

MOBILE HARBOR, ALABAMA

REPORT OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314

REPLY TO
ATTENTION OF:
DAEN-CWP-A

18 November 1981

SUBJECT: Mobile Harbor, Alabama

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on Mobile Harbor, Alabama. It is accompanied by the reports of the Board of Engineers for Rivers and Harbors and the District and Division Engineers. These reports are in response to a resolution adopted 24 June 1965 by the Committee on Public Works of the United States House of Representatives. The Committee requested the Board to review the reports on Mobile Harbor, Alabama, and other reports with a view to determining whether the existing navigation project should be modified.

2. The District and Division Engineers recommend that the existing project for Mobile Harbor, Alabama, be modified to provide deep-draft navigation improvements. Their recommended plan provides for deepening and widening existing channels to accommodate large ocean-going bulk cargo vessels transporting coal and iron ore and for the disposal of all maintenance dredged material from the existing and proposed project in the Gulf of Mexico. Dredged material for proposed new works in the entrance channel to Mobile Bay and in the lower bay ship channel would also be placed in the Gulf while new work dredged material from the upper bay would be placed in a 1,710-acre confined disposal area. Measures to mitigate the loss of wetlands and bay bottom productivity are included as part of the selected plan. Major components of the plan are:

- a. Deepen and widen entrance channel over the bar to 57 by 700 feet, a distance of about 7.4 miles.
- b. Deepen and widen Mobile Bay Channel from mouth of bay to south of Mobile River, 55 by 550 feet, a distance of about 27.0 miles.
- c. Deepen and widen an additional 4.2 miles of Mobile Bay Channel to 55 by 650 feet.
- d. Provide 55-foot deep anchorage area and turning basin in vicinity of Little Sand Island.

e. Construct a 1,710-acre dredged material disposal area adjacent to the Brookley industrial complex.

The cost of these modifications is estimated by the reporting officers at \$338,072,000, based on August 1980 price levels. The non-Federal portion of the cost is estimated at \$42,578,000, which includes a cash contribution by the State of Alabama. The benefit-cost ratio is 1.6.

3. The Board of Engineers for Rivers and Harbors concurs generally with the views and recommendations of the reporting officers. The Board believes that the recommended channel improvements are needed, are technically sound, and are economically feasible. The Board notes the opposition to the Brookley expansion disposal area by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Environmental Protection Agency, and various local interests. The opposition is based on the supposition that this project feature would adversely impact on: wetlands which fringe the project area, commercial and recreational fisheries, esthetic values and existing land uses along the Brookley waterfront. The Gulf Disposal Plan No. 1 shown in the feasibility report, which would avoid these adverse impacts by placing all new construction dredged material in the Gulf of Mexico, is the alternative preferred by these Federal and local interests. Additionally, the Alabama Coastal Area Board has certified the recommended plan specifically conditioned on mitigation of adverse effects associated with the Brookley disposal area.

4. The Board carefully examined the environmental and economic trade-offs between the respective dredged material disposal alternatives. The 1,710-acre site of the Brookley disposal area consists of 5 percent of the total shallow-water area of Mobile Bay i.e., those areas less than 6 feet deep which are generally considered important to the production of shrimp and other estuarine dependent species. While past dredged material disposal, sanitary waste disposal practices, and natural sedimentary processes have adversely affected the ecological integrity of this sector of the Bay, the Board believes that this area does possess moderate recreation and commercial fishing values which must be properly considered in project formulation, including the development of necessary mitigation measures.

5. The Board finds that the anticipated adverse impacts resulting from establishment of the Brookley disposal area can be offset to a large extent by planned and potential environmental mitigation measures. Among these are:

a. Gulf disposal of all maintenance dredged material over the life of the project.

b. Restoration of circulation and improving water quality in the channel behind McDuffie Island by providing openings in the McDuffie Island causeway which has made this area a closed cul-de-sac.

c. Creating marshes adjacent to the southern boundary of Brookley disposal area to replace the estimated 70-acre loss of wetlands presently fringing the shoreline in that area.

d. Restoration of tidal action to Chascoochee Bay and Big Batesu Bay by providing openings in the Mobile Delta causeway.

The total cost of all recommended mitigation elements is estimated at \$2,900,000.

6. In addition to these mitigation measures, the Board concurs with the reporting officers that other potential environmental improvement measures be studied prior to project implementation to determine their technical feasibility and cost-effectiveness. The objective of such study would be to develop an environmental quality plan capable of improving environmental conditions in Mobile Bay and related waterways above without project levels. Potential environmental improvement measures include:

a. Improving circulation in Mobile Bay by creating openings in existing ridges of dredged material which parallel the main ship channel from Dog River to the mouth of Mobile River.

b. Filling natural depressions in Mobile Bay which are believed to contribute to adverse water quality conditions.

c. Establishing a recycling plan to remove dredged material from existing Blakeley and Pinto Islands dredged material disposal areas.

d. Establishing oyster beds in Bon Secour Bay which preliminary model studies indicate may be beneficially affected by the deepening project.

7. It was the view of the Board that the recommended environmental improvement measures provide an effective and efficient way to mitigate for loss of resource values and ecological damages due to establishment of the Brookley disposal area. Also, according to the reporting officers, Gulf Disposal Plan No. 1 would entail an additional first cost of about \$100 million due to higher dredging and haulage costs involved with total Gulf disposal. Furthermore, elimination of the Brookley disposal area would result in economic opportunities foregone due to land enhancement estimated at about \$2,700,000 annually. After weighing the overall environmental impacts of considered alternative dredged material disposal methods against their financial and economic costs, the Board concludes that it is in the public interest to adopt the reporting officers' selected disposal plan.

8. The Board also notes that commodity projections for deep-draft movements of iron ore, coal imports, and metallurgical coal exports are derived essentially from studies and data available in 1975. Based on more current information, it appears that future demand for these commodities will be

lower than estimated in the feasibility report. Conversely, the report analysis did not reflect the substantial growth in worldwide demand for steam coal which has developed in recent years in response to spiraling increases in world petroleum prices. Accordingly, the Board requested the reporting officers to reassess the projected commerce and to provide a reevaluation of navigation benefits taking into account information developed in 1980 by the President's Interagency Coal Export (ICE) Task Force and other sources pertaining to the future outlook for steam coal exports. The Board also requested updated information concerning plans by local interests for new or expanded bulk commodity handling facilities to accommodate deep-draft vessels. Based on this reevaluation, including recontacts with prospective shippers and port interests, average annual benefits decreased for some categories and increased for others in comparison with the feasibility report, thereby resulting in a net increase in navigation benefits from \$50,061,000 to \$51,614,000.

9. The Board finds that estimated land enhancement benefits and associated local contributions were based on outdated data. Recomputation using August 1980 price levels and 7-3/8 percent interest rate resulted in revised land enhancement benefits of \$2,742,000. Accordingly, 5 percent (percent land enhancement benefits to total benefits) of Federal construction cost, currently estimated at \$17,300,000, has been allocated to local interests as part of the non-Federal contribution to the project.

10. Based on its review of estimated dredging costs in the report, the Board believes that costs for dredging the upper bay channel should be increased by about 20 percent, or \$15,216,000. Also, existing berthing facilities will have to be modified to accommodate a 55-foot navigation channel. Costs of such modifications are a local responsibility and are presently estimated at about \$4,000,000. The Board also notes some differences in the feasibility report concerning the amount of material required and costs for constructing necessary retaining dikes for the Brookley disposal area. The cost of dike construction, also a local responsibility, is based on the difference in cost of dredging with and without containment, presently estimated at 0.5 percent of the cost of dredged material to be placed in the disposal area, or about \$460,000. With these adjustments by the Board, costs for the proposed deepening project based on August 1980 prices and the prescribed 7-3/8 percent interest rate are summarized as follows:

Item	Costs		Total
	Federal	Non-Federal ^{1/}	
First cost	\$313,000,000	\$50,400,000	\$363,400,000
Annual cost	29,800,000	5,000,000	34,800,000

^{1/} Includes 5 percent contribution per President's 1978 proposed cost-sharing policy.

Based on revised total annual benefits of \$54,356,000, the benefit-cost ratio remained at 1.6.

11. The reporting officers recommended that the State of Alabama contribute five percent of the construction cost in accordance with previously proposed cost sharing policy. On July 15, 1981, the Department of the Army, on behalf of the Administration, transmitted proposed legislation to Congress that would provide for full recovery of certain operation, maintenance and construction or rehabilitation costs for deep draft channels and ports with authorized depths greater than 14 feet. When this legislation is enacted, Corps of Engineers expenditures for the Mobile Harbor, Alabama, Deep Draft Navigation Project will be subject to recovery as provided in the proposed legislation. Accordingly, non-Federal interests would be required to reimburse the Federal government for construction of navigation features of the recommended plan, and all subsequent expenditures for operation, maintenance and rehabilitation; except for expenditures assigned by the Secretary of the Army to governmental vessels in non-commercial service. The proposal to fully recover these costs supersedes the previous requirement for a 5 percent state cash contribution.

12. The entire amount of the Federal construction or rehabilitation expenditures to be reimbursed, including interest during construction and interest on the unpaid balance would be reimbursed within the life of the project, but in no event to exceed fifty years after the date the project becomes available for use. The interest rate for reimbursement purposes would be determined by the Secretary of the Treasury based on the average market yields on outstanding obligations of the United States. Reimbursements for operation and maintenance would be made annually, and may be scheduled and periodically adjusted to result in the payment of actual operation and maintenance costs. The non-Federal public body would be authorized to recover its reimbursement obligations pursuant to this requirement by the collection of fees for the use of the project by vessels in commercial waterway transportation.

13. I concur with the findings, conclusions and recommendations of the Board with the exception of the requirement that the State of Alabama contribute 5 percent of the construction cost. In lieu of that requirement and in accordance with the Administration's July 15, 1981 proposed legislation, I recommend that the Mobile Harbor, Alabama, Deep Draft Navigation Project be authorized for implementation with the provision that prior to implementation local interests will agree to reimburse the Federal government for all expenditures for the construction of navigation features of the recommended plan, and all subsequent expenditures for operation, maintenance and rehabilitation; except for expenditures assigned by the Secretary of the Army to governmental vessels in non-commercial service. Other items of local cooperation as recommended by the Board would not be affected by this additional requirement. At October 1981 price levels the first cost of the project is estimated at \$407,016,000, of which \$36,057,000 would be for traditional items of non-Federal cooperation and \$370,959,000 would be for Federal construction costs, the latter being subject to the July 1981 cost recovery provisions. At the current interest rate of 7-5/8 percent the benefit to cost ratio is 1.5.


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