

Testimony of Major General Robert Griffin
Director of Civil Works, U.S. Army Corps of Engineers
before the U.S. Commission on Ocean Policy
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Admiral Watkins, Commissioners,

I appreciate your invitation and this opportunity to discuss the roles and responsibilities of the U.S. Army Corps of Engineers in the coastal zone.

Who We Are

The Corps of Engineers is one of the Army's major commands, and has missions to provide construction for the Army, Air Force and other Defense organizations; engineering and construction management support for approximately 60 non-Defense agencies; and a Civil Works program under which we are stewards of much of the Nation's water resources. I am Director of the latter program. The Corps of Engineers consists of over 300 military personnel and 35,000 Federal civilian employees. We are organized into a headquarters, eight regional divisions and, under them, 41 Engineer Districts, plus seven laboratories and five other field activities. The Civil Works Program is carried out in 38 of those 41 districts, and involves about 170 military and 24,000 civilian employees, supported by hundreds of thousands of contractor employees who perform a major part of our engineering and design work and practically all our construction.

The major missions of the Civil Works program are navigation, flood damage reduction, and environmental stewardship and restoration. Our projects also provide benefits in hydropower, water supply and quality and recreation. These projects all arise through a well-established study process, and are individually authorized and funded by Congress. In addition, the Civil Works program regulates work done by others in the waters of the U.S., and provides emergency engineering and construction support in cases of natural or manmade disasters. The annual appropriation for this program is approximately \$4.5 billion.

The Corps and Ocean Policy - Navigation

The Civil Works Program of the Corps intersects National Ocean Policy in several key areas. The first and perhaps the most obvious areas is regulation of ocean and estuary disposal of dredged and fill material under the Marine Protection, Research and Sanctuaries Act and the Clean Water Act. Navigation is the largest of our Civil Works missions. We maintain channels and 926 ports, including 197 major commercial ports handling more than 250,000 tons of cargo each year. We operate and maintain nearly 12,000 miles of commercial inland and intracoastal waterways, including 240 lock chambers. In the process, we dredge 285 million cubic yards of material each year.

This Marine Transportation System (MTS) is tremendously important to our increasingly trade-based economy, where foreign trade represents almost 30 percent of our Gross Domestic product. Excluding trade with Mexico and Canada, approximately 95 percent of our trade moves by water. The Corps role in the MTS includes both waterside improvements including channel deepening and widening in partnership with state and local port authorities and operation and maintenance of the deep draft and inland system. These efforts are partially funded by taxes collected through the Harbor Maintenance and Inland Waterways Tax.

Navigation accounts for nearly 40 percent of our budget. Demand here is great. The total volume of domestic and international marine trade is expected to double by 2020. An increasing percentage of this trade is moving in vessels requiring 50-55 feet in depth. Improving channels to accommodate this increased trade and larger ships will increase dredging and dredged material disposal requirements.

This single fact alone could consume all of our creative thought process in seeking solutions to the myriad of challenges that we will face. Couple that with a waterborne transportation infrastructure that is aged, fragile and operating in our nation's inland rivers and watersheds with sensitive habitat, endangered species and many other environmental issues. Add to that the rapid growth and development pressures in our coastal zone, including coastal storm damage protection and coastal stabilization needs. Then, just for good measure, consider all these in a context of unprecedented needs for increased security and infrastructure protection. That will give you an idea of the challenges we face in the coastal zone.

The Corps and Ocean Policy – Shore Protection

Shore protection, meanwhile, has been part of the Corps program since mid 1950's – a small but growing part of program as population moves to the coastal zone. Our shore protection projects, like those providing flood damage reduction elsewhere, are cost shared with states and local governments under the Water Resources Development Act of 1986. These are extremely popular projects with state and local governments since they protect property while enhancing beach recreation and promote economic revitalization. Our shore protection projects have largely evolved with expanding knowledge of coastal process from hard structures into soft solutions like beach nourishment. Despite its popularity, however, the shore protection program is controversial internally and externally, with questions of the appropriate financial role of the Federal government in view of the localized benefits, and the question of whether a program of this type encourages unwise coastal development.

Balancing needs

An emerging and increasing part of the Civil Works program is aimed at using the scientific, engineering and collaboration skills of the Corps to restore the Nation's environment.

Our major challenge is to meet our Nation's economic needs while protecting and restoring our critically important and valuable near-shore and estuarine resources. Navigation and the environment are not incompatible. Ongoing deepening projects at Houston and Oakland are contributing to ecosystem restoration by using all suitable material beneficially to create wetlands and shallow water habitat.

The Corps of Engineers is a multi-faceted agency, and as such our roles and responsibilities include formulation, planning, engineering and design, construction, and operation and maintenance of our Federal water resource development projects. In conjunction with this responsibility is our commitment to environmental stewardship of the Nation's navigable waters, coasts, and wetlands.

Last Spring, the Chief of Engineers, Lieutenant General Robert Flowers, announced the Environmental Operating Principles to be applied to all our activities – civil and military:

1. Strive to achieve Environmental Sustainability.
2. Recognize the interdependence of life and the physical environment.
3. Seek balance and synergy among human development activities and natural systems
4. Continue to accept corporate responsibility and accountability
5. Seek ways and means to assess and mitigate cumulative impacts
6. Build and share an integrated scientific, economic & social knowledge base
7. Respect the views of interested individuals & groups

Partnering

The Corps Civil Works program is done in close partnership with states and local governments and increasingly private non-profit groups like the Nature Conservancy and Ducks Unlimited. The most notable example of course is the Everglades restoration but much of this work is occurring in our oceans estuaries and coastal zone though efforts like the Coastal America partnership.

We have formed partnerships with many other Federal and State agencies at the national, and regional levels, and have formal Memoranda of Understanding with many of these agencies to ensure our continued dialogue and coordination. We seek opportunities to ensure our respective efforts support, but do not duplicate, each other. A good example is the recently published Proceedings of the Marine Transportation System Research and Technology Conference held in November, 2001.

Leveraging our joint resources and research and development expertise is something the Corps has been committed to for a long time. Our premier field research facility located at Duck, North Carolina has repeatedly offered unprecedented opportunities for corroborative, focused coastal engineering R&D experiences with as many as 100 researchers from several Federal, international, and state organizations and institutions participating. Through our Coastal Engineering Research Board, our involvement in the International Navigation Congress (PIANC), our participation in the Interagency Committee of the Marine Transportation System, the Oceans Board, and numerous Corps

sponsored workshops, seminars and conferences, we are committed to ensuring our efforts in the coastal zone are fully coordinated.

While we will continue to plan and design at the project level in response to the needs of local sponsors, there is a broader based need to begin to look at systems of projects and related regional activities that impact those projects.

Regional Sediment Management

Integral to almost all inland and coastal navigation and flood damage reduction projects is the consideration and management of sediment. You can not do anything in the coastal zone or watersheds without impacting something else adjacent to or downdrift/ downstream of the specific activity. We have initiated a new concept “Regional Sediment Management” which is an approach for managing sediments from projects incorporating principles of integrated watershed resources management. A regional sediment management demonstration program in the coastal zone was initiated in 2000 to examine and evaluate issues and processes required to establish and manage sediments in a regional coastal system.

We are using a program of research and demonstration projects to test ways that we can manage our dredging activities in the coastal zone in a way that retains sand in the littoral to foster a more balanced, natural system process and reduce project costs. These navigation and environmental challenges must be addressed within the context of rapidly increasing population growth in the coastal zone and the resulting tensions between residential, recreational, and economic uses of the coastal zone and the need to preserve, protect and restore critically important ecological resources.

The Regional Sediment Management concept involves the following:

- Conservation and management of sediments in the littoral zone, estuary or watershed – viewing sediment as a resource.
- Attempting to “design with nature”, using an understanding of sediment movement in a region and interrelationships of projects and management actions.
- Conceptual and programmatic linkages among Corps projects, studies and activities involving or affecting sediment in a region (navigation channel maintenance, flood and storm damage reduction, ecosystem restoration and protection, beneficial uses of dredged material).
- Linkages between and among operating and new projects to achieve greater efficiency –typically through cost savings.
- Emphasis on improved program effectiveness through collaborative partnerships with other agencies and across levels of government.
- Identifying and overcoming institutional or procedural impediments to more effective and efficient management.
- Recognition that this system approach is also important to management of fine grained sediments and riverine systems.

The regional sediment management concept is not just for coastal environments. It can also apply to our inland watersheds and estuaries, which brings me to the first of two initiatives for which I seek your support.

New Coastal Initiatives – Estuary Habitat Restoration

The Corps of Engineers is participating with other Federal agencies to implement the Estuary Habitat Restoration Act - a nationwide program to restore a million acres of estuary habitat by the year 2010. Obviously, every one of our major ports is located in an estuary. Expanding these ports at the same time we protect and restore habitat is both a challenge and an opportunity to demonstrate that we can do sustainable development and have smart growth. Industrial society and a burgeoning population have challenged the natural beauty and wildlife that the original settlers first saw in our native estuaries. Restoration will require good science and innovative technology. To achieve this goal, we are establishing a strategy and rules for selecting projects developed by local coalitions. The Army, NOAA, EPA, the Fish and Wildlife Service, and the Natural Resource Conservation Service have formed a council to develop a strategy for implementing this Act. Our proposed national strategy was recently published in the Federal Register for public comment.

New Corps Initiatives – Coastal Louisiana

The second initiative is one that, until a few years ago, might have been thought impossible. Corps and the State of Louisiana are working together to restore and protect that State's shrinking coastal wetlands, and stem an ongoing loss of up to 20,000 acres per year. Louisiana accounts for 80 percent of the Nation's current loss of coastal marshes. The impacts, in turn, range far beyond Louisiana. These wetlands represent such a large and important part of our Nation that I believe stopping the loss of wetlands in Louisiana is actually enough to change this resource to a net gain in wetlands, considering all our other National restoration efforts.

Coastal Louisiana lost over one million acres of coastal habitat between 1932 and 1990. That's one quarter of the original wetlands and an area larger than Rhode Island. If those loss rates continue into the future, even taking into account our current restoration efforts, Coastal Louisiana will lose an additional 630,000 acres of coastal marshes, swamps, and islands by 2050. That's nearly 1,000 square miles more than we have lost up until now.

The commercial fisheries of the Gulf are of national importance. A huge part of our nation's oil and gas production comes through coastal Louisiana at places like the Henry Hub. Also of national importance are the petrochemical industries; recreational saltwater and freshwater fisheries, waterfowl winter habitat, and strategic petroleum reserve storage sites, all in coastal Louisiana and now all at risk.

The situation is critical, and a sense of urgency is appropriate for several reasons. First and foremost, the loss of wetlands and the degradation of barrier islands have exposed a

significant amount of the State's infrastructure, and our national energy infrastructure, to the risk of massive damage in a major hurricane. Second, the sooner we make changes to stem the annual losses and start building back the barrier islands and coastal marshes, the lower the overall cost of restoration will be. Third, there appears to be a consensus forming among Federal, State and private interests on how to solve the problem, and we need to take advantage of that momentum now. The concept is simple, and articulated in the *Coast 2050* paper, which basically calls for river diversions and reconstruction of barrier islands.

Building on the Breaux Act effort, which began in 1990, the Corps and the State have undertaken a study to develop alternative plans that ultimately support restoration of the coastal wetlands. Instead of focusing on a myriad of individual projects, they are developing a new Comprehensive Coastwide Ecosystem Restoration Feasibility Study that will lead to a plan for sustaining a system with the essential functions and values of a natural ecosystem. The study will identify and explore long range, large scale ecosystem restoration strategies to restore and protect coastal Louisiana.

The study will focus on the needs, problems and opportunities of coastal Louisiana, but will also consider related problems in adjacent coastal states and within the Mississippi Valley. We intend to consider other water resources projects that significantly influence the coastal area should be considered in formulating the Comprehensive Plan. There may be solutions, that are beyond the capability of the State and the Corps, that this Commission could be recommended for further study and coordination. In my view, this is a challenge of a magnitude that demands the attention of the best engineers and scientists that the country – not just the Army and Louisiana – has to offer.

The Louisiana Coastal Area Ecosystem Restoration project will be a complex undertaking that may eventually involve resources all along the Gulf Coast and throughout the lower Mississippi River Basin. Our mission, in which we seek the support of our partners, will be to ensure that these restoration efforts are productive, cost-effective, and sustainable; and that the needs of the environment, navigation, flood protection, and other uses will be appropriately balanced.

Corps Strategy and Watershed Management

The initiatives I just outlined are part of what we hope will be a new direction for the Corps of Engineers – one that gets us away from projects with a single focus, designed for a specific locality, and begin to look at watersheds as integrated systems, where what we and others do in one place has numerous consequences elsewhere.

U.S. water policy has evolved in response to legislative authorities, water use demands, environmental health, and economic climate. With heightened public awareness of the interrelationships among all uses of water, a wider range of stakeholders is interested in making decisions on water resource planning. The concept of watershed planning is not new to the U.S. Army Corps of Engineers. Throughout its history the Corps has

incorporated watershed planning into the process by which it manages water resource systems. Even the Corps geographic organization – along watershed boundaries rather than State and county lines in most cases – supports the historic understanding of the need to manage water within a watershed.

This understanding and organizational concept alone, however, are not sufficient to ensure proper protection and responsible development of the Nation's water resources in the 21st century. The problems of rapid growth in certain areas are worse because responsibilities to address water needs are distributed among a multitude of government agencies and private companies, so that problem-solving efforts are typically fragmented. The results are predictable: instead of broadly supported regional solutions that address multiple needs, balance competing uses, and can be quickly implemented – we get narrowly focused, contentious and slowly implemented, uncertain and expensive, inferior solutions.

The Water Resources Development Act of 1986 greatly expanded the extent to which projects must have non-Federal sponsors to share costs with the Federal government. The concept was that willingness to share the costs was a prime indicator of serious local interest in a project. One of the consequences of increased cost-sharing requirements, however, was to shift the Corps focus from comprehensive water resources planning to one centered on the needs of the cost-sharing partner. Non-Federal interests who cost share watershed studies are bound to support local needs over broader regional goals for water management.

The Federal government has mainly been involved in issues of national or multi-state significance (interstate navigation, for example). However, a 21st Century approach to water resources management requires decision makers to integrate a complex array of public values and institutional policies, regulatory frameworks (permits, licenses, and monitoring), planning criteria, operations, maintenance and design standards, public participation, private sector business partnerships, and interstate and intergovernmental priorities, all within a process that fosters transparency and trust. The scope, technical complexity, the magnitude of water issues, and the extent of desired participation all lend themselves to Federal involvement.

Federal agencies will need to adopt the following roles and responsibilities:

1. Promote ecosystem health,
2. Provide facilitation and support where non-Federal entities are in conflict or require special resources,
3. Support public infrastructure system reliability,
4. Provide national-level information,
5. Encourage advancements and innovations in technology, and
6. Promote the highest levels of science and research, and
7. Promote solutions through partnerships – both public and private sector.

Listening Sessions

In the summer and fall of 2000, the Corps of Engineers held a series of 16 “listening sessions” around the Nation to hear what Americans thought were the major water challenges for the 21st Century. The participants provided valuable input for Federal involvement that would best help various levels of government face these challenges.

One of the frequently raised topics was the need to address water challenges from a watershed view, highlighting collaboration and integration. Some present-day watershed management efforts, such as the Comprehensive Everglades Restoration Plan, already promote active participation of all interested parties in the planning and decision-making process.

The Corps believes that this concept of integration is the key to reforming America’s water development, protection, and restoration. In its recently released *Watershed Perspective for the Civil Works Program*, the Corps describes the foundation for watershed activities and involvement.

The Watershed Approach is based on:

1. Seeking sustainable water resources management,
2. Integrating water and related land management,
3. Considering future water demands,
4. Coordinating planning and management,
5. Promoting cooperation among government agencies at all levels,
6. Encouraging public participation,
7. Evaluating monetary and non-monetary trade-offs,
8. Establishing interdisciplinary teams, and
9. Applying adaptive management as changing conditions or objectives warrant.

Unlike the single-purpose, project-driven initiatives that the Corps had been directed to accomplish in the past, the perspective of this new watershed approach is based on multi-purpose, multi-objective management, examining all water needs in the watershed.

Within this broader context, watershed partners would collaborate to simultaneously address multiple objectives - environmental quality, social effects, and national and regional economic development. Projects may still be needed, but would be undertaken with the advantages of a clear public understanding of the priorities and a collaborative working environment. New projects, or those already in operation, would be monitored for performance against watershed objectives.

Such an approach considers all interests and viewpoints, gives special weight to state and local governments and stakeholders, involves all interested Federal agencies, considers problems and solutions in a broader context, opens up the analysis and problem solving process, encourages innovative solutions, and analyzes the full range of benefits and impacts.

The Path to Better U.S. Water Resources Management

Water experts and the public are increasingly looking towards integrated water management as the way to achieve environmentally sustainable solutions that can also be implemented faster and at a lower cost than traditional engineering projects. Assuring the success of this approach, however, will eventually require landmark legislation.

Major elements of the legislation would address:

- Organization of a Federal agency consortium to ensure unity of purpose and collaboration on watershed policy at the National level among the U.S. Army Corps of Engineers, the Department of Interior, the Department of Agriculture, the Environmental Protection Agency and other appropriate Federal agencies.
- Development of regional watershed resource teams to ensure integration and collaboration among Federal, State, local and Tribal agencies and non-government interests within watersheds.
- Establishment of procedures that promote inclusion by individuals and non-government organizations in watershed resource planning and management decisions.
- Innovative resourcing and implementation of solutions involving the full spectrum of public and private sector stakeholders.

Education

We must all continue to find ways to increase the knowledge and awareness of the public concerning the importance of our oceans and coastal zone to their well being, as well as their impact on the viability of our ocean and coastal environments. We have recently introduced an educational outreach program for kindergarten through 12th grade concerning our navigation mission through an interactive website. Since its introduction in April of this year, we have received over 750,000 “hits” mostly from science teachers, students and others seeking information about science, engineering and general information about the Corps navigation program. There are many opportunities for all of us to spread the message about the value of our oceans and the need for all Americans to take part in preserving and protecting our coastal resources. We need to work together to improve this dialogue.

Conclusion

There is a growing recognition that local problems have regional dimensions, and must be addressed in this context. The watershed approach accommodates these issues through collaborative, intergovernmental and private partnerships that are actively engaged in comprehensive programs focusing on the planning and management of water resources. This allows water managers and decision-makers to better understand the cumulative effects of their activities and establish relationships among the critical issues within the watershed. That understanding opens the door to a new range of solutions to water problems that no one agency would have developed, or could carry out, by itself.

Preserving and protecting the environment – to include that of the Nation’s estuaries and coastal wetlands - is integral to the Army’s mission as a steward of our water resources,

and providing for the well being of this and future generations. As stewards of our nation's natural resources, we are committed to maintaining healthy and sustainable environments.

The Corps of Engineers has been at work on the Nation's shores practically since its beginnings – building coastal fortifications and lighthouses in the 19th Century and jetties, seawalls and beach nourishment projects in the 20th. The missions of the Corps – on the shores as well as elsewhere - have changed over the course of the Nation's history, and will continue to change.

Thank you.