



*Summary Report*

*A Report by a Panel of the*

**NATIONAL ACADEMY OF  
PUBLIC ADMINISTRATION**

*For the U. S. Congress and the U.S. Army Corps of Engineers*

**February 2007**

**PRIORITIZING AMERICA'S WATER  
RESOURCES INVESTMENTS:**

**Budget Reform for Civil Works Construction Projects  
at the U.S. Army Corps of Engineers**

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The views expressed in this report are those of the Panel. They do not necessarily reflect the views of the Academy as an institution.

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## FOREWORD

The nation's water resources are a fundamental part of its wealth, and lie at the heart of its economic, social and environmental well-being. The U.S. Army Corps of Engineers has played a major role in managing those resources for more than 200 years. However, concerns have been growing in some circles about how the Corps' projects are prioritized.

In the aftermath of Hurricanes Katrina and Rita, questions about the Corps' priorities grew more urgent. Congress asked the Academy to recommend better ways to prioritize its projects. The Academy Panel formed to take on this task soon recognized that the bigger question was how to make sure the right projects are proposed initially.

I congratulate the Academy Panel, under the excellent leadership of Chair Sean O'Keefe and Vice Chair Mortimer Downey, for preparing this insightful and innovative report. It goes well beyond the assigned task of assessing the criteria used to prioritize individual projects. Its key recommendation is to completely overhaul the current cost-share, project-sponsor driven budget process. The nation's safety, productivity and global competitiveness demand a much more thoughtful, inclusive and rigorously analytical process. This report spells out that process and shows how to achieve it over the next five years. The Corps recognizes the need to improve its planning and budgeting processes, and I commend them for actions already taken to do so. Yet success also will depend upon several important actions by the Congress and Administration, which this report identifies.

This report would not have been possible without the Corps' cooperation. Its very busy staff was always responsive to our questions, provided several special briefings to the Panel and facilitated the Panel's aerial tour of the New Orleans flood area, including current reconstruction and ecosystem restoration efforts. The Panel and staff accomplished an amazing amount of work in the eight short months allotted to this study. I commend them all.

A handwritten signature in black ink that reads "Howard M. Messner". The signature is written in a cursive, flowing style.

Howard M. Messner  
President



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## ACRONYMS

<b>Academy</b>	National Academy of Public Administration
<b>EC</b>	Engineering Circular
<b>FY</b>	Fiscal Year
<b>GPRA</b>	Government Performance and Results Act
<b>IWR</b>	Army Engineer Institute for Water Resources
<b>O&amp;M</b>	Operations and Management
<b>OMB</b>	Office of Management and Budget
<b>P&amp;G</b>	Principles & Guidelines
<b>PART</b>	Program Assessment Rating Tool
<b>RBRC</b>	Remaining-Benefits/Remaining-Costs



## PANEL MESSAGE

The nation's vast water resources are critical to its economic strength and to the well-being of all Americans. Our rivers and their surrounding ecosystems hold tremendous value as sources of recreation, wildlife, channels of commerce, hydropower, flood control and aesthetic pleasure. But, human activity has the potential to both enhance *and* diminish this value. The nation must use effective adaptive management strategies to protect these national treasures and at the same time use them to help meet the challenges of the 21<sup>st</sup> Century. These challenges include globalization, fierce competitive pressures, a compromised environment and a continually growing and shifting population.

The U.S. Army Corps of Engineers has played a major role in the nation's water management ever since the country was founded, and it is uniquely positioned to play a pivotal role in the next 100 years. But the model that has worked in the past is no longer appropriate. Efforts focused on controlling rivers and solving specific local and regional problems cannot effectively harness the potential of the nation's water resources to meet the significant challenges the nation faces. The Corps knows this.

The Corps is expanding its horizons. It is beginning to work in a broader context that recognizes risks, balances multiple objectives, focuses priorities on key agency missions, identifies and avoids unintended consequences, and more systematically plans on a time horizon longer than the annual budget cycle. But, these changes do not go far enough. More fundamental change is needed, change that the Corps cannot accomplish on its own. The Department of the Army, Office of Management and Budget (OMB), Congress, other federal agencies and the many state, local and private stakeholders all have important roles to play in better prioritizing the Corps' budget.

The Academy Panel responsible for this study had a fundamental assignment: to help the Corps better prioritize its funding decisions, especially with regard to construction. This task led initially to consideration of more and better articulated criteria within a more transparent budget process. This report evaluates those possibilities. As the Panel studied the Corps' budget process, however, larger questions emerged that bear on the future sustainability of the nation's water resources and related ecosystems, as well as on the nation's economic viability and social well being.

The answer to these questions should begin with a fundamental reassessment of national water resources needs, goals, and strategies. It should end with a substantially reshaped planning and budgeting process that is conducted across large river basins and nested watersheds and that relies on integrated, systems-based planning to determine budget priorities. This new approach is designed to position the Corps to take the lead, working with the states and many other direct stakeholders, in enhancing the stewardship of the nation's water resources well into the 21<sup>st</sup> century.

## **THE INITIAL REQUEST**

When hurricane Katrina hit New Orleans in 2005, followed almost immediately by hurricane Rita, the resulting disaster set off reevaluations of many government programs. Included were several reevaluations of the Corps' role in these events. Most of the reevaluations focused on engineering and related failures of the New Orleans levee system, and the unintended ecological consequences of Corps navigation and flood control projects.

However, a more general evaluation requested by the House of Representatives Appropriations Subcommittee on Energy and Water Resources Development related to the whole Corps budget process. At the House's request, the Congress asked the Corps to engage the Academy to evaluate the criteria used by the Corps to prioritize the projects in its annual budget requests and to recommend improvements. This report is the Academy's response to that request.

The Subcommittee anticipated very large new financial demands for rebuilding the flood protection system around New Orleans. These new demands come on top of budget stresses caused by an already huge and growing backlog of authorized but unfunded Civil Works projects and an aging inventory of federal water resource infrastructure assets, assets that need constant maintaining and renewal. Given the increasingly tight federal budget situation, the Subcommittee anticipated a pressing need for an improved process for prioritizing Civil Works spending.

## **DEFICIENCIES IN THE PRESENT CORPS BUDGET PROCESS**

As the Academy Panel examined the Corps' current budget process, it identified many deficiencies:

- The process focuses too narrowly on individual projects.
- The projects are proposed primarily by individual cost-share sponsors.
- Funding to completion is uncertain for many large, multi-year projects.
- Many more projects have been authorized than have been funded.
- The projects are difficult to put into the context of national goals, system performance or economic and environmental impacts. Many projects may not meet national goals and objectives.
- Prioritization relies too heavily on single factors—benefit-cost ratios for most projects, or life safety for dams and levees, or environmental factors for ecosystem restoration.
- The prioritization process is not transparent. At several points, within both the executive and legislative branches, the decision process is not sufficiently open or documented so that the public can readily understand the reasons for funding or not funding projects.

- Results are not always demonstrably consistent with established budget criteria or mission needs, may be inefficient in balancing funding needs and funding availability, and sometimes yield disappointing results.

The Panel explored options for using multiple criteria for prioritizing projects—including economic benefit-cost ratios, measures of risk, environmental quality, system planning and timely project completion—and the means to combine the measures into composite priority scores or grades. Other important criteria were considered—social equity, contribution to watershed goals, project management, and facility condition—which are worthy of further study. A project “dashboard” or scorecard should be used to graphically display project criteria to decision makers during the prioritization process and to improve transparency and thoroughness of deliberations.

Nonetheless, the Panel found that these multiple-criteria evaluation techniques for comparing the individual projects that individual project sponsors proposed would be unlikely to produce optimal system performance. Nor would they address the problem of authorized projects far outnumbering funded projects.

The key problem with funding prioritization is that it begins with an inventory of individually conceived projects, and then tries to make a system out of them. The Panel believes that beginning with strategic performance goals and related system designs provides a much stronger basis for identifying and prioritizing the most beneficial outcome-oriented projects. The success of a project that is part of a system can be measured by improvements in system performance, likely a national mission-oriented outcome measure. In contrast, the success of individually conceived projects is likely to be measured only as outputs—was each one completed as proposed within its approved budget?

To illustrate the difference, very few levees failed in New Orleans. However, the system’s weak links resulted in a massive “system failure.” Almost the whole city flooded. Post-Katrina evaluations found that the levees were a system in name only. System performance is what counted, not the performance of individual levees, most of which performed well. The Panel believes it is essential for the Corps to move toward a systems approach to provide greater consistency and optimal performance in prioritizing its Civil Works construction program.

## **CORPS RESPONSES**

The aftermath of Katrina and Rita already has engaged the Corps in activities that have begun to move it toward risk-sensitive systems integration. Examples include the multiple studies of levee failures in New Orleans, a Congressional requirement for comprehensive Corps planning of Louisiana coastal restoration—to complement a State of Louisiana effort—and a Corps review of the conditions and risks associated with flood protection levees nationwide.

In August 2006, the Corps announced its “12 Actions for Change” strategy for moving toward a risk-centered systems integration approach. In addition, the Corps is modifying its budget

preparation process to base it more on enhanced multi-year watershed and river basin planning by its field units, to be carried out in consultation with stakeholders. These are important steps in the right direction. They should be encouraged.

## **MUCH WORK REMAINS TO BE DONE**

The Corps' current budget process is not completely of its own making, and cannot be changed without the agreement of the Administration and Congress. Until 1986, the Corps had greater latitude to do broad river basin and watershed planning studies from which federally funded projects emerged. Since then, however, large-scale study funds have been very limited, and used primarily to justify specific projects proposed by individual cost-share sponsors. The Panel agrees that the cost-sharing principle is important to retain, but believes strongly that broad planning studies should be readily available to provide context and sounder justifications for projects. In general, individual projects should be conceived as integral elements of strategically developed system plans designed to meet outcome-oriented performance targets consistent with high priority Corps missions.

Corps budget priorities should be allocated among its missions and outcomes, rather than among individual projects. Project priorities should be linked to their importance in meeting system-wide performance targets most cost effectively as determined by alternatives analysis. Long-range system plans, with at least a 20-year time horizon, should be interagency and intergovernmental, as appropriate, to incorporate future needs, unique authorities and the resources of multiple stakeholders whose interests interact within a watershed or river basin. System plan implementation should be laid out in a multi-year sequence of specific projects—perhaps five years—consistent with reasonably anticipated revenues from all available sources, both federal and non federal. Priorities for Corps projects should be established in relationship to priorities for those sponsored or provided by other federal agencies, state and local governments and other cooperators within the watershed or river basin. Project accomplishments and system performance should be systematically tracked and fed into the planning process to adjust plans and project schedules and maintain progress. The U.S. Department of Transportation's regular Condition and Performance Report is a model that should be considered.

This collaborative planning process should be performed in the open to the greatest extent possible, and used to maintain maximum transparency and public accountability in budgeting and program performance. The Department of the Army, OMB, and Congress should place credence in the funding priorities arising from this process as much as possible in their budget decision making.

The backlog of authorized but unfunded Corps projects should be reduced through careful analysis of systems and projects during the new multi-party planning process. System performance should be the primary measure of project value and funding priorities within this fiscally constrained process. Projects that are not likely to be funded should be removed from plans until there is some reasonable expectation that they could or should be funded. Funded projects should be fully funded in useful increments to avoid inefficient stop-and-go construction activities.

## PANEL RECOMMENDATIONS

To make this new budget process a reality, the Panel makes six recommendations that should be implemented as quickly as possible. They are listed below and more fully explained in Chapter 6.

1. Transition the Corps, step-by-step, to a strategic budget process supported by a performance-oriented and systems-based watershed management process.
  - Increase the number of factors used to analyze, plan, and prioritize Corps construction projects, and implement a scorecard or report card mechanism for considering these factors simultaneously and across business lines.
  - Revise Corps planning and budgeting guidance to emphasize collaborative watershed planning and consider multiple project selection factors.
  - Amend the Water Resources Development Act to fund broader planning studies and allow greater latitude for planning-based project initiation.
  - Develop five-year fiscally constrained “programs of projects” to implement long-range plans.
  - Revise the existing, outdated interagency planning guidance—*Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*—to incorporate strategic performance-based project selection.
  - Replace individual project earmarks with division-by-division appropriations scaled to meet the strategic performance priorities of those geographic areas as established by the collaborative planning process. Allocate adequate funding for the broad-based studies needed to support this multi-party planning process.
  - Support state water resources planning and intergovernmental river basin planning to guide the nation’s water resources investments and management.
2. Conduct periodic mission reviews of the Corps Civil Works Program similar to Quadrennial Defense Reviews.
3. Restructure the Corps’ strategic plan around key national outcome goals.
4. Establish a partnering approach with other federal agencies, state and local governments and other key stakeholders in order to develop strategic watershed and river basin plans as the basis for Corps implementation projects and budget priorities.
5. Ensure adequate operations and maintenance of all Corps-built facilities.

6. Implement the Water Resources Development Act ability-to-pay provisions to ensure equity among cost-share sponsors.

## **FINDINGS AND RECOMMENDATIONS**

Budgeting for civil works construction projects at the U.S. Army Corps of Engineers is complex and controversial. Project selection decisions, in conjunction with Congressional funding actions, have profound impacts, sometimes of life and death importance, on local, regional and national interests. This was the genesis of the Panel's study—is it possible to improve the prioritization of projects during the budgeting process? As the Panel studied this question, it became evident that project prioritization was only the tip of the iceberg.

Clearly, the criteria and process used to select projects for the budget have important ramifications. Yet, the most important criterion is how projects relate to and support agency and national goals. The Corps is not in a position to answer that question. Consequently, the Panel was drawn to address a wider issue: to assess the context in which the budget process is carried out and to better ensure that Corps efforts are focused on the nation's most important water management priorities from the viewpoints of human safety, ecological health, systems performance and reliability, and much more.

The preceding chapters examine the current process for developing and justifying the Corps' Civil Works construction budget, as well as legislative, administrative, and financial factors that drive the process. This chapter recommends a three-stage improvement strategy aimed at transforming the analytical methods and scope of the budget process and, more important, the planning that underlies it. The ultimate goal is to better ensure that more of the projects funded are of the highest quality and will reliably provide the greatest benefits to the nation. To most effectively do that, the Corps must evolve from the role of "project engineer" to "watershed steward" and become a convener of intergovernmental prioritization processes.

### **THE CURRENT PROCESS**

The current process focuses largely on a single measure to assess the benefits of each project and set priorities for implementation. A type of benefit-cost measure is the main prioritization criterion for flood and storm damage reduction, commercial navigation, and hydropower construction. However, risk criteria are used instead of benefit-cost for projects in the flood and storm damage reduction program if human safety is at issue. Meanwhile, environmental criteria, not benefit-cost, are used for ecosystem restoration projects. Formal budget prioritization lists are developed separately for each business line.

The Panel believes that over-reliance on single-dimension criteria, coupled with the inability to prioritize across business lines, presents serious problems that should be corrected as quickly as possible. The Corps actually uses multiple criteria to develop and analyze its construction projects, but the additional information is not systematically used to prioritize projects for budget purposes. The most commonly considered additional criteria are:

- Does the project save lives?
- Can risk and uncertainty be more accurately estimated and mitigated?
- Are environmental considerations given sufficient weight in projects other than ecosystem restoration (where they are already central)?
- Are current methods of project evaluation biased against less affluent and/or minority populations?
- Does the spending profile for individual projects allow them to be started and completed within a reasonable and predictable time period?
- Are the one-year funding amounts provided by annual appropriations consistent with a longer-run (e.g. five-year) planning horizon?
- Is proposed spending consistent with “systems” and “watershed-based” planning?
- What other performance measures should be used to demonstrate expected benefits?

The Panel believes that multiple criteria should be used, and it has presented an analysis to help the Corps do so. It is also important that the Corps make its budget process as transparent and participatory as possible, articulate how the multiple criteria were used and explain the decisions made. One approach is to develop an understandable means of comparing projects across the criteria. Using comparable prioritization criteria and measuring them with reliable and widely accepted means would facilitate prioritization across programs. The report suggests various methods to do this, including a visual “dashboard.” The process would incorporate collaborative inputs by funding and other partners. The goal would be to provide visible means of assuring budget-makers at each stage of the process—within the Corps and Department of the Army, at OMB and during Congressional deliberations—that the projects being funded are the ones that best satisfy multiple stakeholders and objectives. For example, objectives should go beyond achieving economic benefits to include ensuring safety from natural hazards, enhancing homeland security (critical infrastructure protection), ensuring no net loss of wetlands, achieving equitable distribution of benefits, and enhancing ecological integrity.

### **Ensuring that Projects Support Goals**

This report describes the benefits of managing the nation’s water resources on the basis of watershed and river basin needs and resources. It also discusses the influence of several factors that drive the Corps to focus on solving specific problems rather than assessing and working to meet water resources needs in a systems context on watershed and river basin scales. By correcting the factors that emphasize specific problems and work against an integrated systems approach, the Corps can improve the pool of projects that it is prioritizing and better meet national needs. Among the important structural features of water resources policy that drive narrow rather than system-wide problem solving are the following: current cost sharing

requirements; existing project-focused planning guidance; and the annual, project-specific, appropriations process.

The Corps has recognized the need to plan and implement solutions within fully integrated systems frameworks, that include watershed approaches and collaborative planning, and has begun several key initiatives to begin addressing many of the concerns raised in this report. The Panel strongly endorses these moves and encourages Congress and the Administration to continue support for them. Nevertheless, more can and should be done to improve water resources solutions and investments through broader integration.

The Panel believes that it is essential to move away as rapidly as possible from the current norm of individual projects—toward projects that are drawn increasingly from watershed and river basin planning. Projects should be generated within more comprehensive multi-objective and multi-dimensional planning. These more comprehensive plans should be developed with the full collaboration of all relevant federal agencies, the affected state and local governments, and other interested stakeholders. Collaboration will help optimize benefits and minimize negative consequences, as well as better ensure support for, and funding of, selected projects.

In achieving more fully integrated planning at the watershed and river basin levels, the federal participants should recognize and support the leadership roles of states in water resources management, as they help to establish priorities among watersheds, mobilize non-federal resources on a scale sufficient to plan and implement collaborative watershed-wide solutions, and enable the creation and empowerment of watershed level non-federal institutions to serve as integrators in their respective watersheds and river basins. Although it is essential to maintain non-federal cost sharing, it is also important to seek new, innovative ways to finance projects, looking to many sources and funding mechanisms, including many that may not involve federal dollars.

Recognizing the long-term nature of this transformation and the need for action not only by the Corps, but also by other key stakeholders, the Panel recommends several important actions. They are presented below in six areas: integrated systems planning, periodic mission reviews, a restructured strategic plan, partnerships with other stakeholders, maintenance of Corps-built structures, and cost-share requirements.

## **RECOMMENDATION 1: INTEGRATED SYSTEMS PLANNING**

**The Corps and the Department of the Army, along with OMB and Congress, should begin immediately to implement the three-stage strategy outlined in this report to reshape the Corps' budget process.** The goal is to transition the Corps as quickly as possible to a strategic budget process supported by performance-oriented and systems-based watershed and river basin planning and implementation programs. This effort should include amending the Water Resources Development Act and revising the *Principles and Guidelines* (P&G). These steps would provide a stronger basis for reformulating the Corps' budget process, but should not be allowed to delay this urgently needed transition.

Work should begin immediately on the Panel's recommended three-stage strategy to implement the budget process transformation. The first stage—improving project-by-project prioritization—would continue to drive the appropriations process for the next two fiscal years as the planning-based intergovernmental strategy processes gear up. The second stage—functional system, business-line planning—would provide limited performance-based priorities to guide appropriations in fiscal years 2010 and 2011, before being incorporated into the third stage. The third stage—integrated watershed and river basin planning—would provide the most fully justified funding priorities beginning in fiscal year 2012 and continuing beyond.

In the immediate future, project priorities would be determined by improved project metrics, including a larger array of prioritization criteria that are considered simultaneously through a composite scoring or grading procedure. As more broad-based planning processes become available, project priorities should come increasingly from collaboratively prepared and adapted plans. When the Corps, the Army, OMB and Congress need to identify the next highest funding priority, they would consult the strategic plan for the Corps division with the most urgent unfunded need and find the implementation project next in line for funding on that division's five-year program of system implementation projects.

A timeline and set of activities for implementing the recommended three-stage strategy is set forth in Chapter 5. The following implementation steps should be taken:

- **The Secretary of the Army and the Chief of Engineers should continue to revise Corps planning and budgeting guidance.** With support from Congress and the Administration, the Army and the Corps have made significant progress in revising planning guidance to achieve water resources solutions that meet contemporary needs in collaborative ways. But further revisions are needed, especially in the Corps' *Planning Guidance Notebook* and the "Budget EC," to:
  - Emphasize project planning and development in a collaborative, watershed or river basin context, building on the Collaborative Planning guidance issued by the Corps in May 2005.
  - Move from the existing mechanical project prioritization process—that overemphasizes economic benefits—to a process that considers multiple factors, and gives priority to activities selected from collaboratively developed plans. More deliberate and systematic consideration of human risk should be a top priority. The revisions should also include expanded guidance for assessing and addressing environmental justice concerns that relate to Corps projects.

The Panel also recognizes that the Corps and Department of the Army are limited in the extent to which they can achieve this goal on their own. Congress and the Administration also will need to take action to allow the Corps to fully implement this strategy. Therefore:

- **Congress should amend the Water Resources Development Act to support the collaborative planning concept and allow greater latitude for planning-based project initiation.** Requirements for non-federal cost share should be retained, but cost

sharing commitments should be consistent with collaborative planning activities. Project sponsors should make the case for proposed projects in the collaborative planning and prioritization process, and agreements for meeting the statutory cost share requirements should be determined in the collaborative process with all the stakeholders, including the Corps, other federal agencies, and state and local governments. Collaborative plans should provide for long range solutions—as long as a 20-year time horizon—but should include five-year implementation “programs” that are based on realistic budgets. The collaborative plans should become the basis for authorizing, de-authorizing, and appropriating in order to:

- Get rid of the backlog of projects that have little chance of being funded
  - Ensure efficient and effective completion of projects that are funded
  - Improve performance of the nation’s water resources systems
- **The five-year “program of projects” designed to implement the long-range plan should be financially constrained.** It should contain only those projects for which there is a reasonably expected and specifically identified funding source. Funding sources for which the intergovernmental and other partners in the planning process have responsibility should be included—whether federal, state, local, tribal or private. This means that governors, mayors, elected county officials, legislators and others with financial responsibility for proposed projects should be parties to the process.
  - **The P&G that provides the underlying guidance for Corps planning and priority setting should be revised.** This important interagency guidance should explicitly strengthen the Corps’ evolving performance-based planning and budget prioritization process. It has not been updated since 1983—several years before the *Government Performance and Results Act* (GPRA) became law, and does not even mention the present performance-based ways that federal agencies establish their goals, priorities, and accountability mechanisms. In fact, the P&G leads in a different direction than GPRA. Although the Corps regularly updates its own budget and planning guidelines—and does not see the P&G as a barrier to good budgeting practices—Corps guidance remains remarkably consistent with this older, out-of-date guidance. And, to the extent that the Corps moves away from the P&G on its own, its practices may diverge from those of other federal water resources agencies. It is important to have consistent and current policy guidance for all federal water resources agencies to help them work more closely together.

OMB is in the best position to coordinate revisions to this multi-agency guidance, and it should work with the appropriate water resources agencies to do so. The Panel believes it is better to proactively revise this underlying guidance than to continue to work around it. The Corps should be a strong advocate with OMB and other federal agencies for revising the P&G in order to balance the current overemphasis on economic benefits and to broaden the factors considered in selecting project alternatives; expand and update the analytical approaches used; emphasize the need and provide guidance to consider system

needs and resources on at least a watershed scale (if not a whole river basin); provide for intergovernmental collaboration in setting priorities; and incorporate social equity considerations into the fundamental planning process.

The most critical element to successful revision is the need to permanently remove restrictions on Corps planning that limit planning to formulating alternatives that consider only features or elements that can be implemented by the Corps. It is essential that a planning study be fully integrated to provide for formulation and consideration of comprehensive alternatives that include the meaningful participation during implementation of the other federal agencies, the state and non-governmental entities, as well as the Corps and the non-federal sponsor. Therefore the Corps must not limit studies to formulation and evaluation of “Corps only outputs.”

The Panel recognizes that this interagency guidance (like any interagency policy document) will take a significant amount of time and leadership to revise, and does not propose the Corps wait for it to be completed before proceeding as far as it can on its own with the recommendations above.

- **States should take the lead to create and nurture watershed organizations within their boundaries and to work with other states to form appropriate multi-state watershed and river basin coalitions where problems warrant.** State water management leadership is essential to creating the institutional responses needed to transform the Corps budget to a fully integrated systems-based program. Without effective intergovernmental institutions at the watershed and river basin levels, the integrated approach cannot succeed. More often than not states do and will lead the management of water resources. Federal cooperation is important where states lead management of water resources within their jurisdictions and work with other states to settle complex issues of interstate significance. The federal government should support the states and invest alongside them where appropriate.
- **To support the states, the Corps should take the following initiatives:**
  - Support state water planning. The Corps, working collaboratively with states and other stakeholders, should anticipate national and sub-national needs and conflicts, and establish strategies for meeting them in ways that improve opportunities for economic and environmental well-being—consistent with efficiency and harmony among federal and state goals. When individual states have sound water plans, they will be able to work more effectively together to avoid or resolve interstate issues and create the non-federal institutions essential to successful watershed and river basin approaches.
  - Support national needs assessment. When states prepare good water resources plans, the federal government and the Corps will have the means to assess national needs using these state building blocks.

- Identify roles. State water planning, supported by the federal government and the Corps, will assist the nation in determining roles for meeting the identified needs. These state plans can become a strong basis for setting priorities among watersheds and establishing the appropriate watershed level leadership to support collaborative plans.
- Provide technical assistance to states. The federal government and the Corps should be empowered to provide their technical expertise to state and local governments.
- **Congress should move appropriations from a project-specific basis to a functional system and then watershed or river basin basis as the intergovernmental partnerships mature to support such budgeting. Individual project earmarks should be replaced with division-by-division appropriations to the Corps, scaled to meet the strategic performance priorities in each geographic area established by the collaborative planning process.** Annual appropriations for specific, individual projects, or project segments, are not conducive to efficient and effective completion of major infrastructure systems; they often do not adequately support system-wide performance improvements. In contrast, the individual projects funded through the new systems improvement appropriations should be consistent with the collaboratively developed long-range strategic plans and five-year schedules of projects in the plan's financially constrained implementation program—and should be expected to improve system performance. Until this planning and programming process becomes available, the Administration and Congress must agree on a funding approach that can make full funding secure for projects once they are begun.

To facilitate these broader appropriations, the Corps should move, in developing its budget requests, toward giving budgetary priority to activities identified in state and regional water planning efforts, eventually replacing individual project requests with requests for division-wide, watershed and river basin activities supported by plans collaboratively developed with the states and river basin councils.

- **Congress should authorize and fund multi-party river basin planning councils where necessary to significantly increase the effectiveness with which the nation's watersheds are managed.** Integrated systems planning over large-scale watersheds and river basins would be greatly facilitated by creation of recognized organizations, with funding and staff, charged with coordinating requisite planning and management functions for whole river basins. Absent these formal organizations, the Corps should work with OMB to take the lead in developing partnerships (as discussed in recommendation 4), and providing the funding and authority needed to make them effective.
- **Congress should allocate adequate funding to fully support needed collaboration, planning, and technical assistance at the state and multi-state levels, as well as to strengthen the Corps' ability to perform integrated, systems-based, watershed and river basin studies unconstrained as to formulation of alternatives.**

A major advantage of shifting to this planning-originated, performance-based, intergovernmentally-supported budget process is that it would shift policy makers' attention to issues of national significance rather than to project-specific particulars. This would be very beneficial for performance management and demonstrating nationally significant results of federal programs.

The Civil Works Program should be viewed as having a primary role in supporting the nation's economic and physical development, global competitiveness, energy policy, and environmental policy. Comprehensive thinking is needed to carry out these responsibilities. The present project-by-project approach, with lagging project completions, on-again-off-again construction schedules, and disappointed cost-share sponsors that do not know what they can count on, is not the best path to continued national prosperity.

## **RECOMMENDATION 2: PERIODIC MISSION REVIEWS**

**The Corps should conduct periodic reviews as a means to identify key missions and allocate efforts among them.** The results of these reviews, similar to Quadrennial Defense Reviews, would support the Corps' budgeting effort—and planning and management activities—by providing a foundation for setting mission performance goals and resource priorities, and for guiding decision-making within and among watersheds and river basins. They would also provide an important forum and catalyst for the intergovernmental and other dialogues necessary with all the stakeholders to help the nation articulate its water resources goals and resolve project backlog issues.

## **RECOMMENDATION 3: RESTRUCTURED STRATEGIC PLAN**

**The Corps' strategic plan should be restructured around key national outcome goals for which the Corps has implementation responsibilities; it should contain long-range national goals and annual targets for achieving them for both the nation and specific watersheds and river basins.** This recommendation is intended to focus collaborative planning on critical national interests. The Corps provides engineering and construction services that are vital to achieving the nation's economic development, environmental, public safety, and homeland security goals, and the Corps' objectives, therefore, should key off of those goals to effectively further the nation's top priorities. OMB's PART reviews of Corps performance should be reshaped around these new national priority goals and Corps mission accomplishment.

## **RECOMMENDATION 4: PARTNERSHIPS WITH OTHER STAKEHOLDERS**

**The Corps should partner more effectively with other federal agencies, state and local governments, and non-governmental co-providers of watershed-based facilities and services.**

This recommendation is key to accomplishing recommendations 1, 2 and 3. Working through the states and intergovernmental river basin councils offers the best opportunity for successful watershed and river basin management. Until and even after the states and councils are actively engaged in planning, collaboration through partnerships will be critical. This is especially true where multiple federal and state agencies, local governments and special districts have intricately interrelated responsibilities for wetlands, estuaries and major ecosystem restoration programs. It also will be critical where concerns exist about the unintended consequences of Corps facilities that are built, operated and maintained for potentially conflicting purposes. Each agency and unit of government has a unique contribution to make; together, they can be most successful if they work closely together and align their activities and resources with common goals and plans.

Effective “partnering” goes beyond consultation. OMB is best positioned to foster policies and practices to encourage and facilitate the interagency collaboration and cooperation needed for effective interagency partnerships. The Corps and OMB should consider using the Academy’s *Principles of Effective Consultation* and *Principles for Federal Managers of Community-based Programs* to strengthen inclusive collaborative efforts based on the extensive experience that the Corps and other agencies have in applying them.

#### **RECOMMENDATION 5: MAINTENANCE OF CORPS-BUILT STRUCTURES**

**The Corps should take further steps to ensure that Corps-built facilities turned over to non-federal sponsors are adequately maintained.** Before projects are turned over to a sponsor for operation and maintenance, Corps policies require the sponsor to demonstrate that it has the authority and financial capacity to fulfill its responsibilities. The Corps is responsible for inspecting the facilities and following up with the sponsors on any problems detected. Flood control levees clearly demonstrate the importance of sponsor maintenance. The effectiveness of the levees may significantly deteriorate over time if they are not properly and continually monitored and maintained. Corps inspections have varied in terms of detail, and limited funding has resulted in reduced efforts. Inspection of completed projects is one of the Corps’ “12 Actions for Change.” The Panel strongly supports the Corps’ efforts in this area.

#### **RECOMMENDATION 6: COST-SHARE REQUIREMENTS**

**The Corps should implement the ability-to-pay provisions provided for in the Water Resources Development Act of 2000. It should review the current provisions for flood damage reduction programs to determine if they are too stringent and, if so, make appropriate changes.** Cost share requirements serve important purposes, but they also can negatively impact low-income areas that might not be able to fund “optimal” projects. Not only does this raise issues of equity, but the result can be mismatched projects and “systems that aren’t systems.” These results can be deadly. Under current regulations, the ability-to-pay provisions appear to have little practical impact, raising the question of whether they effectively accomplish Congressional intent.



## PANEL AND STAFF

### PANEL

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