

Appendixes

APPENDIX A

Status of Harbor Dredging Projects

Costs and Benefits of Dredging

Cost-benefit analyses are used by the Corps of Engineers to assess the value of channel deepening projects. Most studies consider the type of vessel traffic to use the port, the drafts of vessels, forecasts of commodity flows, and other variables to compare benefits with costs.

The cost side of the analysis involves determining the costs necessary to establish and operate the project, interest charges, amortization of investments during the specified period, salvage value, and similar factors. The estimated economic cost is expressed in equivalent average annual terms to permit direct comparison with estimated benefits. It is the Corps' policy to assume a useful life of **50** years for port improvements.

After the monetary cost estimates are computed, then the benefits of the projects are measured. This is done by first determining the physical output of the projects. The objective of such measurement is to determine increases, net of associated or indirect cost, in the value of goods and services which result from conditions with the project as compared with conditions without the project. The value of the outputs is either the market value (demand price) or, in the absence thereof, the expected costs of production by the most likely alternative sources that would be utilized in the absence of the project.

The ratio benefit to cost is used as an indicator of the project's worth. Tangible benefits, as they are expected to occur, then are brought back to present worth by a given interest rate and then amortized to obtain average annual benefits. The ratio derived from dividing the average annual benefits by average annual costs is referred to as the "benefit-cost" ratio. Projects are seldom authorized unless the benefit-cost ratio exceeds one.

Federal Funding of Dredging

Although estimates are available for approximating the cost of dredging a certain number of cubic yards of material from a harbor bottom, a wide range of variables can impact the cost. Some of these are:

- cost of local labor;
- geological composition of material;

- distance the material needs to be transported for disposal; and
- cost of disposal area (ocean dumping, port development fill project, creating new disposal area).

Research conducted by the Corps of Engineers, Water Resources Center indicates that between 1963 and 1979, annual expenditures for improvement dredging actually decreased 22 percent from \$107 million to \$83 million. Moreover, the unit costs for improvement dredging were \$0.41/cubic yard (yd³) in 1963 and increased to \$1.73/yd³ in **1979**. Maintenance dredging over the same period saw unit prices increase from \$0.27/yd³ to \$1.03/yd³. Total annual expenditures in this area increased by a factor of four from **\$59** million to \$241 million. Figures prepared by the Corps of Engineers indicates that 289 million yds were dredged in the United States in 1980, and an estimated 320 million will be made in **1981** (see table A-1). Of the 1981 totals, the Corps would be expected to handle 95 million, and private industry contracts with the Corps for the remaining 225 million for 1981. On the cost side, the Corps itself is expected to directly assume \$115 million and Corps contracts to private industry \$337 million in 1981 (see table A-2).

The numbers presented in tables A-1 and A-2 must be viewed in the context of estimates for new channel deepening projects. Assuming a reasonably high \$2.00/yd³ dredging costs, and a 200-million-yd³ project, a total bill of \$400 million results. This level of dredging for new construction is a reasonable estimate for a major new project at one port.

Channel Improvement Process

There are both private and Federal public sector efforts involved in channel maintenance, improvement, and new dredging activities. Non-Federal efforts, both private and local governmental, are primarily directed to dredging of channels to and around private docks from main channels. There have also been limited non-Federal efforts in the dredging of short main channels. However, these cases are rare and more often than not pertain either to artificial ports or for channels that are used primarily by a single industry. The Federal efforts are conducted by the Corps of Engineers.

Table A-1.—Corps of Engineers Cubic Yard Dredging (millions)

	With Corps equipment			With private industry equipment		
	Maintenance	New work	Total	Maintenance	Newwork	Total
1978	92	2	94	118	68	186
1979	87	3	90	147	45	192
1980	81	1	82	154	53	207
1981 (est.)	95	0	95	153	72	225

SOURCE: Corps of Engineers.

Table A-2.—Corps of Engineers for Dredging (\$ millions)

	With Corps equipment			With private industry equipment		
	Maintenance	New work	Total	Maintenance	New work	Total
1978	90	2	92	124	91	215
1979	87	8	95	154	75	229
1980	92	3	95	193	95	228
1981 (est.)	115	0	115	184	153	337

SOURCE: Corps of Engineers.

The two dredging activities—the non-Federal dredging and the Federal dredging—necessarily go through two different Federal Government administrative processes. The non-Federal Government dredging requires a permit from the Corps of Engineers. The Federal dredging requires the Congress to enact legislation to request the Corps to conduct a feasibility study followed by an act to provide authorization for construction and then by appropriations acts to provide funding. During the Corps study environmental considerations and other public concerns are taken into account and public hearings are held similar to those required for non-Federal efforts.

Permit Process for Non-Federal Dredging

A Corps of Engineers permit is required whenever a project is considered which would affect the waters of the United States by:

- locating a new structure;
- excavating, or discharging dredge or fill material; or
- involve transporting dredged material for the purpose of dumping it into ocean waters.¹

However, not every activity requires a separate permit application. Certain activities and work have been authorized by nationwide permits and general permits.²

¹See Corps of Engineers, *Permit Program A Guide for Applicants*, EP 1145-2-1, Nov. 1, 1977).

²Nationwide permit is a form of general permit which authorizes a category of activities throughout the Nation. Nationwide permits are designed to allow work to occur with little, if any, delay or paperwork.

Prior to actually submitting an application to obtain a permit, applicants are encouraged to contact the District Engineers Office having jurisdiction over specific geographic location of the structure or activity.

Each application is evaluated to determine the probable impact the structure or activity will have on public interest. This is where many delays can occur. The Corps is responsible for coordinating the responses to the project of numerous State and local governmental bodies and civic groups. If any one organization objects to the project, then additional consideration must be given to overcoming the difficulties the objecting organization sees. In some cases, an environmental impact statement (EIS) may be required and simply developing the background data for the EIS can take 2 years or more. In other cases, less stringent environmental impact assessments or environmental reviews maybe needed.

Once all data have been submitted, the District Engineer will issue a public notice seeking comments on the proposed action. A normal 30-day comment period is given to responding agencies, but this period is usually exceeded, contributing to additional delays. A public hearing may then be held if the District Engineers believe there to be sufficient reason to allow an additional forum for public comment. Once all public comment is obtained, the District Engineer takes all information and based on a series of evaluation factors will make a final decision to approve or disapprove the application. In the event that a permit is denied, a complete procedure is available for appeal.

Recently, the Corps released a proposal for the purpose of speeding up the review process needed to obtain Federal permits.⁴ There are several specific procedures recommended for shortening the leadtime required, but, in short, the proposed regulations are designed to impose time limits on the accomplishment of goals, and require reviews of contested applications to be "pulled" from high levels of decision-making, rather than "pushed" from lower levels. This forces decisions to be made by the lowest possible level, where most attention to detail can be devoted and decisions can be more timely. In the event that the Corps does not grant a permit, or a granted permit is contested by a local public agency or civic organization, a ranking official representing the contesting group must request that the application be reconsidered at the next highest level. Such a procedure is designed to limit permit reviews at the highest levels of the Corps of Engineers.

Also, memoranda of agreement were established between the Corps and five involved Federal agencies requiring that to the maximum extent practicable, a decision should be made on individual applications within 90 days of the issuance of the public notice.

Federal Process for Port and Channel Improvement Projects

The Corps of Engineers has a rather strict set of procedures through which it must operate in the process of developing channels and other public works. There are four basic controls which Congress has on the selection and timely development of the public works. First, Congress must request the Corps of Engineers to conduct a feasibility study of the improvement which local groups perceive to have merit. Such a feasibility study includes engineering considerations, cost factors, environmental concerns, and perceived benefits. After the completed feasibility study is forwarded to Congress, further studies or engineering of that particular improvement are undertaken as project funds are "extinguished" on the submittal of the feasibility report to Congress. The next action that Congress takes is to authorize the project; however, further work by the Corps must await congressional appropriations actions. However, the appropriations are generally only yearly. Thus, each year Congress must reconsider the individual project as it progresses and appropriate funds for the next year.

⁴Federal Register part VI, Department of Defense, Corps of Engineers, Department of the Army, "Proposal to Amend Permit Regulations for Controlling Certain Activities in Waters of the United States," Sept. 19, 1980, p. 62732.

Besides Congress and the Corps of Engineers, other agencies, the State governments, and the interested public become involved in the review process of public works projects. These often become quite controversial when environmental issues become of great concern and do cause delays and modifications in the program. In dredging, the site selected for depositing the dredged materials often becomes particularly controversial.

The 19 steps of establishing and constructing new projects is given in table A-3. Maintenance dredging, a 20th step is not listed, but does occur and requires annual funding for larger projects and occasional, but predictable funding for smaller projects.

Status of Present and Proposed Coal Port Projects

There have been many proposals to improve various ports to increase export capabilities. Some of these are just conceptual, others are in some stage of the Corps of Engineers 19 steps, previously discussed. The four predominant coal ports, have major improvement projects in planning or design. Table A-4 lists the proposed improvements to these ports. The status of the projects, as of April 1, 1981, to improve these four channels is as follows:

Baltimore.—Feasibility complete, approved by the Corps of Engineers and Secretary of the Army and deepening of the channels authorized by Congress. *Step 26 is underway:* The Secretary of the Army is entering into formal agreements with non-Federal interests to fulfill their obligations. Appropriations action would have to follow for the actual construction to be initiated.

Hampton Roads.—The District report has been reviewed by the Board of Harbors and Rivers and has issued its recommendations. *Step 10 is underway:* The Chief of Engineers is coordinating the report and the EIS with the Governor of the affected States and with the Federal Department heads. After this step, the Secretary of the Army will review the report and submit it and the EIS to Congress for authorization.

Mobile.—The feasibility report has been completed by the District. *Step 9 is underway:* The Board of Rivers and Harbors is reviewing the report.

New Orleans.—A reconnaissance phase has been completed and the results found favorable. Preliminary alternatives have been selected by the Corps District Office and public involvement initiated. *Step 6 is underway:* The preparation and circulation of the preliminary draft report and the preliminary EIS.

Table A-3.—How Corps Projects Are Conceived, Authorized, Funded, and Implemented (preauthorization)

1. Public requests assistance from congressional delegation to solve water resources problems
2. Committee on Public Works of House or Senate authorizes study
3. Initial funds for study enacted into law
4. Corps district conducts reconnaissance (Stage 1 Planning)—includes public meeting and other forms of public involvement
5. If results of reconnaissance favorable, Corps district continues study and develops preliminary alternatives (Stage 2 Planning) —includes public meeting and other public involvement
6. Corps district selects several alternatives to develop in detail and on the basis of further evaluation tentatively selects plan, which best achieves the objectives of the study (Stage 3 Planning) —includes public meeting and the preparation and circulation of draft report and draft environmental impact statement (EIS)
7. District engineer submits report and EIS to division engineer
8. Division engineer submits report and results of division review to Board of Engineers for Rivers and Harbors (BERH)—includes includes public notice
9. **BERH reviews district and division recommendations and issues its findings and recommendations**—includes public notice of recommendations
10. Chief of Engineers coordinates proposed report and EIS with Governors of affected States and Federal department heads
11. Chief of Engineers report reviewed by Secretary of the Army and the Office of Management and Budget and submitted to Congress—final EIS filed with EPA
12. Committees on Public Works hold hearings and include project in authorization bill or authorize by joint resolutions
13. Initial funds for Advance Engineering and Design (AE&D) for project enacted into law—usually several years after authorization
14. Corps reaffirms plan based on current conditions and any new planning criteria applicable to project—includes a public meeting and other forms of public involvement
15. If plan reaffirmed, or satisfactorily modified to accommodate new conditions or criteria, Corps continues with sufficient engineering and design to award initial construction contracts
16. Non-Federal interests required to enter into formal agreement with Secretary of the Army to fulfill their obligations, as authorized by Congress
17. Initial funds for construction of project enacted into law—requires specific decision by President and Congress to initiate construction of project
18. Continuation of engineering and design and project construction—may include adjustments based on results of detailed engineering design
19. Completion of project construction

SOURCE: Corps of Engineers

A summary listing of project status of the major coal exporting ports and other coal exporting, or potential coal ports, is as follows:

<i>Project port</i>	<i>Present project step underway</i>
Principal coal ports	
Baltimore	16
Hampton Roads	10
Mobile	9
New Orleans.	6
Additional coal ports (or potential)	
East coast:	
New York City	2
Charleston, S.C.	10
Savannah, Ga.	7
Brunswick, Ga.	10 (unfavorable)
Gulf coast:	
Galveston, Tex.	
(Texas City)	6
(Pelican Island)	Permit granted to private organization.
Sabine, Tex.	6
Corpus Christi, Tex.	6
West coast:	
Columbia River, Wash,	
(Astoria)	6
Kalamia, Wash.	Permit requested for private dredging
Bellingham, Wash.	Deepening not required, step not applicable
Gray Harbor, Wash.	6
Long Beach/Los Angeles.	18
Sacramento, Calif.	9

Acceleration of Corps Process

There have been numerous suggestions for fast tracking the Corps 19-step process. Most of these involve the accelerating or avoiding of three delays. These are: 1) delays caused by serially conducted reviews within the Corps of Engineers as well as by other agencies and outside interested States and organizations; 2) delays in design and engineering due to lack of funding while project authorization and appropriation bills on favorable projects are acted upon in Congress; and 3) delays caused by yearly resubmission of project funding request and appropriation thereof by Congress.

The Corps is in the process of implementing the concurrent reviews of key projects. The Corps schedule under their revised report system for Norfolk, Mobile, and New Orleans is shown on table A-5. Concurrent review outside the Corps, over which it

Table A-4.—Proposed Improvements to Existing Coal Harbor Channels

	Channel depth (ft)		Vessel size capacity (dwt)		Capital cost (10 \$)	Annual operating and maintenance costs (10 \$)	
	Current	Proposed	Current	Proposed		Existing	Increased
Hampton Roads ^a	45	55	80,000	100,000 +	372 (April 1980)	6.2	2.5
Baltimore.....	42	50	70,000	100,000 +	278 (October 1980)	4.0	0.8
Philadelphia.....	40	—	60,000	—	—	8.2	—
Mobile ^a	40	55	60,000	100,000 +	392 (August 1980)	8.7	2.4
New Orleans ^b	40	55	60,000	100,000+	440 (May 1980)	19.5	75.0

^aFeasibility studies completed and report now under review at levels of the Chief of Engineers and the Secretary of the Army

^bFeasibility study in final stages of completion by the District Engineer.

SOURCE: Corps of Engineers.

has no control, has not been initiated. This will require action by the other Federal Agencies involved in the review and approval process.

To avoid the delays in design and engineering incurred while awaiting authorization and appropriation by Congress, the Corps in its fiscal year 1982 budget has submitted a request for funds and authorization to conduct continuing studies for those projects found favorable. The budget submitted to the

Office of Management and Budget requested \$2 million for continuing studies in fiscal year 1982, which was reduced to \$1 million before submission to Congress.

to avoid the hiatus that occurs between fiscal years, it has been suggested that two possible congressional alternatives exist: 1) appropriate funding for the full project, or 2) provide multiple-year funding.

Table A-5.—Coal Ports Reports Schedule (for planning)

Milestone	Norfolk (Hampton Roads)				Mobile Harbor				New Orleans (M R-GO)			
	Best estimate	Maximum acceleration ^a	Presidential initiative	Incremental construction	Best estimate	Maximum acceleration ^a	Presidential initiative	Incremental construction	Best estimate	Maximum acceleration ^a	Presidential initiative	Incremental construction
Report forwarded to BERH.....	Aug 80	same	same	same	Nov 80	same	same	same	Jun 81	same	same	same
Chief of Engineers' proposed report (and FEIS) to ASA(CW), OMB, and to States and agencies for review.....	Mar 81	same	same	same	Apr 81	same	same	same	Oct 81	same	same	same
Statutory review periods end.....	Jun 81	same	same	same	Jul 81	same	same	same	Jan 82	same	Nov 81	Nov 81
Chief's final report to ASA(CW).....	Aug 81	Jul 81	Jul 81	Jul 81	Sept 81	Aug 81	Aug 81	Aug 81	Mar 82	Feb 82	Dec 81	Dec 81
Report to WRC.....	Aug 81	Jul 81	N A ^b	N A ^b	Sept 81	Aug 81	N A ^b	N A ^b	Mar 82	Feb 82	NA	NA
Report to Congress ^c	Nov 81	Oct 81	Aug 81	Aug 81	Dec 81	Nov 81	Sept 81	Sept 81	Jun 82	May 82	Jan 82	Jan 82
Congress authorizes....	1981	1981	1981	Sept 81 ^d	1982 ^e	1981	1981	Oct 81 ^d	1982	1982	1982	Feb 82 ^d
AE&D complete ^f	1984	1984	1984	Mar 82 ^g	1985	1984	1984	1982 ^h	1985	1985	1985	Jul 83

^aAssumes ASA/CW will expedite to extent possible. Potential expediting within the President's purview (items 3 and 5) were not assumed.

^bInvolves directives to agencies to accelerate 90 review to 30 days, and to waive independent project review.

^cAssumes 2 months to process report through WRC and 1 month to process through OMB. We estimate that this is the fastest possible progress for Complex projects

and assumes we have taken all "assurance" steps to maintain progress.

^dAssumes Congress authorizes within 1 month of receipt.

^eDepending on congressional session dates in relation to report submissions, a 1981 authorization could be possible.

^fAssumes efforts to compress from the expected 4 to 5 years required are successful assumes concurrent funding of AE&D and authorization; and assumes a 3 year

AE&D effort (18 to 24 months for Phase I and 12 to 18 months for P&S) AE&D is considered complete when plans and specifications for the first major contract are approved

^gconstruction begins for 50-ft stage. No environmental issues or factors have been raised concerning this stage.

^hMobile cannot accelerate unless disposal issue is resolved: disposal is controversial, first increment is widening and turning basin.

ⁱOne preliminary plan involves an initial construction phase of 55ft from the Gulf to River Mile 60 above Head of Passes.

SOURCE: Corps of Engineers, Mar. 16, 1981