



WHAT THE EXPERTS ARE SAYING ABOUT THE CORPS OF ENGINEERS

The Army Corps of Engineers has been the subject of at least seven important federal reports in five years. The National Academy of Sciences (NAS) has completed four reports analyzing the Corps' planning process – one in 1999 and, most recently, in December 2003. The U.S. General Accounting Office (GAO) has audited two proposed Corps' projects and uncovered flawed economic analyses in each. In addition, the U.S. Army Inspector General issued a report in November 2000 after the U.S. Office of Special Counsel directed the Department of the Army to conduct an investigation. Below are several of the key findings and conclusions of each report.

NAS Panel Questions the Corps' Economic Models Used to Justify Major Lock Expansion and Criticizes the Agency for Failing to Implement Nonstructural Measures Immediately.

Summary: National Academy of Sciences, Upper Mississippi-Illinois Waterway Restructured Feasibility Study: Interim Report, December 2003. The NAS has released the first of three reports on the Corps' restructured feasibility study on the Upper Mississippi River-Illinois Waterway (UMR-IWW). This panel points out that the Corps' prediction of future grain exports was contrary to the stagnant trends from the past twenty-five years. The panel also recommends that the Corps immediately implement nonstructural traffic management measures, rather than before continuing to evaluate the merits of the massive lock expansion project.

- *After exhibiting increasing trends from 1950-1980, U.S. grain exports have since shown almost no growth (USDA, various issues). There is little compelling evidence for a substantial increase in world demand for U.S. grain exports over the next decade or two. Indeed, several factors could contribute to declining grain exports. . . . Given the relatively flat level of exports over the past two decades, the committee views the projected increases in four of five scenarios with some skepticism. **Forecasts of increase in U.S. grain exports should present explanations for likely export trends after 2003 that are consistent with history and with expert opinion on likely future conditions in global grain markets.** (p. 15)*
- *The [Tow Cost Model (TCM)] was previously rejected by the Corps, a decision with which the [National Research Council (NRC)] 2001 committee concurred. That committee also recommended that results from the ESSENCE model should not be used in the feasibility study. However, the Corps has reversed its decision on the use of the TCM and continues to use the ESSENCE model. (p. 2)*
- *It is possible that new traffic management measures would reduce congestion in a cost-effective manner. Unless an efficient system for managing waterway traffic is in place, it is not possible to evaluate the benefits for lock extensions. . . . The Corps should proceed as soon as practicable toward developing and implementing any feasible nonstructural measures to help alleviate waterway traffic congestion. (p. 2)*

NAS Finds the Corps Used Flawed Assumptions and Data In Its Economic Model To Forecast Traffic Demand for the Upper Mississippi River-Illinois Waterway.

Summary: National Academy of Sciences, Inland Navigation System Planning: The Upper Mississippi River-Illinois Waterway, February 2001. The Department of Defense asked the NAS to review the Corps' feasibility study for the UMR-IWW. The NAS finds that the Corps used bad economic data and failed to treat its 50-year forecasts as highly certain. The panel's conclusions reveal agency-wide, systemic problems that are not limited to a single project study or a single economic model.

- *As a result of flawed assumptions and data, the current (September 2000) results of the spatial equilibrium model and the ESSENCE model should not be used in the feasibility study. **The problem lies not in the theoretical motivation behind these models, but in their implementation and data used as input.** (p. 3)*
- *Environmental concerns have become a core issue in the operation of inland waterway systems and should be treated as such in planning studies. **The Corps should recognize the central importance of environmental issues and adapt its planning, engineering design, operations, and analysis accordingly.** (p. 5)*
- *The Principles and Guidelines should be reviewed and updated in order to reflect changes in social values since the early 1980s, as well as advances in analytical techniques and technologies. . . . In revising the P&G, special attention should be given to: (1) guidance for incorporating concerns about environmental quality into plans for inland navigation systems, regardless of how the EQ objective is stated, (2) more definitive guidance on techniques for forecasting demands for waterway services over extended time horizons, and (3) more appropriate methods for treating uncertainty in large projects that are subject to high levels of uncertainty in future demand. (p. 28)*
- *Large and important projects such as the proposed lock extension on the UMR-IWW would benefit from a second opinion. . . . **issues such as these are too important to not receive an independent judgment on the merits of the various approaches and a careful scrutiny of the analysis.** There are nearly always different possible approaches to achieving a goal; decision-makers need assurance that the analysis was conducted carefully and is state-of-the-art. **Before embarking on important decisions - particularly ones involving more than \$1 billion of construction - an independent peer review is crucial.** (p. 60)*

U.S. Army Inspector General Exposes the Corps Manipulated the Economics on the Upper Mississippi River Project.

Summary: U.S. Army Inspector General Agency Report of Investigation, November 2000. As with the NAS report, although the U.S. Army Inspector General investigation focused on one study, **the testimony and evidence presented strong indications that institutional bias might extend throughout the Corps. Advocacy, growth, the customer service model, and the Corps' reliance on external funding combined to create an atmosphere where objectivity in its analyses was placed in jeopardy.** These influences create a tension with the honest broker role inherent in reconnaissance and feasibility studies.

- ***The evidence also indicated that the economic analysis prepared for the draft report was manipulated.** The District Engineer (DE) directed a specific value for a key parameter when he knew it was mathematically flawed, not empirically based, and contrary to the recommendations of Corps economists. (p. 1)*
- *Several Corps officials noted **an institutional preference for construction solutions.** The "Grow the Corps" program placed pressure on Corps leaders and managers to justify projects. **Treating the barge industry as a customer created a conflict with the Corps' role as an honest broker in the study.** It also led to granting the barge industry preferential treatment in terms of exclusive access and involvement in development of the economic analysis. (p. 4-5)*
- *The "Grow the Program" initiative had a less defined impact on the study. Its potential for impact on future studies, however, was clear. **The pressure on Divisions to deliver projects was immense.** Moreover, compelling evidence indicated that a key element of the program was encouragement of grass roots lobbying for projects. (p. 7)*

- *The Corps' employment of the customer service model also created a conflict with the Corps' role as honest broker. Because of the taxes it paid into the Inland Waterway Trust Fund, the barge industry was viewed as a partner during the study. This view led Corps leadership to involve the industry to a far greater extent than other interest groups. (p. 7)*
- *Nearly all the economists expressed a view that the Corps (or individuals within the Corps) held an inherent preference for large-scale construction. A senior economist used the term "corrupt" in discussing one division. The term was used in the sense that leadership in that division appeared to be working for the interests of the navigational industry. (p. 8)*

GAO Finds Economic Analysis for Oregon Inlet Jetties Cannot Be Trusted.

Summary: General Accounting Office, Oregon Inlet Jetty Project: Environmental and Economic Concerns Still Need to Be Resolved, September 2002. The GAO found that the Corps' analysis justifying the \$108 million proposal to construct dual rock jetties and a 20-foot navigation channel for North Carolina's Oregon Inlet could not be trusted.

- *We found significant problems with the analysis, including a reliance on outdated and incomplete data, the use of unsupported assumptions, and a lack of accounting for risk and uncertainty in key variables that could significantly affect the project's benefits and costs. (p. 38)*
- *In calculating the estimated benefit, the Corps relied on data provided in a 1987 consultant's report that studied the number of trips taken by trawlers during the mid-1980s. However these data do not reflect fewer trips taken by trawlers in recent years. (p. 19)*
- *As a result, the Corps reliance on the consultant's 1987 study calls into question the usefulness of the Corps' estimate of the benefits of the jetty project to commercial fishing vessels. (p. 20)*

GAO Concludes Corps Vastly Overstated Benefits of Deepening Delaware River.

Summary: General Accounting Office, Delaware River Deepening Project, Comprehensive Reanalysis Needed, June 2002. The GAO found serious flaws and errors in the Corps' economic analysis of the \$286 million proposal to deepen the Delaware River main channel. GAO concluded that the project required an entirely new comprehensive reanalysis.

- *The Corps' analysis of project benefits contained or was based on miscalculations, invalid assumptions, and outdated information. After taking these problems into consideration, we found that the project benefits for which there is credible support would be about \$13.3 million a year, as compared to the \$40.1 million a year claimed in the Corps' 1998 Limited Reevaluation Report. (p. 5)*
- *Although the district, division and headquarters offices approved the project according to the procedures in place in 1992 and changes that followed in 1995, these review processes were ineffective in detecting and correcting the significant miscalculations, invalid assumptions, and outdated information in the economic analysis that our review revealed. (p. 19)*
- *Because of the significance of the problems we identified, the uncertainties that surround the project, and the ineffectiveness of the Corps' quality control process, the actual economic merits of the Delaware River deepening project will not be reliably known unless and until it is comprehensively reanalyzed. (p. 22-23)*

NAS Concludes Corps' Planning Procedures Are Outdated.

Summary: National Academy of Sciences: New Directions In Water Resources Planning for The U.S. Army Corps of Engineers, 1999. The NAS has reviewed the Corps' planning procedures and evaluate the *Principles and Guidelines*. When the NAS released this report five years ago, the NAS noted some of the **same problems** in the planning process that it reported on in the recent 2001 report, such as the Corps' failure to consider environmental impacts in its decision-making process.

- *Examples of specific revisions to the P&G which the committee recommends include:*
 - *Movement away from consideration of the National Economic Development (NED) account as the most important concern. **Today, ecological and social considerations are often of great importance in project planning and should not necessarily be considered secondary to the maximization of economic benefits. Strict adherence to the NED account may discourage consideration of innovative and nonstructural approaches to water resources planning.***
 - *The P&G should be updated to **eliminate biases or disincentives that work against nonstructural approaches**, and to ensure that the benefits of flood damages avoided by nonstructural projects are consistently and uniformly considered. (p. 4)*
- *The Corps should strive to **improve and further develop analytical methods for valuing the environmental benefits/detriments associated with its water projects.** (p. 7)*

NAS Recommends Managing the Missouri River to Meet Contemporary Needs By Placing a Greater Emphasis on Ecological Health

Summary: National Academy of Sciences, The Missouri River Ecosystem: Exploring The Prospects For Recovery, January 2002. The NAS documents how efforts to improve navigation and protect against floods, particularly by the Corps, have significantly degraded the Missouri River as a resource for fish and wildlife. This report provides significant evidence that returning the Missouri River to a more natural state restores the river to support the incredibly rich biological diversity and production it once did.

- *Degradation of the Missouri River ecosystem will continue unless some portion of the hydrologic and geomorphic processes that sustained the pre-regulation Missouri River and floodplain ecosystem are restored – including flow pulses that emulate the natural hydrograph, and cut-and-fill alleviation associated with river meandering. **The ecosystem also faces the prospect of irreversible extinction of species.** (p. 3)*
- *Commercial traffic levels on the Missouri River have fallen short of the Corps' 1950 projections. The shortfall has been largely because of agricultural grain, food, and food product tonnage failing to meet expectations. After peaking in the late 1970's, agricultural tonnage has been in steady decline. (p. 75)*
- *However, the procedures in the Master Manual used to produce the current suite of benefits largely reflect the social values from the mid-twentieth century. As a result, the Master Manual may not adequately be meeting contemporary social demands, which place a greater emphasis on ecosystem benefits, water- and nature- based recreational pursuits, preservation of endangered species, the enhancement and conservation of biodiversity, and maintenance of the river corridor's cultural heritage. . . . **there is a distinct prospect that a reversal of tradeoffs that would favor ecosystem restoration may be justifiable solely on the grounds that it represents an economic improvement on current mainstem dam operations.** (p. 87)*