

A National Dialogue
About America's
Water Resources Challenges
For the 21st Century



United States Army Corps of Engineers

America's water resources demands are changing. We are listening.

Last year, the United States Army Corps of Engineers invited Americans to “Join the Dialogue” about our nation’s water resources.

The purpose of the Listening Sessions was twofold. First, it was to provide citizens an opportunity to voice concerns about pressing water resources needs, problems, and opportunities that impact their lives, communities and future sustainability. Secondly, it was to provide citizens an opportunity to tell us what they believe the Federal role should be in addressing those concerns.

From June through November 2000, we conducted 14 regional listening sessions across the country, plus two national-level meetings to give citizens the opportunity to voice their concerns. A cross-section of concerned stakeholders participated in the workshops —nearly 1300 attendees—including representatives from Federal, state, and local agencies, tribes, environmental organizations, port authorities, private companies, legal professionals, livestock/farming operators, navigators, journalists, and homeowners.

We present 10 challenge areas that the participants of these listening sessions discussed. Actually, the attendees provided more than 3400 specific concerns, which we regrouped into 10 challenge areas. Each challenge is presented in terms of some key facts and a short list of views from participants about what they believe the Federal role should be in addressing these challenges. More detailed and complete reports are available, and we encourage you to review them on our website:

www.wrsc.usace.army.mil/iwr/waterchallenges.

In particular, we invite you to read: *America's Water Resource Challenges for the 21st Century: National Report on Identified Water Resource Challenges and Water Challenge Areas*.

Locations of the Listening Sessions



- *Regional Listening Sessions*
- ▲ *National Level Meetings*



This brochure serves as an abstract of this report to help you become quickly familiar with the pressing issues that were of concern to participants:

MARINE TRANSPORTATION SYSTEM

RESTORING AND PROTECTING THE ENVIRONMENT

MANAGING WATERSHEDS HOLISTICALLY

FLOODPLAIN AND COASTAL ZONE MANAGEMENT

RESPONDING TO NATURAL DISASTERS

COMMUNITY WATER INFRASTRUCTURE

REGULATING DREDGE AND FILL ACTIVITIES

RECREATION

PROJECT PROCESSES

INSTITUTIONAL CHANGES

Solutions to water resources challenges are complex and will require the concerted effort of many government organizations, at all levels in, working for



the good of the nation. This effort however, is not something for the government to address alone. Solutions will not be successful without the involvement and participation of all Americans. The more people that get involved, the better the results will be.

The views expressed in this document represent opinions of those who attended the Listening Sessions. Although the Army Corps of Engineers sponsored the meetings, the views summarized in this brochure do not reflect official policies or positions of the Corps.

The information contained in this document is intended as a resource that can be used to further the dialogue about how to address water resources challenges in the future. We want the dialogue to continue and will be meeting with other Federal agencies to seek solutions to problems that have been expressed. We will also meet with non-government organizations to better define the challenges and to seek ways to address them. We have been in the process of updating our Civil Works strategic program plan and have used information from the Listening Sessions to develop our goals and strategies.

MARINE TRANSPORTATION SYSTEMS

“The challenge is to plan for international commerce”

– Atlanta Session



World Market Competitiveness

- About 29% of the Gross Domestic Product and 13 million jobs (20% of U.S. employment) rely on international trade, and most goods travel by water for at least part of the journey.
- The marine transportation system moves more than 2 billion tons of freight, over 60% of the nation’s grain exports, and 95% of soybean exports.
- Over 99% of U.S. overseas international freight by volume – 1.3 billion tons – moves on Federally maintained waterways each year.
- The U.S. imports more than 3.3 billion barrels of oil each year.
- Today’s mega-containerships, need deep-draft channels and harbors (45-50 feet) to avoid running aground.

Infrastructure Performance

- Lock delays attributed to waiting in line to use the lock are currently over 550,000 hours annually, translating into about \$385 million in increased transportation costs.
- Most of the locks on the inland navigation system were built in the 1930’s with a design life of 50 years.

Growing Demand

- Over the next 20 years, economists estimate that seaborne commerce is expected to double and inland navigation to increase by more than 35%.

Americans say the Federal government should:

- Ensure that the marine transportation system built during the 1930’s can meet demands of today and tomorrow.
- Use problem-solving forums with all stakeholders to build consensus about water transportation approaches and solutions.
- Seek solutions that balance economic and environmental needs.
- Educate the public on how navigation infrastructure supports national prosperity and defense.
- Improve the process for deciding about dredge disposal sites.
- Eliminate the backlog of navigation projects.
- Make greater use of the Inland Waterway Trust Fund for improving system capacity and meeting environmental needs.

RESTORING AND PROTECTING THE ENVIRONMENT

“With every new undertaking, we must ensure that we leave the environment in the same or better shape than it was before we began” – Vancouver Session



Impacts by Humans

- An estimated one-third of the native U.S. flora and fauna is vulnerable, imperiled or critically imperiled.
- At least 30 ecosystem types within the U.S. are critically endangered, having lost more than 98% of their extent since European settlement.
- Currently 511 animal species and 736 plant species are federally listed as threatened or endangered in the U.S.
- Major causes of habitat loss and degradation include: agriculture; commercial development; grazing; pollutants; infrastructure development; logging and mining; oil, gas, and geothermal exploration; and development.
- Approximately 64% of 694,000 miles of surveyed rivers fully support habitat and recreation. The major problems of imperiled rivers are sedimentation and excess nutrients.
- States, tribes, territories and interstate commissions report that, in 1998, about 40% of U.S. streams, lakes and estuaries that were assessed were not clean enough to support uses such as fishing and swimming.

Biodiversity

- Identified threats to biodiversity are habitat destruction, non-native species intrusion, over-exploitation, disease, and pollution.

- Estimates are that between 70-90% of riparian habitats have been lost or altered, adversely affecting the viability of plant and animal species.

Importance of Wetlands

- Each year, wetlands provide an estimated \$14.8 billion in ecosystem services such as regulating floods and filtering waste.
- Over 53% of wetlands in the contiguous U.S. have been lost due to human actions.
- About 35% of all Federally listed rare and endangered animal species either live in or depend upon wetlands.

Americans Say the Federal Government Should:

- Revise Federal planning policy to **make the environment an equal goal** with economic benefits in project selection.
- **Create cost-sharing incentives** to encourage environmental benefits.
- Create **consistency among agencies** in environmental regulations, especially regarding wetlands.
- Assure that **unavoidable environmental impacts** are fully mitigated.
- **Assess and monitor:** environmental health, test mitigation techniques, and develop environmentally friendly technologies.
- Educate the public on environmental issues.

MANAGING WATERSHEDS HOLISTICALLY

“Watersheds cross political boundaries and require Federal, state and local agencies to develop effective teams to deal with problems on a watershed basis” – Woburn Session



Watershed Perspective

- “Watershed” refers to a geographically defined drainage area and all the human and ecological resources and processes there. A watershed can range from a few square yards to more than 1 million square miles.
- In the U.S., over 2,000 small watersheds fall within 21 large river basins.
- Activities in small, upstream watersheds impact processes in larger, downstream watersheds.
- Project cost sharing requirements and political boundaries can and often do complicate the adoption of a holistic focus.
- Full watershed impacts are generally not considered when developing local projects.
- The Water Resources Development Act of 2000 broadened the Federal watershed perspective to include the full range of water resources (for example, groundwater, storm water, non-point source pollution, water supply, wetlands, sedimentation, and ecosystem restoration).

Americans Say the Federal Government Should:

- Analyze water resources comprehensively at a watershed level.
- Assist in the development of regional “visions” for each major watershed.
- Help identify watershed-level goals that can be implemented locally.
- Seek water resources solutions for ecosystem restoration and environmental sustainability along with economic development.
- Coordinate watershed planning involving all stakeholders and agencies (Federal, state, and local).
- Create forums and conflict resolution mechanisms.
- Help to identify issues for integrated management and planning, including storm water, non-point source pollution, water supply, wetlands, sedimentation, and ecosystem restoration.

FLOODPLAIN AND COASTAL ZONE MANAGEMENT

“Protect water recharge areas such as wetlands and floodplains”

—Omaha Session



Floodplain Risks and Costs

- Only 20-30% of at-risk buildings are covered by national flood insurance.
- Less than 15% of the more than 20,000 U.S. communities are protected by flood protection measures.
- Urban development in floodplains continues, increasing annually by 2%.
- Most floodplain maps are outdated – by more than 20 years in many communities – and nonexistent in many developing areas.
- Floods cost over \$4 billion annually in property losses and emergency assistance.

Return on Investment

- An estimated \$706 billion in damages have been prevented through the nation's investment in flood damage reduction measures. The cumulative cost of constructing and maintaining these projects is about \$119 billion, yielding about a six to one return on investment.

Coastal Hazards

- Every year, 1,500 structures and their land could be lost to erosion, costing property owners \$530 million.

- Along the east and Gulf Coasts, about \$3 trillion in shoreline infrastructure is vulnerable to erosion from flooding and other natural hazards.
- Global warming is likely to increase the frequency of tropical storms
- Since 1980, the population migrating to the coasts has outpaced the total U.S. population growth by 15%.

Americans Say the Federal Government Should:

- Update floodplain maps.
- Use both structural and non-structural means to reduce flood damages.
- Achieve more synergy across agency programs for better floodplain management, prevention, and response.
- Discourage future development in floodplains.
- Promote watershed planning and work for balanced, environmentally sustainable flood solutions.
- Restore, nourish, and monitor beaches.
- Establish national standards – including technical design, economics and research – for coastal shore protection.
- Coordinate coastal restoration and protection among Federal agencies.

RESPONDING TO NATURAL DISASTERS

“Improve preparedness to minimize destruction from natural disasters” – Dallas Session



Tragic and Costly Disasters

- The cost of all disasters runs high in terms of environmental, economic, and social impacts: more than 10,000 deaths since 1900 and over \$180 billion in damages just between 1998-2000.
- In 2000, the nation suffered losses of 7.3 million acres of forests, homes, and other flora due to fires.
- From 1987-1997, there were six earthquakes in California with a magnitude of 6.5 or greater resulting in almost \$26 billion in losses.
- Risks are increasing as the population grows and moves to the coasts and from potential weather calamities from global warming.
- Overall extreme weather events cost the Nation an estimated \$15.8 billion a year.

- Floods and winter storms cost the U.S. an estimated \$3.4 billion and 150 lives each year.

Americans Say the Federal Government Should:

- Proactively prepare, coordinate and plan for natural disasters.
- Provide timely and efficient natural disaster response across Federal, state, and local agencies.
- Better balance water distribution between municipalities during droughts.
- Improve coordination across Federal agencies regarding disaster assistance programs.
- Issue general permits (404 permits – see Regulating Dredge and Fill Activities Challenge area) so that people can respond effectively and efficiently during emergencies.

COMMUNITY WATER INFRASTRUCTURE

“In this time of economic prosperity we are not spending money to repair, maintain, and improve infrastructure. If not now, when?”

– Louisville Session



Growing Needs

- Although Americans spend \$59 billion every year for clean water, the country faces an annual shortfall of \$23 billion.
- Metro areas have grown from 9 to 19% of U.S. land area since 1960.
- From 1970 to 1990, more than 30,000 square miles (19 million acres) of once rural land in the U.S. became urban.
- As development extends outward from the core, city infrastructure service and maintenance costs increase exponentially.

Lacking Infrastructure

- Approximately 17 million people in the U.S. are served by sub-standard facilities.
- Public infrastructure investments have declined from 3.9% of the Federal budget in 1960 to 2.6% today. Of this amount, the share for water resources has declined from 1 to .2%.
- Approximately 900 U.S. cities have combined sanitary and sewer systems, creating sewage overflows during major storms.

- The U.S. has more than 74,000 dams, of which approximately 2,000 are owned by the Federal government. The average age of the dams is 40 years.
- Approximately 1,600 significant hazard dams are within one mile of a downstream city
- The U.S. has about 450,000 brownfield sites encompassing 5 million-acres.

Americans Say the Federal Government Should:

- Develop an objective infrastructure project prioritization system.
- Increase financial assistance for water infrastructure in poor and rural communities.
- Consider multi-purpose water resources projects.
- Fund upgrades to water/sewer systems in older urban areas and fund development in growing areas.
- Assist states and local governments in developing “smart growth” programs that balance protection for the environment, economy, and quality of life.
- Encourage development practices that minimize environmental impacts.
- Provide funds for buying and cleaning brownfields.

REGULATING DREDGE AND FILL ACTIVITIES

“The permitting process should be streamlined and more user friendly”

– Williamsburg Session



Numerous Permits

- In Fiscal Year 2000, the Corps processed nearly 90,000 permits. Of these, 90% were approved within 60 days, while 2500 complex permits required four months or more.
- A majority of authorized projects are modified and conditioned to protect the aquatic environment and fulfill other public interests while allowing needed economic development.
- The Corps denied 180 permits in Fiscal Year 2000.

Wetlands

- During Fiscal Year 2000, permit applicants were authorized to fill approximately 18,900 acres of wetlands. In return, applicants were required to create, enhance, restore, or preserve more than 44,000 acres of wetlands.

Nationwide Permits

- The Corps recently revised its nationwide permit program to better safeguard the aquatic environment while assuring expedited review for projects having minimal impacts.

Enforcement

- During Fiscal Year 2000 there were 5,700 violations reported. Most were resolved through voluntary restoration or by using after-the-fact permits. Less than 1% required litigation.

Americans Say the Federal Government Should:

- Create a “one-stop” permit source, rather than the current multi-agency system.
- Sponsor training workshops on the permit application and permit appeals processes.
- Ensure that permit offices continue to provide assistance to applicants, such as proposing alternatives.
- Grant long-term regulatory permits to local sponsors for their project maintenance responsibilities.
- Develop a database of cumulative impacts of permitted activities.
- Weigh regional differences in the permitting process rather than apply nationwide standards.
- Develop greater consistency Corps-wide for both permitting and application reviews.
- Develop an Internet system to provide permit status for individual applicants.
- Pursue opportunities for general permits for dredging and filling to insure rapid recovery from emergencies.

RECREATION

“Balance the needs of various recreation types and find suitable multiple-use management solutions” – Washington, DC Session



High Use

- Fifty million people fish in the U.S. each year.
- Most of our nation’s outdoor recreation – 75% -- is within a mile of streams or another body of water.
- The nation’s nearly 1,800 Federal lakes host 900 million visits a year.
- Over 3 million visitors attend educational programs each year.
- Americans spend \$15 billion visiting Federal parks and recreation areas each year, resulting in 500,000 jobs.

Disrepair

- One-fourth of the nation’s recreation sites at water resources projects are in need of significant modernization; many sites have health and safety concerns.
- The current backlog of deferred maintenance at Federal lakes now exceeds \$800 million.

- Though many regions rely on tourism and outdoor recreation for economic stimulus and employment, numerous recreation areas are degraded and overcrowded.
- Most recreational facilities were built in the 1960s and do not meet the needs of people today.

Conflicting Priorities

- There are growing conflicts between recreational uses of waterways and the marine transportation system. Both recreation and commerce have increased on waterways, causing congestion and potential safety issues.

Americans Say the Federal Government Should:

- **Make** recreation a Federal priority.
- **Build** and improve facilities.
- **Maintain** recreation facilities currently in use.

PROJECT PROCESSES

“Streamline the time to complete design and construction process for projects” – Sacramento Session

Project Delivery

- The average planning time of a Corps of Engineers project is roughly 5.6 years.
- As of 1996, it took the Corps an average of 1.5 years for reconnaissance studies, and 3.4 years for feasibility studies, with a one-year gap in between.
- Now is the time to re-examine study methodologies, especially economic principles and guidelines for cost-benefit studies.
- Under Federal rules, the Federal objective of water resources project planning is to contribute to National Economic Development, consistent with protecting the Nation's environment.



Americans Say the Federal Government Should:

- Incorporate environmental sustainability principles into project development processes.
- Deliver projects faster. Reduce the time lag between concept and construction.
- Emphasize full stakeholder involvement from a project's beginning.
- Improve sponsor communication, education, and involvement in decision-making.
- Develop consistent interpretation of National Economic Development (NED) benefits.
- Provide efficient processes that incorporate stakeholder inputs early on.
- Include due consideration of economic, social, and environmental benefits during project formulation.

INSTITUTIONAL CHANGES

“The multiplicity of federal agencies involved in water programs may find themselves working at cross purposes if there is not better coordination of the their policies”

– Washington, DC Session



Multiple Agencies

- Federal responsibility for water planning, development, and regulation is fragmented across 34 agencies.
- Federal agencies prefer and encourage watershed approaches but lack resources to conduct or complete watershed studies on their own.

Cost Sharing Hurdles

- Project cost sharing requirements prevent poor or rural communities from getting their water resources needs met.
- Some communities meeting the government's criteria did not get projects built because they lacked funds for cost sharing during design and construction phases. Some small communities also lack the required technical expertise to participate as project sponsors.

Local Burdens

- Project completion dates have been extended frequently due to Federal funding ceilings and shortfalls. This has resulted in inflated project costs and increased cost sharing burdens on sponsors.

Americans Say the Federal Government Should:

- Better coordinate between agencies to reduce policy overlaps and conflicts.
- Fund pilot holistic watershed management study(s) at full Federal expense.
- Conduct a gap analysis of all water resources.
- Develop watershed or river basin commissions to coordinate basin activity.
- Consider funding a national group such as the Water Resources Council to coordinate water resources policy.
- Provide full funding over the project term.
- Develop policies sensitive to a community's ability to cost share.
- Instead of funding individual programs, fund all water resources programs using a “water resources appropriation bill.”
- Reduce construction backlogs of authorized water resources projects and justified maintenance.
- Encourage multi-objective approaches.
- Increase interaction and communication with stakeholders.





**US Army Corps
of Engineers®**

For more information, visit the Water Challenges Web Site:
www.iwr.usace.army.mil/iwr/waterchallenges

or call:
(877) 447-6342
(703) 428-8535