

Corps of Engineers Feasibility Studies

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Corps of Engineers Feasibility Studies

Prophesy is a good line of business, but it is full of risks.

–Mark Twain

Summary

This report provides a review of the Corps of Engineers project planning process, as it would apply to a feasibility study for three improvements in the Cape Fear River channel contemplated by a letter of intent issued by the Secretary of the North Carolina Department of Environment and Natural Resources.

A feasibility study is a comprehensive analysis of the engineering, economic, and environmental aspects of a water resources project, ultimately used to seek Congressional authority and funding for that project. Such a study costs tens of millions of dollars and can take the better part of a decade.

The only recent planning projects bearing a reasonable similarity to the proposal for the Cape Fear River are a project to deepen the channel in the Savannah River from the river mouth to the Garden City container terminal approximately 26 miles upriver from 42 feet to a depth to be determined, and a project for deepening the channel in the Delaware River to Philadelphia from 40 feet to 45 feet. Also relevant is the history of the project to deepen the Cape Fear River to the Port of Wilmington commenced in 1998 and not yet complete.

Experience in those projects shows that navigation improvement studies disclose a plethora of problems—environmental and otherwise—that require substantial unanticipated analysis and extend the schedule and the costs significantly. Studies for these recent river channel improvement projects have cost \$20 million to \$36 million.

The law governing water resources projects provides that, before embarking on such a feasibility study, the Corps must first conduct a “reconnaissance study” to determine whether there is a “Federal interest” in such project. The Wilmington District of the Corps of Engineers has issued a “Section 905(b) Analysis” with that conclusion, and a recommendation to proceed to the feasibility phase. That analysis is the subject of a separate report.

The three improvements contemplated by the letter of the Secretary of NCDENR would address three problems encountered with the channel in the Cape Fear River after the recent deepening to 42 feet. Two were related to difficulties in maneuvering and turning the ships for which the project had been designed, and the third was the increased shoaling and beach erosion experienced with the deeper channel. Corps of Engineers procedures provide a different procedure for study of issues arising out of earlier studies or ongoing projects, a “General Reevaluation Report.” Such a report would be a more appropriate method of addressing the three problems, and would cost the State of North Carolina less.

The Corps of Engineers Study Process

Projects to facilitate navigation are handled by the US Army Corps of Engineers. Planning for such projects involves two steps, spelled out in section 905 of the Water Resources Development Act of 1986 (33 USC 2282):

The first step is a “reconnaissance study,” preliminary in nature, to determine whether the project has enough merit to warrant a full feasibility study. Such studies are fully funded by the Federal government, cost about \$100,000, and take a year or two (33 USC 2282(b)).

The essential element of the reconnaissance study is the “section 905(b) analysis,” which responds to the requirements of section 905(b) of the Water Resources Development Act of 1986. That involves preliminary analysis of the costs and potential benefits to determine whether there is a “Federal interest” in proceeding to the next phase, the feasibility phase. In addition to the finding of a Federal interest, the Corps must receive a “letter of intent” from a “non-Federal sponsor” expressing a willingness to share the costs of a feasibility study, and then a formal cost-sharing agreement binding the non-Federal sponsor..

Should those requirements be met, the project can proceed to a feasibility study, a full study of the economic and environmental aspects of the project, to determine whether and how the project should be constructed. Such studies cost many millions of dollars and take the better part of a decade (33 USC 2282(a)). Costs would be shared equally between the Federal government and a “non-Federal sponsor.” In the case of channel dredging projects, the usual non-Federal sponsor would be the port authority or other agency that operates the port facilities that would be served. Although the costs may be shared, the study responsibility is not; the local district of the Corps of Engineers conducts such studies using its practices and procedures.

The usual practice of the Corps in these studies is separate the project into two parts, the feasibility analysis and the environmental impact statement. The feasibility analysis is a quantitative exercise, which involves estimation and comparison of benefits and costs over the life of the project, assumed to be fifty years. An excess of benefits over costs would mean the project contributes to national economic development and should move forward. Of course, measuring the benefits and costs of something that has not yet happened, and will be in place for fifty years or more, is uncertain at best.

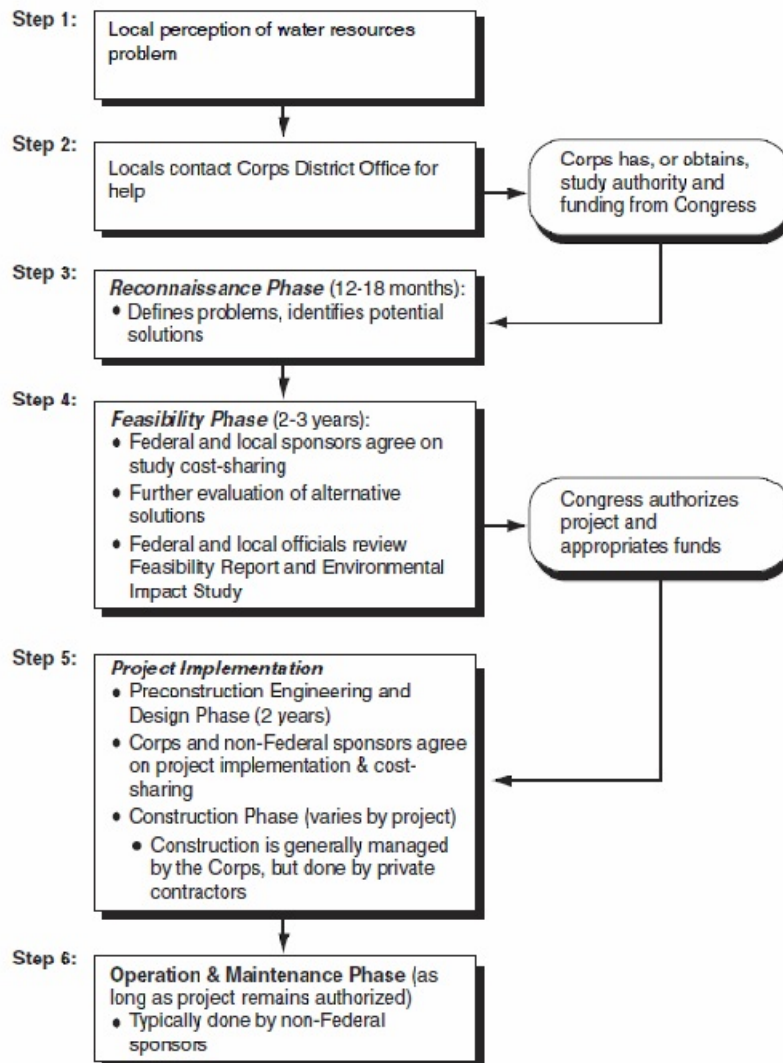
The environmental part of the study is a greater source of mischief. This is an environmental impact statement prepared according to the National Environmental Policy Act. The Corps takes a compliance approach; legal requirements are determined and the project is measured against those requirements. If minimum standards are met, that is considered sufficient. If it is necessary to take some steps to mitigate environmental damage, such as establishing wetlands to replace wetlands lost to dredging, the cost of that mitigation is counted in the costs to be compared to benefits in the economic analysis; otherwise the environmental

impacts, however extensive, effectively are assigned a value of zero so the feasibility analysis is unaffected.

Should the cognizant Corps of Engineers officer, the District Engineer, find on the basis of the study that the project is feasible, the project sponsors would seek a Congressional appropriation for the Federal share of the cost of the project and local funding for the non-Federal share. For channel dredging projects at depths of 45 feet or less, the Federal share is 65%; the non-Federal share is 35%, but 10% of the cost can be deferred.

Upon receipt of Congressional authorization and funding and agreement of the non-Federal sponsor to pay the non-Federal share, the project would proceed, beginning with more comprehensive studies to formulate the design of the project. These preconstruction studies would lead to the design phase, and then construction.

Figure 1: Major Steps in Developing a Civil Works Project



Source: GAD presentation of Corps data.

The Revised Principles and Standards

The environmental aspects of a project have traditionally been treated by the Corps as a procedural step—the proposed action is measured against statutory and regulatory standards, and the boxes are checked. The overall effect on ecosystems—the big picture—is disregarded. In the quantitative evaluation of costs and benefits that drives the Corps’ analytical process, environmental effects (other than the cost of mitigation) are given a value of zero, and weigh not at all in the decision process.

This analytical flaw was once excused by the difficulty in evaluating ecosystem services in the same terms as construction costs and transportation efficiencies. But the field of valuing ecosystem services—ecological economics—has progressed to the point at which such excuse is no longer valid. In the Water Resources Development Act of 2007, Congress stated a national policy of “protecting and restoring natural systems,” and mandated revision of the Corps’s *Principles and Guidelines* for studies to better address environmental issues by use of the “best available techniques.... .” Sec. 2031.

In the same provision, Congress addressed another flaw in the usual Corps study, the failure to consider interaction with other projects in the region, and required the revised *Principles and Guidelines* to include “The assessment and evaluation of the interaction of a project with other water resources projects and programs within a region” In this context, that means that the relationship of this project to dredging and port expansion projects in Jacksonville, Savannah, Charleston, Hampton Roads, and perhaps Baltimore and points north should be considered—that is, do we really need all those projects?

Congress specified that the revised *Principles and Guidelines* be issued not later than two years from the enactment of the act. That deadline has come and gone. The project has, however, been preempted by a White House project to have the Council on Environmental Quality (CEQ) revise the *Principles and Guidelines* for applicability to other government agencies involved in water resource projects, such as the Bureau of Reclamation.

On December 3, 2009, the CEQ released the second draft of updated *National Objectives, Principles and Standards for Water and Related Resources Implementation Studies*. These principles and standards, when adopted in final form, will cover all Federal agencies that undertake water resource projects. They will replace the *Principles and Guidelines* now used by the Corps of Engineers.

The new *Principles and Standards* rank the goal of protecting and restoring the environment equal to the traditional economic objectives. The revised principles consider both monetary and non-monetary benefits to justify and select a project that has the greatest net benefits – regardless of whether those benefits are monetary or non-monetary. For example, the monetary benefits might capture reduced damages measured in dollars while the non-monetary benefits might capture increased fish and wildlife benefits, or biodiversity. The

principles also set new standards for the transparency of and public involvement in the planning and implementation process, with the objective of producing better decisions regarding water resource projects.

Many of these standards address deficiencies in the Corps of Engineers planning process discovered by the Government Accountability Office and disclosed in 2006 in testimony before the Subcommittee on Energy and Resources, Committee on Government Reform, House of Representatives: *Corps of Engineers, Observations on Planning and Project Management Processes for the Civil Works Program* (GAO-06-529T) .

Authorization, Funding, and Reprogramming

The process of authorization and funding of water resources projects is chaotic at best. Each project must be authorized by Congress. Normally this is done in a biennial “Water Resources Development Act”; however, the last one was passed in 2007. Projects may be recommended by the administration, or they may be proposed for addition by individual Congressmen. There is not any system of ranking of projects to assure that the most beneficial take priority.

Once a project is authorized, it must be funded by a Congressional appropriation. Such appropriations can be placed in any legislation—so-called “earmarks.” Usually such appropriations are only for a single year. Needless to say “earmarks” are not favored in the current Congress.

The Corps of Engineers is quite proficient at stretching authority. The authority for the reconnaissance study that was commenced in 2009 for the proposed North Carolina International Terminal was derived from a 2006 resolution of the House Committee on Transportation and Infrastructure for a review of a 1996 study on improvements to the Cape Fear River and Wilmington Harbor “to determine whether any modifications of the recommendations contained therein are advisable in the interest of navigation improvements and associated water resource development opportunities for Wilmington Harbor, North Carolina.”

Appropriations for projects are likewise subject to broad interpretation. Funds appropriated for one project may be moved around to fund other projects, in a process called “reprogramming.” In testimony to Congress in 2006, the Director of Natural Resources and Environment of the Government Accountability Office identified \$1.6 billion in such movement of funds from one project to another in a two-year period. The GAO pointed out that there was not any Corps-wide system of priorities but that “reprogramming decisions were left up to the intuition of program and project managers at the district level.”

Project Review

Once the project has been authorized and started, further studies may be necessary. Corps of Engineers regulations contemplate post-authorization studies and reports in the course of the project. “Studies may be necessary if a significant period of time has elapsed or conditions have changed since the feasibility study was completed.” ER 1105-2-100, section 4.1b. Authority for such studies is implied by the authority for the construction of the project.

Two types of reevaluation reports are specified in the Corps regulation:

(1) General Reevaluation. This is reanalysis of a previously completed study, using current planning criteria and policies, which is required due to changed conditions and/or assumptions. The results may affirm the previous plan; reformulate and modify it, as appropriate; or find that no plan is currently justified. The results of the study are documented in a General Reevaluation Report (GRR).

(2) Limited Reevaluation. This study provides an evaluation of a specific portion of a plan under current policies, criteria and guidelines, and may be limited to economics, environmental effects or, in rare cases, project formulation. A Limited Reevaluation Report (LRR) documents the results of the analysis undertaken.

Other types of post-authorization studies and reports document the design and engineering of the project or changes in environmental effects.

These post-authorization studies and reports would be subject to the same cost-sharing formula as the project itself, 65% Federal and 35% non-Federal for dredging projects down to 45 feet, instead of the 50/50 cost sharing of feasibility studies.

Peer Review

Section 2034 of the Water Resources Development Act of 2007 (33 USC §2343) instituted the process of independent peer review of certain Corps project studies, following findings by the US General Accountability Office that many Corps planning studies were flawed, particularly in the estimate of future benefits that justified a project going forward.

In certain circumstances such a review is mandatory:

A project study shall be subject to peer review under paragraph (1) if—

- (i) the project has an estimated total cost of more than \$45,000,000, including mitigation costs, and is not determined by the Chief of Engineers to be exempt from peer review under paragraph (6);
 - (ii) the Governor of an affected State requests a peer review by an independent panel of experts; or
 - (iii) the Chief of Engineers determines that the project study is controversial considering the factors set forth in paragraph (4).
- 33 USC §2343(a)(3) (A).

Paragraph (4) immediately following this provides the factors to be used to determine if the project study is controversial for the purpose of subparagraph (iii):

(4) **FACTORS TO CONSIDER.**—In determining whether a project study is controversial under paragraph (3)(A)(iii), the Chief of Engineers shall consider if—

- (A) there is a significant public dispute as to the size, nature, or effects of the project; or
- (B) there is a significant public dispute as to the economic or environmental costs or benefits of the project.

The next paragraph describes the grounds for exemption from subparagraph (i) (although the reference in subparagraph (i) is to paragraph (6), the grounds for exemption are in paragraph (5)) :

(5) **PROJECT STUDIES EXCLUDED FROM PEER REVIEW** —The Chief of Engineers may exclude a project study from peer review under paragraph (1)—

- (A) if the project study does not include an environmental impact statement and is a project study subject to peer review under paragraph (3)(A)(i) that the Chief of Engineers determines—
 - (i) is not controversial;
 - (ii) has no more than negligible adverse impacts on scarce or unique cultural, historic, or tribal resources;
 - (iii) has no substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures; and
 - (iv) has, before implementation of mitigation measures, no more than a negligible adverse impact on a species listed as endangered or threatened species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) or the critical habitat of such species designated under such Act. 33 USC §2343(a)(5)

In other circumstances peer review is discretionary:

(i) AGENCY REQUEST–A project study shall be considered by the Chief of Engineers for peer review under this section if the head of a Federal or State agency charged with reviewing the project study determines that the project is likely to have a significant adverse impact on environmental, cultural, or other resources under the jurisdiction of the agency after implementation of proposed mitigation plans and requests a peer review by an independent panel of experts.

The statute provides for appeal to the Council on Environmental Quality on the determination under this paragraph.

It is apparent that the Corps has considerable discretion in determining whether a peer review would be conducted. The Corps procedures for review are set out in an engineering circular, EC 1165-2-209. *Civil Works Review Policy* .

Hidden Costs

There are substantial hidden costs in the study process. The study, particularly the environmental impact statement, would require participation by many State and Federal agencies (called by the Corps “resource agencies”): the various divisions of the State Department of Environment and Natural Resources, the Department of Cultural Resources, the Coastal Resources Commission, the Wildlife Resources Commission, the Department of Transportation. At the Federal level, US Fish & Wildlife Service, NOAA Fisheries Service, the Environmental Protection Agency and others must be involved from the beginning to the end of the process. The cost of that participation must come out of agency budgets, taking away from other endeavors.

Experience

The Savannah Harbor Improvement Project

The Savannah District of the US Army Corps of Engineers recently released the final draft of a feasibility study for dredging the Savannah River to the Georgia Ports Authority's container terminal at Garden City, upriver from Savannah. The study has been underway in one form or another since 1997. The Savannah District hopes to release a final report in 2011. The cost of the study through mid-2010 has been variously reported as \$36 million (*Dredging Today*) to \$40 million (*Atlanta Journal-Constitution*).

In 1997, the Georgia Ports Authority commenced the feasibility study at its own expense, as is permitted by the laws governing such projects.. When the report was issued in the very next year, it was regarded as somewhat inadequate. Congress authorized the project in 1999, but with the condition that the final plan be approved by the Secretary of the Interior (US Fish & Wildlife Service), the Secretary of Commerce (NOAA Marine Fisheries), and the Administrator of the Environmental Protection Agency. So a new study, called *Tier II*, was started. This was characterized as a General Reevaluation Report instead of a new feasibility study because the project had been authorized. The nature and scope of this GRR was very much the same as that of a feasibility study, and included a full environmental impact statement.

The original estimate of the cost of the study is not readily available. In 2004, the Savannah District of the Corps estimated the cost of the study at \$24,250,000, of which more than \$19 million was Georgia's share. Including the original study, that has grown to \$36 million or more.

The cost of the project itself has similarly escalated. The cost authorized by Congress in 1999 was \$230,174,000, which included extensive mitigation measures. The cost estimates in the draft feasibility study issued in November 2010 range from \$425 million (44-foot depth) to \$606 million (48-foot depth).

The Savannah River project is remarkably similar to the project to dredge the Cape Fear River that the State of North Carolina proposes. The Garden City terminal in Georgia is 26 miles up the Savannah River from sea—the same distance as the Port of Wilmington on the Cape Fear River. The existing channel in both rivers is now maintained at a depth of 42 feet. There is an issue of beach erosion at Tybee Island due to the channel in the Savannah River, just as we have at Bald Head Island and Caswell Beach at the mouth of the Cape Fear River. There is a problem of penetration of the aquifer, just as the Cape Fear River dredging would penetrate the Castle Hayne aquifer. The issues of salt water intrusion upriver and in tidal inlets are the same. Loss of salt marshes. Insufficient oxygen at lower depths. Damage to marine habitat.

The difference, however, is that the Garden City Terminal in Georgia handles about as many containers in a month as the Port of Wilmington handles in a year.

The Delaware River Channel Deepening Project

In 1983, the Corps of Engineers Philadelphia District began a the process of studies to investigate the modifying the channel in the Delaware River to Philadelphia, which was than maintained at a depth of 40 feet. The study progressed to the feasibility phase with an interim feasibility study authorized by the Water Resources Development Act of 1988. In 1992, the Philadelphia District completed a feasibility study and environmental impact statement, recommending deepening the channel in the Delaware River to Philadelphia from 40 to 45 feet. The study estimated the cost of the project at \$278 million, and determined that the project was feasible, with a benefit/cost ratio of 1.33. The cost of this study has not been discovered.

The project was authorized by Congress in 1992 and preconstruction studies were initiated to address issues identified in review of the feasibility study.

In 2002, the General Accounting Office (since renamed the Government Accountability Office) issued a report criticizing the economic analysis, in particular substantial overstatement of benefits. The Philadelphia District promptly prepared a revised economic analysis with a finding of a benefit/cost ratio of 1.18.

The project environmental studies proceeded apace through the years, being completed in 2009. The fiscal year 2008 annual report of the Corps of Engineers, the last available, shows that the cost of the studies to the Federal government had reached \$20 million. The non-Federal share, borne by the Regional Ports Authority, was not reported; using the usual cost-sharing formulae, that would be another \$10.8 million to \$20 million, bring the total to \$31 million to \$40 million.

In 2008, an agreement was signed with the Philadelphia Regional Ports Authority for sharing of costs of the project. The States of Delaware and New Jersey promptly brought suit to stop the project. The GAO issued a report in 2010 pointing out that several issues remained to be addressed, and identifying procedural and substantive flaws in the Philadelphia District's study process. Nevertheless, in 2010, dredging commenced. The current estimate of the cost is \$311 million, with \$78 million to be paid by the Philadelphia Regional Ports Authority.

The Current Wilmington Harbor Project

The Wilmington District of the Corps of Engineers is in the 13th year of construction of the Wilmington Harbor Improvement Project, a project to deepen the channel in the Cape Fear River from 38 to 42 feet. The project traces its ancestry to authorization in the Water Resources Development Act of 1986. Current plans call for completion in 2014, depending on the availability of funds.

The feasibility study and the environmental impact statement were started in 1992, and completed in 1996. Construction of the project began in 1998; the channel was opened at the deeper depth in 2004, but many of the environmental mitigation parts of the project remain to be funded and constructed.

The cost of the feasibility study and environmental impact statement are not apparent in the record. The feasibility study estimated the project cost at \$250 million, and on that basis determined that the benefits would exceed costs in a ratio of 1.2 to 1.

When design work commenced, the Wilmington District determined that there would be cost savings from realignment of the channel at the ocean bar, where the river meets the sea between Bald Head Island and Caswell Beach. The realignment involved moving the lower reaches of the channel, beyond the river mouth, to the east to avoid rock formations. An environmental assessment of modifications of the plan was made in 2000, and the modifications were adopted.

In 2009, the Wilmington District estimated the cost to complete the project at \$533 million. The channel had been opened at the new depth of 42 feet in 2004, but much of the environmental mitigation had not been done. Some parts of the project have since been abandoned. In July 2011, NCDENR reported the current estimate to complete the project to be about \$384 million.

The cost to July 2011 is \$317,548,550. Of that, the State share is 35%, approximately \$111 million. Federal law permits 10% of the cost of the project to be deferred by the State. The State has so far contributed \$73,995,550; approximately \$37 million remains owed by the State to the Federal government for project costs to date.

The cost to complete the project was estimated in July 2011 to be \$67 million. The State share of the work to be done, after repayment of deferred amounts, would be \$23.5 million. The aggregate balance for account of the State to the completion of the project is thus \$60.5 million.

The total cost of the Wilmington Harbor Project is thus estimated to be \$384 million. The State share, ultimately, would be \$134.4 million.

In 2005, a general reevaluation report was begun to address environmental mitigation and other issues that had arisen. In 2007, the project team determined that peer review would not be required, and that decision was approved by the South Atlantic Division. In early 2009, the general reevaluation report process stopped, and has not been resumed.

The benefit/cost ratio determined in 1996 has been recalculated from time to time to take into account the increased cost but not the actual benefits realized. The cost of construction is amortized over 50 years, and the future value of annual benefits is discounted to present value. Interest rates have come down considerably since the ratio was calculated in 1996. Such reduction in rates reduces the annual interest cost of the construction and increases the present value of future benefits. The benefit/cost ratio currently expressed compares the benefits assumed in 1996 to the costs actually incurred, an analytical mismatch. Although data are available to redetermined the benefits based on experience, that has not been done.

The Proposed Feasibility Study

The Section 216 Study

In July 2010, the Wilmington District prepared (but did not release to the general public) a report entitled *Wilmington Harbor Initial Appraisal*. This was not done under the authority for the ongoing Wilmington Harbor Improvement Project, but was a new initiative under the general authority of section 216 of the Rivers and Harbors and Flood Control Act of 1970. This permits review of

the operation of projects the construction of which has been completed...when found advisable due the (*sic*) significantly changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest.

The cost of this study was \$20,000, all from Federal sources. Use of section 216 for this study is curious—on the same page of the report, the Wilmington Harbor Project is described as a “Completed Project,” (which is necessary to gratify section 216) and “Features yet to be completed” are identified.

The purpose of the section 216 study is described thus:

The results of this Initial Appraisal will be used to determine if potential problems exist which may warrant further planning in the second phase of the study process, the Reconnaissance Phase. Should the Initial Appraisal identify potential problems warranting further study, the District would use the report to support initiation of a reconnaissance study under the Section 216 authority. Results from the reconnaissance report would be used to determine support to initiate a cost shared feasibility-level study effort.

The section 216 study is quite clearly intended as the precursor to another round of major studies—first, a reconnaissance study, then a feasibility study. It includes an outline of the feasibility study.

The section 216 study addressed two areas of concern:

- (a) the channel turn at Battery Island, a turn of 95 degrees which does not conform to Corps engineering standards and has proved a problem for maneuvering large vessels; and
- (b) the channel at the mouth of the river, the proximity of which to Bald Head Island has led to problems of rapid shoaling of the channel and erosion of the beaches.

These are two of the three issues identified in the NCDENR December letter of intent.

The section 216 report concluded that the issues should be further investigated in preparation of a reconnaissance report, and if that determines that there is a “Federal interest” in the project, then a feasibility study should be undertaken.

The NCIT Reconnaissance Study

In 2009, the Wilmington District had initiated a reconnaissance study for the proposed North Carolina International Terminal, a very large container terminal proposed by the North Carolina State Ports Authority for a “greenfield” site on the Cape Fear River just north of Southport. The District used as authority a 2006 resolution of the U.S. House Committee on Transportation and Infrastructure for review of the 1996 Wilmington Harbor Project report “to determine whether any modifications of the recommendations contained therein are advisable in the interest of navigation improvements and associated water resource development opportunities for Wilmington Harbor, North Carolina.” Using this authority for a study for dredging for a new marine container terminal downriver at Southport seems to be a bit of a stretch, but the project moved along and the Wilmington District prepared a draft “Section 905(b) Analysis” in February 2010.

That report was never issued to the public. A copy was provided to the North Carolina Department of Environment and Natural Resources to induce delivery of a letter of intent for sharing of cost for the feasibility study to follow. In the hands of NCDENR, the report became subject to discovery under the North Carolina Public Records law. A citizens’s group did indeed discover and disclose it, revealing the poor quality of the report and the flaws in its conclusions. The fundamental economic conclusion involved a violation of section 904 of the Water Resources Development Act of 1986, and the said violation became the subject of a complaint to the Inspector General of the Corps of Engineers. That complaint is now in the hands of the Inspector General of the Department of Defense.

The February 2010 draft has not resulted in a final report in that form. Instead, when the proposed North Carolina International Terminal lost favor with the North Carolina General Assembly and the area’s Representative to the U.S. House of Representatives, the Wilmington District of the Corps of Engineers redirected the focus of the reconnaissance study to three problems with the existing channel serving the Port of Wilmington.

The Wilmington Harbor Section 905(b) Analysis

In December 2010, the Secretary of the North Carolina Department of Environment and Natural Resources issued a letter to the District Engineer of the Wilmington District of the Corps of Engineers expressing the intent of the State to participate as the non-Federal sponsor

in a feasibility study to address three problems encountered with the channel in the Cape Fear River after the deepening to 42 feet. Two were related to difficulties in maneuvering and turning the ships for which the project had been designed, and the third was the increased shoaling and beach erosion experienced with the deeper channel.

Using the NCIT draft section 905(b) analysis as a starting point, the Wilmington District prepared a new draft section 905(b) analysis, which was released in April 2010. The analysis addresses the problems identified in the Secretary of NCDENR's letter of intent, and concludes with a recommendation by the District Engineer for a project covering those three problems to proceed to the feasibility phase. The analysis of the NCIT project is retained from the earlier draft (including the violation of section 904 of the Water Resources Development Act of 1986) as an alternative, but the District Engineer excluded that from his recommendation.

That section 905(b) analysis is examined in a report accompanying this one.

General Reevaluation Report?

The three issues identified in the NCDENR letter of intent for a feasibility study all relate to the Wilmington Harbor Improvement Project authorized and commenced 1998. That project is not yet complete. All three issues emerged as the project progressed, and all were foreseen or should have been foreseen in the planning process but were not addressed adequately.

Thus these issues do not represent new projects that would properly be the subject of a feasibility study. They would constitute reanalyses of issues covered in a previously completed study, and as such should be addressed in a general reevaluation report as specified in the Corps of Engineers Engineering Regulation 1105-2-100, *Planning Guidance Notebook*. Indeed, the Wilmington District of the Corps of Engineers has commenced a General Reevaluation Report for the Wilmington Harbor Project, and included in its scope another turning and anchorage basin in the Cape Fear River above the anchorage basin intended to be studied in the feasibility study contemplated by NCDENR.

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