

MEMORANDUM FOR DISTRICT ENGINEER

SUBJECT: Stabilization and Protection of Alabama State Highway 193, Cedar Point, Alabama--FOR SIGNATURE

1. PROBLEM: In order for the proposed activity to proceed, request review of the enclosed Environmental Assessment (EA), Finding of No Significant Impact (FONSI), and Section 404(b)(1) Evaluation.

2. RECOMMENDATION: That the DE approve the above documents, and sign at the colored tabs.

APPROVED *[Signature]* SEE ME \_\_\_\_\_ OTHER \_\_\_\_\_  
11. Jun. 99

3. BACKGROUND AND DISCUSSION:

Wave action in Mobile Bay has resulted in severe erosion to the shoreline threatening a section of Highway 193 along the western side of Mobile Bay. In the past, the Alabama State Highway Department has added riprap to the Mobile Bay shoreline four to five times a year to provide necessary protection for the highway with only marginal success. At any time, a relatively low frequency storm could wash out the highway, removing the only permanent access route to Dauphin Island. The project is to provide Alabama State Highway 193 protection from shoreline erosion caused by constant wave action and frequent storms. This proposed action is authorized under Section 14 of the Flood Control Act of 1946, as amended, which provides for the Secretary of the Army to undertake emergency measures to prevent erosion damage to endangered highways, public works, and non-profit public facilities. In addition to major highway systems of national importance, eligible highways include principal highways, streets, and roads of significant importance to the communities and adjacent settlements, as well as roads designated as primary farm to market roads.

4. IMPACTS: There are no <sup>significant</sup> adverse environmental impacts.

5. COORDINATION:

PD-E	Concur/Nonconcur	<i>[Signature]</i>	) 9 Jun 1999
RE-A	Concur/Nonconcur	<i>[Signature]</i>	) 9 Jun 1999
OC	Concur/Nonconcur	<i>[Signature]</i>	) 10 June 1999
PD	Concur/Nonconcur	<i>[Signature]</i>	) 10 June 1999
DX	Concur/Nonconcur	<i>[Signature]</i>	) 11 June 1999
DE OUT	Concur/Nonconcur	<i>[Signature]</i>	) 11 June 1999

Encl

*Carol B...*  
for SUSAN IVESTER REES, Ph.D.  
Team Leader, Coastal Environment

**ENVIRONMENTAL ASSESSMENT**

**STABILIZATION AND PROTECTION**

**FOR**

**ALABAMA STATE HIGHWAY 193**

**CEDAR POINT, ALABAMA**

1.0 **INTRODUCTION.** The project area is on the western shore of the Mobile Bay, south Mobile County, Alabama bordered on west by Mississippi Sound and Heron Bay wetlands. The project will provide stabilization and protection for Alabama State Highway 193 (Highway 193) which follows the western edge of Mobile Bay from Heron Bay “Cut-Off” Bridge to a point approximately 9,000 south to Cedar Point at the north end of the Dauphin Island bridge. Highway 193 provides the only permanent access to Dauphin Island from the mainland. Additional access to the island is by Ferryboat service, a temporary, privately owned service from Ft. Morgan on the eastern shore of Mobile Bay in Baldwin County that is generally geared to tourism on the island. Highway 193 separates Mobile Bay on the east from the Heron Bay and Heron Bay wetlands on the west. The shoreline along the eastern side of the highway is constantly eroding from surf caused by the strong northers and prevailing southeast winds.

1.1 **Problem Description.** Wave action in Mobile Bay has resulted in severe erosion to the shoreline threatening a section of Highway 193 along the western side of Mobile Bay. In the past, the Alabama State Highway Department has added riprap to the Mobile Bay shoreline four to five times a year to provide necessary protection for the highway with only marginal success. At any time, a relatively low frequency storm could wash out the highway removing the only permanent access route to Dauphin Island.

1.2 **Purpose and need for the Proposed Action.** The purpose and need for this project is to provide Alabama State Highway 193 protection from shoreline erosion caused by constant wave action and frequent storms.

1.3 **Authority.** This proposed action is authorized under the Section 14 of the Flood Control Act of 1946, as amended. Section 14 provides for the Secretary of the Army to undertake emergency measures to prevent erosion damage to endangered highways, public works, and non-profit public facilities. In addition to major highway systems of national importance, eligible highways include principal highways, streets, and roads of significant importance to the communities and adjacent settlements, as well as roads designated as primary farm to market roads.

1.4 **Scope.** This Environmental Assessment (EA) is prepared in accordance with the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 Code of Federal Regulations (CFR) Parts 1500-1508) and the Engineering Regulation (ER) 200-2-2, Procedures for Implementing

the National Environmental Policy Act. The objective of the EA is to determine the magnitude of the environmental impacts of the proposed action. If the environmental impacts are significant according to CEQ's criteria (40 CFR Part 1508.27), an Environmental Impact Statement will be prepared before a decision is reached to implement the proposed action.

## 2.0 DESCRIPTION OF THE PROPOSED ACTION.

2.1 **General.** The existing project area is along the shoreline of Highway 193 from the Heron Bay "Cut-Off" Bridge to Cedar Point, Alabama at the north end of the Dauphin Island Bridge. The project area is on the eastern side of the highway where the shoreline is exposed to wave action from Mobile Bay.

2.2 **Description of the proposed action.** The proposed action will provide stabilization and protection to the eastern side (north bound lane) of Highway 193 from Cedar Point northward to the Heron Bay "Cut-Off" Bridge south of Alabama Point, Mobile County, Alabama (Figure 1). The project consists of installing approximately 7,800 linear feet of vinyl sheetpile bulkhead with a treated wood wale, along the highway (Figure 2). The land side of the project will be backfilled with sand and riprap (13# to 210#) and grassed to provide erosion protection. Existing riprap will be moved bayward of the bulkhead to provide toe protection for the sheetpile bulkhead. The sheetpile bulkhead will be located approximately 20 feet bayward from the edge of the roadway. The sheetpile will be driven by jetting, vibratory hammer, or drop hammer four (4) feet deep into the soil, with four (4) feet extending above the soil line. The top of the bulkhead, at an elevation of +4.0 feet, will be restrained with tiebacks. The tiebacks will be attached to the bulkhead by 12-foot stainless steel bars. Sand backfill will be placed behind the bulkhead with a 5,790 cubic yard blanket of stone 2-feet thick by 10-feet wide, adjacent to the sheetpile to protect the backfill from wave overtopping. Approximately 7,800 linear feet of vinyl sheetpile will be placed below mean low water (MLW) during construction of the bulkhead. Approximately 1,570 cubic yards of riprap currently located along the highway edge will be relocated bayward of the bulkhead below mean low water. A total of 17,140 cubic yards of sand will be utilized to backfill behind the bulkhead, approximately 4,000 cubic yards of which will be placed below mean low water. Stabilization for the backfill will be provided by placement of 8,700 square yards of filter fabric. The proposed action would involve mainly land based construction techniques, but a combination of land based and water based techniques may be necessary for the construction. Construction on land would be performed by trackhoe or a small crane with a boom. Construction in the water would be performed by barge-mounted dragline. The lumber used in the construction is treated with chromate copper arsenate as required by the American Wood Preservers Association. The approximate time to complete the proposed construction is 120-180 days. The contractor will be requested not to work during the week of the fishing rodeo (around mid-July). Staging areas will be the responsibility of the contractor, however, small areas covered with oyster shells, typically used for parking by oystermen and recreational boaters exist within the reach of the project and could possibly be used.

### 3.0 ALTERNATIVES TO THE PROPOSED ACTION.

3.1 No Action Alternative. This alternative involves the continuation of existing conditions with no new solutions for existing problems. This alternative avoids both the monetary investment and potential adverse impacts associated with structural improvements. Without corrective action, shoreline erosion along the highway will continue and the Alabama State Highway Department will continue to make periodic placement of riprap to the shoreline to prevent the erosion of the highway. This alternative would leave the existing flora and fauna disturbed by the periodic placement of riprap in the project area and subject to the natural erosion conditions presently experienced along the shoreline.

3.2 Riprap Structural Alternative. This alternative is a structural shoreline protection plan similar to the proposed action, but consisting of riprap revetment protection for Highway 193. The environmental considerations for the project are approximately the same for this alternative as the proposed alternative, however costs are greater for the same level of benefits.

### 4.0 AFFECTED ENVIRONMENT.

4.1 **General.** Mobile Bay is 31 miles in length and up to 20 miles wide. The average depth at mean low water is 9.8 feet. The Mobile Bay shoreline has a long history of erosion, accretion, and hurricane damage. The total 162 mile shoreline is constantly changing as a result of deposition of sediment, the accumulation of tidally-introduced sand and wind-caused erosion. The restricted outlet into the Gulf of Mexico between Dauphin Island and Mobile Point exerts significant control on the movement of water and sediment by both wind and tidal-generated currents. Tidal movement into Mobile Bay is a continuation of the Gulf of Mexico tide. Tidal cycles in the bay exhibit seasonal fluctuation, winter tides are generally lower than summer tides. Some bay tides are affected by floods in the drainage basin of the rivers emptying into Mobile Bay. Tides in the bay are strongly affected by strong northers and by steady and more prevailing southeast winds that pile up water in the head of the bay.

#### 4.2 **Biological Resources.**

4.2.1 **Coastal Flora.** The flora in the vicinity of the proposed action includes tidal marshes that vary in salinity concentration from low salinity brackish water marshes to high salinity saltmarshes. All these marshes receive some tidal influence. These marshes are usually bordered along the water's edge by a strip of salt marsh grass, *Spartina alterniflora*, with stands of *Juncus roemerianus*, *S. patens*, *Distichlis spicata*, and *Phragmites communis*.

4.2.2 **Coastal Fauna.** Animals in the vicinity of the project include several species of shorebirds. Major invertebrate and vertebrate estuarine animals in the project area include polychaete worms, shrimp, blue crabs, snails, isopods, amphipods, crustaceans, menhaden, anchovy, mullet, flounder, croaker, and others.

4.2.3 **Threatened and/or Endangered Species.** Possible threatened and/or endangered species in the vicinity of the project include numerous species of sea turtles, the

peregrin falcon and the bald eagle. None of these species are endemic to the project area or are known to actually utilize the area.

**4.3 Physical Resources.** The project area is classified geologically as a portion of the East Gulf Coastal Plain section of the Coastal Plain province and the Coastal Lowlands subdivision (O'Neil, P.E. and M.F. Mettee. 1982). Sand sediments occur around the periphery of the bay, and extend south of the mouth of the Bar Channel.

**4.3.1 Aesthetics.** The project area is a pleasant coastal view with Mobile Bay on the east and Heron Bay wetlands on the west.

**4.3.2 Noise.** The noise level in the vicinity of the project is low consisting of low-level vehicular traffic, shrimp and oyster boats, recreational vehicles in the area and the sound of the wind and surf.

**4.3.3 Air Quality.** According to the U.S. Environmental Protection Agency's National Ambient Air Quality Standards, the project area is classified as an attainment area.

## 5.0 ENVIRONMENTAL IMPACTS.

**5.1 General.** The environmental impacts associated with the stabilization and protection of the highway are limited to the placement of sheetpile, filter fabric and graded rock in the nearshore zone along the existing shoreline. The impacts anticipated as a result of the proposed action include benthic organism disruption, physical substrate disturbance, aesthetic deterioration, increased noise, reduced air quality, and reduced water quality. All these impacts are considered temporary and restricted to the immediate project area. The benthos in the area of the project would be reduced, but would repopulate soon after construction.

### 5.2 Direct Impacts.

**5.2.1 Benthic Organisms.** Placing sheetpile, filter fabric and graded rock in waterbottoms would eliminate some benthic organisms. This impact is considered temporary and insignificant. Benthic organisms should quickly repopulate the sediments trapped by the bulkhead and stone, therefore offsetting some of the losses associated with construction activities. The addition of hard substrate would tend to increase the diversity of organisms within the nearshore vicinity of the highway. Any increases in turbidity caused by the vinyl sheetpile, filter fabric and graded rock placement into the nearshore zone will be temporary and insignificant due to the high energy nature of the area.

**5.2.2 Physical Substrate.** The highway stabilization and protection would result in a slight change in the appearance of the shoreline in the vicinity of the project. This is a dynamic area whose appearance is changing very rapidly. The current littoral movement of sand would continue and would not be impacted by implementation of the proposed action.

5.2.3 **Aesthetics.** The highway stabilization and protection would result in slight changes to the appearance of the shoreline in the vicinity of the project, as it is viewed from the water. Overall aesthetic quality in the vicinity of the project would return to its pre-construction aesthetic quality after construction.

5.2.4 **Noise.** Noise levels in the vicinity of the project would be temporarily increased by construction equipment in the area. These increases would be short-term and overall the noise level would return to normal following construction.

5.2.5 **Air Quality.** The highway stabilization and protection work is expected to add minor vehicle exhaust emission to the project area during the construction. These are emission levels considered de minimis and the overall air quality would return to normal following construction.

5.2.6 **Water Quality.** Pursuant to the Clean Water Act, State water quality certification has been requested for the proposed action. Water quality impacts due to the construction of the proposed project will be increased turbidity and sediment suspension. The increased turbidity levels are not expected to violate State standards. A section 404(b)(1) evaluation Report has been prepared to address potential impacts of fill material to navigational waters of the United States (Appendix A).

5.2.7 **Cultural Resources.** The National Register of Historic Places has been consulted and no properties listed on, being nominated to, or that has been determined eligible for National Register of Historic Places. In a letter dated August 19, 1998, the Alabama State Historic Preservation Officer agreed that the proposed work would not impact historic properties. The Alabama Historical Commission concurs with the proposed action contingent upon all construction activities occurring within the highway right-of-way or in previously disturbed areas.

5.2.8 **Threatened and Endangered Species.** Coordination of threatened or endangered species or their critical habitat with the U.S. Department of the Interior, Fish and Wildlife Service (FWS) and the U.S. Department of Commerce, National Marine Fisheries Service (NMFS) indicates that no species or their critical habitat will be adversely affected by this shoreline protection activity.

5.2.9 **Traffic Congestion/ Time Delays Impact.** Implementation of the proposed action may also result in the temporary closing of the north bound lane of Alabama Highway 193 for loading/unloading materials, equipment and personnel and use as a staging area during construction if parking area used by oystermen and recreational boaters is not available.

### 5.3 Other Considerations.

5.3.1 **Coastal Zone Management.** Pursuant to the requirements of the Coastal Management Act (CZMA), concurrence with the Mobile District's determination of coastal zone consistency has been requested from ADEM. The Mobile District has determined that the

proposed action is consistent with the Alabama Coastal Program to the maximum extent practicable.

**5.3.2 Coastal Barrier Resources Act (CBRA).** The Mobile District has determined the proposed action is not located within a designated CBRA unit.

**5.3.3 Hazardous, Toxic and Radioactive Waste (HTRW) Considerations.**

A site inspection and an assessment of the project area was conducted per the requirements of Engineer Regulation (ER) 1165-2-135 entitled, *Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects*. There was no evidence of landfills, surface areas unable to support vegetation, visible sheens of petroleum products, or any type of visible signals that HTRW concerns exist. No known HTRW concerns were identified within the confines of the project. A site inspection of adjacent properties, which would include those areas proposed as staging areas, was also conducted and revealed no HTRW concerns. Based on the findings of the HTRW site assessment, no specific or unusual environmental concerns were identified that would affect the construction of the shoreline protection projects described in this document. It should be noted that all surficial environmental evaluations made during the above described site visit were limited due to the fact that subsurface conditions were not field investigated as part of the HTRW site assessment and may differ from the conditions implied by the surficial observations. However, there were no indications of the need for a subsurface investigation. Due to the location and history of the project area, there was no reason to believe the project area had been previously used to store or dispose of toxic, hazardous or radioactive waste.

**5.3.4 Protection of Children.** On April 21, 1997, the President issued Executive Order (EO) 13045, *Protection of Children from Environmental Health and Safety Risks*. On April 21, 1997, the President issued Executive Order (EO) 13045, *Protection of Children from Environmental Health and Safety Risks*. In terms of protection of children, the likelihood of disproportionate risks to children from the proposed action is considered non-existent due to the geographic location and use of the area.

**5.3.5 Environmental Justice.** On February 11, 1994, the President issued Executive Order (EO) 12898, *Federal Actions to address Environmental Justice in Minority Populations and Low Income Populations*. In terms of protection of children, the likelihood of disproportionate risks to children from the proposed action is considered non-existent due to the geographic location and use of the area. The proposed action poses no disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe within the affected community. This EO requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children..

## 6.0 LIST OF AGENCIES AND OTHERS CONTACTED REGARDING THE ACTION.

In accordance with public interest, a public notice was published on February 17, 1999, for a 21-day review (extended 30 days) by the public. Our response to the comments from the agencies and public that responded to the public notice can be found in the Appendix . The agencies and public comments were received from:

U.S. Department of Commerce. National Marine Fisheries Service, Protected Species Management Branch, St. Petersburg, Florida. Mr. Larry Kelley (Federally-protected species NMFS jurisdiction).

U.S. Department of the Interior, Fish and Wildlife Service, Daphne Field Office, Daphne, Alabama. Mr. Larry Goldman, Field Supervisor (Federally-protected species FWS jurisdiction).

U.S. Air Force, Air Education and Training Command, Tyndall AFB, Florida. Arvil E. White III, Lt Col, (USAF Commander).

State of Alabama, Department of Environmental Management, Mobile, Alabama. Mr. Brad Gane (Coastal Programs).

State of Alabama, Department of Archives and History, State Historic Preservation Officer, Montgomery, Alabama. F. Lawrence Oaks (Executive Director).

State of Alabama, Department of Conservation and Natural Resources, Dauphin Island, Alabama. Riley Boykin Smith (Commissioner).

Mobile County Public Works, Mobile, Alabama, Mr. Joe W. Ruffer, PE (Director of Public Works/County Engineer).

Island Realty Corporation, Commercial, Residential and Investment Properties, Dauphin Island, Alabama. Mr. Howard A. Yeager (President).

## 7.0 DOCUMENT PREPARER.

**Glenn M. Harbin.** Physical Scientist. U.S. Army Corps of Engineers. Planning Division, Environment and Resources Branch, Coastal Environment section. Environmental Compliance Manager for civil coastal projects. Mr. Harbin , telephone number (334)694-3867, or E-mail address [Glen.M.Harbin@sam.usace.army.mil](mailto:Glen.M.Harbin@sam.usace.army.mil) U.S. Army Corps of Engineers, Mobile District, 109 St. Joseph Street, Mobile, Alabama 36628-0001.

## 8.0 LITERATURE CITED.

O'Neil, P. E. and M. F. Mettee. 1982. Alabama Coastal Region Ecological Characterization. Volume 2. A synthesis of environmental data. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. FWS/OBS-82/42 346 pp.

U.S. Army Corps of Engineers, Mobile District. 1980. Survey Report on Mobile Harbor, Mobile, Alabama. October 1980.

U.S. Army Corps of Engineers, Mobile District. 1975. Final Environmental Statement for Maintenance Dredging of Mobile Harbor, Mobile County, Alabama. April 1975.

## **FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

### **STABILIZATION AND PROTECTION FOR ALABAMA STATE HIGHWAY 193 CEDAR POINT, ALABAMA**

**I. PROPOSED ACTION.** The proposed action will provide stabilization and protection for the eastern side (north-bound lane) of State Highway 193, north of Dauphin Island from Cedar Point, to the Heron Bay “Cut-Off” Bridge south of Alabama Port, Alabama.

**A. Purpose and need for the Proposed Action.** The purpose and need for this project is to provide Alabama State Highway 193 protection from shoreline erosion caused by constant wave action and frequent storms.

**B. Authority.** This proposed action is authorized under the Section 14 of the Flood Control Act of 1946, as amended. Section 14 provides for the Secretary of the Army to undertake emergency measures to prevent erosion damage to endangered highways, public works, and non-profit public facilities. In addition to major highway systems of national importance, eligible highways include principal highways, streets, and roads of significant importance to the communities and adjacent settlements, as well as roads designated as primary farm to market roads.

## **II. ALTERNATIVES CONSIDERED.**

**A. No Action Alternative.** This alternative involves the continuation of existing conditions with no new solutions for existing problems. This alternative avoids both the monetary investment and potential adverse impacts associated with structural improvements. Without corrective action, shoreline erosion along the highway will continue and the Alabama State Highway Department will continue to make periodic placement of riprap to the shoreline to prevent the erosion of the highway. This alternative would leave the existing flora and fauna disturbed by the periodic placement of riprap in the project area and subject to the natural erosion conditions presently experienced along the shoreline.

**B. Riprap Structural Alternative.** This alternative is a structural shoreline protection plan similar to the proposed action, but consisting of riprap revetment protection for Highway 193. The environmental considerations for the project are approximately the same for this alternative as the proposed alternative, however costs are greater for the same level of benefits.

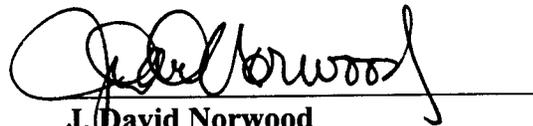
**III. FACTORS CONSIDERED IN THE DETERMINATION THAT NO ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED.**

The proposed action is not expected to significantly impact setting, geology, hydrology, groundwater sediment quality terrestrial or avian resources, cultural resources or archaeological resources in the region. The proposed action will not involve the use, storage or transport of hazardous, toxic or radioactive materials during construction. Although some short-term and minor adverse impacts are anticipated for water quality, aquatic resources, air quality, noise, aesthetics and recreational resources, adverse cumulative impacts to these resources are not expected. The beneficial impact is reduced potential for shoreline erosion and protection of existing public property.

**IV. CONCLUSION.**

An evaluation of the environmental assessment for the proposed action shows that the action would not have significant impacts on the environment and that the preparation of an environmental impact statement is not required.

DATE: 11. June. 1999



**J. David Norwood**  
Colonel, Corps of Engineers  
District Engineer