested Improvements) is a strip of city-owned land about 3/4 mile in length on the northeast side of the Valparaiso peninsula as shown on Plate 2. The area begins about 50 feet southeast of Eastview Avenue and ends near Northend Avenue to the northwest and includes the lands of Lincoln Park and other small picnic areas. The shore varies from a gently sloping sand beach in Lincoln Park to steep banks about 15 feet above the water's edge in places. This land, situated between Bayshore Drive and Boggy Bayou is mostly park-like with mature trees, well maintained lawns, and

with a few benches and tables placed where the terrain allows. It provides a pleasant shoreline and attractive setting for residences adjacent to Bayshore Drive. Along the shoreline within the current study area, (see Plate 4) private residents have constructed three wood piers and a wood boat shed. The construction of piers and boat sheds is no longer permitted by the city. However, the piers and boat shed were allowed to remain under a "grandfather clause" since they were constructed before the city changed its permit procedure.

PROBLEMS AND REQUESTED IMPROVEMENTS

Persistent erosion of the shoreline throughout the study area is occurring at an estimated rate of three-tenths of a foot per year. This rate was determined using aerial photography and inspections of the area. The effects of this erosion vary from minimal in the area of Lincoln Park beach to moderate at several other locations. Bayshore Drive, utilities and the boat piers along the shore are threatened with destruction by the continuing erosion. The northern shoreline of Choctawhatchee Bay has a history of general erosion including the shores of Boggy and other bayous. The study area shoreline and embankment is composed of loose, poorly graded, fine grained sands. Therefore, embankments tend to erode easily. The banks are under continual attack from erosion at the toe of the slope caused by wave action. As the base of the slope is eroded away, the banks become very steep and sluff away. The city, with its limited resources is trying to contain the erosion with fill at the base of the slope and by planting vegetative cover on the slope. The measures the city is able to provide are temporary in nature and failure of the road appears imminent. The city desires Federal assistance to provide measures necessary to prevent the threatened damages to Bayshore Drive, and associated utilities.

The Initial Appraisal Report completed in December of 1983 investigated the erosion problem and described a possible solution for protecting approximately 2050 feet of shoreline fronting Bayshore Drive. The preliminary design section of the stone revetment considered and the limits of the structure alignment are shown on Plate 2. The plan of improvement addressed not only protection of the road and utilities, but also was designed to prevent damage to recreation areas along the shore and to help maintain the park-like character of the study area for public enjoyment. Due to the fact that the erosion in the park area and the area north of the current study area was not as critical and also to reduce construction costs, city officials requested that the scope of further studies address only the 700 feet of shoreline most severely threatened with the immediate loss of public road and utilities. Erosion control measures formulated and described in this report were developed with these considerations.

SIMILAR PROJECTS

In 1976, the City of Valparaiso requested Federal assistance in solving a similar erosion problem along the southeast shore of the Valparaiso peninsula about one-half mile south of the present study area. Their request resulted in a study under Section 14 of the Flood Control Act of 1946, which recommended a stone revetment with earth backfill to correct the problem. A project incorporating the recommended structure was approved and construction was completed in 1982.

SHORE PROCESSES AND PROBLEM ANALYSIS

Tides. The area tides are diurnal. There are no recording tide gages on Boggy Bayou to provide a record of tidal data. However, the mean tidal range in Choctawhatchee Bay near Boggy Bayou is 0.5 foot and the extreme, except during storms, is about 1.5 feet. The following tidal data, refers to National Geodetic Vertical Datum (NGVD) of 1929 (Formerly Mean Sea Level (MSL) Datum of 1929):

	Elevation (feet) NGVD
Mean low water	0.00
Mean water level	+0.25
Mean high water	+0.50

Storms. Available records indicate that only two hurricanes, or tropical storms of less intensity, have passed inland at Valparaiso since 1900. In July 1936 and September 1956 storms passed inland over Valparaiso causing surge elevations of 5.0 feet above NGVD at Fort Walton Beach, about 10 miles to the southwest. No information is available on the surge heights which occurred at Valparaiso during either storm. Elevated water surfaces resulting from passage of nearby storms are given in Table 1 for the locations nearest to Valparaiso where data is available.

Table 1
Maximum Storm Surge Elevations
(Feet-NGVD)
Storms

Location	(Eloise) (Flossy)		1953	1950	1936	1929
	1975	1956				
Choctawhatchee Bay						
Fort Walton Beach	5.5	5.0	4.5	4.1	5.0	5.4
Point Washington*	6.2	7.5	3.3	4.8	-	5.4
Gulf of Mexico						
East Pass Entrance	6.4	5.9	4.5	7.3	-	-

* Point Washington is at the east end of Choctawhatchee Bay.

Winds. Data on surface winds in the study area were furnished by the Air Weather Service at Eglin Air Force Base located near the City of Valparaiso. The data is representative of a 34-year observation period extending between 1938 and 1972 and show the winds which prevailed from all specific directions for 0.1 percent or more of the time. This 34-year record indicated that wind with maximum speeds no greater than 21 knots occurred for about 99.6 percent of the time. An accumulation of winds from all directions having speeds of 22-27 knots was reported to have occurred for no more than 0.3 percent of the time and that winds with speeds of 27 knots or less occurred 99.9 percent of the time. Winds from the northeast, the direction of maximum fetch exposure for the study area, occurred only about 6.4 percent of the time and averaged 6.5 knots. A chart showing the percentage frequency of wind direction and speed from hourly observations over the 34-year period of record, as furnished by the Eglin Air Force Base, is given in Table 2.

Waves. A northeast wind across the 2,000-foot width of Boggy Bayou produces the most severe wave conditions at the study area. Since wave data are not available for Boggy Bayou, methods prescribed in the U. S. Army Coastal Engineering and Research Center's (CERC) Shore Protection Manual (SPM) were used to determine the characteristics of the waves affecting the shoreline. Assuming a maximum 27 knot wind blowing from the northeast with a 2,000-foot fetch and constant depth of 15 feet across Boggy Bayou, the critical wave which would affect the study area has a calculated height (H) of 0.8 foot, a period (T) of 1.7 seconds, and wave set-up of 0.17 foot. However, storm surges of 4.9 ft. NGVD have occurred at Ft. Walton Beach Florida six times during the last 60 years.

DESIGN CRITERIA

The emergency nature of the action is demonstrated since it has been determined that an eight year storm event has a 50% chance of occurring in the next five years. This event could cause failure of the road and other significant damage to the area. The design for the structural alternative is based on a combination of the storm surges that have occurred over the last 60 years, which are shown in Table 1, the wind and wave data presented, and procedures published in the U. S. Army Coastal Engineering and Research Center's Shore Protection Manual (SPM).

Wave Runup. Maximum wave runup on permeable riprap structure having a slope of 1 vertical on 2 horizontal is calculated to be 0.64 feet. (SPM Chapter 7)

Top of Structure Elevation. Based on the summation of the wave setup, wave runup and normal high tide, the protection should

TABLE 2
PERCENTAGE FREQUENCY, DIRECTION AND SPEED OF WIND
(FROM HOURLY OBSERVATIONS FOR ALL WEATHER AT EGLIN AIR FORCE BASE)

Dir.	Speed (Knts)						Σ	Mean Wind Speed
	1-3	4-6	7-10	11-16	17-21	22-27		
N	2.7%	3.6%	3.3%	1.5%	.3%	.1%	11.5	6.8
NNE	1.3%	1.8%	1.6%	.7%	.1%	.0%	5.5	6.8
NE	1.4%	2.2%	2.1%	.7%	.1%	.0%	6.5	6.5
ENE	.9%	1.7%	1.3%	.4%	.0%	.0%	4.3	6.2
E	1.1%	2.0%	1.8%	.4%	.0%	.0%	5.3	6.3
ESE	.6%	1.1%	1.4%	.5%	.1%	.0%	3.7	7.2
SE	.8%	1.7%	2.5%	1.0%	.1%	.0%	6.1	7.8
SSE	.5%	1.3%	2.0%	.9%	.1%	.0%	4.8	7.9
S	.8%	2.0%	3.2%	1.1%	.1%	.0%	7.2	7.7
SSW	.8%	1.3%	2.5%	1.2%	.1%	.0%	5.9	8.2
SW	.8%	1.4%	2.2%	1.1%	.2%	.0%	5.7	8.1
WSW	.6%	.9%	1.0%	.5%	.1%	.1%	3.2	7.4
W	.9%	1.2%	1.0%	.3%	.1%	.0%	3.5	6.2
WNW	.7%	1.0%	.8%	.3%	.1%	.0%	2.9	6.7
NW	1.2%	1.5%	1.3%	.6%	.1%	.0%	4.7	6.7
NNW	1.2%	1.8%	1.8%	.9%	.2%	.1%	6.0	7.4
VAREL							13.2	
CALM	16.5%	26.4%	30.0%	11.9%	1.8%	.3%	100.0	6.2
TOTAL NUMBER OF OBSERVATIONS								280663

Data furnished by:
Air Weather Service, Eglin Air Force Base

extend at least to elevation 1.41 ft. NGVD.

Wave Setup	.17
Wind Setup	.00
Wave runup	.64
Normal High Tide	<u>.60</u>
Total	1.41 ft.

A three foot minimum thickness for the dike structure will require that the top of the dike be set to at least elevation 3.0 ft. NVGD. The protection required for the storm surges that have occurred over the last 60 years require that the protection be carried to elevation 6.0 ft. NGVD. The top of the protection will therefore be carried to elevation 6.0 ft. NGVD. Strip sodding, grassing and mulching will be carried to the top of the slope to prevent erosion from rain runoff, wind erosion and pedestrian traffic.

ALTERNATIVE PLANS

In addition to the Without Project Condition, three structural plans were considered as possible solutions to the erosion problem along approximately 700 feet of Boggy Bayou shoreline, the most critical reach for the immediate loss of road and utilities. The structural measures using a stone dike and revetment (Plan 1) or a vertical wall timber bulkhead and revetment (Plans 2 and 2B) would protect the shoreline located in the vicinity of the intersection of Bayshore Drive and Magnolia Avenue and would extend 350 feet northward and 350 feet southeastward from that intersection. These three plans are shown on Plates 4, 6 and 7.

Alternative plans were formulated through coordination with local, state and Federal agencies (see Appendix A). During a site visit and subsequent correspondence, the U.S. Fish and Wildlife Service, and the Florida Department of Environmental Regulation expressed concerns relative to the loss of estuarine habitat due to the structural alignment of the preliminary plans. To minimize the losses of estuarine habitat, the design was modified by moving the alignment from about the 2.0-foot depth contour landward to the maximum extent possible and the slope of the earthfilled embankment was modified accordingly from about one vertical on three horizontal to one vertical on two horizontal. Plans considered are described in more detail in the following paragraphs of this report. All of the alternatives provide for protection of the picnic area at the end of Magnolia Avenue by separating the riprap revetment from the stone dike. A section of this area with Plan 1 is shown on Plate 5. (Sections of this area were not shown with Plans 2 and 2B since these were not recommended.) The area will be sloped at 1 vertical to 20 horizontal. All of the plans provide for protection of telephone cables which are located in the project site. Removal and

replacement of the 3 wood piers and the boat shed and the steps that lead to them will be a responsibility of the city and the property owners. The construction plans and specifications will provide for removal of that portion of the wood piers and boat shed within the construction right-of-way as part of the clearing and grubbing item. Tree wells are provided to prevent damage to large trees in the construction area. All structural plans require a storage area for construction materials.

Without Project Condition. In the absence of implementation of a Federal erosion control project along Bayshore Drive, the existing shoreline will continue to erode at the base of the slope causing steepening of the ground slope between the paved edge of Bayshore Drive and the bay bottom. The erosion rate of 0.3 feet per year was based on analysis of aerial photography, inspections of the area and interviews with residents. Periodic slope failures, induced by the advancing shoreline, will continue to occur until a significant storm event results in rapid erosion and massive caving and failure of Bayshore Drive. It is projected that road failure would occur in 1993. The response to this failure by local interests would be to relocate Bayshore Drive an average of 50 feet inland of its current alignment. This relocation would consist of abandoning approximately 950 feet of road, and constructing approximately 1,050 feet of new road. Water lines, sewerage lines, and other utilities would also require relocation; as well as, purchase of seven residential lots with structures, four without, and a small portion of two other residential lots. The alignment of the relocated road was chosen based on projected 50 year erosion rates and street design criteria. See Plate 3 for the alignment and the property involved.

Plan 1. This plan would provide protection for approximately 700 feet of shoreline and Bayshore Drive with a stone dike having a crest elevation of +3.0 feet NGVD and a 15-foot wide base between +1 and -1 foot NGVD. The dike slopes would be 1 vertical on 2 horizontal along the shoreface and 1 vertical on 1.5 horizontal along the landward side. An apron two feet wide would extend along the toe of the structure to provide additional stability and protection against breaking waves. An 18 inch thick layer of riprap would be placed from the top of the dike at elevation 3.0 ft. NGVD to elevation 6.0 ft. NGVD. The riprap would be placed on 6 inches of bedding material and filter cloth. The slope of the revetment would vary, but would be no steeper than 1 vertical to 2 horizontal. The picnic area would be protected as shown on Plate 5. The structure would be constructed with 1620 cubic yards of graded quarystone which would include 390 cubic yards of bedding material placed on filter fabric. Weight of stones would vary between 7 and 108 pounds with 50 percent of the stones having a weight of about 30 pounds. The embankment behind the dike would be backfilled with 1280 cubic yards of clean sandy material to a maximum slope of 1 vertical on 2 horizontal and

would be strip sodded, seeded and mulched. A typical section of the structure is shown on Plates 4 and 5. The structure would extend into the water between 10 and 15 feet beyond the existing waters edge and would result in the conversion of up to 0.3 acre of shallow estuarine area to terrestrial habitat. This distance represents the minimum possible disruption of estuarine habitat consistent with engineering design considerations. This alternative would return the area to approximately its former terrestrial state and would provide hard substrate for estuarine organisms which are not presently abundant in the area.

Plan 2. This plan would provide for protecting the shoreline and Bayshore drive with a vertical wall timber bulkhead with a top elevation at +3.0 feet NGVD and extending about 700 feet along the existing shoreline at mean low water and returning to high ground at each end. An 18 inch thick layer of riprap will extend from the top of the bulkhead at elevation 3.0 NGVD to elevation 6.0 ft. NGVD. The riprap will be placed on 6 inches of bedding material and filter cloth. Approximately 580 cubic yards of riprap, including 150 cubic yards of bedding material will be required for the revetment. The bulkhead would consist of 8-inch diameter 18-foot vertical piles with 4-foot centers driven approximately 15 feet into the ground and anchored with tie backs. Treated timber sheet pile consisting of 2 by 10 inch by 9 feet long planking would be buried 6 feet deep average. The embankment behind the bulkhead would be backfilled with approximately 1630 cubic yards of clean material borrowed from an available upland site, and the material would be placed to a maximum slope of 1 vertical on 2 horizontal. The area would be strip sodded, seeded and mulched as in Plan 1. A typical section is shown on Plate 6.

Plan 2B. This plan was formulated after interagency review of preliminary designs of Plans 1 and 2. Plan 2B consists of the same design features and quantities as Plan 2 with the addition of a stone apron 5 feet wide placed within the -1 foot contour along the toe of the bulkhead to provide additional protection from breaking waves. The stone apron would have a thickness of 12 inches and consist of stones ranging in size from 26 pounds to 2 pounds. The apron will require an additional 50 cubic yards of stone. Plan 2B would provide hard substrate habitat for estuarine organisms which are not presently abundant in the area. A typical section of Plan 2B is shown on Plate 7. Plan 2 was not evaluated further because of unacceptability for environmental reasons.

COMPARISON OF ALTERNATIVES

The previously described structural alternatives (Plan 1 - Stone Revetment and Plan 2B - Timber Bulkhead with Riprap Toe) have been considered as possible solutions to the shoreline erosion problem in the location most vulnerable to road and utility

damage. This section of this report presents a comparison of these two structural plans and the without project condition. First Costs and Annual Charges. The economic impacts of Plans 1 and 2B are summarized in Table 3. Costs are based on April 1989 price levels and include allowances for contingencies, supervision, administration, engineering, and design. Annual charges are based on 8-7/8 percent interest rate over the 50 year project life and include maintenance costs associated with structural repairs necessary to maintain the integrity of each project. Costs for maintenance of the stone revetment alternative are expected to be nominal and are shown in Table 3 for Plan 1. It is anticipated that implementation of Plan 2B would require the eventual replacement of the entire timber sheet pile and most of the pilings over the 50 year project life. These replacement costs are included in the annual disbursements included in Table 3.

Benefits. Costs associated with the road relocation construction are presented in Table 4. Benefits resulting from implementation of Plans 1 and 2B are derived by the avoidance of road relocation expenditures (which are predicted to occur in 1993). Costs used to derive these benefits include the value of land that would be lost to erosion, expenditures that would be required in connection with the relocation of Bayshore Drive, and the cost involved with traffic diversion during construction of the relocated road. Costs of land required for the road right-of-way have been excluded from the benefits since this land would not be lost, but would be converted to another use of equal value (i.e. roadway). Listed below are the various components of the benefits:

a. Average annual charges for eroded land is based on an erosion rate of 0.3 ft./yr. and a value of \$3.42/S.F. (700 ft. x 0.3 x \$3.42 = \$700/yr.)

b. Benefits associated with road relocation are derived from the following items:

(1) Road Relocation Construction - The relocation costs, itemized in Table 4, are estimated to total \$183,000.

(2) Land Acquisition and Evacuation Costs - Acquisition costs are estimated to be \$50,000 and evacuation costs are estimated to be \$75,000. The portion of these costs associated with the land for the road right-of-way are included in the benefits since these costs will be lost once made.

(3) Structures - Seven residential structures would require acquisition due to road relocation. Five of the structures would be located within the road right-of-way, and the other two would have to be purchased because of a failure to meet required set back restrictions. The total estimated value of these seven structures is \$872,900 plus contingencies in the amount of \$132,000.

(4) Lots - The road relocation would require the acquisition of 11 lots; of which 7 have residences and 4 are

Table 3
Comparison of Plans
Cost Estimate and Annual Charges
(April 1989 Prices)

	Plan 1-Stone Revetment	Plan 2B-Timber Bulkhead with Riprap Toe
Construction Cost	\$168,900	\$184,100
Relocations Cost	<u>\$33,000</u>	<u>\$33,000</u>
Total Project Cost	\$201,900	\$217,100
Interest During Construction ¹	<u>\$4,500</u>	<u>\$4,800</u>
Project Investment	\$206,400	\$221,900
Annual Charges (8 7/8% interest and 50 year project life)		
Amortized Project Investment	\$18,600	\$20,000
Maintenance	<u>\$1,300²</u>	<u>\$1,400³</u>
Total Annual Charges	\$19,900	\$21,400

¹ 3 months @ 8 7/8%

² Riprap and dike (\$600), earth fill maintenance (\$300) and replacement of stone moved but not lost (\$400)

³ Riprap (\$400), earth fill maintenance (\$300) and bulkhead repair (\$700)

Table 4
Cost Estimate
Road Relocation (Future Without Project Condition)
(April 1989 Prices)

CONSTRUCTION COST

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Removal			
Road (20'x950')	2,110 SY	\$1.50	\$3,200
Utilities	1 job	1,000.00	1,000
Relocate			
Signs, Plants, etc.	1 job	1,500.00	1,500
New Work			
Earthwork	2,500 cy	3.50	8,800
Road Surface	2,800 sy	8.50	23,800
Curb Gutter	2,100 LF	8.00	16,800
Storm Drains	3 ea	2,500.00	7,500
Sanitary Sewer	1,050 LF	12.00	12,600
Water Line	1,050 LF	4.50	4,700
Utility Connections	14 ea	100.00	1,400
Power Lines	1,050 LF	8.00	8,400
Grassing	.5 ac	2,500.00	1,300
Subtotal			91,000
Contingencies (25%)			23,000
Subtotal			114,000
Engineering & Design			21,000
Supervision & Administration			15,000
Total Road & Utility Construction Cost			\$150,000

Relocation Cost	
Telephone Cables	\$30,000
Contingencies	3,000
Subtotal	\$33,000

Total Cost-Construction \$183,000

REAL ESTATE COSTS

Land for New Road*	126,900
Structures	872,900
Lots	322,400
Subtotal	\$1,322,200
Acquisition Costs	50,000
Evacuation Costs	75,000
Contingencies	200,000
Subtotal Real Estate Costs	\$1,647,200

Total Road Relocation Cost \$1,830,200

* Cost of land for the road (\$126,900) plus associated contingencies totalling \$19,200 are excluded from the benefits.

vacant. In addition a small portion of each of the two end lots would be impacted and only that part included in the right-of-way would have to be acquired. The total cost of the lots less the cost of the land for the road right-of-way is estimated to be \$322,400 plus contingencies in the amount of \$48,800.

c. Traffic diversion costs would be involved during construction of the relocated road. The diversion to Washington Avenue and John Sims Parkway would increase the distance for vehicles now using Bayshore Drive, by a distance of about 1050 feet, for a period of about two months during construction. Total costs associated with the traffic diversion are estimated to be \$11,200.

In summary, the average annual benefits which would accrue to protection by a Federal project are: (1) land loss prevented \$700; (2) road relocation costs avoided \$116,500; and (3) traffic diversion cost eliminated \$1,000. Therefore, total average annual benefits are \$118,200.

Environmental and Aesthetic Considerations. During the reconnaissance phase of study, Plan 2 was found to be environmentally unacceptable and was eliminated from further consideration as a viable plan. In Plan 2, the preservative treated vertical timber face of the bulkhead has little value as aquatic habitat. Additionally, waves reflected from vertical bulkheads lend to scour a trough at the base of the bulkhead, which further reduces shallow water habitat remaining after completion of the project. When commenting on proposals for private shore stabilization projects under Department of the Army permit processing procedures, the environmental review agencies generally discourage construction of vertical wall bulkheads unless provisions are made to mitigate losses of intertidal and shallow subtidal areas. As a mitigation measure, Plan 2B was developed to provide a biologically valuable substrate (riprap) along the base of the bulkhead at an additional cost of about \$10,000 over Plan 2. This hard substrate, with its large surface area and numerous interstices, would provide good quality habitat for aquatic biota.

The shoreline between waters edge and Bayshore Drive is mostly grass interspersed with pines and some hardwoods. Erosion is occurring around and under some trees threatening to topple them into the water. The steeper banks where erosion has been most severe are sparsely vegetated. Isolated stands of emergent vegetation are present along the shoreline. No submerged marine vegetation occurs in the study area.

The structural alternative would extend into the water varying distances beyond the existing waters edge and would result in the conversion of up to 0.3 acre of shallow estuarine bottom to terrestrial habitat. Shallow shore zones are valuable to fish and wildlife since numerous invertebrates inhabit the substrate,

small finfish feed and seek refuge in the shallows, and shore and wading birds use the shallows and adjacent land for feeding and resting. The filling of the shallow shore zone associated with the riprap revetment alternative will be the minimum necessary to provide the needed protection and will minimize the losses of fish and wildlife resources. Where feasible, tree wells would be constructed around some existing trees to prevent root damage due to backfilling. It is presently estimated that ten tree wells would need to be constructed to protect the trees along the slope. These wells would be constructed of landscape treated timbers with perforated pipes radiating from each well below the surface of the fill. The wells would be filled to ground level with gravel. In addition, this alternative would return the area to approximately its former terrestrial state and would provide hard substrate habitat for estuarine organisms which are not presently abundant in the area.

The nature of the study area is "park-like", a pleasant blend of manmade and natural features. The continuity created by the joining of waters edge to grassy slope or sandy beach, and the play of shadow, color and texture cast by the mixture of pine and hardwood trees provide a pleasing setting for man's activities. As viewed from the bayou, the study area is an important visual foreground for the residences along Bayshore Drive as viewed from the shore, it forms an aesthetic transition from the land to the water. The erosion that is occurring is disruptive to this pleasant balance between manmade and natural features. Structural measures of erosion control provide an opportunity to restore and maintain this balance for continued use and enjoyment of the community.

Social and Cultural Resources Considerations. Relocation of Bayshore Drive would cause considerable inconvenience and hardship for the residents affected. At the very least they will have access to their property and utility services temporarily interrupted during construction in addition to the dust and noise. More seriously, seven lots and the residential structures located on each of them would have to be acquired. An additional four vacant lots would have to be purchased because the road right-of-way would reduce the lot size below minimum size requirement of the city. Such matters can be expected to be very divisive and controversial to the point that condemnation proceedings might be necessary. With the proposed shore protection works, the need for road relocation would be avoided. Increased positive social values connected with increased usability, beauty, and protection would be created by the stabilized shoreline.

Considering the residential nature of the area and the highly eroded condition of the study area in particular, it is highly unlikely that there are any preserved cultural resources that would be impacted by shore protection works. There are no known

cultural resources eligible or listed on the National Register of Historic Places within the immediate study area. A letter from the Florida State Historic Preservation Officer concurring this finding is included in Appendix A.

A summary and comparison of social, environmental and economic impacts of alternatives considered (Without Project Condition, Plan 1 and Plan 2B) are presented in Table 5.

RECOMMENDED PLAN

Under the without-project condition, the erosion could be expected to continue, eventually resulting in the loss of portions of Bayshore Drive, adjacent utilities, public land, and private property. Because Bayshore Drive is necessary for access to private property, its destruction would necessitate reconstruction in a new location further inland on what is now private land. This "road relocation", requiring the acquisition of private property, would likely be so socially and economically disruptive to the community that the without project condition is not considered as an acceptable alternative. Comparison of impacts of alternatives considered indicate that Plan 1 consisting of a stone revetment with an earth-filled embankment is the best plan that meets the planning objectives. Plan 1 is recommended because in addition to its aesthetic qualities and providing enhanced habitat, it is more economical than Plan 2B. It maximizes net economic development benefits, minimizes adverse environmental impacts and is more socially acceptable. The cost estimate for Plan - Stone Revetment, the recommended plan, is shown on Table 6. The project features and structural alignment of Plan 1 are shown on Plate 4. Cross-sections are shown on Plates 4 and 5.

Economics of the Recommended Plan. The benefits consist of a summation of the value of the land protected from erosion (\$700/yr.), plus the annual value of the cost for road relocation (\$116,500), and traffic diversion costs during construction of relocated road (\$1,000), which total \$118,200. The annual charges associated with the proposed plan (Plan 1) amount to \$19,900. The benefit-to-cost ratio is 5.9 for Plan 1, with net NED benefits of \$98,300.

Environmental Coordination of the Recommended Plan. The Environmental Assessment was prepared in 1984. The Section 404(b)(1) Evaluation was prepared and approved by District Engineer on 19 January 1985. The Finding of No Significant Impact (FONSI) was completed and approved by District Engineer on 19 January 1985. The Water Quality Certification by the State of Florida was issued on 18 November 1985. These documents were prepared for the original plan done under Section 103 of the Flood Control Act of 1962, as amended. The plan presented in this report (Section 14 of the Flood Control Act of 1946, as

Table 5
Comparison of Alternatives

<u>Impact</u>	<u>Without Project Condition</u>	<u>Plan 1 Stone Revetment</u>	<u>Plan 2B Timber Bulkhead with riprap toe</u>
ENVIRONMENTAL			
Habitat (700' shoreline area)	Convert 350 sf/yr. of terrestrial to estuarine habitat.	Convert 0.3 ac. of shal- low sandy shore to hard substrate.	Loss of 0.1 ac. of shallow sandy habitat (Plan 2) converts to hard substrate habitat.
Water Quality	Continued erosion and associated turbidity.	Increased water quality due to bank stabilization. Temporary decrease in water quality during construction.	Same as Plan 1
Noise	No impact.	Increased noise levels during construction.	More than Plan 1
Aesthetics	Bank erosion and associated turbidity.	Increased aesthetics due to project landscape.	Not as desirable as Plan 1
SOCIAL/CULTURAL			
Damages	Loss of property, road and utilities.	No impact	No impact
Community Cohesion	Loss of access road and utilities and associated disruption.	Prevent disruption due to loss of road and utilities.	Same as Plan 1
Archeological	No impact	No impact	No impact
Plan Acceptability	Unacceptable	Acceptable	Acceptable
ECONOMICS			
Benefits(8-7/8%)	None	Stabilize shoreline. Pre- cludes future losses and costs. Total annual benefits are \$118,200.	Same as Plan 1
First Costs	None	\$201,900	\$221,900
Annual Charges	None	\$19,900	\$21,400
B/C Ratio	None	B/C = 5.9	B/C = 5.5
Net Benefits	None	\$98,300	\$96,800

Note: Plan 2 was excluded from evaluation in this table because previously it had been determined to be environmentally unacceptable, and therefore was eliminated from further consideration.

Table 6
Cost Estimate of Recommended Plan
Plan 1 - Stone Revetment
(April 1989 Prices)

CONSTRUCTION COST

<u>ACCOUNT</u> <u>NUMBER</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT COST</u>	<u>TOTAL COST</u>
16.0.1.B	Clearing and Grubbing	1	job	\$4,000.00	\$4,000
16.0.1.B	Slope Preparation	0.50	ac	2,500.00	1,300
16.0.2.B	Stone	1230	cy	50.00	61,500
16.0.2.B	Bedding Material	388	cy	40.00	15,500
16.0.2.B	Filter Cloth	24000	sf	0.30	7,200
16.0.1.B	Excavation	590	cy	4.00	2,400
16.0.1.B	Fill	1280	cy	10.00	12,800
16.0.1.B	Tree Wells	10	ea	230.00	2,300
16.0.1.B	Grassing and Mulching	0.50	ac	2,500.00	1,300
	Subtotal				\$108,300
16.0.2.-	Contingencies (25%)				27,100
	Subtotal				\$135,400
30.H.-.-	Planning, Engineering and Design				20,000
31.-.-.-	Construction Management				13,500
	Total Construction Cost				\$168,900

RELOCATIONS COST

02.3.-.-	Telephone cable protection. Place 4 cables in conduit, provide access and cover with stone and soil.	\$30,000
	Contingencies	3,000
	Total Relocation Cost	\$33,000

TOTAL PROJECT COST	\$201,900
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amended) is smaller than the original plan and the State of Florida does not require revision of the Water Quality Certification. However a revised FONSI was prepared and approved by the District Engineer on 18 July 1989. These documents are included in Appendix C, Environmental Studies.

COST SHARING BY THE CITY OF VALPARAISO

The city of Valparaiso qualifies for Federal cost sharing under Section 14 of the 1946 Flood Control Act, as amended. Cost sharing for the construction of shoreline erosion control projects is defined in the Water Resources Development Act of 1986 (PL 99-662). Non-Federal interests are required to pay 5 percent of the cost of the project during construction; provide all lands, easements, and rights-of-way; and perform all related necessary relocations; (LERRD). In accordance with CECW-RP letter dated 13 October 1988, Subject: Guidance Letter No. 11, Credit for Lands, Easements, and Rights-of-Way (LER) at Shore Protection Projects, the land needed for the placement of project features that prevent the loss of land itself has no value for crediting purposes itself. If the value of the contributions required above is less than 25 percent of the cost of the project, the non-Federal interests shall pay during construction such additional amounts as may be necessary so that the total contribution of the non-Federal interests is equal to 25 percent of the total project cost. Accordingly, the financial costs to the City of Valparaiso based on April 1990 prices (Table 5 data were escalated to 1990 prices) are estimated as follows:

Construction Cost	\$174,300
Relocations Cost	<u>34,100</u>
Total Project Cost	\$208,400

Cash Contribution by City of Valparaiso

5 Percent Total Project Cost of \$208,400	\$10,400
Relocations Cost	<u>34,100</u>
Subtotal	\$44,500

Additional Cash Contribution During Construction	
25% x \$208,400 = \$52,100 - \$44,500 =	<u>\$7,600</u>
Total Contribution	\$52,100

Total Cash Contribution	\$10,400 + \$7,600 :	\$18,000
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In addition the City will be responsible for maintenance of the project which is currently estimated to be \$1,300 per year. There will be a final financial accounting based on actual construction costs for the project and the actual relocation costs paid by the City. The above estimates will be adjusted based on the above guidelines and actual prices.

An approved Local Cooperation Agreement (LCA) must be in effect prior to initiation of construction. This agreement contains the following requirements:

- a. Provide, during the period of construction, a cash contribution of 5 percent of total project costs. If the value of the allowable contributions required in paragraph b. and c. below represent less than 25 percent of the total project costs, the City of Valparaiso shall provide during the period of construction an additional cash contribution in the amount necessary to make its total contribution equal to 25 percent of the total project costs;
- b. Provide all lands, easements, and rights-of-way, required for construction and maintenance of the project;
- c. Perform all relocations determined to be necessary for the construction of the project;
- d. Hold and save the United States free from damages due to the construction, operation and maintenance of the project when not the fault of the United States;
- e. Maintain and operate the project after completion without cost to the United States in accordance with regulations prescribed by the Secretary of the Army;
- f. Assume responsibility for project costs in excess of the Federal cost limitation of \$500,000;
- g. Fulfill the applicable requirements of non-Federal cooperation as specified in the terms and conditions of the Uniform Relocation Assistance Real Property Acquisition Policies Act of 1970 (Public Law 91-646), as amended; and
- h. Comply with Section 402 of the Water Resources Development Act of 1986 which requires non-Federal interests to agree to participate in and comply with applicable Federal flood plain management and flood insurance programs.

The sponsor's ability to pay has been analyzed in accordance with section 103(m) of the Water Resources Development Act of 1986. The City of Valparaiso is not eligible for a reduction of the maximum non-Federal cost share. The City of Valparaiso indicated on 27 April 1989 that it will execute a Local Cooperation Agreement for the construction of this emergency shore protection project. The letter dated 3 April 1989 forwarding to the draft LCA to the City of Valparaiso and the 27 April 1989 response are attached in Appendix B.

CONCLUSION

Information from local residents and historical shoreline data indicates that the erosion rate of the shoreline within the study area is approximately three tenths of a foot per year. In some areas, erosion has caused the shoreline to approach to within a few feet of the edge of Bayshore Drive. A severe storm could cause failure of portions of the street and adjacent utilities at anytime. Based upon the investigations conducted during this

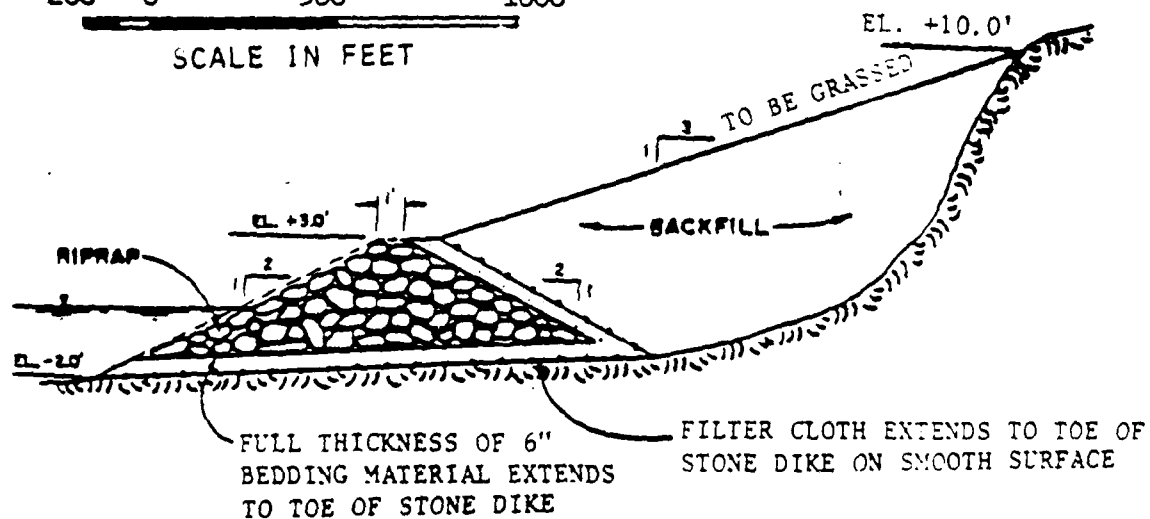
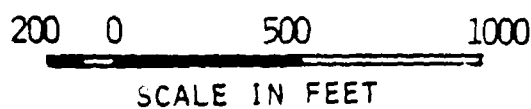
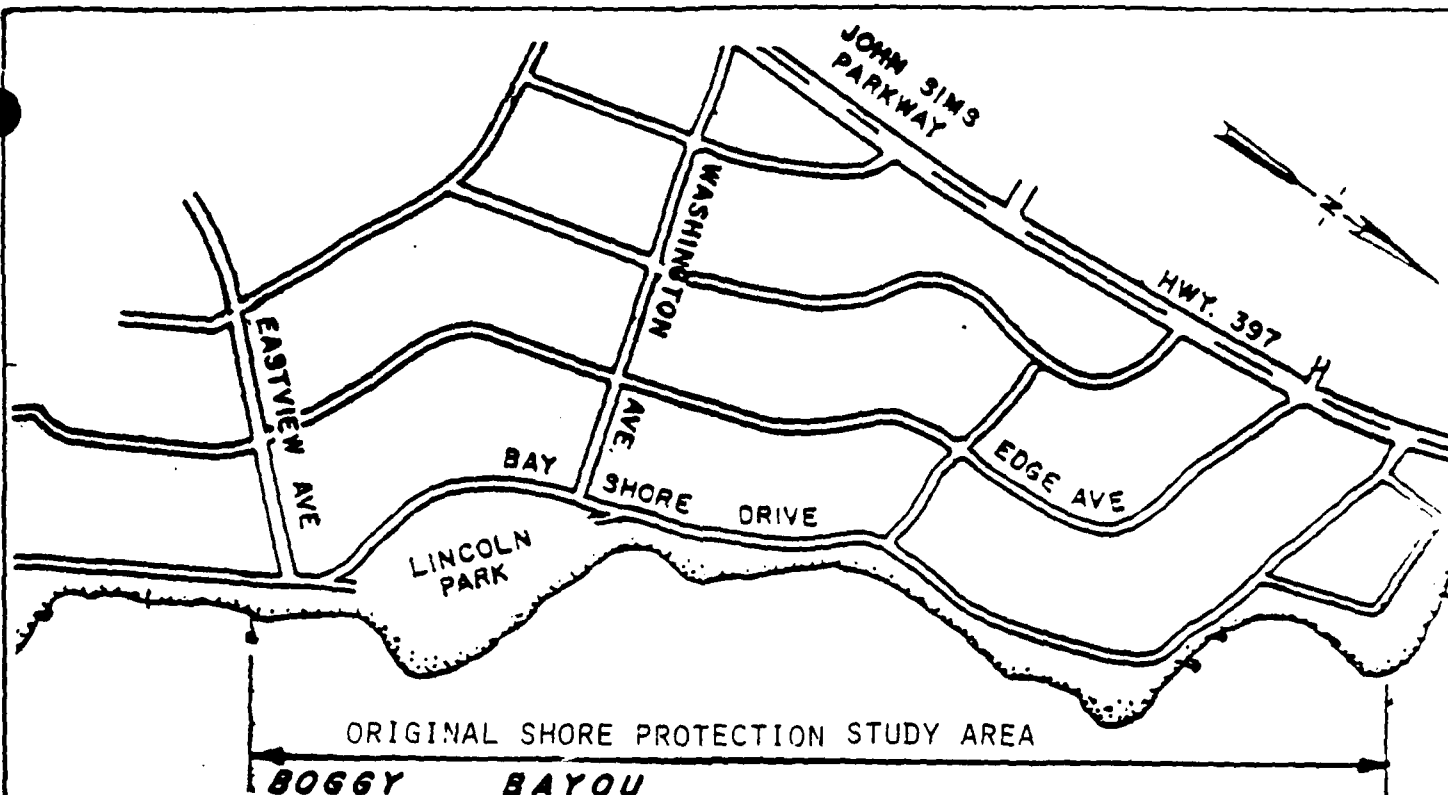
study, the annual benefits attributable to shore protection will exceed the cost of construction and maintenance of the recommended plan. Any adverse social, cultural, aesthetic, and environmental impacts will be mitigated by beneficial effects.

RECOMMENDATION

Protective works along 700 feet of shoreline of Boggy Bayou are needed to preclude possible destruction of public access road and utilities. It is recommended that Plan 1 consisting of a stone revetment with an earth-filled embankment be constructed, with such modifications as at the discretion of the Chief of Engineers may be advisable, at an estimated construction cost of \$174,300 (Apr 90 Prices). This recommendation is made with the provision that, prior to the implementation, the local sponsor will agree to provide a cash contribution for project construction presently estimated at \$18,000, and to fulfill the other implementation responsibilities previously described in this report. The City of Valparaiso's financial plan has been reviewed and it is my assessment that funding will be provided when necessary. This recommendation reflects the information available at this time and current policies governing formulation of individual projects. It does not reflect program and budgeting priorities of higher review levels. Consequently, the recommendation may be modified before it is approved and funded by the Chief of Engineers.



LARRY S. BONINE
Colonel, Corps of Engineers
District Engineer

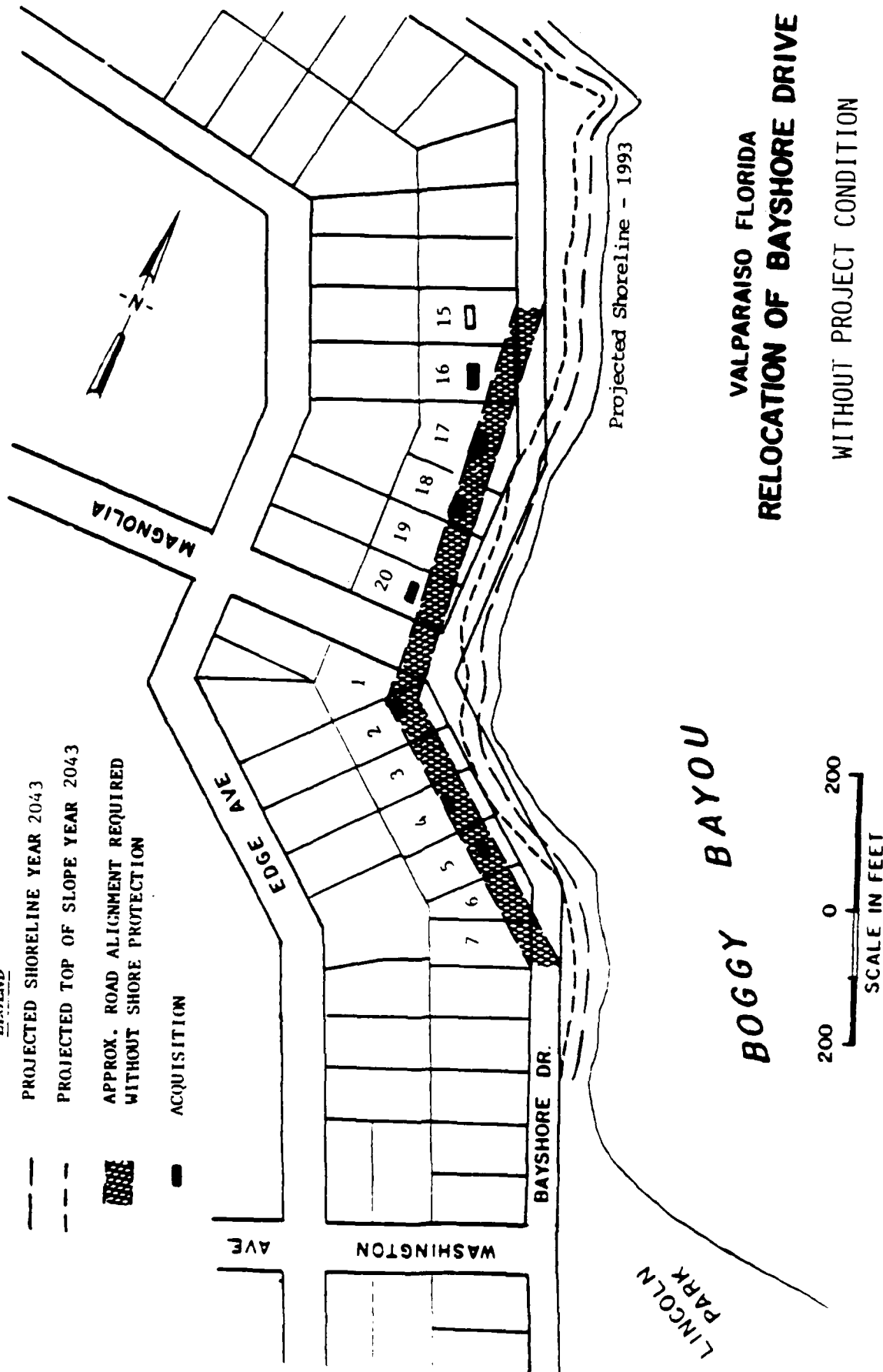


TYPICAL SECTION
RIPRAP REVETMENT DESIGN
NOT TO SCALE

BOGGY BAYOU, VALPARAISO, FLORIDA
ORIGINAL STUDY AREA
AND
PRELIMINARY REVETMENT
DESIGN SECTION

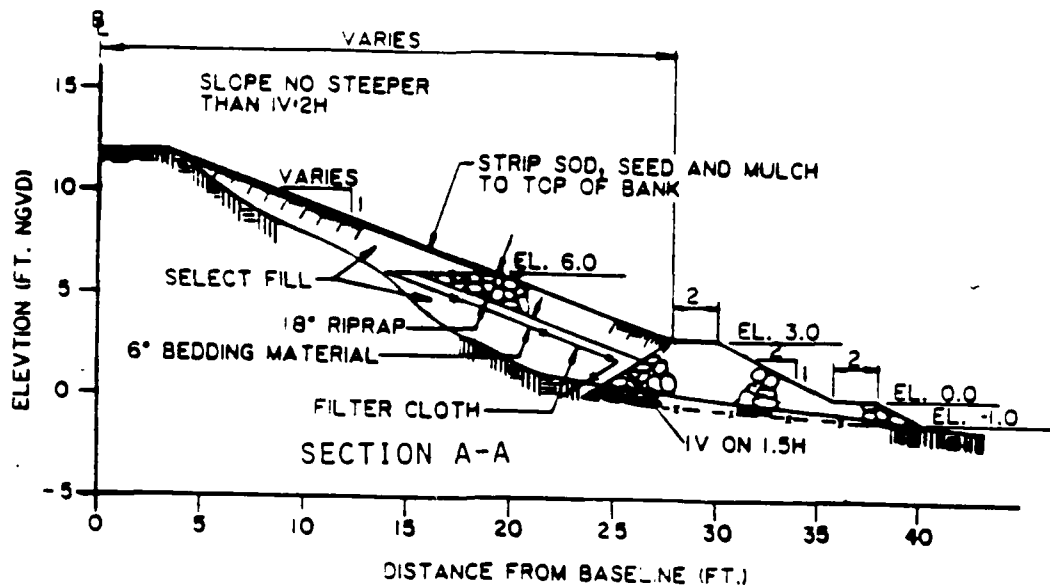
LEGEND

- PROJECTED SHORELINE YEAR 2043
- - - PROJECTED TOP OF SLOPE YEAR 2043
- ▨ APPROX. ROAD ALIGNMENT REQUIRED WITHOUT SHORE PROTECTION
- ACQUISITION



**VALPARAISO FLORIDA
RELOCATION OF BAYSHORE DRIVE**

WITHOUT PROJECT CONDITION



TYPICAL SECTION

STATION 0+00 TO STATION 2+27
STATION 3+27 TO E.O.P.

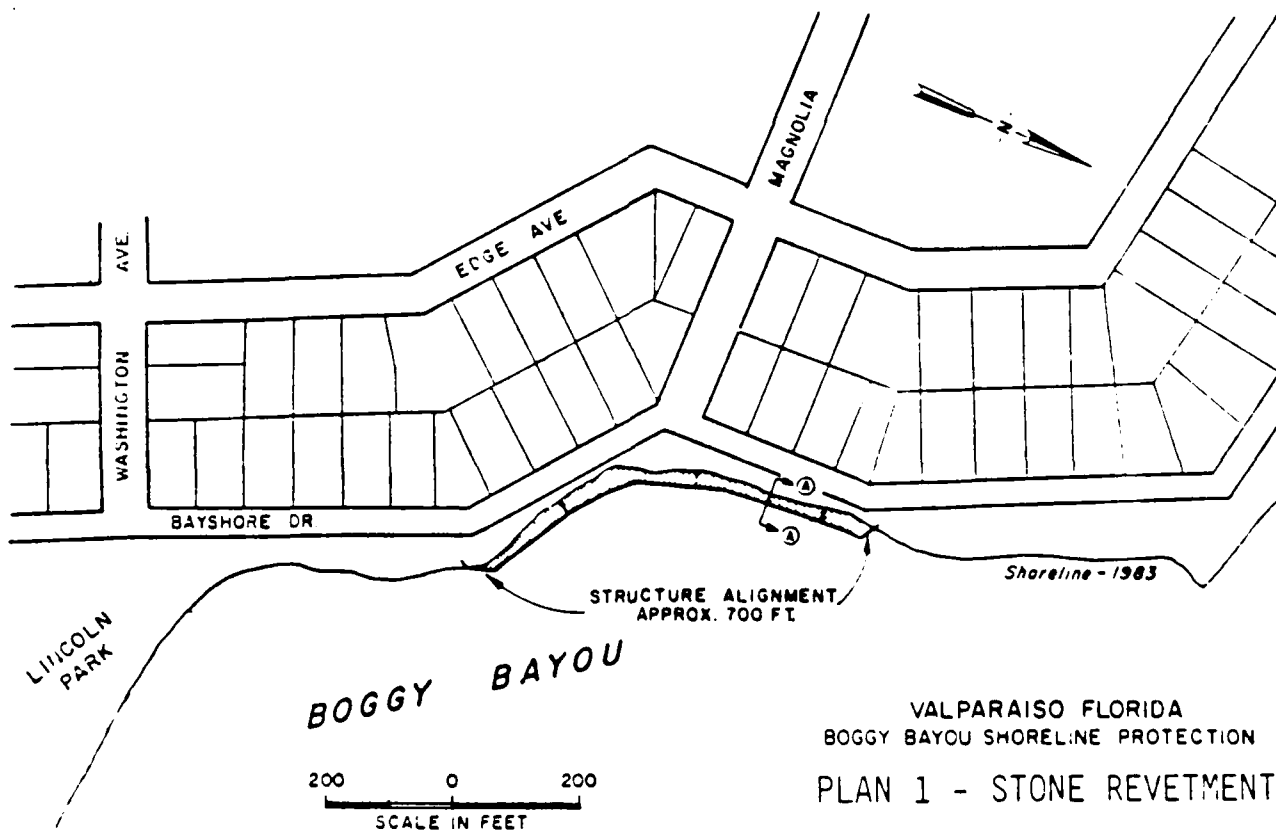
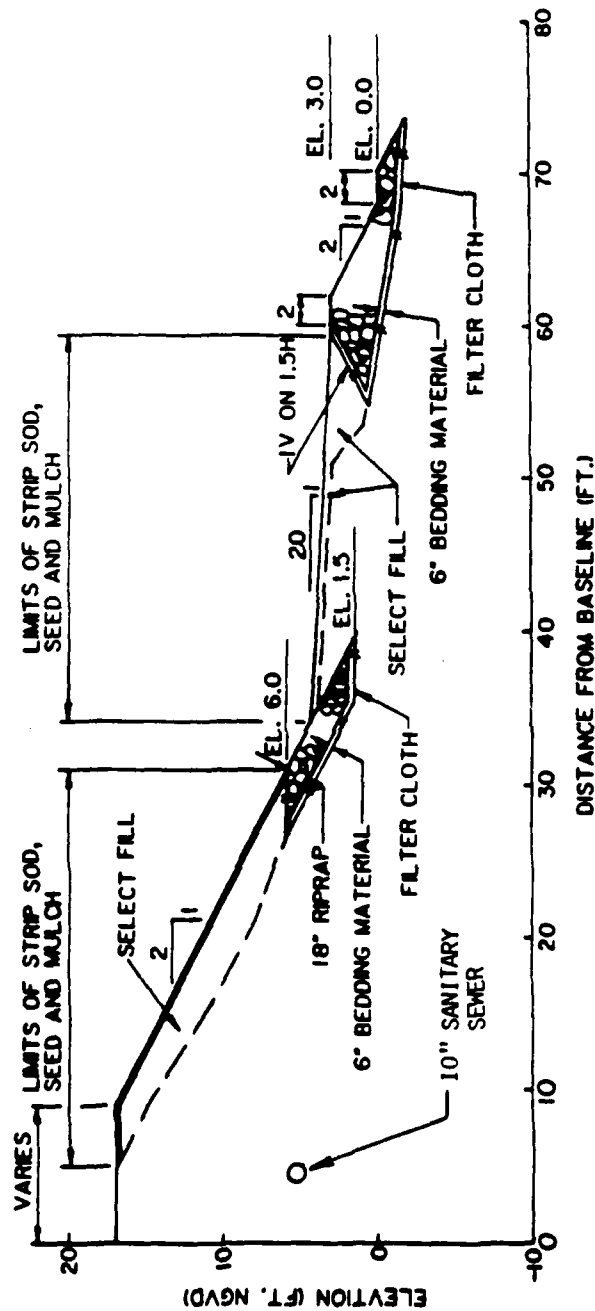


PLATE 4

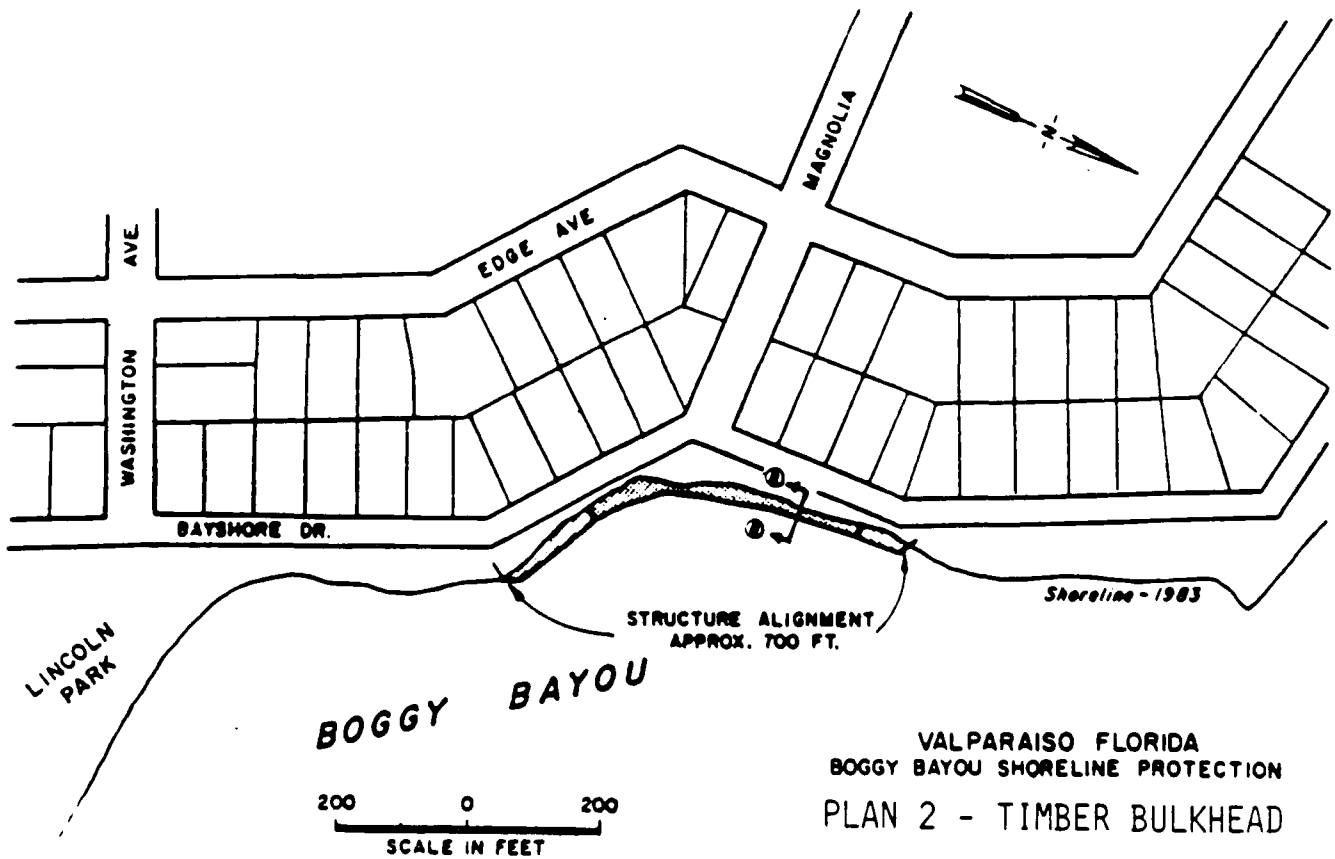
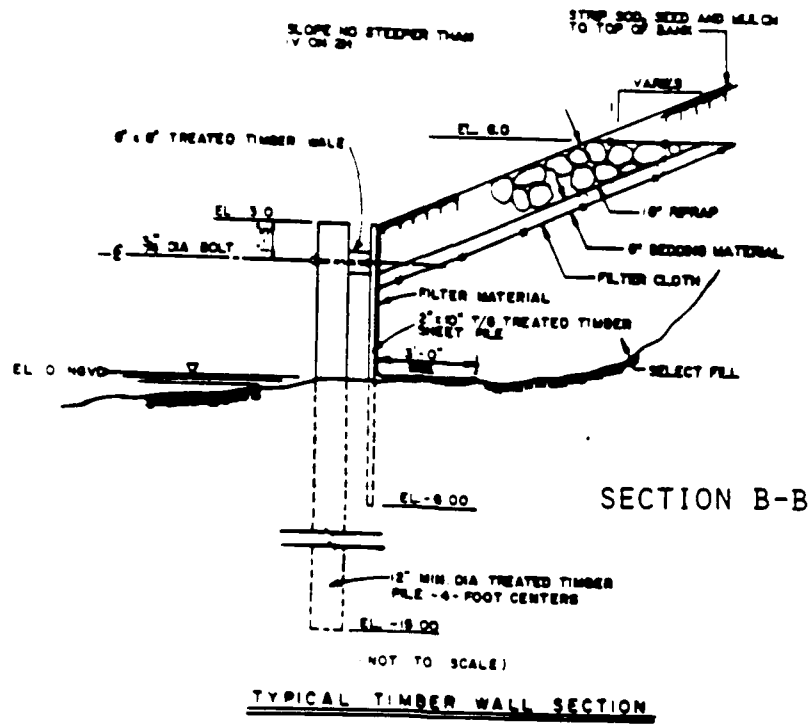


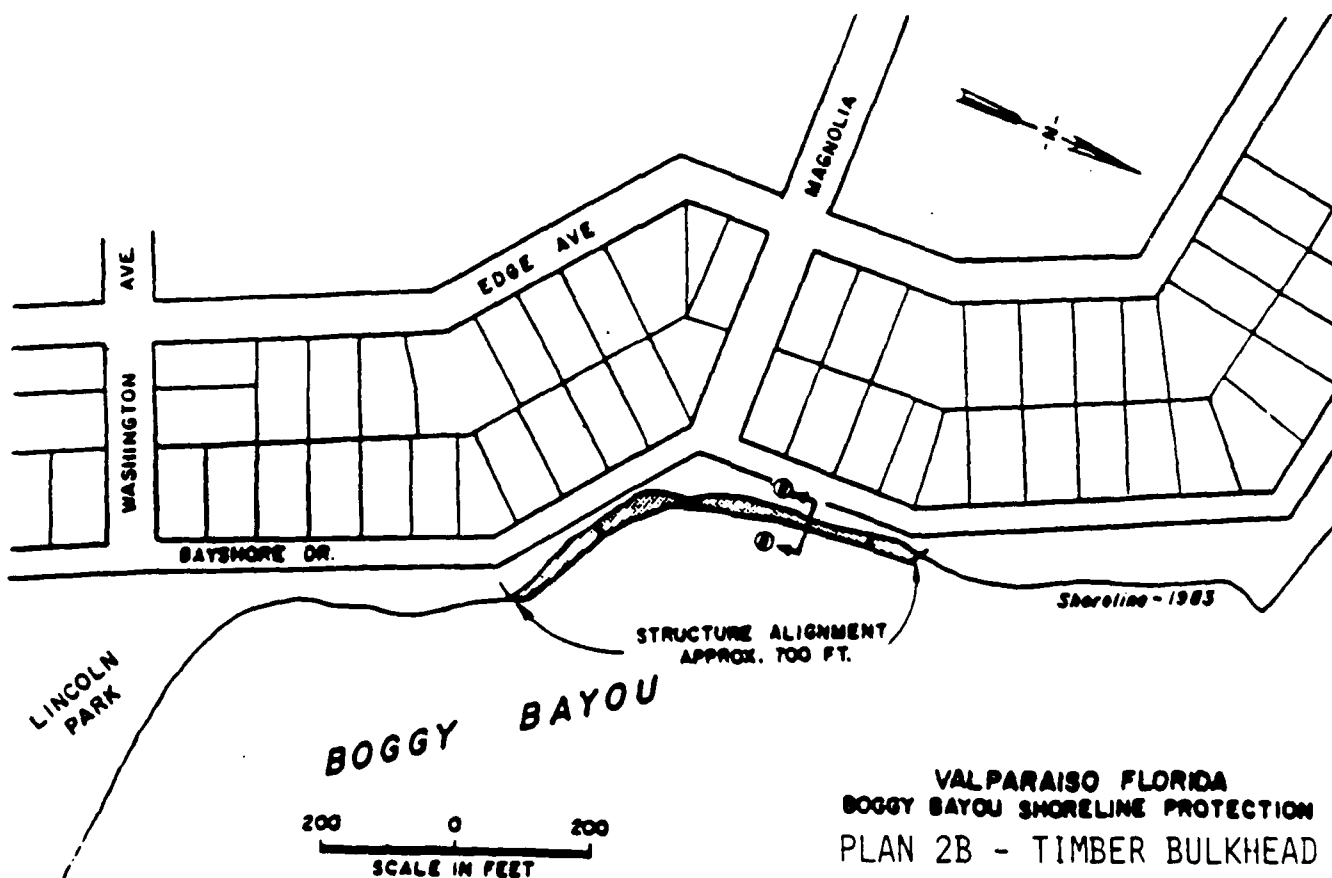
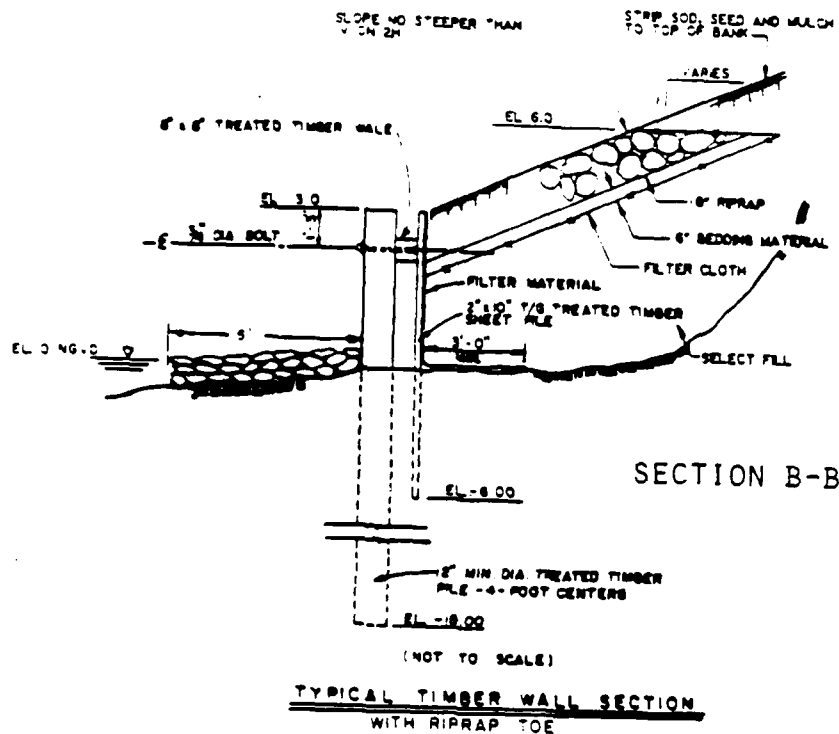
TYPICAL SECTION

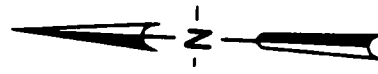
STA. 2+27 TO STA. 3+27
PICNIC AREA AT END OF MAGNOLIA AVENUE

VALPARAISO FLORIDA
BOGGY BAYOU SHORELINE PROTECTION
PLAN 1 - TYPICAL SECTION

PLATE 5

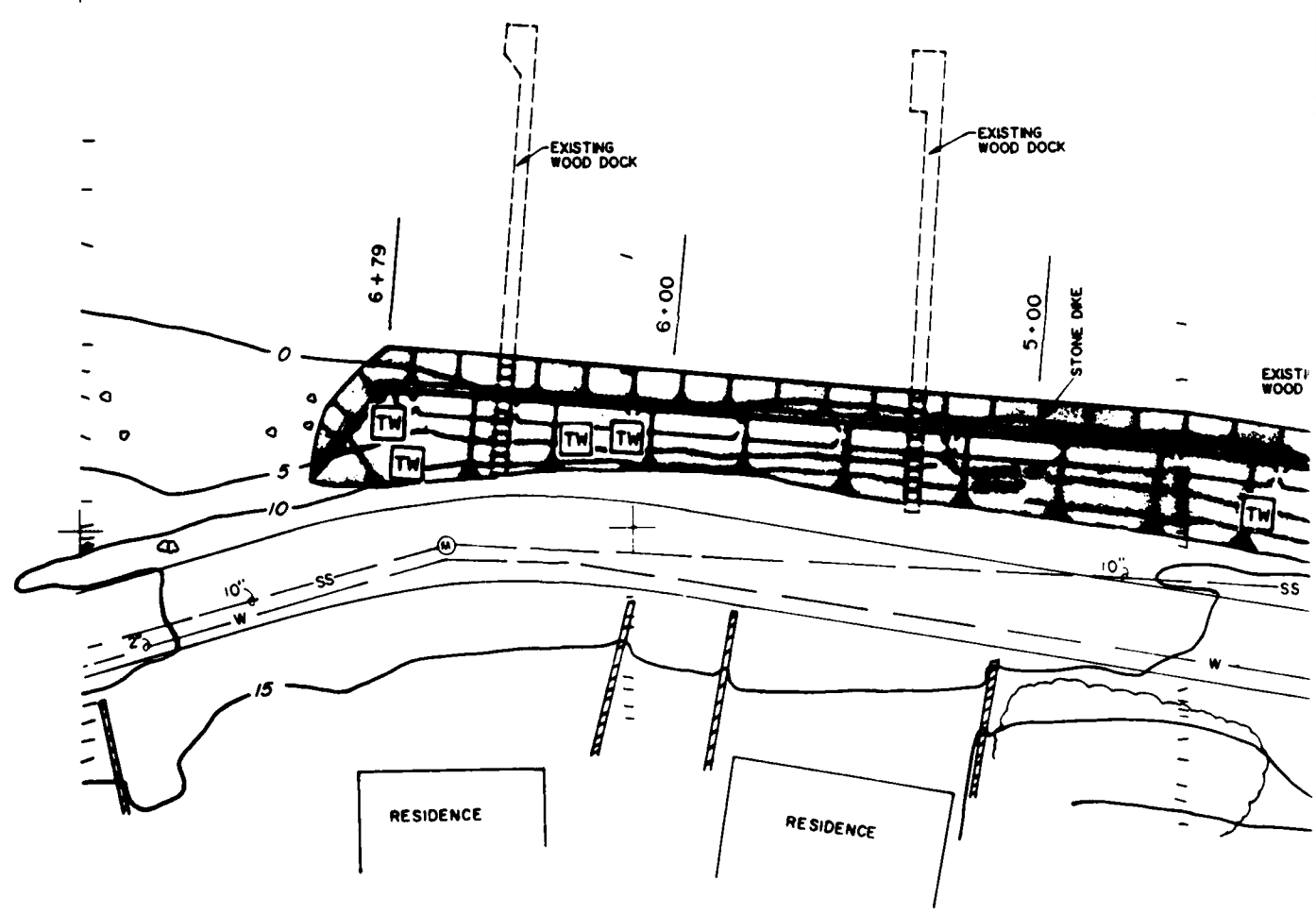






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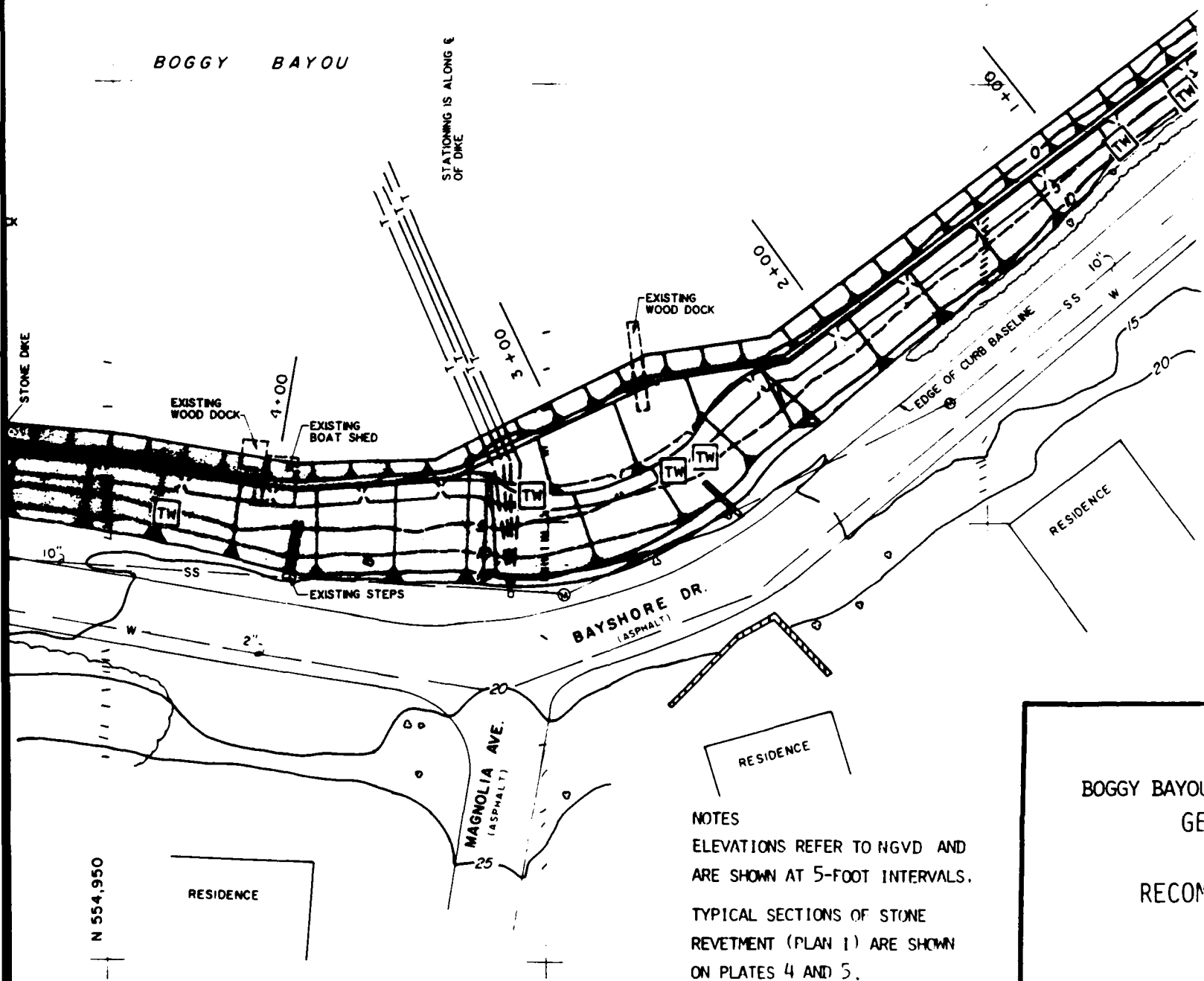


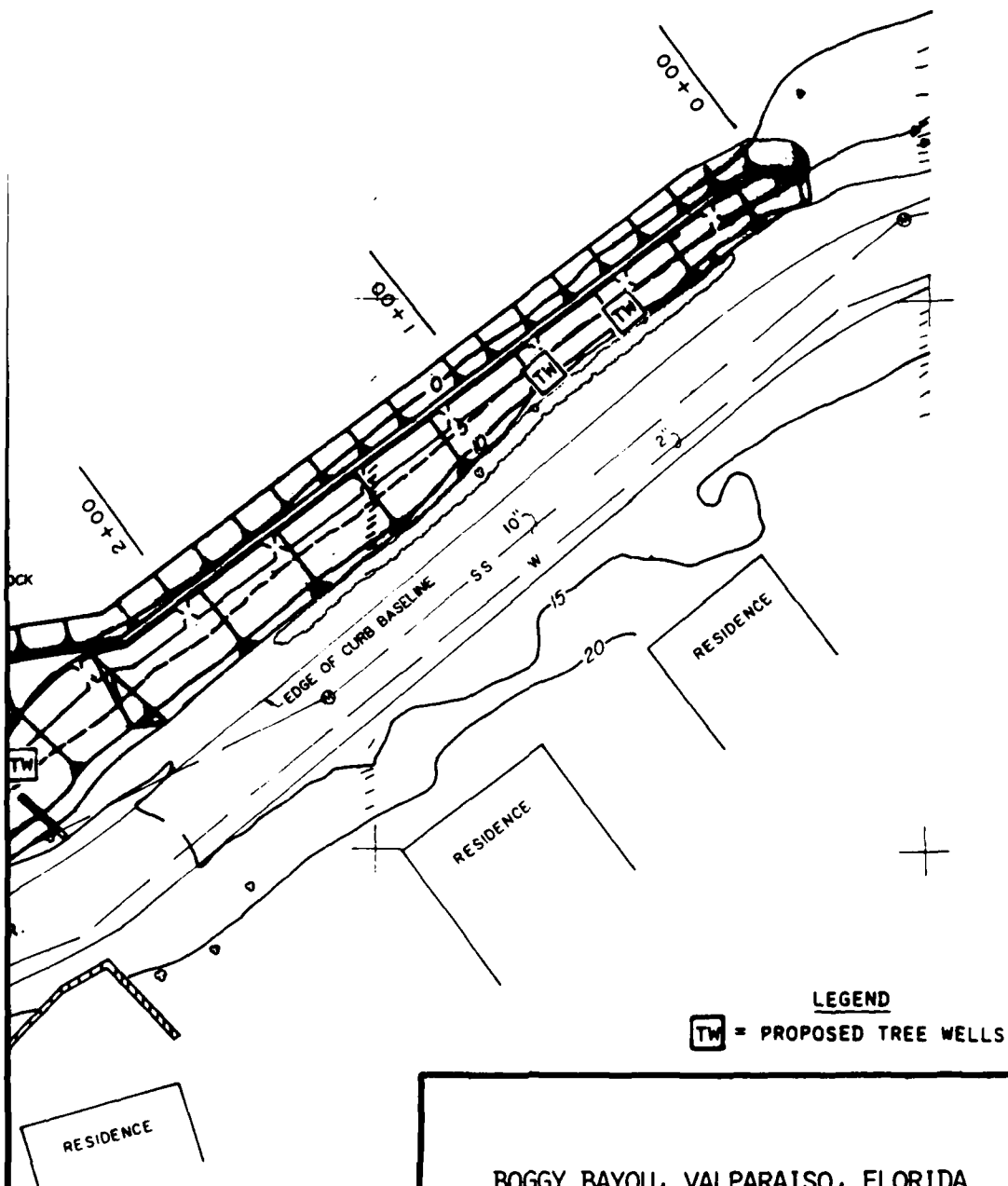
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LEGEND
 TW = PROPOSED TREE WELLS

NOTES
 ELEVATIONS REFER TO NGVD AND
 ARE SHOWN AT 5-FOOT INTERVALS.
 TYPICAL SECTIONS OF STONE
 RETAINMENT (PLAN 1) ARE SHOWN
 ON PLATES 4 AND 5.

BOGGY BAYOU, VALPARAISO, FLORIDA
 GENERAL MAP
 OF
 RECOMMENDED PLAN

PLATE 8

APPENDIX A

COORDINATION WITH OTHER AGENCIES



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

AUG 11 1983

4PM-EA/WT

Lawrence L. Green
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, AL 36628

ATTENTION: Coastal Branch

SUBJECT: Reconnaissance Report
Shore Line Erosion Valparaiso, FL

Dear Mr. Green:

This in response to your letters of July 14 and August 1, 1983, regarding the subject report.

The proposed riprap and grassed backfill should prevent erosion and therefore reduce turbidity and sedimentation in waters along the shore of Boggy Bayou fronting Bay Shore Drive. In addition to improving water quality and protecting Bay Shore Drive, the aesthetics of the city property along the shoreline would be greatly improved.

We have no objection to the work and believe it would be an asset to the area.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Arthur G. Linton".

Arthur G. Linton, P.E.
Federal Activities Coordination
Environmental Assessment Branch

cc: See attached



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Region
9450 Koger Boulevard
St. Petersburg, FL 33702

August 10, 1983

F/SER113/DEN
904-234-5061

Colonel Patrick J. Kelly
District Engineer, Mobile District
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, AL 36628

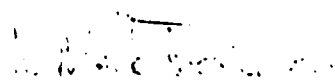
Dear Colonel Kelly:

This letter is in further response to the Draft Reconnaissance Report, Section 14 Study, Valparaiso, Florida.

A National Marine Fisheries Service biologist met onsite with representatives from the Corps of Engineers, U.S. Fish and Wildlife Service, and the City of Valparaiso, August 9, 1983. Based on these discussions and our review of the project site, we have concluded that project impacts to fishery resources would be minimal and, therefore, have no objection to project construction.

If you have any questions or require additional information, please contact Mr. David Nixon of our Panama City Area Office at 904-234-5061.

Sincerely yours,


Richard J. Hoogland
Chief, Environmental Assessment Branch





United States Department of the Interior
FISH AND WILDLIFE SERVICE

Division of Ecological Services
1612 June Avenue
Panama City, Florida 32405

August 16, 1983

District Engineer
U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628

Dear Sir:

This is in response to Mr. Lawrence R. Green's July 13, 1983, request for our comments concerning the draft reconnaissance report for the Section 14 shore erosion control study at Valparaiso, Florida. Our comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The area under study is a 3/4-mile reach of the southwestern shoreline of Boggy Bayou, an embayment connected to Choctawhatchee Bay. The structural alternative evaluated in the draft report consists of placing a riprap revetment near or at the shoreline, and backfilling as needed to connect existing uplands to the revetment. Most of the shore zone in the study area is sandy and unvegetated. Mowed lawn grasses with scattered trees and shrubs are predominant on the adjoining uplands.

The draft report is generally well written. On page 10, Item 13, "Environmental Considerations," the information presented indicates that a loss of nearshore shallow habitat in the Choctawhatchee Bay system would be insignificant. We suggest revising this viewpoint to reflect the following information.

Many Department of the Army permits are issued every year for erosion control structures (usually bulkheads) along the Choctawhatchee Bay system shoreline, particularly in the Fort Walton Beach-Niceville-Valparaiso area. Some of these works include backfilling in nearshore shallows. This trend is essentially certain to continue, and perhaps intensify, into the foreseeable future as a part of the developmental growth of this area.

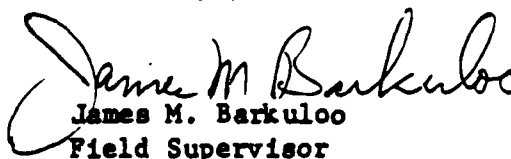
Shallow shore zones are valuable to fish and wildlife. Numerous invertebrates inhabit the substrate; smaller forms of finfish, including certain seafood and forage species, feed and seek refuge in the shallows; and shore and wading birds use the shallows and adjacent land for feeding and resting. Thus, a variety of fish and wildlife, as well as associated public values, depend on or are benefitted by shallow shore areas. Cumulatively, the many projects around Choctawhatchee Bay that eliminate the shallowest part of the shore zone adversely affect fish and wildlife, even though individual projects may be relatively small. Because of this, all actions that could eliminate nearshore shallow habitat should be considered as an incremental part of a highly significant activity, and should be implemented in such a way as to minimize losses of public fish and wildlife resource values.

Re: Reply to Mr. Lawrence R. Green's
Letter of July 13, 1983
Page 2 of 2

On August 9, 1983, personnel from the City of Valparaiso, Corps of Engineers, National Marine Fisheries Service, and Fish and Wildlife Service viewed the project area and a nearby completed project similar to that considered as the structural alternative in the draft report. Based on presently available information and our observations at the completed project, it appears that the structural alternative evaluated in the draft report probably would be compatible with conservation of fish and wildlife resources. However, before a conclusion to that effect is made, we would prefer to review specific project plans and any other action alternatives that might be considered, along with any pertinent additional information.

We appreciate this opportunity to comment on the draft reconnaissance report, and look forward to further participation in the planning of this project.

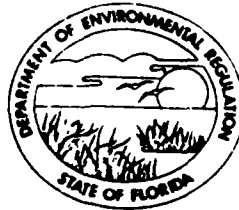
Sincerely yours,


James M. Barkuloo
Field Supervisor

cc:
ES, Atlanta, GA
EPA, Atlanta, GA
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FL DER, Tallahassee, FL
FL DNR, Tallahassee, FL
FL G&FC, Tallahassee, FL

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

September 8, 1983

Mr. Lawrence R. Green
Chief, Planning Division
Corps of Engineers
Mobile District
Post Office Box 2288
Mobile, Alabama 36628

Dear Larry:

This is in response to the July, 1983 Draft Reconnaissance Report for the Section 14 Study at Valparaiso, Florida. We regret we were unable to participate in your August 9 field trip.

We have discussed the proposed project with staff in our Pensacola office. Based on that and our own review of the proposal, we anticipate no serious problem in securing DER permits for the proposal as described in the draft Reconnaissance Report. That is based on an understanding that no significant marsh area will be affected, that no significant seaward extension is proposed, and that the project, if constructed, will use only clean material for riprap.

As project planning is continued, of course, both the Corps and DER may propose some modifications to improve the project. For more specific information, you should contact Mr. Cliff Rohlke (904/436-8428). Please call on me if you have any further questions.

Sincerely,

Al Bishop
Chief, Bureau of
Water Management

AB/lj

cc: Cliff Rohlke
John Outland
Bill Youngman

FLORIDA GAME AND FRESH WATER FISH COMMISSION

WILLIAM G. ROSTICK, JR.
Chairman, Winter Haven

CECIL C. BAILEY
Vice Chairman, Jacksonville

C. TOM RAINEY D.V.M.
Miami

THOMAS L. HIRES SR.
Tampa

J.H. BAROCO
Pensacola

ROBERT M. BRANTLY, Executive Director
F. G. BANKS, Assistant Executive Director



FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32301

March 6, 1984

Ms. Marlene Nestor
Army Corps of Engineers
PD-ES
Post Office Box 2288
Mobile, AL 36628

Re: Shoreline Protection of Boggy
Bayou, Valparaiso, Okaloosa
County

Dear Ms. Nestor:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the alternative shore protection plans discussed at the interagency meeting of February 23, 1984, and offers the following comments.

Proposed protective measures are planned for an 800-foot long section of Boggy Bayou shoreline in the vicinity of the intersection of Bayshore Drive and Magnolia Avenue. The project is intended to rectify current erosion problems which threaten to undermine Bayshore Drive and its associated utilities.

To remedy the existing situation, three plans of action were considered by the Corps: (1) construction of an 800-foot long and five-foot high stone revetment with a 2:1 horizontal to vertical slope, extending three feet above and two feet below mean sea level; (2) construction of an 800-foot long and five-foot high timber bulkhead along the minus-two-foot mean low water (MLW) contour with the embankment behind the bulkhead graded to a 3:1 slope; or (3) relocation of Bayshore Drive and the associated utilities landward from the existing shoreline. A fourth alternative developed during the interagency meeting proposed construction of a timber bulkhead at or above the mean high water (MHW) line and placement of a stone rip-rap toe at the base of the bulkhead. Preliminary initial and annual cost estimates for the first three options were calculated by the Corps. Based on the benefit/cost ratio, the economic ranking of the projects in order of descending economic viability was: Plan 2 (4.84), Plan 1 (3.33), and Plan 3 (1.0). It was estimated that the value of Plan 4 would be intermediate between plans 1 and 2.

Ms. Marlene Nestor
March 6, 1984
Page 2

Plan 2 would fill most of the shallow, littoral areas within the project site. These areas serve as important refuge and feeding areas for small forms of finfishes. Additionally, wading birds utilize the shallows as feeding and resting areas. Tidal scouring would exacerbate the loss of shallows by deepening the water at the base of the bulkhead.

We recommend that the fourth option be implemented. Plan 4 would preserve shallow, littoral areas for fish and wildlife utilization while still protecting the shoreline. The rip-rap toe would also impede tidal and storm currents from undermining and breaching the bulkhead. Aligning the bulkhead at a more landward location along the face of the bluff would further reduce the project's cost by reducing the amount of required backfill.

We appreciate the opportunity to comment on this project. Please contact us if we may be of further assistance.

Sincerely,

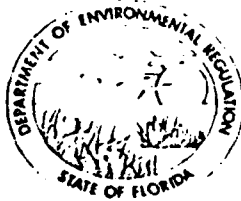
Douglas B. Bailey

Douglas B. Bailey, Assistant Director
Office of Environmental Services

E662sm6/7
ENV 1-4-2
RM

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

March 14, 1984

Ms. Marlene Nestor
U.S. COE AHNPD-ES
Post Office Box 2288
Mobile, Alabama 36628

Dear Ms. Nestor:

Proposed Shore Protection, City of Valparaiso

On February 22, 1984, Mr. Cliff Rohlke, our area field representative met on site with you, Larry Godwin and Curtis Flakes (USCOE), Lloyd Stith (USF&W), Rick McCann (GFWFC) and Bob Koncar of the City of Valparaiso.

You offered several proposals regarding protection of 800 linear feet of shoreline on Boggy Bayou in the area of Magnolia Drive and Bayshore Drive.

- Plan 1) The proposed rip rap revetment would be an adequate project. However, I would recommend that the amount of filling of submerged lands be substantially reduced. Reducing the amount of filling would reduce environmental impacts and simplify processing.
- Plan 2) The proposed bulkhead location at the 2.0' depth contour is not recommended due to the anticipated environmental impacts and the availability of a more landward location for a bulkhead.

I would like to suggest for protection of this area the construction of a bulkhead at or above the approximate MHW line with rip rap placed at the toe of the wall. The wall, situated close to the existing bluffline, would have the advantages of minimizing the expense and environmental impacts of the backfill. The rip rap would provide toe protection of the bulkhead and provide a viable habitat for shoreline and littoral marine organisms.

Ms. Marlene Nestor
March 14, 1984
Page two

Another positive alternative worth considering is the construction of a low-profile rip rap wave break several feet waterward of the shoreline MHW and planting shoreline marsh grass behind the wave break, such as Spartina alterniflora, Cladium Jamaicense or Juncus roemerianus. This type of barrier may actually stimulate long-term building of a beach, while providing water quality maintenance and habitat functions.

We appreciate the opportunity to comment and offer our suggestions in this matter. If you have any further questions you may contact Mr. Cliff Rohlke at (904) 436-8428 or me at (904) 488-0130.

Sincerely,

Suzanne P. Walker
for Stephen J. Fox, Director
Division of Environmental
Permitting

SJF/ms

cc: Bob Koncar
Al Bishop
John Outland
Cliff Rohlke
John Cole



United States Department of the Interior
FISH AND WILDLIFE SERVICE

Division of Ecological Services
1612 June Avenue
Panama City, Florida 32405

March 20, 1984

District Engineer
U.S. Army Corps of Engineering
P.O. Box 2288
Mobile, Alabama 36628

Dear Sir:

This letter is the draft Fish and Wildlife Coordination Act Report for the Boggy Bayou Shore Protection Project at the City of Valpariso, Okaloosa County, Florida. Our report is provided under the terms of the Fiscal Year 1984 Scope of Work and Transfer Funding Agreement, and in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). It was prepared in cooperation with the Florida Game and Fresh Water Fish Commission and the National Marine Fisheries Service. We will submit our final Coordination Act report in conjunction with our comments on the draft Feasibility Report, as called for in the Scope of Work.

This project has been studied in the past under the authority of Section 14 of the Flood Control Act of 1946, and Section 103 of the River and Harbor Act of 1962. Our understanding is that it is presently being studied as a "Section 14" project.

Earlier studies addressed shore protection along approximately 2000 feet of city-owned waterfront. We provided an August 16, 1983, planning aid letter for a project of this size. The study area has since been revised, so that shore protection is now being considered for an 800-foot shoreline reach in the mid-portion of the previous proposal. This reach is approximately centered on the intersection of Bayshore Drive and Magnolia Avenue.

The area under study generally consists of residential property landward of Bayshore Drive; the street itself; a moderate to steep 10- to 20-foot high slope below the street, vegetated with mixed grasses, shrubs, and trees; a gently sloping grassy zone and sandy bayou beach with scattered trees at the base of the slope; and sandy-bottom bayou shallows immediately offshore from the beach. Corps investigations have determined that erosion is causing landward movement of the shoreline, and is threatening Bayshore Drive and associated utilities.

An onsite interagency meeting was held February 23, 1984. We were provided the following draft alternative plans at that time.

Plan 1 would protect the shoreline with a riprap revetment 5 feet high, 800 feet long, and extending along about the 2-foot depth contour 15 to 25 feet waterward of the existing water line. The revetment would have a slope of 1 vertical on 2 horizontal. Approximately 2600 cubic yards of material would be placed landward of the revetment to form an embankment with a 1 vertical: 3 horizontal slope. The slope would be strip-sodded, seeded, and mulched. Apparently, the fill material in this and other plans would come from an upland source, since dredging is not mentioned in the draft plans.

Plan 2 would provide shoreline protection with a vertical timber bulkhead 5 feet high and 800 feet long, constructed generally along the 2-foot depth contour approximately 15 to 25 feet seaward of the present waterline. About 3400 cubic yards of backfill would be placed landward of the bulkhead to form an embankment with a 1 vertical:3 horizontal slope. The embankment would be strip-sodded, seeded, and mulched.

Plan 3 calls for relocation of Bayshore Drive and associated utilities to a more landward location. Relocation of residents and acquisition of houses would be needed. Shoreline stabilization structures would not be built.

Plan 4 consists of an additional plan discussed at the February 23, 1984, meeting, but not included in the draft of alternative plans presented then. It would provide shoreline protection by construction of a vertical bulkhead as close as is engineeringly feasible to the existing mean high water line for 800 feet. Riprap would be placed along the entire base of the bulkhead in such a way that it would remain as a permanent feature of the project. Backfilling would be done as needed. Our preference is that the riprap would be placed from about the mean high water line on the bulkhead to the bayou bottom at a slope of 1 vertical to at least 2 horizontal. Presumably, the backfill would be stabilized in a manner adequate to prevent soil erosion.

As we pointed out in our August 16, 1983, letter on the larger proposal, sandy estuarine intertidal and shallow shore zones, such as occur in the project area, have life support values not found in deeper areas. Numerous invertebrates inhabit the substrate; smaller forms of finfish, including certain seafood and forage species, feed and seek refuge in the shallows; and shore and wading birds use the shallows and adjacent land for feeding and resting. Fauna directly provided with habitat include penaeid shrimps, blue crab, flounders, mullet, forage fishes, herons, egrets, terns, and sandpipers. Fauna indirectly benefitted through the food chain include bluefish, spotted seatrout, red drum, common loon, double-crested cormorant, brown pelican, mergansers, osprey, and bottlenose dolphin.

Natural estuarine shorelines are finite, and in many parts of the United States, their life support capabilities are continuously being diminished by large numbers of shore protection projects. Eventually, fish and wildlife resources and associated public benefits will be substantially

reduced by these projects, unless adverse effects of individual projects are reduced enough to minimize cumulative impacts. The manner in which Federal projects are constructed is especially important in this regard, since these projects set examples and establish precedents for construction of similar projects by private interests. When commenting on proposals for private shore stabilization projects under Department of the Army permit processing procedures, the Fish and Wildlife Service generally recommends that, in circumstances similar to those at the study area, vertical bulkheads be constructed at or above the mean high water line, and riprap be placed at the base of the bulkhead. A Federal project constructed in this high-visibility location in less than the most environmentally sensitive manner feasible could undermine years of effort to conserve shore zone fish and wildlife in an area undergoing rapid waterfront development.

Plan 4, referred to above, would maximize conservation of shore zone habitat, provide a biologically valuable substrate (riprap) as mitigation for unavoidable losses of intertidal and shallow subtidal areas, and serve as an example of an environmentally sound project. Because of this, Plan 4 is the plan preferred by the Fish and Wildlife Service.

Plan 1 would cause a loss of approximately one-half acre of existing shoreline habitat, but would result in considerable riprap being placed in the post-project intertidal and shallow water zones. This hard substrate, with its large surface area and numerous interstices, would provide good quality attachment, shelter, and foraging habitat for aquatic biota; and would mitigate the loss of natural shoreline. In light of this, Plan 1 is a biologically acceptable alternative, but somewhat less so than Plan 4.

Plan 2 would eliminate one-half acre of natural shoreline habitat, with no features to mitigate fish and wildlife losses. The preservative-treated vertical timber face of the bulkhead has little value as aquatic habitat. In fact, the purpose of the preservative is to repel aquatic biota. In addition, we have observed that waves reflected from vertical bulkheads tend to scour a trough at the base of the bulkhead, which further reduces any shallow water habitat remaining after completion of the project. For these reasons, and because Plan 2 would set an undesirable example for the public, we consider this plan to be by far the alternative most detrimental to fish and wildlife resources.

Plan 3 would avoid man-made alteration of the shore zone, but in view of the relatively small amount of shoreline habitat involved compared to the potential social disruption, Plan 3 would be totally impractical.

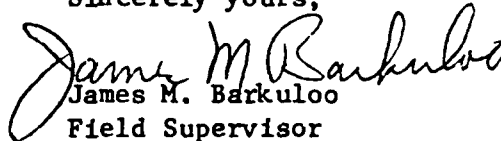
Under all of the structural plans discussed above, backfilling and other construction activities would reduce or eliminate existing vegetation between Bayshore Drive and the water. This would cause a loss of habitat for several species of birds (such as song birds, belted kingfisher, woodpecker), and diminish associated public benefits. These losses appear to be an unavoidable aspect of project construction, but could be mitigated through minor changes in project plans.

In view of the preceding, the Fish and Wildlife Service offers the following recommendations:

1. The selected plan for this project be one such as Plan 4, discussed in this report; wherein the bulkhead is located as close as is engineeringly feasible to the existing mean high water line; riprap is placed and permanently maintained along the entire base of the bulkhead, from the mean high water line to the bayou bottom, on a 1 vertical to at least 2 horizontal slope; and backfills are stabilized as completely and promptly as possible to minimize adverse effects of soil erosion.
2. If an alternative such as Plan 4 is not selected, Plan 1 be implemented.
3. Plan 2 not be implemented because of excessive, unacceptable losses of fish and wildlife resources.
4. Wildlife habitat and associated public benefits lost due to project construction be mitigated by including an abundance of trees and shrubs of several species in embankment stabilization plantings.

We appreciate the opportunity to participate in the planning of this project. Please let us know if additional information or assistance is needed.

Sincerely yours,


James M. Barkuloo
Field Supervisor

cc:

AHR, Atlanta, GA
EPA, Atlanta, GA
NMFS, St. Petersburg, FL
NMFS, Panama City, FL
FL DER, Tallahassee, FL
FL DNR, Tallahassee, FL
FL G&FWFC, Tallahassee, FL



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Region
9450 Koger Boulevard
St. Petersburg, FL 33702

April 26, 1984

F/SER113/DEN
904-234-5061

Colonel Patrick J. Kelly
District Engineer, Mobile District
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, AL 36628

Dear Colonel Kelly:

The National Marine Fisheries Service has reviewed the five plan modifications for the Section 14 project, "Shore Protection on Boggy Bayou," which accompanied the letter of April 18, 1984, from Mr. Lawrence R. Green, Chief, Planning Division.

Based on the information provided and a previous onsite inspection by a NMFS biologist August 9, 1983, and our correspondence dated August 10, 1983, we have concluded that the two environmentally acceptable plans include Plan 1: Stone revetment as previously discussed and commented on in our August 10, 1983 letter, and Plan 2B: Timber bulkhead with riprap toe. Plan 2B is considered environmentally acceptable because of the creation, by placement of rock riprap, of hard substrate and habitat diversity. Substitution of the rock with other material such as oyster shell, would not be acceptable. If the riprap is deleted from project plans then we would recommend that the bulkhead be relocated to follow the existing mean high waterline.

If you have any questions or require additional information, please contact Mr. David Nixon of our Panama City Area Office at 904-234-5061.

Sincerely yours,

for Edwin J. Hoogland

Richard J. Hoogland
Chief, Environmental Assessment Branch



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT

1 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501-5794



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROBERT V. KRIEGLER
DISTRICT MANAGER

May 15, 1984

Mr. Lawrence Green
USCOE ANNPD-ES
Post Office Box 2288
Mobile, Alabama 36628

RE: City of Valparaiso Shoreline Erosion Project

Dear Mr. Green:

This is in response to your letter to Mr. Al Bishop, Chief of our Bureau of Water Management. The Department's general recommendations for the Valparaiso Shoreline Project were stated in Mr. Fox's letter dated April 14, 1984 (copy attached). The drawings in your April 6, 1984 proposal again indicate placing a wall at the -2.0 MHW location and backfilling I've previously mentioned. I think other alternatives exist which will accomplish the desired goal without the adverse impacts associated with substantial filling of intertidal areas. I do not think this is environmentally preferable.

The Department's primary choice for shoreline stabilization in this case is a rip-rap wave-break at the -2.0 location with marsh grass plantings landward of the rip-rap and extending landward to the MHW line. Our second choice is a bulkhead at the immediate base of the bluff or at MHW line and with a rip-rap toe.

I would expect that the alternates described in your April 6, 1984, correspondence would receive an unfavorable recommendation from the permitting staff, and I think I would concur with their recommendation.

Sincerely,

A handwritten signature in cursive script, appearing to read "W. R. Fancher", is written over a horizontal line.

W. Richard Fancher
Dredge and Fill Supervisor

WRF/wfh

cc: Lloyd Stith
John Cole

A-15

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee		
To: _____	Locn.: _____	
To: _____	Locn.: _____	
To: _____	Locn.: _____	
From: _____	Date: _____	
Reply Optional []	Reply Required []	Info. Only []
Date Due: _____	Date Due: _____	

TO: File

FROM: Cliff Rohlke *CR*

DATE: May 14, 1984

SUBJECT: February 22, 1984, On-Site Inspection
City of Valparaiso and USCOE

On February 22, 1984, I met on-site with Marlene Nestor and Curtis Flakes (USCOE); Lloyd Stith (US F&W); Rick McCann (GFWFC) and Bob Koncar (City of Valparaiso).

We discussed the presented alternatives as far as permissibility. Bob Koncar expressed concern over the financial aspects of the presented USCOE alternatives.

I felt all USCOE proposals were excessive in light of (1) reclamation proposed, and (2) mild erosion conditions at the site and the magnitude of proposed shoreline protection.

I proposed the additional alternatives of (1) bulkhead at the bluffline (this would largely be out of jurisdiction except for certain select areas), and (2) a bulkhead at the MHW line with a riprap toe to provide habitat.

This second alternative was well received by Mr. Stith and Mr. McCann. The USCOE reps said they would consider it and add it to the original considerations.

I added that the location of the wall at the bluffline would be largely out of jurisdiction and the portions at or below the MHW line could likely be handled by short form application. All other alternatives would be standard form projects.

I indicated that on the riprap revetment alternative, I felt I could recommend favorable comments; however, I indicated it should be a secondary choice due to the reclamation involved, quantity of fill, higher cost and lack of need for a structure of that magnitude. There is no real need for a revetment of the size proposed. The erosion and storm actions at this area do not warrant a structure of the size proposed.

CR:crp



FLORIDA DEPARTMENT OF STATE
George Firestone
Secretary of State
DIVISION OF ARCHIVES,
HISTORY AND RECORDS MANAGEMENT
The Capitol, Tallahassee, Florida 32301-8020
(904) 488-1480

June 11, 1984

In Reply Refer to:

Mr. Frederick P. Gaske
Historic Sites Specialist
(904) 487-2333

Mr. Willis E. Ruland, Chief
Environment and Resources Branch
Mobile District, Corps of Engineers
U.S. Department of the Army
Post Office Box 2288
Mobile, Alabama 36628

RE: Your Letter of June 4, 1984
Cultural Resource Assessment Request
Proposed Boggy Bayou Shoreline Protection Project,
Located in Sec. 7, T1S-R22W, Valparaiso, Okaloosa
County, Florida

Dear Mr. Ruland:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Procedures for the Protection of Historic and Cultural Properties"), we have reviewed the above referenced project for possible impact to archaeological and historical sites or properties listed, or eligible for listing, in the National Register of Historic Places. The authorities for these procedures are the National Historic Preservation Act of 1966 (Public Law 89-665) as amended by P.L. 91-243, P.L. 93-54, P.L. 94-422, P.L. 94-458 and P.L. 96-515, and Presidential Executive Order 11593 ("Protection and Enhancement of the Cultural Environment").

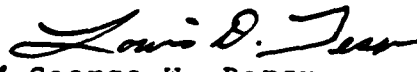
A review of the Florida Master Site File indicates that no archaeological or historical sites are recorded for the project area. Furthermore, because of the location of the project, it is considered highly unlikely that any significant, unrecorded sites exist in the vicinity. Therefore, it is the opinion of this office that the proposed project will have no effect on any sites listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state or local significance.

Mr. Willis E. Ruland
June 11, 1984
Page Two

If you have any questions concerning our comments, please do not hesitate to contact us.

Your interest and cooperation in helping to protect Florida's archaeological and historical resources are appreciated.

Sincerely,


for George W. Percy
State Historic
Preservation Officer

GWP:Gkp



DEPARTMENT OF THE ARMY

MOBILE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2288
MOBILE, ALABAMA 36628

RECEIVED

JUN 7 1984

NATIONAL REGISTER PROGRAMS
DIVISION

REPLY TO
ATTENTION OF:

June 4, 1984

Environmental Compliance
Section

Mr. Wilfred Husted
National Register Programs Division
National Park Service
Department of the Interior
Richard B. Russell Federal Building
75 Spring Street, S. W.
Atlanta, Georgia 30303

Dear Mr. Husted:

The U. S. Army Corps of Engineers, Mobile District, is proposing to offer shoreline protection to a short stretch of the shoreline of Boggy Bayou at Valparaiso, Florida. The type of protection has not yet been finalized, but will most likely consist of bank armor with perhaps a riprap toe. Attachment 1 is a Niceville, Florida U. S. G. S. 7.5 Minute Quadrangle map showing the project location. Attachment 2 illustrates the specific work area.

Attachment 3 is a letter from the Florida State Historic Preservation Officer agreeing to similar work at a location denoted on Attachment 1 as Previous Work Area. Due to the urbanized nature of the area and its small size, it is the opinion of the Mobile District cultural resources staff that no cultural resources eligible for the National Register of Historic Places will be affected by the proposed work.

If you agree with our position, please sign in the afforded space and return this letter to this office by July 5, 1984. Any comments you may have will be welcomed. If no reply is received by this date our planning effort will continue.

Please call Mr. Ernie Seckinger at (205) 694-4107 if you have any questions.

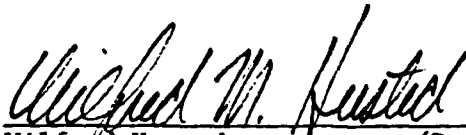
Sincerely,



Willis E. Ruland
Chief, Environment and Resources
Branch

Attachments

CONCURRENCE:

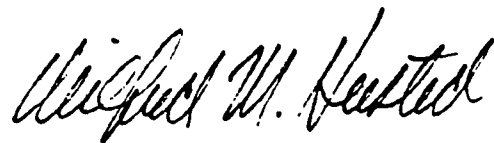


JUN 15 1984

Wilfred Husted (Date)
National Register Programs Division
National Park Service

June 15, 1984

I made a visit to the proposed work site on June 11 and could find no evidence of archeological material. However, there is a site, 80K48, immediately south of the project area at Lincoln Park. Care should be taken to insure that the southern end of the project does not impinge on 80K48.





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

September 10, 1984

F/SER113/DEN
904-234-5061

Mrs. Marlene Nester
Environmental Studies and Evaluation Section
Mobile District, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628

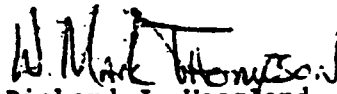
Dear Mrs. Nester:

As requested in Mr. Lawrence R. Green, Chief, Planning Division letter of September 7, 1984, the National Marine Fisheries Service has reviewed the "Draft Expanded Reconnaissance Report, Section 103 Shore Protection Feasibility Study on Boggy Bayou, Valparaiso, Florida.

Based on the information provided, we would have no objection to construction of the revetment as proposed.

Should you require additional information, please contact Mr. David E. Nixon of our Panama City Area Office at 904-234-5061.

Sincerely yours,


for Richard J. Hoogland
Chief, Environmental Assessment Branch





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

SEP 18 1984

4PM-EA/WT

Mr. Lawrence R. Green, Chief
Planning Division
U.S. Army Corps of Engineers, Mobile
P.O. Box 2288
Mobile, Alabama 36628

ATTENTION: Environmental Studies and Evaluation Section

SUBJECT: Draft Expanded Reconnaissance Report Section 103
Shore Protection Feasibility Study Boggy Bayou,
Valparaiso, Florida

Dear Mr. Green:

We have reviewed the Environmental Assessment 404(b) Evaluation for the proposed shoreline protection works and it is our appraisal that the work will have no significant adverse effect on water quality or the natural environment. Therefore, we have no objection to the work as planned.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Arthur G. Linton".

Arthur G. Linton
Federal Activities Coordinator
Environmental Assessment Branch



United States Department of the Interior
FISH AND WILDLIFE SERVICE

Division of Ecological Services
1612 June Avenue
Panama City, Florida 32405

October 15, 1984

District Engineer
U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628

Dear Sir:

This is the Fish and Wildlife Coordination Act Report for the Boggy Bayou Shore Protection Project at the City of Valpariso, Okaloosa County, Florida. The project is advertised in Public Notice FP84-VB-02-04, dated October 2, 1984. Our report is provided under the terms of the Fiscal Year 1985 Scope of Work and Transfer Funding Agreement, and in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). It was prepared in cooperation with the Florida Game and Fresh Water Fish Commission and the National Marine Fisheries Service, and includes review of the draft Reconnaissance Report, Environmental Assessment, 404(b) Evaluation, and Finding of No Significant Impacts. This project is being studied under the authority of Section 103 of the River and Harbor Act of 1962.

All of the aforementioned documents are well written, and provide accurate, adequate consideration of fish and wildlife resources. We therefore have no suggestions for revisions.

Protection from bank erosion is being considered for a 700-foot portion of Boggy Bayou shoreline that is approximately centered on the intersection of Bayshore Drive and Magnolia Avenue. Three structural erosion protection plans are discussed in the Reconnaissance Report. These are described below.

Plan 1 would provide shoreline protection with a sloping stone revetment approximately three feet high and 15 feet wide, with the waterward edge of the revetment paralleling the shore along the one-foot depth contour. According to the Reconnaissance Report, this is the landward most engineeringly feasible location to construct the revetment, and is a revision from the two-foot depth contour considered earlier. A stone apron 2 feet wide would extend along the waterward base of the revetment. Backfilling shoreward of the revetment would form a sloping earthen embankment that would be strip sodded, seeded and mulched. In the Reconnaissance Report Plan 1 is considered the plan that best meets planning objectives and minimizes environmental impacts. It is therefore the plan that Mobile District recommends for implementation.

Plan 2 would provide protection with a vertical timber bulkhead 3 feet high, paralleling the shore along the mean low water line, and returning to high ground at each end. A sloping earthen embankment landward of the bulkhead would be formed by backfilling.

Plan 2B would provide protection with a vertical timber bulkhead and earthen embankment as in Plan 2, with a stone apron 5 feet wide placed along the toe of the bulkhead.

In general, the study area consists of residential property landward of Bayshore Drive; the street itself; a moderate to steep 10- to 20-foot high slope below the street, vegetated with mixed grasses, shrubs, and trees; a gently sloping grassy zone and sandy bayou beach with scattered trees at the base of the slope; and sand-bottom bayou shallows immediately offshore from the beach. Sandy estuarine intertidal and shallow shore zones, such as occur in the project area, have life support values not found in deeper areas. Numerous invertebrates inhabit the substrate; smaller forms of finfish, including certain seafood and forage species, feed and seek refuge in the shallows; and shore and wading birds use the shallow and adjacent land for feeding and resting. Fauna directly provided with habitat include penaeid shrimp, blue crab, flounder, mullets, forage fish, herons, egrets, terns, and sandpipers. Fauna indirectly benefitted through the food chain include bluefish, seatrouts, red drum, common loon, double-crested cormorant, brown pelican, mergansers, osprey, and bottlenose dolphin.

Plan 1 would adequately conserve shore zone habitat, provide a biologically valuable substrate (riprap) as mitigation for unavoidable losses of intertidal and shallow subtidal areas, and serve as an example of an environmentally sound project. Because of this, Plan 1 is the plan preferred by the Fish and Wildlife Service.

Plan 2B would cause a loss of existing shoreline habitat, but would result in considerable riprap being placed in the post-project intertidal and shallow water zones. This hard substrate, with its large surface area and numerous interstices, would provide good quality attachment, shelter, and foraging habitat for aquatic biota; and would mitigate the loss of natural shoreline. However, the preservative-treated timber bulkhead might be detrimental to aquatic biota (see below). In light of this, Plan 2B is a biologically acceptable alternative, but somewhat less so than Plan 1.

Plan 2 would eliminate natural shoreline habitat, with no features to mitigate fish and wildlife losses. The preservative-treated vertical timber face of the bulkhead has little value as aquatic habitat. In fact, preservative chemicals leaking from marine construction timbers can be toxic to aquatic biota. In addition, we have observed that waves reflected from vertical bulkheads tend to scour a trough at the base of the bulkhead, which further reduces any shallow water habitat remaining after completion of the project. For these reasons, and because Plan 2 would set an undesirable example for the public, we consider this plan to be by far the alternative most detrimental to fish and wildlife resources.

Under all of the structural plans discussed above, backfilling and other construction activities would reduce or eliminate existing vegetation between Bayshore Drive and the water. This would cause a loss of habitat for several species of birds (such as song birds, belted kingfisher, woodpecker), and diminish associated public benefits. These losses appear to be an unavoidable aspect of project construction, but could be mitigated through minor changes in project plans.

In view of the preceeding, the Fish and Wildlife Service offers the following conclusions and recommendations:

1. We concur with selection of Plan 1 as the recommended plan.
2. If Plan 1 is not implemented, Plan 2B would be an environmentally acceptable alternative.
3. Plan 2 not be implemented because of excessive, unacceptable losses of fish and wildlife resources.
4. Terrestrial wildlife habitat and associated public benefits lost due to project construction be mitigated by including an abundance of trees and shrubs of several species in embankment stabilization plantings.

We appreciate the opportunity to participate in the planning of this project. Please let us know if additional information or assistance is needed.

Sincerely,

for Lloyd Stith
James M. Barkuloo
Field Supervisor

cc:

ARD/ES, Atlanta, GA
EPA, Atlanta, GA
NMBS, St. Petersburg, FL
NMFS, Panama City, FL
FL DER, Tallahassee, FL
FL DNR, Tallahassee, FL
FL G&FC, Tallahassee, FL

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY, D.V.M.
Chairman, Miami

THOMAS L. HIRES, SR.
Vice-Chairman, Lake Wales

WILLIAM G. BOSTICK, JR.
Winter Haven

J.H. BAROCO
Pensacola

MRS. GILBERT W. HUMPHREY
Miccosukee

ROBERT M. BRANTLY, Executive Director
F.G. BANKS, Assistant Executive Director



FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32301
(904) 488-1960

October 16, 1984

Ms. Marlene Nester
Mobile District, U.S. Army Corps of Engineers
Post Office Box 2288
Mobile, AL 36628

RE: Section 103 Draft Report
Shore Protection Feasibility Study on Boggy Bayou, Valparaiso, Okaloosa County

Dear Ms. Nester:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the referenced document and offers no objection to the recommended plan for providing shoreline protection along Boggy Bayou.

We appreciate the opportunity to review this report. Please contact us if we may be of further assistance.

Sincerely,

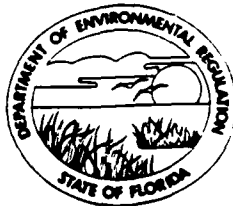
Douglas B. Bailey
Assistant Director
Office of Environmental Services

DBB/RM/ms
ENV 2-1-2A

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT

160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501-5794



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROBERT V. KRIEGLER
DISTRICT MANAGER

October 9, 1984

Col. Patrick Kelly
Post Office Box 2288
Mobile, Alabama 36628

Dear Col. Kelly:

This is to acknowledge receipt of your application, file number 460939511, for a permit to:

construct 700 linear ft. of rip-rap revetment.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 253 and 403, Florida Statutes.

Your application for permit is incomplete. Please provide the information listed on the attached sheet promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

If you have any questions, please contact Cliff Rohlke at 904/43608428 of this office. When referring to this project, please use the file number indicated.

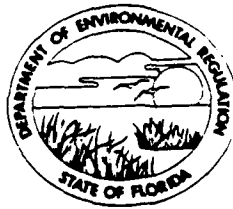
Sincerely,

W. Richard Fancher
Dredge and Fill Supervisor

WRF/wfb

DER Form 17-1.201 (4)
Effective November 30, 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION



NORTHWEST DISTRICT

160 GOVERNMENTAL CENTER
PENSACOLA, FLORIDA 32501-5794

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

ROBERT V. KRIEGLER
DISTRICT MANAGER

October 9, 1984

COMPLETENESS SUMMARY
DREDGE & FILL PERMIT APPLICATION

File No. 460939511

NAME: Col. Patrick Kelly
ADDRESS: Post Office Box 2288
Mobile, AL. 36628

DATE RECEIVED: 10/4/84
DATE REVIEWED: 10/9/84
BY: C. Rohlke

The following marked items were omitted or were found to be incomplete in your application as submitted:

GENERAL

Application Fee. \$0.00 has been received; \$100.00 is due.
[FAC Rule 17-4.05]

APPLICATION FORM [FAC Rule 17-1.203(1)]

Your application was not signed; please sign and return.

Your affidavit of ownership was not notarized; please have notarized.

DRAWINGS [FAC Rule 17-1.203(1)]

Plan view: Please provide a more detailed view. Indicate maximum waterward distance of revetment below MHW. Show approx. MLW submitted plan view indicates over 2500' of shoreline, application states 700'. Please clarify.

Cross-sectional view: Section views (1,2,and 3) are not indicated on the submitted plan view.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301



BOB GRAPEN
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

November 2, 1984

U. S. Army Corps Of Engineers
C/O Patrick J. Kelly
Post Office Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Kelly:

This is to acknowledge receipt of your application, file number 460939399,
for a permit to: construct a riprap shoreline 700 foot long
backfilled with sand and gravel.

- [X] This letter constitutes notice that a permit will be required for your project pursuant to Chapter(g) 403, Florida Statutes.
- [] Your application for permit is complete as of _____ and processing has begun. You are advised that the department under Chapter 120, Florida Statutes, must take final action on your application within ninety (90) days unless the time is tolled by an administrative hearing.
- [X] Your application for permit is incomplete. Please provide the information listed on the attached sheet promptly. Evaluation of your proposed project will be delayed until all requested information has been received.
- [] The additional information was received on _____ was reviewed, however, the items listed on the attached sheet remain incomplete. Evaluation of your proposed project will continue to be delayed until we receive all requested information.
- [] At this time no permit is required for your project by this department. Any modifications in your plans should be submitted for review, as changes may result in permits being required. This letter does not relieve you from the need to obtain any other permits (local, state or federal) which may be required.

If you have any questions, please contact the undersigned
of this office. When referring to this project, please use the file number indicated.

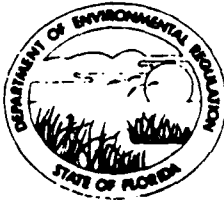
Sincerely,

Mark Latch
Environmental Specialist
Standard Permitting Section

cc: D.E.R., Pensacola
D.N.R., Wilde/Horne
DER Form 17-1.201(4)
Effective November 30, 1982

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

COMPLETENESS SUMMARY
DREDGE & FILL PERMIT APPLICATION

File No. 460939399, Okaloosa County

NAME: U. S. Army C.O.E.
ADDRESS: Post Office Box 2288
Mobile, Alabama 36628-0001

DATE RECEIVED: October 4, 1984
DATE REVIEWED: November 2, 1984
BY: M. Latch *[Signature]*

The following marked items were omitted or were found to be incomplete in your application as submitted:

GENERAL

- [X] Application fee. \$ 100 has been received; \$ 0 is due. [FAC Rule 17-4.05]
- [] Letter of authorization for your agent. [FAC Rule 17-1.203(1)]
- [] Certification of drawings by a professional engineer or registered land surveyor. [FAC Rule 17-4.05]
- [X] Two copies of aerial photographs of project area, scale 1:24,000 (1" = 2000 ft) or greater (more detailed). [FAC Rule 17-1.203(1)]
- [] Consent of use of state-owned land from the Board of Trustees (Department of Natural Resources) in the form of See attached notes.
NOTE (See application pamphlet for explanation) [Section 253.77, F.S.]

APPLICATION FORM [FAC Rule 17-1.203(1)]

- [X] Your application was not signed; please sign and return.
- [X] Your affidavit of ownership was not signed/notarized; please sign/have notarized.
- [] Item No. _____ was not completed. Please provide _____

DRAWINGS [FAC Rule 17-1.203(1)]

- [] Vicinity map:
- [X] Plan view: See attached Notes
- [X] Cross-sectional view: See attached Notes

Attached Notes
File No. 460939399, Okaloosa County
U. S. Army C.O.E.

1. The application form indicates 700 feet of riprap revetment. The drawings provided indicate a "Study area" of more than 3200 feet, but does not indicate the area where work is to occur. Please provide a plan view drawing indicating the specified area where the revetment is to be placed. These drawings should indicate the existing mean high water line (MHW), the existing bluff line, the proposed revetment, and the areas of backfill.

F.A.C Rule 17-12.060

2. Plate 8 indicates three additional cross sections that are different from the section in Figure 2. If these additional sections are applicable please indicate the portions of the project for which each section applies.

F.A.C. Rules 17-12.060

3. On the plan view drawing, please indicate the areas of wetland involvement.

F.A.C. Rule 17-12.060

NOTE:

The department may deny a permit application if the applicant, after receiving timely notice, fails to correct errors, omissions, or supply additional information within a reasonable period of time (Subsection 17-4.28(11)(a), Florida Administrative Code). However, the department recognizes that there may be extra time required for completing a hydrographic study, a water quality study, or other appropriate surveys, when such may be necessary to complete an application. Reasonable time will be allowed to pursue such items. Moreover, extra time may be granted upon the applicant's written request."

Pursuant to Section 403.815, Florida Statutes, and Section 17-103.150, Florida Administrative Code, you are required to publish (at your own expense) a Notice of Proposed Agency Action in the legal ad section of a newspaper of general circulation in the county where the activity is proposed. The notice will be provided you upon development of intended agency action. Failure to publish the notice in an expeditious manner will result in the denial of your application for permit.

For your information: Section 370-034, Florida Statutes, requires that all dredge and fill equipment owned, used, leased, rented or operated in the state shall be registered with the Department of Natural Resources. Before selecting your contractor or equipment you may wish to ascertain if this requirement has been met. For further information, contact Richard Healy, Chief, Bureau of Licenses and Motorboat Registration, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32303. Telephone Number 904/488-1195. THIS IS NOT A REQUIREMENT FOR A PERMIT FROM THE DEPARTMENT OF ENVIRONMENTAL REGULATION.

The applicant is herein advised that Florida law states: "No person shall commence any excavation, construction, or other activity involving the use of sovereign or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund or the Department of Natural Resources under Chapter 253, until such person has received from the Board of Trustees of the Internal Improvement Trust Fund the required lease, license, easement, or other form of consent authorizing the proposed use." If such work is done without consent, a fine for each offense in an amount of up to \$10,000 may be imposed.

APPENDIX B

LOCAL COOPERATION

704/

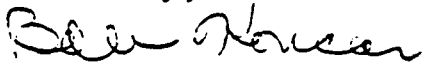
March 9, 1982

Project Director Shoreline Restoration Division
Corps of Engineers
Mobile District
P. O. Box 2288
Mobile, Alabama 36628

Dear Sir;

Enclosed is a copy of a resolution passed last night by the City Commission of the City of Valparaiso concerning erosion control problems in the City. If further information is required in order to begin study programs in this area please let me know.

Sincerely,



Bob Koncar
Administrative Assistant

WHEREAS, the City of Valparaiso is bordered by navigable water ways (i.e. Boggy Bayou and Tom's Bayou), the City has experienced a severe erosion problem in certain coastal areas of the City.

WHEREAS, certain areas of the City have continued to experience severe erosion due to natural wave action and frequent storms.

WHEREAS, the erosion has become severe enough in some areas to threaten City rights-of-way and certain public utilities (water and sewer lines).

WHEREAS, the City's Public Works Department has been unsuccessful in containing the erosion in certain areas of the City.

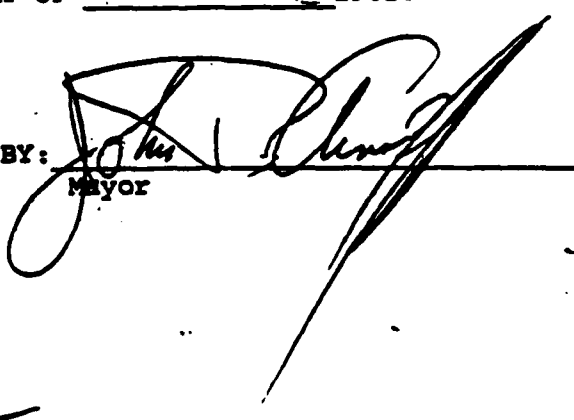
NOW THEREFORE, be it resolved, by the City Commission, of the City of Valparaiso, Valparaiso, Florida, that under the authority provided in section 103 in the River and Harbor Act 1962; as amended, the City Commission hereby requests that the Corp of Engineers (under the above referenced act), study the beach erosion control problems in the following areas of the City of Valparaiso.

Area I: is a 600' section of shoreline along the Northeastern shore of Plat 1 along Bayshore Drive. This section is located between the landmarks of the Valparaiso Inn and Lincoln Park.

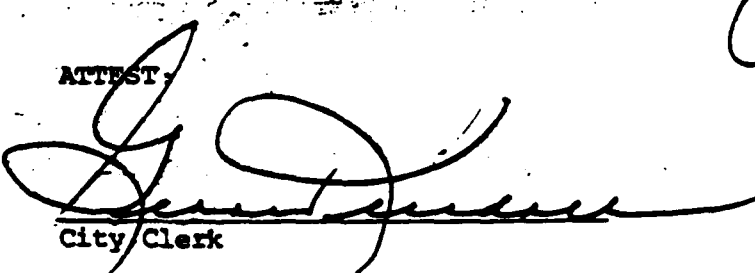
Area II: is a 1,000' section of shoreline located along the Northeastern shore of Plat 1 along Bayshore Drive. This section is located between the landmarks of Ship Yard Point and Lincoln Park.

Area III: is a 450' section of shoreline located on the northern shore of Plat 1 along Bayshore Drive this section is located along the landmarks of Ship Yard Point and Northend Avenue.

PASSED AND ADOPTED THIS 8TH DAY OF April 1982.

BY: 
Mayor

ATTEST:


City Clerk

July 13, 1983

Coastal Branch

Mr. Bob Komcar
Administrative Assistant
City of Valparaiso
Post Office Box 296
Valparaiso, Florida 32580

Dear Mr. Komcar,

In response to your letter request of March 9, 1982, we have completed a draft reconnaissance report on Shore Erosion Control problems at Valparaiso, Florida, one copy of which is attached. This report is being prepared under authority of Section 14 of the Flood Control Act of 1946. The purpose of this letter is to inform you of the preliminary findings of the reconnaissance report and explain possible future study and implementation responsibilities. This draft reconnaissance report is presently being coordinated with the Florida Department of Environmental Regulation, U.S. Fish and Wildlife Service, and other environmental agencies to identify environmental concerns that should be addressed in more detailed studies.

This feasibility study is being conducted in two phases: reconnaissance and expanded reconnaissance. The primary purpose of the reconnaissance report is to determine whether there is a Federal interest in shore erosion control measures to protect Bay Shore Drive and to identify a potential solution which is economically, engineeringly viable and environmentally sound. This reconnaissance report suggests that such Federal interest exists and that more detailed studies are warranted. An expanded reconnaissance study will be recommended to consider a range of alternative solutions and select the best. It will provide a more detailed appraisal of costs, benefits, and environmental impacts and a consequent determination as to whether to recommend construction of erosion control measures.

Should the expanded reconnaissance recommend construction of erosion control measures, construction costs for Section 14 projects are funded 100 percent Federal, up to a maximum of \$250,000 Federal share and also requires that the local sponsor comply with the following:

- a. Provide without cost to the United States all necessary lands, easement, rights-of-way and relocations for construction of the project.
- b. Hold and save the United States free from claims for damages which may result from construction and subsequent maintenance of the project, except damages due to the fault or negligence of the United States or its contractors.
- c. Assure maintenance and repair during the economic life of the project as required to serve the intended purposes.
- d. Assure that water pollution that would affect the health of the public utilizing the project shoreline will not be permitted.
- e. Contribute in cash the local share of project construction cost and assume full responsibility for all project costs in excess of the Federal cost limitation of \$250,000.

After allowing time for all parties to receive copies of the draft report, we will request a site visit of all those concerned. We look forward to working with you on this study and will be in contact with you in the near future concerning the site visit. If you have any questions, please do not hesitate to call me or Mr. Bill Youngman at (205) 694-3807.

Sincerely,

Lawrence R. Green
Chief, Planning Division

Enclosures

CITY OF VALPARAISO

VALPARAISO, FLORIDA 32281

August 10, 1983

Mr. Lawrence R. Green
Chief, Planning Division
Department of the Army
Mobile District
Corps of Engineers
P.O. Box 2288
Mobile, AL 36628

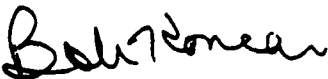
Dear Sir:

After having reviewed the draft study prepared by your office for the City of Valparaiso erosion problems, the following comments are offered:

1. The study appears complete in its attention to the erosion problems of the proposed study area.
2. Statistical data seems to be in order and correctly utilized.
3. The proposed solution to the erosion problem is the best solution to the present problem and in our opinion the only long term solution.
4. The City has no objections or additions to the study and recommends completion of the final study as soon as possible.

Thank you for your cooperation in this matter.

Sincerely,



Bob Koncar
Administrative Assistant

December 13, 1983

Mr. Larry Godwin
Corps of Engineers
Mobile District
P. O. Box 2288
Mobile, Alabama

Dear Sir,

At last night's City Commission meeting the City Commission decided on the following course of action in response to your conversation with me about the City's proposed shoreline erosion project:

1. Request the Corps to reconsider the project for possible inclusion in the emergency category,
2. If upon reevaluation of the project the Corps does not include it in the emergency funding category, then the City would like to consider a phased project that would address only the areas of critical concern.

The City Commission expressed the fact that they are not in a financial position at this time to fund a portion of a project of this nature. Therefore, it strongly suggests that the Corps carefully consider the areas of critical concern and consider funding that portion of the project. The Commission also wanted to make sure that the project is not dropped from the Corps project list and is willing to listen to any proposal that the Corps has.

If you have any questions please give me a call.

Sincerely,



Bob Koncar
Administrative Assistant

September 13, 1984

Mr. Lawrence R. Green
Chief, Planning Division
Department of the Army
Mobile District - Corps of Engineers
P. O. Box 2288
Mobile, Alabama 36628

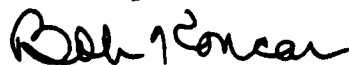
Dear Sir,

In response to your letter of September 7th, the City approves of the type of construction proposed. Further, the City will be more than happy to comply with items a, b, c, e, f, g, and h as stated in your letter. However, item d which requires us to pay for 50% of the total cost of the project presents a problem for us. As you are aware the project was formerly in the emergency funding category, thus providing for federal funding of the project up to \$250,000.00.

Your letter of September 7th requesting that the City share 50/50 with the Corps for funding of the project represents an unexcepted change. In as much as we were under the impression that the Corps would pay for the entire project, the City did not budget any funds for this project. In addition the City is not currently in a financial position to fund such a share. However, the City is vitally interested in the project and feels that it warrants being considered as an emergency project. Therefore, we are requesting that you please review the project once again and reconsider placing the project back on the emergency funding list.

Please consider our request and let me know what position the Corps will take in this matter. Thank you so much for your consideration in this matter. If you have any questions please let me know.

Sincerely,



Bob Koncar

Administrative Assistant to the Mayor and Commission

CITY OF VALPARAISO

December 21, 1984

Mr. Lawrence R. Green
Chief - Planning Division
U. S. Army Corps of Engineers
Mobile District
P. O. Box 2288
Mobile, Alabama 36628

Dear Mr. Green,

This letter is in response to your letters of September 7th and October 15th, 1984, concerning the proposed project to remedy the erosion problem at Boggy Bayou. As the local sponsor, the City of Valparaiso is in full support of the proposed plan and intends to fulfill the following items of local responsibilities:

a. Provide without cost to the United States all lands, easements, rights-of-way, relocations and utility adjustments necessary for the construction and subsequent maintenance of the project.

b. Hold and save the United States free from damages due to the construction of the project when not the fault or negligence of the United States or its contractors.

c. Assure continued conditions of public ownership and public use of the shore upon which the amount of Federal participation is based during the economic life of the project.

d. Provide a cash or in kind contribution for beach erosion control equal to the appropriate percentage of the final construction costs allocated to this function exclusive of lands, rights-of-ways, easements, alternations, and relocations, the percentage to be in accordance with existing law and based on the extent of share in public ownership or use at the time of implementation.

e. Assure maintenance and repair during the economic life of the project as required to serve the intended purposes without cost to the United States and in accordance with regulations prescribed by the Secretary of the Army.

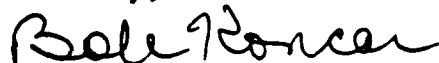
f. Assume full responsibility for all project costs in excess of the Federal cost limitation of \$1,000,000.00.

g. Comply with the terms and conditions of the Uniform Relocation Assistance Real Property Acquisition Policies Act of 1970 (Public Law 91-646), approved 2 January 1971.

h. Comply with Title VI of the Civil Rights Act of 1964 (PL 88-352).

As you know, the City had been under the impression that the project was in the emergency category and eligible for Federal funding under Section 14 authority. Therefore, funds were not allocated in our FY 85 budget, and the City will not be able to comply with the local cost sharing requirement at this time. Please be advised that the City is concerned about the loss of public road due to the erosion problem and prefers that the project be constructed under Section 14 authority. However, as funds become available in FY 86, the City will again consider its share of construction costs for the proposed plan. We request that this study be kept active in the meantime.

Sincerely,



Bob Koncar

Administrative Assistant to the Mayor and Commission



CITY OF VALPARAISO

VALPARAISO FLORIDA 32580

September 3, 1985

Mr. Roger A. Burke
Chief - Coastal Branch
Department of the Army
Corps of Engineers
Mobile District
P. O. Box 2288
Mobile, Alabama 36628

Dear Sir;

The City Commission of the City Valparaiso has considered funding the proposed Corps of Engineers erosion control project for Valparaiso during the last two budget years. Due to the cost of the project to the City we must decline to participate in the project at this time. The City's ever increasing operational costs will not permit us to fund an amount sufficient to participate in the project with the Corps.

We want to express our appreciation to the Corps for all of your efforts on this study project, as well as, past projects within the City.

Sincerely,

Bob Koncar
Administrative Assistant to the Mayor and Commission

"Home of the World's Largest Air Force Installation, Eglin AFB, Fla."



CITY OF VALPARAISO

VALPARAISO, FLORIDA 32580

December 13, 1985

Mr. Larry Godwin
Department of the Army
Mobile District - P.O. Box 2288
Coastal Branch
Corps of Engineers
Mobile, AL 36628

Dear Mr. Godwin:

This letter is to confirm my telephone conversation with you this date, to defer the Bayshore Drive Project for one year, and to request the plans be modified to provide recreational enhancement to the area.

This is a vital project for the City and one the City would like to see completed. Therefore, we are requesting that the project be continued on your open projects list.

Sincerely,

Faye B. Floyd
Faye B. Floyd
City Clerk

FBF/eg

"Pioneers of the World" - Report on Town Development, City of Valparaiso, Fla.

December 5, 1986

Coastal Section

Honorable John B. Arnold, Jr.
Mayor of Valparaiso
Post Office Box 296
Valparaiso, Florida 32530

Dear Mayor Arnold:

I am writing in regards to a letter of December 13, 1985 from Mr. Pape E. Floyd, City Clerk of Valparaiso, which requested that we defer our studies for shore protection along Bayshore Drive for one year. I am enclosing a copy of the letter for your reference.

As you may be aware, President Reagan recently signed the Water Resources Development Act of 1986 which provides for a more favorable project construction cost sharing percentage for the city. The cost sharing arrangements for shore protection have been changed to require the non-Federal interests to pay 5 percent of the cost of the project during construction; provide all lands, easements, rights-of-way, and dredged material disposed areas required for the project purpose; and perform all related necessary relocations. If the value of the contributions required above is less than 25 percent of the cost of the project, the non-Federal interests shall pay during construction such additional amounts as may be necessary so that the total contribution of the non-Federal interests is equal to 25 percent of the cost of the project. Thus, rather than providing 98 percent of the project cost as previously required, the City would only be required to provide 25 percent of the cost of the project currently recommended.

At this time, we need a letter indicating the City's position on the project. If the desire is to proceed toward construction of the project, we will need to revise the report to reflect the new cost sharing policy. If you have any questions concerning the new project cost sharing or concerning the need for the letter, please feel free to call on me or Mr. Howard Danley, Acting Chief of the Coastal Section, at (205) 694-3844.

Roger A. Burke
Chief, Plan Formulation Branch

Enclosure



FRESH AND SALT WATER SPORTS
ON CHOCTAWHATCHEE BAY

CITY OF VALPARAISO

P O BOX 296 — PHONE 678-2912

VALPARAISO, FLORIDA 32580

January 13, 1987

Mr. Roger A. Burke
Mobile District Corps of Engineers
Coastal Section
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Burke:

I was very much encouraged by your December 5, 1986 letter outlining the new cost sharing provisions of the Water Resources Act of 1986. I presented these new provisions to our City Commission last night. They too were encouraged, and have requested that you press ahead with the Bayshore Drive project.

We very much appreciate your continued support and interest in this project.

Sincerely,

Gregory S. Wood
Administrative Assistant to
the Mayor and Commission

"Home of the World's Largest Air Force Installation, Eglin Air Force Base, Florida"



DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P O. BOX 2288
MOBILE, ALABAMA 36628-0001

April 3, 1989

REPLY TO
ATTENTION OF:

Coastal Section

Honorable John B. Arnold, Jr.
Mayor of Valparaiso
Post Office Box 296
Valparaiso, Florida 32580

Dear Mayor Arnold:

The Mobile District, Planning Division has recently completed the Detailed Project Report for Emergency Shoreline Protection along Boggy Bayou in Valparaiso. This report must be forwarded to the South Atlantic Division prior to start of final design, advertising and award of a construction contract.

Funding for this project is unlikely in Fiscal Year 1989. However, we do want to be prepared to start final design, advertising and construction contract award in the event funds become available.

Execution of a Local Cooperation Agreement is required prior to start of final design, advertising and construction. A draft agreement is enclosed for your review and approval.

If the draft agreement is acceptable to you, please furnish us with a letter stating your intent to execute the agreement. A simple statement describing the source of funds for the City of Valparaiso should also be included in the letter of intent. Also, if the City of Valparaiso enters into an agreement with another party to provide any of the items of local cooperation for this project, we will need a copy of that agreement prior to execution of the final agreement.

If you have any questions or wish to arrange a meeting to discuss the agreement, please call Amy Bridges at (205) 690-2726.

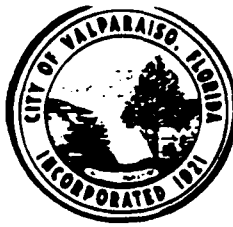
Sincerely,

N. D. McClure IV
Chief, Planning Division

Enclosure



FRESH AND SALTWATER SPORTS
ON CHOCTAWHATCHEE BAY



HOME OF
EGM AFB FORCE BASE

CITY OF VALPARAISO

P.O. BOX 296 — PHONE 678 2912

VALPARAISO, FLORIDA 32580

April 27, 1989

Mr. N.D. McClure IV
Coastal Section
Mobile District, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. McClure:

The Valparaiso City Commission met in special session, April 24, 1989, to discuss the Emergency Shoreline Protection Project at Boggy Bayou, Valparaiso Florida. The Commission voted unanimously to support the project, provide the \$11,300 cash match requirement, and the funding for required relocations.

The City's funding source will be provided through its 89/90 FY Capital Budget. These funds are derived through ad valorem taxes, utility taxes, franchise fees, and state revenue sharing.

If you have any questions please contact me.

Sincerely,

Gregory S. Wood
Administrative Assistant
to the Mayor and Commission

"Home of the World's Largest Air Force Installation Eglin Air Force Base Florida"

APPENDIX C

ENVIRONMENTAL STUDIES

Appendix C
Environmental Studies

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ENVIRONMENTAL ASSESSMENT

SHORE PROTECTION ALONG BOGGY BAYOU VALPARAISO, FLORIDA

Need for the Proposed Action.

Persistent erosion of the shoreline along Boggy Bayou in Valparaiso, Florida, is occurring at an estimated rate of approximately one half foot per year. The effects of this erosion vary from minimal in the area of Lincoln Park beach to moderate at several other locations. A section of Bayshore Drive, utilities, and recreation facilities along the shore could be threatened with the eventual destruction by the continuing erosion.

Description of the Study Area.

The city of Valparaiso, Florida, is about 10 miles northeast of Fort Walton Beach in Okaloosa County. Valparaiso is located on the west bank of Boggy Bayou, an embayment which indents the north shore of Choctawhatchee Bay. The city and county had 1983 populations of about 6,142 and 109,920, respectively. The study area is shown on Plate 1 of the main report.

Boggy Bayou is about 3.2 miles long and one-half mile wide with depths varying from 13 feet near the head of the bayou to about 22 feet at its mouth in Choctawhatchee Bay. Its length is oriented in a northwest-southeast direction.

The primary study area is a strip of city-owned land about 700 feet in length on the western shore of Boggy Bayou. Bayshore Drive, a paved street with concrete curb and gutter, extends generally parallel to the shoreline and provides access to both the bayou and private residences located across the street.

The land between Bayshore Drive and Boggy Bayou is mostly park-like, as the area is primarily grassed with several picnic tables located among the trees. A pleasant setting is provided for the residences along Bayshore Drive, which are valued in excess of \$150,000. Wood piers constructed by private residents, but available for public use, are located at several points along the shoreline.

The existing shoreline under study is a steep bank fronted by a narrow, relatively flat area adjacent to the water. In some areas, the flat portion has been eroded back to the toe of the bank and in other areas it extends as much as 20 to 30 feet in front of the bank. An isolated stand of black rush, encompassing approximately 15 square feet, and a stretch of reed approximately 60 feet long are present along the shoreline. The slopes between the mean high water line and top of the bank is predominantly vegetated with mixed grasses, shrubs, and trees. The top of the bank is vegetated with several species of trees and shrubs including oak, magnolia, yaupon, and pampas grass.

The shallow shore zone of the study area presently provides habitat for a variety of fish and wildlife. Invertebrates such as penaeid shrimp and blue crabs utilize the substrate of this shallow zone. Additionally, small finfish, including certain seafood and forage species, such as flounders, mullet, herring, pinfish, and croaker, feed and seek refuge in the shallows. Shore and wading birds expected to use the shallows and adjacent land for feeding and resting include ducks, herons, egrets, terns, belted kingfishers, and sandpipers.

The study area is within the range of the following species listed as endangered or threatened by the U.S. Department of the Interior: the bald eagle, peregrine falcon, brown pelican, and American alligator. Of these, the brown pelican is the only species known to utilize the area.

There are no known cultural resources eligible or listed on the National Register of Historic Places within the study area. Considering the residential nature of the area and the eroded condition of the study area in particular, it is highly unlikely that there are any preserved cultural resources in the immediate study area.

Description of the Recommended Plan.

The structural plan for providing shoreline protection along Boggy Bayou involves construction of a 700-foot long stone revetment having a crest elevation of +3.0 feet NGVD (formerly mean sea level) and a base elevation between +1 and -1 foot. Revetment slopes would vary between 1 vertical on 2 horizontal along the shoreface and 1 vertical on 1.5 horizontal along the landward side. An apron two feet wide would extend along the toe of the structure to provide additional stability and protection against breaking waves. The structure would be constructed with approximately 800 cubic yards (c.y.) of graded quarrystone placed over 250 c.y. of bedding material on filter fabric.

The embankment behind the revetment would be backfilled with 1,600 c.y. of clean material borrowed from an upland site to a maximum slope of 1 vertical on 2 horizontal. The trees and other vegetation presently growing in this area would be removed and disposed of in an acceptable disposal area. Where feasible, tree wells would be constructed around some existing trees in this area in order to prevent root damage due to backfilling. After backfilling activities, the area would be mulched, strip sodded, and seeded to prevent erosion. The recommended plan is shown on Plate 7 of the main report.

Alternatives to the Recommended Plan.

The alternatives considered include construction of a vertical wall timber bulkhead (Plan 2), a timber bulkhead with a riprap toe (Plan 2B), and relocating Bayshore Drive, as well as the "no-action" plan. Plans 2, 2B and road relocation are shown on Plates 4, 5 and 6, respectively.

Plan 2 would involve the construction of a vertical wall bulkhead with a top elevation of +3.0 feet NGVD and extending approximately 700 feet along the existing shoreline. The embankment behind the bulkhead would be backfilled with clean material borrowed from an available upland site to a maximum slope of 1 vertical on 2 horizontal.

Plan 2B would be similar to Plan 2 in structure and alignment, yet would include a riprap toe placed along the base of the structure within the -1 foot NGVD depth contour. Approximately 130 c.y. of stone would be placed in a 5 foot wide strip along the length of the structure providing hard substrate to serve as attachment and foraging habitat for aquatic biota.

Relocating Bayshore Drive and utilities would involve abandoning approximately 950 feet of existing road and constructing about 1050 feet of new road landward of the existing road alignment. As a result of the new road alignment, acquisition and removal of four residential structures would be required. Water and sewer lines in the area would also require relocation.

The "no-action" alternative would involve no work being done to alleviate the erosion problem.

Environmental Impacts of the Recommended Plan.

The principal environmental impact of the proposed project would be the loss of 700 feet of very narrow beach and some of its associated littoral fauna. Approximately 0.3 acres of existing shoreline intertidal habitat would be lost due to the placement of riprap between the -1 and 1 foot contours and backfilling operations. However, the placement of riprap in the shallow water zone would add habitat diversity in the Boggy Bayou ecosystem by providing new substrate for littoral flora and fauna. This hard substrate would provide good quality attachment, shelter, and foraging habitat for aquatic biota.

Vegetation presently existing along the slope between Bayshore Drive and the water would be reduced or possibly eliminated due to the construction and backfilling operations. The small patch of low quality reed and black rush would be destroyed; due to the unproductive nature of this vegetation, however, this impact would be insignificant. Where feasible, tree wells would be constructed around some existing trees in order to prevent root damage. Trees and other vegetation which could not feasibly be saved would be removed and disposed of in an acceptable upland disposal area. Loss of habitat for songbirds and other species would result from the removal of vegetation in this area. However, after the completion of construction and backfilling, the area would be mulched, strip sodded, and seeded to prevent erosion.

Construction impacts would include a slight temporary degradation of existing water quality due to increased turbidity resulting from the placement of the stones and backfill. The proposed project would

not significantly affect existing air quality or noise levels in this area.

Environmental Impacts of Other Alternatives.

The most severe project environmental impacts would result if Plan 2, timber bulkhead construction, were implemented. Approximately 0.1 acre of natural shoreline habitat would be eliminated by the construction of a bulkhead having little value as aquatic habitat. Additionally, construction of a timber bulkhead would not be aesthetically desirable in this area.

The implementation of Plan 2B (timber bulkhead with riprap toe) would have impacts similar to those of Plan 2 (timber bulkhead); however, the addition of the riprap toe would result in beneficial environmental impacts. In addition to the 0.1 acre of shoreline habitat being eliminated due to bulkhead construction, approximately 0.1 acre of shallow sandy shorezone would be lost due to the placement of riprap. The hard substrate provided by the stone would serve as attachment and foraging habitat for aquatic biota. As in Plan 2, however, the timber bulkhead itself would not be aesthetically desirable.

Impacts to the shoreline and shallow water zone would be avoided if the road was relocated. However, the social disruption and costs resulting from the acquisition and removal of four residential structures make this alternative impractical and unacceptable.

Under the "no action" alternative, erosion of the shoreline could be expected to continue, eventually resulting in the damage or loss of utilities and a public access road. Since this alternative provides no solution or erosion protection, it is considered to be unacceptable.

Coordination With Others.

Coordination has been maintained with the City of Valparaiso, the local sponsor for the project. Coordination through on-site investigations, telephone conversations, and/or letters has also been maintained with the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, National Marine Fisheries Service, Florida Department of Environmental Regulation, and Florida Game and Freshwater Fish Commission.

The above agencies have been sent a copy of this report which includes the Environmental Assessment, Finding of No Significant Impact, and 404(b)(1) Evaluation prepared for the proposed project. In addition, other agencies and individuals have been sent a Notice of Availability of the completed report.

Compliance With Federal and State Statutes.

The compliance of the recommended plan with Water Resource Council designated environmental statutes is summarized in Table EA-1.

Table EA-1
Compliance of the Selected Plan

<u>Federal Statutes</u>	<u>Compliance</u>
1. Archaeological and Historic Preservation Act	FC
2. Clean Air Act	FC
3. Clean Water Act	FC
4. Coastal Zone Management Act	FC
5. Endangered Species Act	FC
6. Estuary Protection Act	FC
7. Federal Water Project Recreation Act	FC
8. Fish and Wildlife Coordination Act	FC
9. Land and Water Conservation Fund Act	FC
10. Marine Protection, Research and Sanctuaries Act	FC
11. National Historic Preservation Act	FC
12. National Environmental Policy Act	FC
13. Rivers and Harbors Act	FC
14. Watershed Protection and Flood Prevention Act	NA
15. Wild and Scenic Rivers Act	NA

NOTE: The compliance categories used in this table were assigned based on the following definitions.

Full Compliance (FC) - The selected plan has met all requirements of the statute for this stage of planning.

Not Applicable (NA) - The requirements of the statute are not applicable to the selected plan.

Section 404(b)(1) Evaluation
For
Shore Protection Along Boggy Bayou
Valparaiso, Florida

1. PROJECT DESCRIPTION. The recommended plan to provide erosion protection along a portion of the Boggy Bayou shoreline in Valparaiso, Florida, requires construction of a 700-foot long stone revetment having a crest elevation of +3.0 feet National Geodetic Vertical Datum (NGVD) and a base elevation between +1 and -1 foot NGVD. An apron two feet wide would extend along the toe of the structure to provide additional stability and protection against breaking waves. The structure would be constructed of approximately 800 cubic yards (c.y.) of graded riprap, approximately 250 c.y. of bedding material, and filter fabric. The embankment behind the revetment would be backfilled with approximately 1,600 c.y. of clean material borrowed from a presently unspecified upland site. (See Plates 7 and 8 of the main report).

a. Authority and Purpose. This report was prepared under the authority of Section 103 of the River and Harbor Act of 1982, as amended. The purpose of this study and report was to investigate the erosion problem along the southwest shoreline of Boggy Bayou fronting Bayshore Drive.

b. Description of the Proposed Dredged and Fill Materials.

(1) General Characteristics. The fill materials which would be placed between -1 and +1 foot NGVD consist of graded riprap over bedding material and filter fabric. Weight of stones would vary between 7 and 108 pounds with 50 percent of the stones having a weight of about 30 pounds. The embankment behind the revetment would be backfilled with clean sandy material.

(2) Quantity of Material Proposed for Discharge. About 1,050 c.y. of riprap and bedding material would be placed on filter fabric between -1 and +1 foot NGVD. Approximately 1,600 c.y. of clean sandy material would be used as backfill.

(3) Source of Materials. The bedding material and riprap would be obtained from commercial sources. The sandy backfill material would be obtained from a presently unspecified upland site.

c. Description of the Proposed Discharge Sites.

(1) Location and Areal Extent. The discharge site is located along 700 feet of the southwest shoreline of Boggy Bayou fronting Bayshore Drive. Approximately 0.3 acres between -1 and +1 foot NGVD would be covered by riprap, and approximately 0.5 acres of bank would be affected by placement of the backfill. Of this 0.5 acres of bank, an approximate 15 square foot section supports a low quality stand of black rush as well as a stretch of reed approximately 60 feet in length which is also of low quality.

(2) Types of Discharge Sites. The discharge sites for the construction of the stone revetment are primarily in open water in the littoral zone adjacent to the bank of Boggy Bayou. The discharge sites for the construction of the earth-filled embankment are primarily along the eroded bank above mean high water.

(3) Method of Discharge. The backfill and riprap would be trucked to the site and placed from the road.

(4) When will Disposal Occur? Filling is scheduled within the next 12 months.

(5) Projected Life of Discharge Sites. The fill materials should remain at the site throughout the 50-year project life.

2. FACTUAL DETERMINATIONS.

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The stone revetment would have a crest elevation of +3.0 feet NGVD and a base elevation between -1 and +1 foot NGVD. The slope of the shoreface side of the revetment would be 1 vertical on 2 horizontal. The backfill would be placed between the revetment and up to the existing roadgrade at a maximum slope of 1 vertical to 2 horizontal.

(2) Sediment Type. Refer to Paragraph 1.b.(1) of this evaluation.

(3) Dredged/Fill Material Movement. Due to the nature of the fill material, movement would be insignificant.

(4) Physical Effect on Benthos. Placement of riprap would destroy any nonmotile organisms living along the 700-foot section of Boggy Bayou. After stabilization of the fill material, organisms common to the area and those requiring hard substrates would colonize the submersed fill material. The new benthic communities would be more diverse than those which presently inhabit this area.

(5) Actions Taken to Minimize Impacts. Placement of riprap would be within a defined area thereby minimizing impacts to benthos.

b. Water Circulation, Fluctuation, and Salinity Determinations.

(1) Water. There would be no significant impacts on water chemistry, salinity, color, odor, taste, dissolved gas levels, nutrients or eutrophication characteristics due to disposal. Water clarity may be temporarily reduced due to disposal activities but should return to normal shortly after construction is completed.

(2) Current Patterns and Circulation. No impact.

(3) Normal Water Level Fluctuations. No impact.

(4) Salinity Gradients. No impact.

(5) Actions to Minimize Impacts. Due to the fact that water circulation, fluctuation, and salinity gradients would not be affected significantly, no actions to minimize impacts would be required.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. Temporary and localized increase in turbidity levels during disposal activities.

(2) Effects of Chemical and Physical Properties of the Water Column. Slight decrease in dissolved oxygen concentrations would occur during disposal activities.

(3) Effects on Biota. No significant impacts.

(4) Actions Taken to Minimize Impacts. Due to the fact that no significant impacts would occur, no actions to minimize impacts would be required.

d. Contaminant Determinations. No testing was required of the material to be used since riprap has been determined to meet the exclusion criteria under 40 CFR 230.60. The determination was based on the fact that the material is characterized as stone which is sufficiently removed from sources of pollution to provide reasonable assurance that the material would not be contaminated by such pollution and the fact that the material itself is inert. The material to be backfilled would be obtained from an upland source which is free of contaminants.

e. Aquatic Ecosystem and Organism Determinations.

(1) Effects on Benthos. Nonmotile benthic organisms living on or within the 0.3 acres to be covered by riprap would be destroyed. Also refer to paragraph 2.a.(4) of this evaluation.

(2) There would be no significant effects on plankton, nekton, aquatic food web, threatened or endangered species or other wildlife.

(3) Actions Taken to Minimize Impacts. There is no need to provide special protection measures since no significant impacts are expected.

f. Proposed Disposal Site Determinations.

(1) Mixing Zone Determination. The proposed action would comply with any zone of mixing specified by the State of Florida.

(2) Determination of Compliance with Applicable Water Quality Standards. The proposed action would comply with applicable water quality standards. Water quality certifications from the State

of Florida, Department of Environmental Regulation, would be obtained prior to any action.

(3) Potential Effects on Human Use Characteristic. The placement of riprap would result in the protection of an access road and utilities; however, 700 feet of very narrow beach would be lost.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. Cumulative effects would be negligible as the discharge will only occur once.

h. Determination of Secondary Effects on the Aquatic Ecosystem. Secondary effects of the placement of riprap would be in terms of the increased habitat diversity in this area. Also, no other actions are presently taking place in the project area which would tend to compound the impact of this action on the aquatic ecosystem.

3. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. The planned discharge of fill materials would not violate any applicable State water quality standards. The disposal operation would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

c. Use of the proposed site would not harm any endangered species or their critical habitat.

d. The proposed discharge of fill materials would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites.

The life stages of aquatic life and other wildlife would not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values would not occur.

e. On the basis of the guidelines, the proposed sites for the discharge of fill materials are specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

DATE: 19 Jan 85


PATRICK J. KELLY
Colonel, CE
District Engineer

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
FOR THE RECOMMENDED SHORE PROTECTION PROJECT ALONG
BOGGY BAYOU, VALPARAISO, FLORIDA

I. Recommended Plan: The recommended plan involves the construction of a 700-foot long stone revetment between the +1 and -1 foot NGVD contours along the shoreline of Boggy Bayou in Valparaiso, Florida. The structure would be constructed of approximately 800 cubic yards (c.y.) of graded quarrrystone over 250 c.y. of bedding material on filter fabric. The embankment behind the structure would be backfilled with 1,600 c.y. of select material, mulched, strip sodded, and seeded.

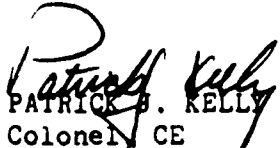
II. Alternatives Considered: Alternatives to the recommended plan included:

- a. Timber bulkhead
- b. Timber bulkhead with riprap toe
- c. Relocation of Bayshore Drive and removal of four residential structures.
- d. No action.

III. Factors Considered in the Determination that No Environmental Impact Statement Is Required: All impacts which would occur as a result of implementation of the recommended plan have been determined to be minor, short-term negative impacts, or beneficial impacts. Adverse impacts include the loss of approximately 0.3 acre of existing shoreline intertidal habitat, loss of vegetation presently growing along the slope between Bayshore Drive and Boggy Bayou, and increased turbidity during construction. Beneficial impacts include the protection of the shoreline from further erosion and the creation of good quality attachment, shelter, and foraging habitat for aquatic biota. No endangered or threatened species would be impacted. No cultural resources are known to be in the area. All impacts associated with this action are minor and are discussed in the Environmental Assessment.

IV. Conclusion: An evaluation of the attached Environmental Assessment describing the proposed action along Boggy Bayou at Valparaiso, Florida, shows that the recommended plan would have no significant impacts and that an Environmental Impact Statement would not be required.

DATE: 19 Jan 85


PATRICK S. KELLY
Colonel, CE
District Engineer

SUPPLEMENTAL
FINDING OF NO SIGNIFICANT IMPACT (FONSI)
FOR THE RECOMMENDED SHORE PROTECTION PROJECT
ALONG BOGGY BAYOU, VALPARAISO, FLORIDA

I. RECOMMENDED PLAN. The recommended plan involves the construction of a 700-foot long stone revetment between the +1 and -1 NGVD contours along the shoreline of Boggy Bayou in Valparaiso, Florida. The structure would be constructed of approximately 800 cubic yards (cy) of graded quarrystone over 250 cy of bedding material on filter fabric. The embankment behind the structure would be backfilled with 1,600 cy of select material, mulched, strip sodded, and seeded.

II. ALTERNATIVES CONSIDERED.

- a. Timber bulkhead.
- b. Timber bulkhead with riprap toe.
- c. Relocation of Bayshore Drive and removal of four residential structures.
- d. No action.

III. RATIONALE FOR SUPPLEMENT. This supplemental FONSI is being prepared to address the changes in the environmental assessment (EA) that occurred after coordination of the Draft Detailed Project Report (DPR). These changes do not warrant preparation of another EA and include (1) an administrative correction in the EA so that the recommended plan plate number referenced in the EA would correspond with the plate number in the Final DPR, and (2) a size reduction of the study area from 2050 feet to 700 feet, thereby, reducing impacts to marginal wetlands located within the area.

The original EA was written in 1985 and was incorporated into the Reconnaissance Report for the Section 103 Shore Protection Feasibility Study on Boggy Bayou. In this report, the recommended plan was shown on plate 7. When the Detailed Project Report was prepared, additional plates were added, thereby, changing the plate number of the recommended plan to 8. The marginal wetlands that were sparsely located along the edge of the road which could not be avoided were considered to be relatively unproductive because they provide minimal ecological value, such as, food value, cover, and erosion protection.

IV. FACTORS CONSIDERED IN THE DETERMINATION THAT NO SUPPLEMENT TO THE EXISTING ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED. All impacts which would occur as a result of implementation of the

recommended plan have been determined to be minor, short-term negative impacts, or beneficial impacts. The changing of the plate number was purely administrative so that the EA and the Final DPR would correspond with each other. As result of the size reduction of the study area, some of the marginal wetlands that would have originally been impacted would no longer be affected. All impacts associated with this action are minor and are discussed in the Environmental Assessment which was prepared in 1985.

IV. CONCLUSIONS. An evaluation of the above changes shows that there would be no significant impact and an Environmental Impact Statement for this action is not required.

Date: _____

18 July 89



LARRY S. BONINE
Colonel, Corps of Engineers
District Engineer

WATER QUALITY CERTIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY

November 18, 1985

Col. Patrick Kelly
U. S. Army Corps of Engineers
Post Office Box 2288
Mobile, Alabama 36628-0001

Dear Col. Kelly:

Enclosed is Permit Number 460939399. Should you object to the issuance of this permit or the specific conditions of the permit, you have a right to petition for a hearing pursuant to the provisions of Section 120.57, Florida Statutes. The petition must be filed within fourteen (14) days from receipt of this letter. The petition must comply with the requirements of Section 17-103.155 and Florida Administrative Code Rule 28-5.201 and be filed pursuant to Rule 17-103.155(1) in the Office of General Counsel of the Department of Environmental Regulation at 2600 Blair Stone Road, Tallahassee, Florida 32301-8241. Petitions which are not filed in accordance with the above provisions are subject to dismissal by the Department. In the event a formal hearing is conducted pursuant to Section 120.57(1), all parties shall have an opportunity to respond, to present evidence and argument on all issues involved, to conduct cross-examination of witnesses and submit rebuttal evidence, to submit proposed findings of facts and orders, to file exceptions to any order or hearing officer's recommended order, and to be represented by counsel. If an informal hearing is requested, the agency, in accordance with its rules of procedure, will provide affected persons or parties or their counsel an opportunity, at a convenient time and place, to present to the agency or hearing officer, written or oral evidence in opposition to the agency's action or refusal to act, or a written statement challenging the grounds upon which the agency has chosen to justify its action or inaction, pursuant to Section 120.57(2), Florida Statutes.

If no petition is filed within the prescribed time, you will be deemed to have accepted this permit and waived your right to request an administrative hearing on this matter.

C-1

U. S. Army Corps of Engineers
Permit Number 460939399
November 18, 1985
Page 2

Acceptance of the permit constitutes notice and agreement that the Department will periodically review this permit for compliance, including site inspections where applicable, and may initiate enforcement action for violation of the conditions and requirements thereof.

Sincerely,

Karen J. Busen
for Suzanne P. Walker, Chief
Bureau of Permitting

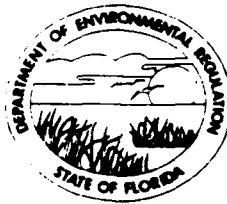
SPW/KLB/jk

Enclosures

cc: DER, Northwest District
Florida Marine Patrol
U.S. Army Corps of Engineers, Jacksonville (PD-2177-10-04)
Game and Fresh Water Fish Commission
Dredge/Fill Permit File

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

PERMITTEE:

Col. Hilton Dunn
U. S. Army Corps of Engineers
Post Office Box 2288
Mobile, Alabama 36628-0001

Permit Number: 460939399
Date of Issue: November 18, 1985
Expiration Date: 07-09-90
County: Okaloosa
Project: 5-Year, New Work

This permit is issued under the provisions of Chapter 403, Florida Statutes, Public Law 92-500, and Florida Administrative Code Rules 17-3 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

PROJECT DESCRIPTION:

To build a stone revetment for shoreline protection along Bayshore Drive, Boggy Bayou, Valparaiso, Florida by: building a stone revetment 3 ft. high and 15 ft. wide, with the waterward edge paralleling the shore along the -1 foot depth contour, and with a stone apron 2 ft. wide extending along its waterward base; excavating 500 cu. yds. of material to shape the bank and depositing this material north of the revetment on the embankment; backfilling 2,000 cu. yds. of commercially obtained clean sand shoreward of the revetment to form a sloping earthen embankment.

LOCATION:

Bayshore Drive, Boggy Bayou, Valparaiso, Okaloosa County, Section 7, Township 1 South, Range 22 West, not in an aquatic preserve, Class III waters.

Permittee: U. S. Army Corps of Engineers
Permit Number: 460939399

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

Permittee: U. S. Army Corps of Engineers
Permit Number: 460939399

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

Permittee: U. S. Army Corps of Engineers
Permit Number: 460939399

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)

14. The permittee shall comply with the following monitoring and record keeping requirements:

- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permittee: U. S. Army Corps of Engineers
Permit Number: 460939399

GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
 - the date, exact place, and time of sampling or measurements;
 - the person responsible for performing the sampling or measurements;
 - the date(s) analyses were performed;
 - the person responsible for performing the analyses;
 - the analytical techniques or methods used; and
 - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

- 1. Riprap will be placed at the toe of the revetment to provide protection for the bulkhead and to provide a viable habitat for shoreline and littoral marine organisms.
- 2. The bulkhead will be constructed with the waterward edge paralleling the shore along the -1 ft. depth contour, near the MHW line and close to the existing bluffline.

Permittee: U. S. Army Corps of Engineers
Permit Number: 460939399

SPECIFIC CONDITIONS:

3. Tree wells will be constructed where feasible around existing trees to prevent root damage due to backfilling.
4. The embankment slope will be strip-sodded, seeded, and mulched.

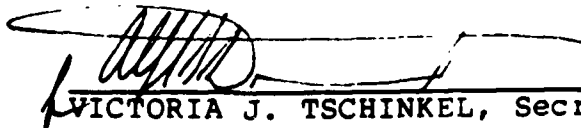
MONITORING REQUIRED:

None.

Recommended by Karen D. Busen

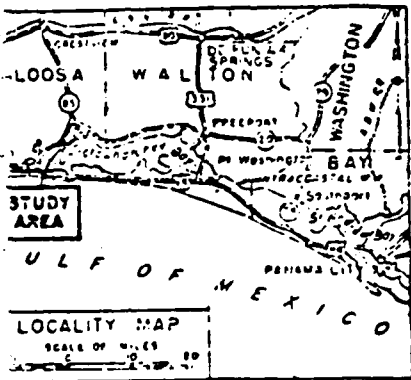
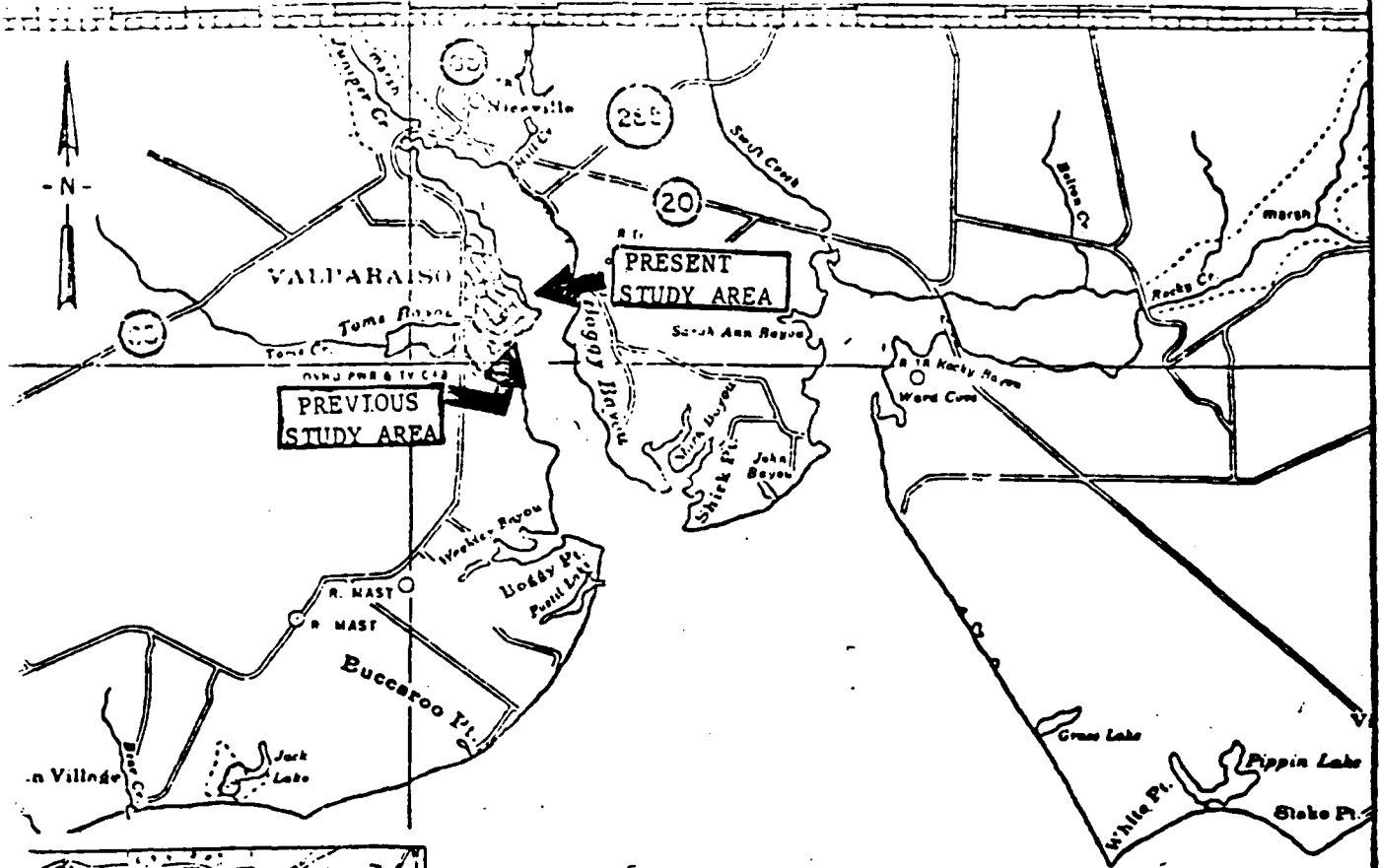
Issued this 15th day of Nov, 1985.

**STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION**

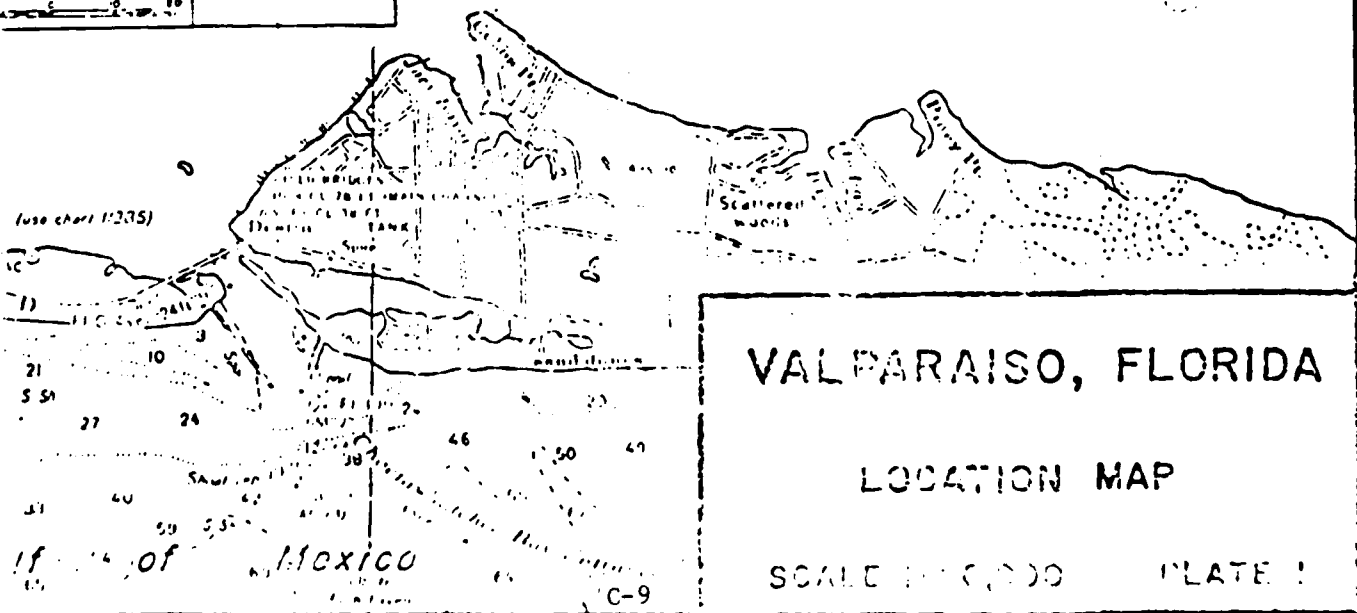


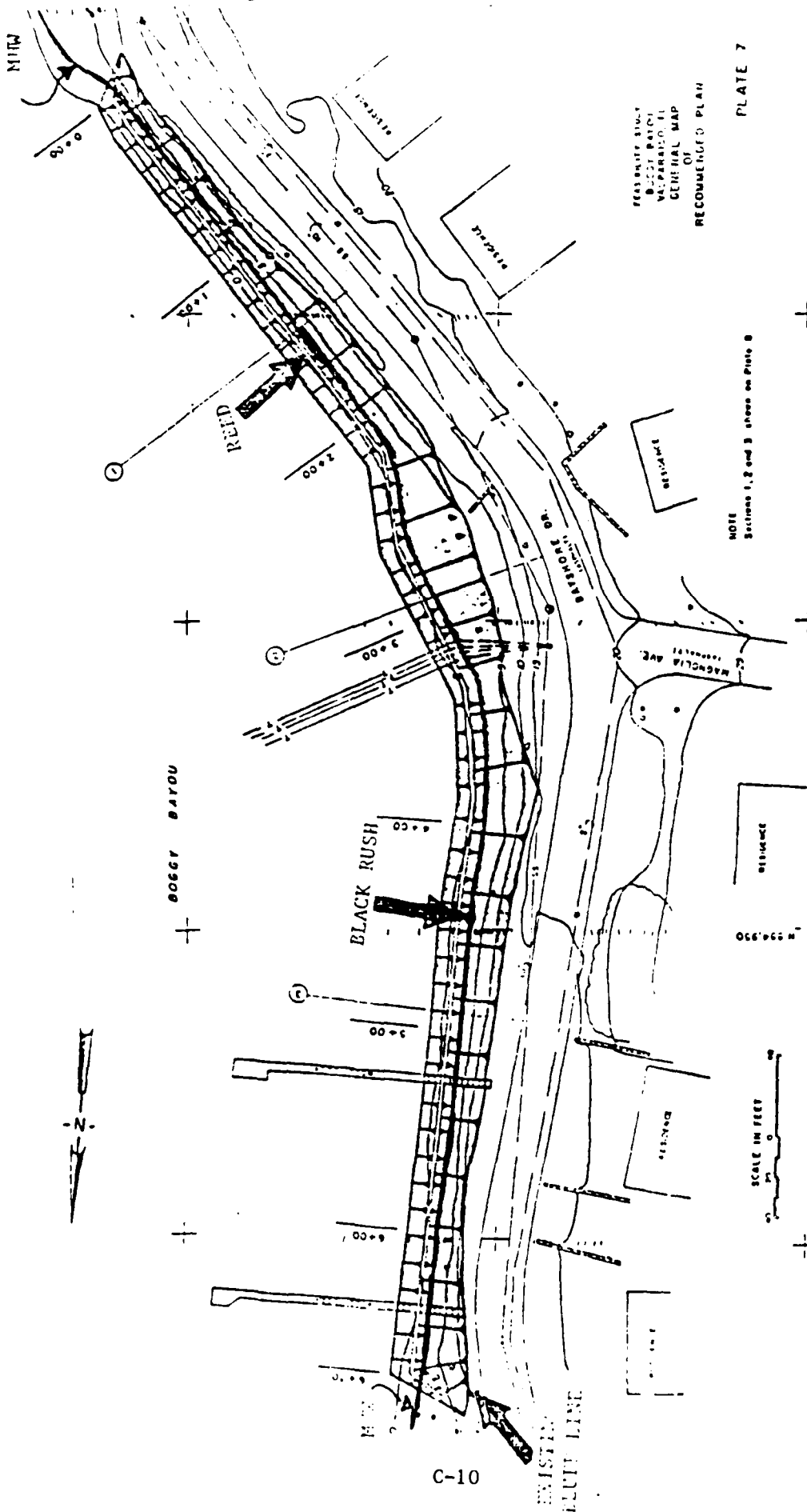
VICTORIA J. TSCHINKEL, Secretary

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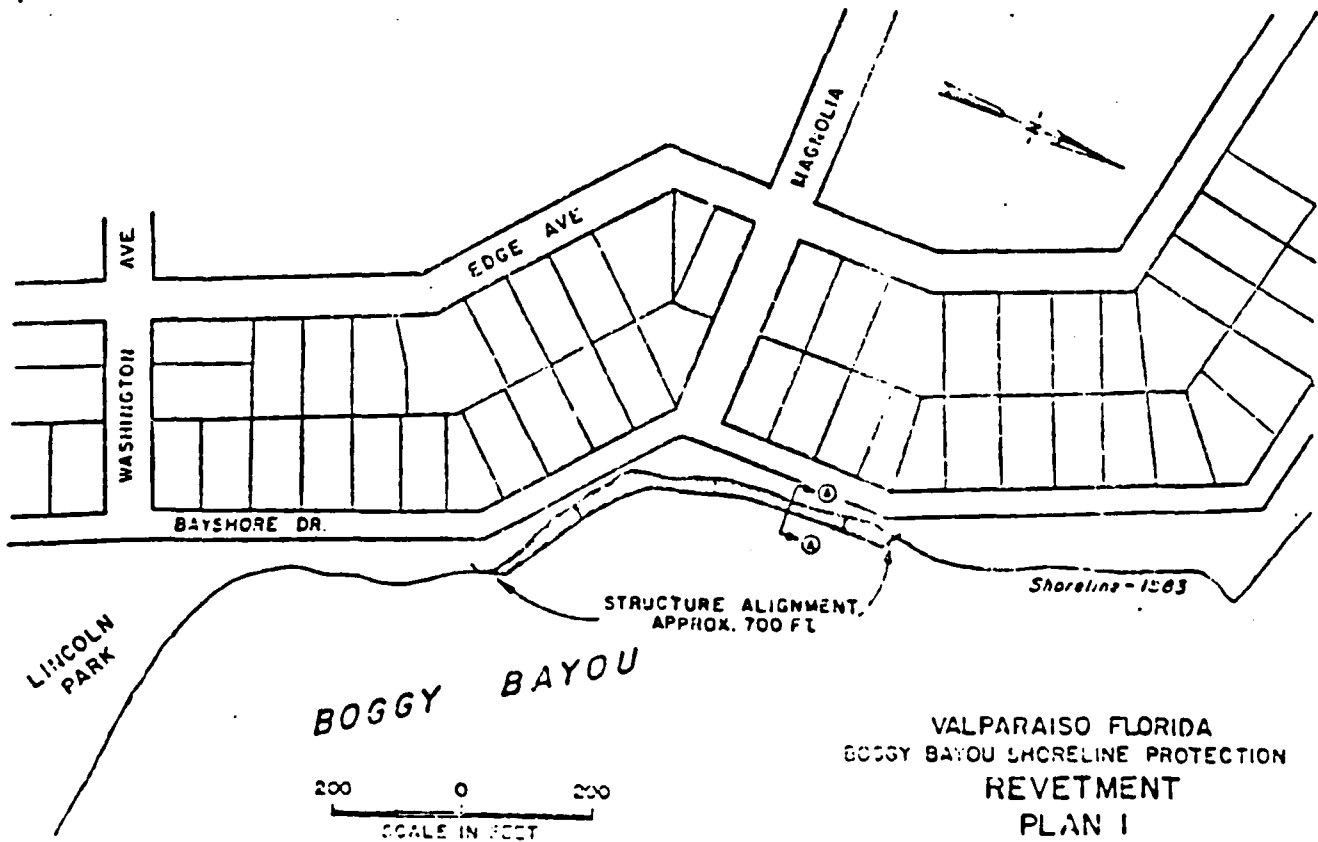
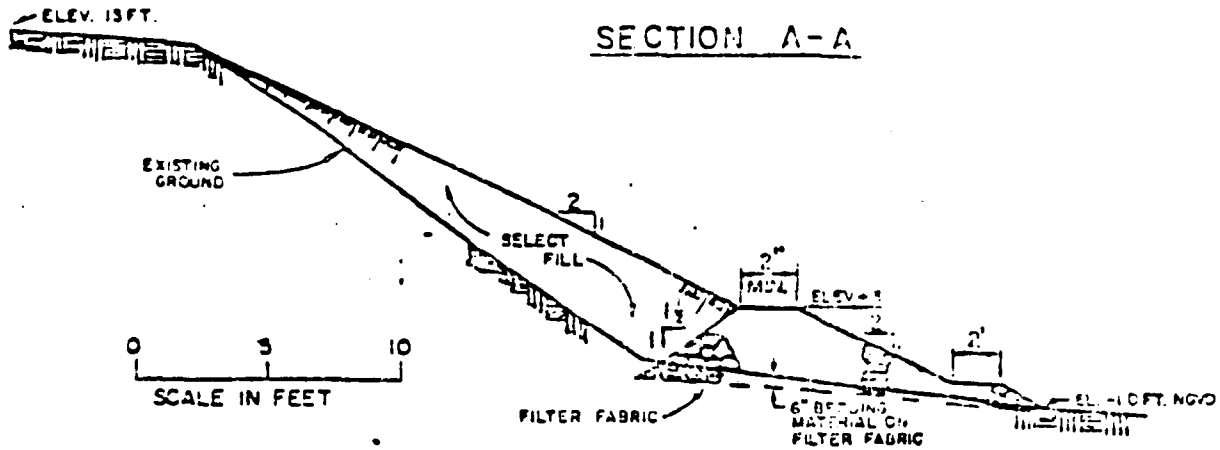


CHOCTAWHATCHEE BAY



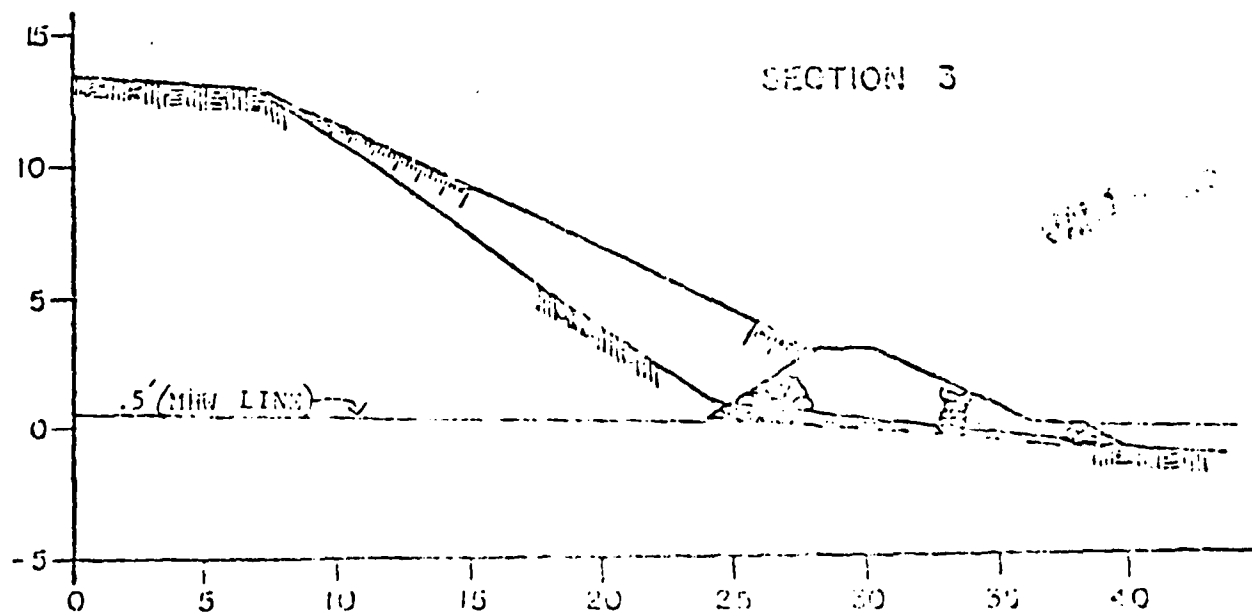
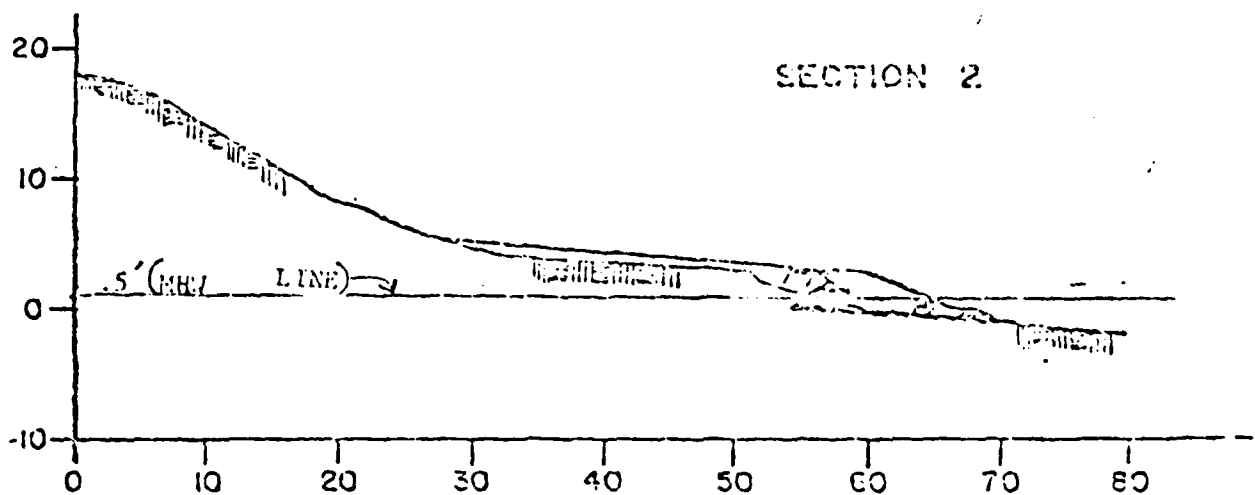
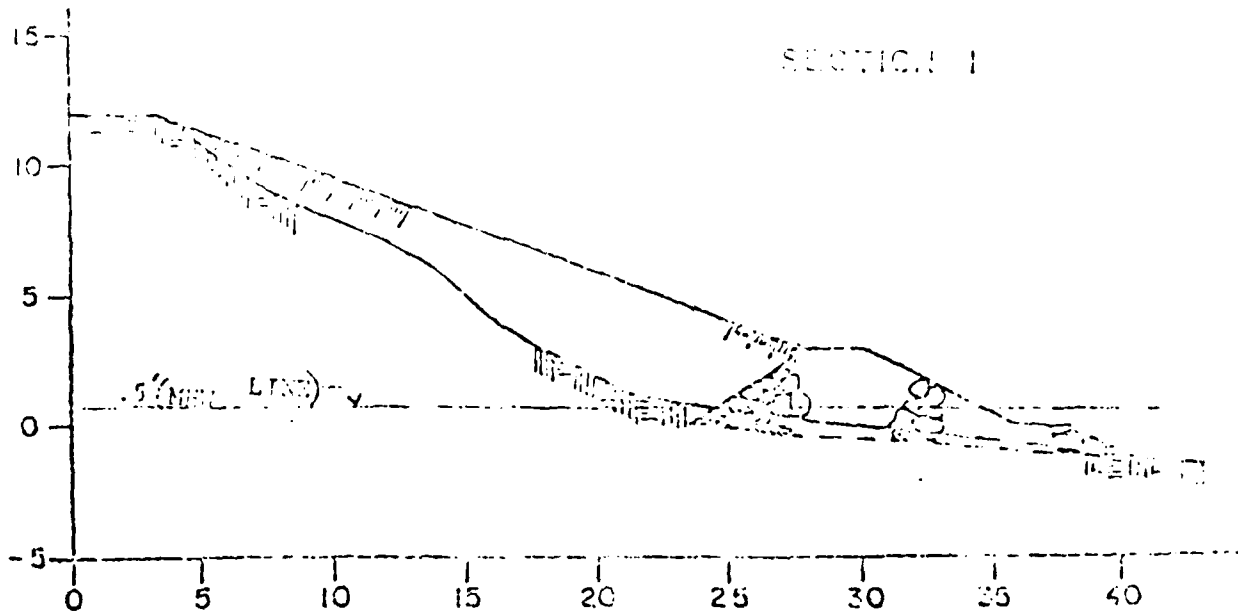


Enclosure 3



VALPARAISO FLORIDA
BOGGY BAYOU SHORELINE PROTECTION
REVETMENT
PLAN 1

ELEVATION IN FEET (NGVD)



DISTANCE IN FEET

C-13

PLEASE REFER TO PLANS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

SELECTED SECTIONS
OF RECOMMENDED PLAN

RULES OF THE ADMINISTRATIVE COMMISSION
MODEL RULES OF PROCEDURE
CHAPTER 28-5
DECISION DETERMINING SUBSTANTIAL INTERESTS

PART II
FORMAL PROCEEDINGS

28-5.201 Initiation of Formal Proceedings

- (1) Initiation of formal proceedings shall be made by petition to the agency responsible for rendering final agency action. The term petition as used herein includes any application or other document which expresses a request for formal proceedings. Each petition should be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced and indented.
- (2) All petitions filed under these rules should contain:
 - (a) The name and address of each agency affected and each agency's file or identification number, if known;
 - (b) The name and address of the petitioner or petitioners, and an explanation of how his/her substantial interests will be affected by agency determination;
 - (c) A statement of when and how petitioner received notice of the agency decision or intent to render a decision;
 - (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
 - (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief;
 - (f) A demand for relief to which the petitioner deems himself entitled; and
 - (g) Other information which the petitioner contends is material.

A petition may be denied if the petitioner does not state adequately a material factual allegation, such as a substantial interest in the agency determination, or if the petition is untimely. (Section 28-5.201(3)(a), F.A.C.)

APPENDIX D

ECONOMIC ANALYSIS

APPENDIX D

DETAILED PROJECT REPORT ON BOGGY BAYOU, VALPARAISO, FL. ECONOMIC ANALYSIS

Purpose. The purpose of this analysis is to determine the economic feasibility of providing a protective measure which would eliminate a serious erosion problem occurring along a section of Bayshore Drive in Valparaiso, Florida.

Demography. The study is located in the southeast part of the city of Valparaiso, Florida in Okaloosa County. The population of Valparaiso in 1980 was 6,142, which represented a 5.6 percent decline from 1970. This compared to an increase of 24.6 percent for Okaloosa County and a 43.5 percent gain for the State of Florida. The 1980 County and State population totals were 109,920 and 9,746,324, respectively. Almost 88 percent of the city's 1980 residents were of the white race. By 1990, the State of Florida is projected to have a population of 12,527,778 and Okaloosa County is estimated to total 148,099 persons.

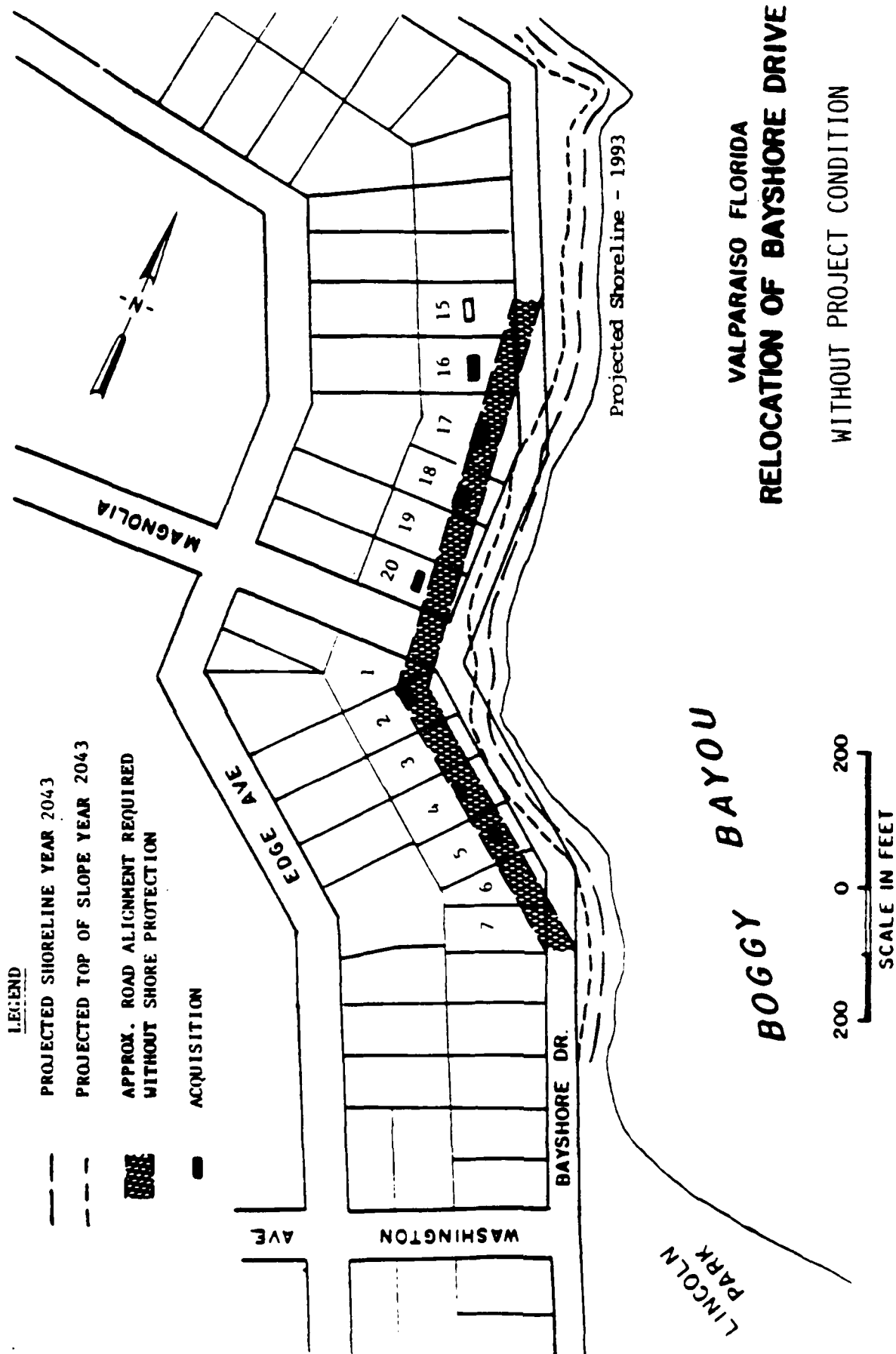
Employment. Total County employment in 1978 was 48,017 while wage and salary employment numbered 45,084. The County's largest employer was government, which in 1978 totaled 23,814. The second largest employer was in the category of services with 6,795; followed closely by retail trade with 5,886 workers. Total county employment in 1990 is estimated to be 71,110 workers.

Housing. The total number of housing units in Valparaiso in 1980 was 1,590 which represents a 30.3 percent increase from 1970. County housing was 7,578 and increased by 57.9 percent. A total of 7,140 of the County's units were occupied and the owner-occupied units had a median value of \$44,000. The median value for housing units in the State of Florida was \$45,300.

Study Area Description. The study area limits begin at Bayshore Drive at Lot 7 between Washington and Magnolia Avenue and the limits end at Lot 15 between Magnolia Avenue and Highway 85. See Figure 1.

Methodology. On site measurements of the full limits of the study area were conducted in May 1983. All structures located within 100 feet of the shoreline were inventoried and the location measurements of each structure were recorded on a plat map of the area.

In August, 1987 the Real Estate Division of the Mobile District Office (MDO-RE) appraised the structures and lots in the study area and added any additional structures which were built between May, 1983 and August, 1987. These appraisals were updated by MDO-RE in February, 1989 to reflect the changes in the fair market value from August, 1987 and are shown at price levels for fiscal year 1989. Land values were estimated by the Real Estate Division to be \$3.45 per sq. ft. for the majority of the lots, within a range between \$2.30 and \$4.03 per square foot for the others. Structures along Bayshore Drive were estimated to average 2,700 square feet or \$46.00



VALPARAISO FLORIDA
RELOCATION OF BAYSHORE DRIVE
 WITHOUT PROJECT CONDITION

FIGURE 1

TABLE 1

VALPARIAISO, FLA. DPR
STRUCTURE AND LOT VALUES
MDO REAL ESTATE BRANCH, AUG. 1987 APPRAISAL UPDATED TO 1989 VALUES

LOCATION	LOT SIZE PSP	UPDATE	TOTAL LOT	STRUCTURE PRICE	UPDATE	COST	STR/LOT COST	STR/LOT	TOTAL COST
BAYSHORE DRIVE	SQ.FT. 1987	115.00%	COST	SIZE	SQ.FT.	115.00%	PER SQ.FT	PER SQ.FT	
LOT 7	11,750	\$3.00	\$3.45	0	\$0.00	\$0.00	\$0		\$38,810
LOT 6	12,000	\$3.00	\$3.45	0	\$0.00	\$0.00	\$0		\$41,400
LOT 5	11,250	\$3.00	\$3.45	4,000	\$40.00	\$46.00	\$184,000	\$222,810	\$56
LOT 4	11,250	\$3.00	\$3.45	3,000	\$40.00	\$46.00	\$138,000	\$176,810	\$59
LOT 3	11,250	\$3.00	\$3.45	0	\$0.00	\$0.00	\$0		\$38,810
LOT 2	11,250	\$3.00	\$3.45	1,500	\$35.00	\$40.25	\$60,375	\$99,185	\$66
LOT 1	10,200	\$2.00	\$2.30	0	\$0.00	\$0.00	\$0		\$23,460
LOT 20	11,250	\$3.50	\$4.03	1,900	\$35.00	\$40.25	\$76,475	\$121,755	\$64
LOT 19	11,250	\$3.00	\$3.45	0	\$0.00	\$0.00	\$0		\$38,810
LOT 18	11,250	\$3.00	\$3.45	3,500	\$40.00	\$46.00	\$161,000	\$199,810	\$57
LOT 17	17,700	\$3.00	\$3.45	3,300	\$40.00	\$46.00	\$151,800	\$212,870	\$65
LOT 16	11,250	\$3.00	\$3.45	2,200	\$40.00	\$46.00	\$101,200	\$140,010	\$64
LOT 15	11,250	\$3.00	\$3.45	1,900	\$40.00	\$46.00	\$87,400	\$126,210	\$66
TOTAL	152,400		\$3.415	21,300			\$960,250	\$1,299,460	\$61
AVERAGE	11,723			2,663			\$120,031	\$162,433	\$61
VACANT LOTS	55,950								
IMPROVED LOTS	96,450								
TOTAL	152,400								

per square foot, with the largest residence measuring 4,000 square feet and the smallest home 1,500 square feet. The average (MODE) lot size in the area was 11,200 square feet (142' x 79'). Displayed on Table 1 are the structures, lots, and their respective values.

Assumptions.

a. The shoreline will erode inland parallel to the existing shoreline at the rate of three tenths of a foot per year beginning at a point in Lot 6 and continuing through Lot 17 for a distance of 700 feet. Erosion in the remaining study area is insignificant.

b. The shoreline change map accurately reflects the erosion rate.

c. The city of Valparaiso will relocate Bayshore Drive approximately 50 feet inland from its existing location when the road is impacted.

d. The first year of project life is 1990.

e. Any significant storm could immediately erode this road and make the road impassable. However, based on the long-time erosion rate, the road will be severely impacted by 1993 at which time, the City/County must replace/repair the road.

Without-Project Condition. Based on a historical shoreline change map, the study area along Bayshore Drive between Lot 6 and Lot 17 is eroding at an average rate of approximately three tenths of a foot per year. Based on the erosion rate, Bayshore Drive will be impacted in 1993 and it is assumed the City of Valparaiso will rebuild the road and utilities inland a safe distance to protect against erosion. Relocating the road would also require the city to purchase all or portions of thirteen residential lots and seven residential structures. (Houses on lots 16 and 20 will not have adequate setbacks after erosion and, thus, were included.)

There are three (3) categories of expenditures by the City of Valparaiso that are occurring or will occur under without-project condition: 1) Eroded shoreline, 2) Road and utility relocation, and 3) Traffic diversion. First costs were discounted to present worth, when applicable, and were then converted to average annual equivalent values at 8-7/8 percent rate of interest in this analysis. Tables 2, 3 and 4 show the calculations for the three categories of benefits.

Eroded Shoreline. Through the use of a shoreline change map and a manual measurement of the study area shoreline, it was determined that the State of Florida and the City of Valparaiso will lose approximately 200 square feet of land annually due to erosion at an annual cost of \$700. This was computed by multiplying the linear footage of the area eroded by the erosion rate and multiplying that product by the cost of a square foot of land. Table 2 shows the calculation by lot ($700 \times .3 \times \$3.45 = \$700$).

TABLE 2

VALPARIASO, FLA. DPR
ANNUAL EROSION BY LOT

LOCATION	ERODED SHORELINE			
	ESTIMATED LENGTH OF SHORELINE	ESTIMATED SHORELINE ERODED	ANNUAL A/A COST OF EROSION 0.3	A/A COST OF EROSION \$3.42
BAYSHORE DRIVE				
LOT 7	100	0	0.0	\$0
LOT 6	90	50	15.0	\$51
LOT 5	105	110	33.0	\$113
LOT 4	100	100	30.0	\$102
LOT 3	70	70	21.0	\$72
LOT 2	66	70	21.0	\$72
LOT 1	57	60	18.0	\$61
LOT20	65	60	18.0	\$61
LOT19	64	60	18.0	\$61
LOT18	64	60	18.0	\$61
LOT17	97	60	18.0	\$61
LOT16	120	0	0.0	\$0
LOT15	95	0	0.0	\$0
SUBTOTAL	1,093	700	210.0	\$700
TOTAL	1,093	700	210	\$700

NOTE: AVERAGE ANNUAL TOTAL COSTS ARE SHOWN ROUNDED TO \$100.

Road Relocation. Four (4) subcategories of benefits were considered to replace the road when it becomes undermined: Road relocation construction, contingencies for new road, Residential structures and Residential lots.

a. Road Relocation Construction. In 1993, (3 years from the construction completion date of July, 1990) Bayshore Drive will be impacted as the slope is undermined 3.0 feet cumulatively from erosion occurring since 1983. This undermining at the base of the slope is considered to create a landslide which will damage a portion of the road located 5.0 feet inland at the top of the slope. The MDO Cost Estimating Branch of Engineering Division estimated the cost of relocating the street; water, power and sewage lines; and street lights less the price of land at \$157,000 plus \$26,000 for contingencies to total \$183,000. This cost is in April 1989 dollars and was assumed to represent values for October 1989. The construction costs present worth to 1990 total \$130,200 and average annual costs over the project life at 8-7/8 percent are \$11,800. Table 3 displays the computation.

b. Contingencies for New Road. Land needed to construct the new road was determined by lot from a plat map on which the new road was overlaid. No NED Benefits were taken from the costs of the purchase of new road land, itself, in that the use of this land would change from residential lots to public road right-of-way. The economic value of the land is estimated to remain the same. The land for the new road would still have to be purchased. These acquisition and evacuation costs are shown in footnote 1 of table 3 and total \$12,000 (does not include land values). The above costs present worth to 1990 total \$9,300 and average annual equivalent costs are \$800.

c. Residential Structures, and, Land Values for Lots. From a local map, seven structures were found to be located along the 40 foot width of the right-of-way to be used for the relocated road. Structural values for these residences, their lots, and vacant lots were determined through an August, 1987 appraisal and a subsequent update in 1989 by the Mobile District Real Estate Division. The structures and lots, between lot 6 and 16, were purchased because either the structures would fall within the relocated road and would have to be removed, or they no longer met the set back limits required by the city. The impact of the new road on lot 7 and the structure on lot 15 was considered as not affecting the city requirement and contingency costs for the new road were used only. Present worth first costs of structures and land totaled \$842,700 and \$311,200, respectively. Average annual costs totaled \$75,900 and \$28,000. Calculations are displayed on Table 3.

Traffic Diversion. In February 1988, the Economic Analysis Section of the Mobile District Office contacted the City Manager of Valparaiso, Florida to determine the traffic using the portion of Bayshore Drive located in the study area. It is assumed that this survey is valid for traffic using Bayshore Drive in 1993. From the City Manager, it was determined that the direction of traffic using

TABLE 4

VALPARIAISO, FLA. DPR
ESTIMATED VALUE OF THE COST OF
TRAFFIC DIVERTED FROM BAYSHORE DRIVE

CATEGORIES OF TRAFFIC	DAILY NUMBER OF TRIPS	ANNUAL # OF DAYS	ANNUAL TRIPS	TRIPS IN 60 DAYS (16.7%)	ADDITIONAL MILES TRAVELED	COST PER MILE \$0.133	PRESENT WORTH 1993-1990 0.774846	ROUNDED TOTAL COST	INTREST AND AMORITAZATION 0.09003
RESIDENTIAL	400	365	146000	24382	4849	\$645	\$500	\$500	\$0
LUNCH/PICNIC	600	365	219000	36573	7273	\$967	\$750	\$700	\$100
SUMMER RECR.	600	120	72000	12024	2391	\$318	\$246	\$200	\$0
MULTI-VEHICLE	6	36	216	36	7	\$1	\$1	\$0	\$0
REROUTE RD. COST					0.27	\$12,690	\$9,833	\$9,800	\$900
TOTAL	1606	886	437216	73015	14520	\$14,621	\$11,329	\$11,200	\$1,000

NOTE: TOTAL COST AND INTEREST AND AMORITIZATION ARE ROUNDED TO \$100.
COST PER MILE (\$.133) IS THE VARIABLE COST OF VEHICLE OPERATION USING
COST OF OWNING AND OPERATING AUTOMOBILES AND VANS 1984 FROM THE U.S.
DEPARTMENT OF TRANSPORTATION (\$.137). (MAINTANCE, GAS AND OIL, AND STATE
AND FEDERAL TAXES) UPDATED VIA THE 1988 MOTOR VEHICLE MANUFACTURES
ASSOCIATION OF THE U.S..
COST OF ROAD LIFE TO WASHINGTON AVENUE= 47000
(OKLAHOOSA COUNTY ENGINEER'S OFFICE)

Bayshore Drive at Magnolia Avenue was equally distributed in both directions and that there were four categories of traffic using the road. Columns 1, 2, and 3 on Table 4 show the categories of traffic, number of daily trips and number of days per year estimated by the City Manager for the vehicles using Bayshore Drive.

At the time the road becomes unusable, the traffic will be rerouted. The length of time of the diversion for the road to be rebuilt was estimated by the Mobile District to be 2 months. The additional mileage driven from the rerouting was based on measurements of the two routes from a local map. The route under existing conditions, was measured starting from State Hwy 397 at the northern intersection of Bayshore Drive going in a southeasterly direction on Bayshore Drive to Washington Avenue. A second measurement was also made of the diversion which routed traffic on State Hwy 397 and Bayshore Drive going south on Hwy 397 to Washington Avenue and easterly to Bayshore Drive. The distance of the two routes was .715 for the diversion and .516 miles under existing condition or a net increase in travel during the diversion of .199 miles or about 1,050 feet longer driving distance. See Figure 2.

Table 4 shows the number of trips, the miles traveled while the diversions which would occur in 1993 brought to present worth IN 1990, and the annual cost at 8-7/8 percent. Also shown in Table 4 is the additional maintenance cost which would be incurred on the diversion route. The cost to the rerouted road when used as the diversion (.715 miles) for 2 months was based upon a telephone call in February, 1988 to the Okaloosa County Engineer's Office. A representative of that office estimated that an annual cost of \$47,000 would be incurred per mile to the two lane (Washington Avenue) area measuring approximately .270 miles. No additional costs are expected for the use of State Hwy 397 (.445 miles) because it was built to sustain heavy automobile traffic. The cost of the diversion present worth would total \$11,200 which equates to an average annual cost of \$1000.

With-Project Condition. Three (3) alternative plans were considered for the study area along Bayshore Drive, including that of no action. Consideration of no action does not provide a solution to the existing erosion problem, and therefore is not considered further, but is an alternative to be considered against structural plans in the analysis.

Two structural measures were considered under with-project condition: a stone revetment, Plan 1, and a verticle wall timber bulkhead with a riprap toe (Plan 2B). Each measure would protect the entire study area's length and would have a crest elevation of 3.0 feet NGVD. The placement of the stone revetment or the timber bulkhead would stop the erosion and eliminate the need to relocate Bayshore Drive and, therefore, eliminate the need to acquire land and structures associated with relocating the road.

BENEFITS.

Structural Plans. The structural plans in place are expected to eliminate the erosion occurring to the shoreline and hence the need to relocate Bayshore Drive. Average annual benefits accruing to these plans are the savings the City of Valparaiso would realize by halting the erosion in the study area and subsequently eliminating the need for relocation.

Table 5, displays the benefits by category. The total benefits OF \$118,200 are the same for each of the structural plans. Table 6 exhibits the benefits versus the costs of the two structural plans. The NED plan is plan 1.