

AMERICA'S WATER RESOURCES CHALLENGES FOR THE 21ST CENTURY

SUMMARY REPORT ON IDENTIFIED WATER RESOURCES CHALLENGES AND WATER CHALLENGE AREAS

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by

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I. INTRODUCTION

Over a period of approximately five months (June 16th to November 9th, 2000) the U.S. Army Corps of Engineers and its Institute for Water Resources (IWR), conducted 14 regional listening sessions and two national listening sessions throughout the United States. The listening sessions were a means of obtaining information and feedback from a variety of stakeholders and concerned citizens regarding the nation's water resources. This report summarizes the purpose and objectives of the sessions, how the sessions were conducted, the information generated during the sessions, and how the information from the sessions was compiled and studied.

BACKGROUND

The U.S. Army Corps of Engineers (Corps) has managed aspects of the nation's water resources for more than 200 years. Recently, the Corps identified six general water resources challenges that require attention in order to accommodate the needs of the nation for the 21st century. These six challenges are important to the current sustainability and future growth of the nation. The six challenges identified by the Corps included:

- **Aging Infrastructure** – The national investment in water resources has not kept pace with the nation's economic and social expansion. Over the last 40 years, the investment in our public infrastructure (including water resources infrastructure) has been declining relative to our Gross Domestic Product (GDP). At current investment rates, the nation's water resources infrastructure will be unable to support the greater demands of a rapidly expanding population and economy.
- **Environmental Restoration** – Even though the water resources projects built today include built-in environmental protection, the environment is still suffering from past actions. Some forests, grasslands, and wetlands have been damaged during the construction of projects. Much has been done to remediate and restore these ecosystems, but much still needs to be done to clean up, restore, and improve the environment.
- **Emergency Response** – Natural disasters cost the nation an average of \$1.5 billion annually in damages. Disasters in the form of hurricanes, floods, earthquakes, and tornadoes strike virtually everywhere in the nation. They cost people their lives, homes, livelihoods, and sense of well being. Much has been done to prepare for and mitigate these disasters, but more can be done. The nation's capability to respond to natural disasters is being stretched. The nation needs to maintain an effective response capability.
- **Marine Transportation System** – Every year more than \$1 trillion of cargo move in and out of the nation's ports and harbors. In 20 years it is expected that this commerce will double. However, the marine transportation system is nearing its capacity, which threatens economic prosperity that has been provided by the current expansion.
- **Flood Control** – Nearly 400 lakes and reservoirs, 8,500 miles of levees and dikes, and hundreds of smaller local flood protection projects have prevented close to \$500 billion in flood damages since 1950. By contrast, less than 15 percent of the nation's 20,000

communities have structural flood protection. Less than 30 percent of at-risk buildings are covered by national flood insurance. There is a need for better flood risk identification and public education. What is known is that more can be done to help prevent or minimize flooding impacts on communities.

- **Smart Growth** – The water infrastructure of many urbanized areas is beginning to show signs of decay. Water supply systems are crumbling. Finding clean water sources and protecting them from contamination is becoming more difficult. In the West and other areas, finding adequate quantities is a major problem. With a growing population, all of these issues must be addressed.

In accordance with the Government Performance and Results Act of 1993, the Civil Works program is required to submit revisions to their strategic plan every five years. As part of the current revision of the Civil Works Strategic Plan, the Assistant Secretary of the Army and Chief of Engineers agreed to involve the affected and interested public in a national dialogue. To facilitate the dialogue, IWR published an information brochure and fact sheets presenting the key, cross-cutting national water resources challenges. The Corps then conducted a series of listening sessions with interested stakeholders and the general public. The six challenges identified above were designed to promote an open discussion in which the public could define the water resources challenges of concern to them.

PURPOSE AND OBJECTIVES

A listening session is an open forum where people are given the opportunity to express views and opinions within a defined but flexible public involvement format. Two main objectives of the listening sessions were to (1) open a dialogue with stakeholders and concerned citizens in order to assess the water resources needs and priorities of the nation for the future and (2) identify what the federal role should be in addressing those water resource needs and priorities. By conducting sessions across the country, a variety of stakeholders and concerned citizens with geographically-oriented concerns could be heard. The purpose was to provide citizens the opportunity to voice concerns about pressing water resources problems, opportunities, and needs (which the Corps has labeled as “challenges”) impacting their lives, communities, and future sustainability. The Corps responsibility was to listen to the participants’ concerns and compile the information for review. Another objective was to evaluate the information provided at the sessions and develop potential trends or national Water Challenge Areas that could be described in brochures and fact sheets for educating the general public. Once all the results from the sessions were compiled, the information would be provided to decision makers and the general public to help generate informed discussions regarding future investment decisions. Lastly, applicable challenges identified at the sessions will be used to help formulate the Corps’ Civil Works Strategic Plan.

LISTENING SESSIONS

Session Locations and Schedule

In order to obtain a variety of information from a broad array of citizens, 16 cities throughout the nation were chosen to host the sessions (see Figure I-1). The 14 regional sessions were expected to not only identify national needs, but also regional interests. The two national sessions targeted participants from around the United States and were expected to focus more on the national perspective. A list of the session locations, when they occurred, the number of attendees, and the number of challenges each group identified are provided below in Table I-1.

TABLE I-1			
LISTENING SESSION SCHEDULE			
Date	Location	Non-Corps Attendees	Number of Water Challenges Identified
Regional			
6/16/00	St. Louis, MO	175	52
6/20/00	Sacramento, CA	28	47
6/22/00	Phoenix, AZ	38	23
7/11/00	Woburn, MA	25	24
7/12/00	Atlanta, GA	54	28
7/18/00	Omaha, NE	89	40
7/26/00	Honolulu, HI	33	37
8/02/00	Chicago, IL	47	39
8/07/00	Louisville, KY	120	55
8/10/00	Dallas, TX	128	35
8/14/00	Williamsburg, VA	62	45
8/17/00	New Brunswick, NJ	64	34
9/15/00	Anchorage, AK	16	21
9/19/00	Vancouver, WA	103	62
National			
10/24/00	San Diego, CA	94	--
11/09/00	Washington, DC	65	--
Totals		1,141	542

Geographic Stakeholder Representation/Session Turnout

The number of participants attending each session varied by location, but all sessions had adequate stakeholder representation. Most sessions were attended by a variety of persons with a broad range of interests in water resources. Representatives came from other federal and state

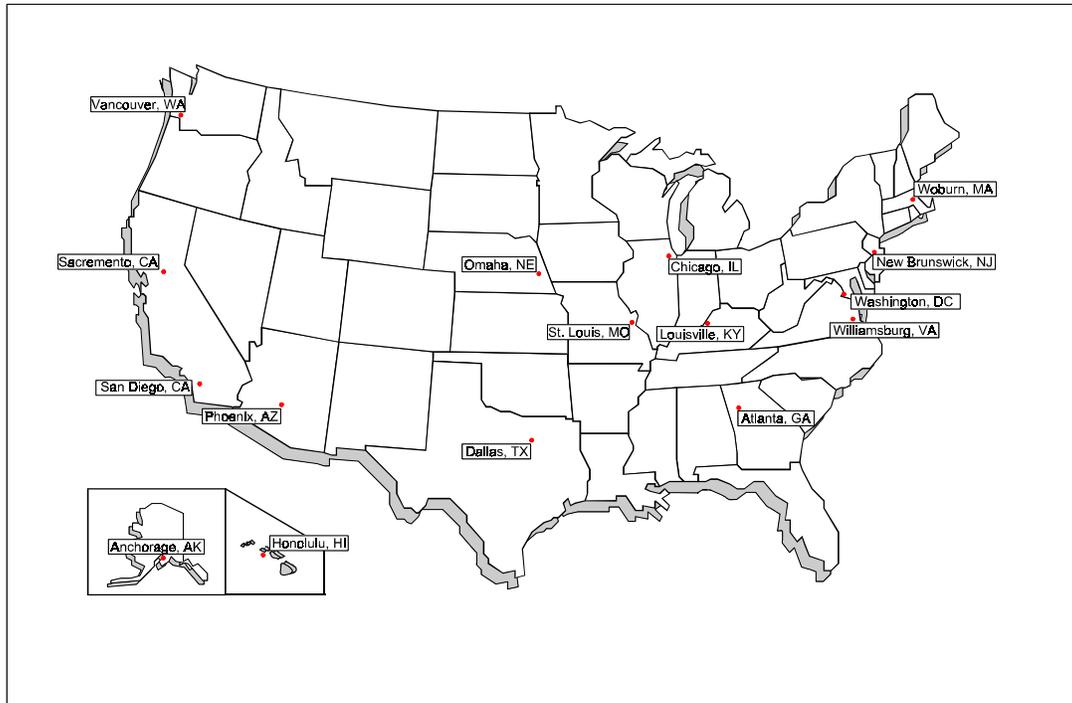


Figure I-1. Locations of Listening Sessions

agencies, tribal governments, environmental organizations, port authorities, private companies (e.g., consultants, legal professionals, tourism companies, developers, etc.), local interest groups (e.g., historical preservation groups, etc.), livestock/farming operators, journalists, and homeowners. The Corps did not set out to ensure statistical representation but focused on promoting public participation. Because of this, the results presented herein should be considered a non-scientific sampling of public opinion.

The number of participants that attending each session varied considerably from location to location (see Table I-1) and was not directly dependent on the size of the regional population surrounding each session location. Most of the sessions had approximately 2,000 invitations mailed out prior to each session. These invitations were mailed to stakeholders identified by the Corps many weeks before the sessions. Additionally, online pre-registration for the sessions was available to those who received invitations and to anyone else who may have been informed and was interested in attending. Walk-ins were also welcomed at the sessions for citizens not formally invited. All sessions took place during the day and on a weekday, which may have been a restricting factor for some potentially interested stakeholders.

SESSION FORMAT¹

A private facilitation team orchestrated the sessions, with additional staff support being provided by IWR and Corps District and Division personnel. Because of the unique nature of the sessions, the Corps developed a specialized forum that would allow every participant to be involved in the discussion and information-sharing process. As a result, it was specified that participants would not be given the opportunity to present prepared statements in a formal manner (as is typically the case in formal public hearings). However, participants were encouraged to submit written statements for the meeting record and for inclusion in the regional listening session report. Discussion regarding specific projects was also discouraged as part of the session activities. The reasoning behind these limitations was to obtain as much information (on a regional or national level) from as many participants as possible. Written statements and project concerns would frustrate obtaining an interactive dialogue to develop national or regional concerns.

Part of the initial portion of each session was spent discussing the purpose of the sessions and the six water resources challenges the Corps had identified. A short explanation was given regarding aging infrastructure, environmental restoration, emergency response, the marine transportation system, flood control, and smart growth. These were six challenge areas the Corps felt would serve as starting points to promote a dialogue on the nation's water resources needs for the 21st century. The Corps indicated that these challenges were presented as a way of stimulating discussion and were to be seen as a starting point. Participants were encouraged to move beyond these and to identify any water resource challenges that they believed were important and should be addressed by the federal government. People were told that the Corps is trying to identify what the federal role in water resources should be and not what the Corps role should be.

During the morning portion of the session, participants gathered in small table groups of 6 to 12 persons. The following instructions were shown on an overhead projector for guidance:

1. Select a non-Corps spokesperson.
2. Identify water challenges that are of interest to you and write each one on the top part of a yellow sticky. Challenges were defined as water resource needs, issues, problems, or opportunities.
3. Discuss why they are important to you. Write down the results of your discussion or your own opinion(s) on the bottom part of the yellow stickies.
4. Give a report to the large group.

Each participant was asked to identify and write down all water resources challenges they felt were important on yellow, self-adhesive note pads (stickies) that were on each table. The term “challenges” could be considered needs, problems, opportunities, or concerns that, if not

¹ This session format discussion primarily addresses the regional sessions. See Chapter V for a discussion of the national session.

addressed, could negatively impact the nation's prosperity, quality of life, or environmental sustainability. Participants were told that the yellow stickies were very important and would serve as data points in the Corps analyses of what people said. These comments would serve as additional remarks to challenges identified during the initial portion of the session. The intention was to obtain as much information related to water resources challenges from participants as possible, which would assist the Corps in determining which challenges were of greatest concern among participants. Additionally, the use of the yellow stickies would give participants the opportunity to comment on challenges at any time during the session.

After everyone at each table was given an opportunity to list the challenges they identified, each table group developed a list to be presented to the entire group. At the designated time, a spokesperson from each table presented the challenges their table identified to the entire group. As the challenges were presented, a member of the facilitation team posted a concise summary sentence of the challenge on an overhead projector for all participants to view. While this was being done, a Corps member copied the challenge sentence onto butcher pad paper and affixed the sheets to the wall. Participants were asked to place their yellow stickies on the corresponding challenge sheet posted around the room. Participants were encouraged to post as many stickies as necessary to elaborate on their concerns and were reminded that they could be posted at any point during the session.

After all the identified challenges were posted, participants from 12 of the 14 sessions (not including St. Louis and Sacramento²) were asked to identify/vote on the water resources challenges they felt were of most importance. The result of the prioritization/voting process was a smaller number of challenges to focus on during the afternoon portion of the sessions³. This would allow for more thorough discussion on what was assumed to be the priority water resources challenges of the region. Depending on the size of the group or the amount of time designated for the afternoon discussion, four to ten of the top challenges were chosen at each session for further discussion.

The objective of the afternoon discussion period was to determine what actions needed to be taken to resolve the challenges and who should take responsibility for each challenge. The participants were told to assume they had sovereign power to develop the solutions to the identified challenges. Each of the main challenges voted on earlier were positioned around the room, and the participants were asked to sit next to the challenge they wanted to discuss. The following instructions were shown on an overhead projector for guidance and were reiterated by the facilitator of the session:

² Since this type of forum was new to the Corps, some minor adjustments occurred as the session schedule progressed. In the first two sessions, participants formed the same table groups after the break/lunch. They were instructed to discuss the challenges they identified at each of their tables. The number of challenges identified by the participants turned out to be more extensive than the session developers expected, which did not allow for sufficient time allotments for discussing each challenge identified during the morning portion of the session. After the first two sessions, the facilitation team, along with Corps coordinators, decided to modify the format slightly to allow for more voting and prioritization of identified challenges.

³ After the challenges were identified, each non-Corps participant was given a select number of self-adhesive dots, either four or five, depending on the session location. (Participants in Phoenix and Woburn were given four dots for voting on challenges, whereas all other participants at the other ten sessions were given five dots for voting.) The participants were asked to affix the dots in any fashion they wished (e.g., five dots on one challenge or one dot on five challenges) to the challenge or challenges posted on butcher pads around the room that they considered to be of greatest concern. The quantity of dots distributed was a factor of available supply.

1. Select someone from your small group to be a spokesperson. A Corps person will record the main points on the easels.
2. Assume you have the authority to implement the changes you'd like to see. Discuss within your group:
 - a. What actions would you take?
 - b. Who should do it?
 - i. Role of federal government.
 - ii. Role of state or local governments.
 - iii. Role of private individuals or organizations.
3. Agree on what the spokesperson will report out to full group.

The participants had the option to move around from challenge to challenge if they had more than one they wanted to discuss. A Corps member was assigned the task of taking notes at each of the group discussion areas. After the designated discussion period, a non-Corps spokesperson from each challenge group was asked to present the information to the entire group.

Throughout this whole process, it was the primary responsibility of the attending Corps members to listen to what the participants had to say. The main objective was to gather information provided by the participants on water resources needs. It was assumed the best way to obtain the greatest amount of information from participants was to listen, not answer or debate participants' views.

ORGANIZATION OF THE REPORT

Chapter II of the report discusses the types of challenges identified by the regional session participants and how the challenges were analyzed and compiled into Water Challenge Areas. Chapter III describes the Water Challenge Areas and analyzes where potential regional and national trends can be observed. Chapter IV offers a summary of regional session participants' views on government roles in meeting the identified challenges. Chapter V presents an overview of the process and outcomes of the two national listening sessions. Finally, Chapter VI summarizes the findings and presents some concluding remarks.

II. PROCESS OF IDENTIFYING WATER RESOURCES CHALLENGE AREAS

Across the 14 regional listening sessions, there were 542 individual water resources challenges identified, supported by 1,226 specific participant challenges (yellow stickies). A complete tabulation of challenges is presented in Appendix A. Many of the challenges identified by the participants during the sessions were similar to the Corps six challenges, but with a greater level of detail and/or regional perspective. Numerous additional challenges unrelated to those identified by the Corps also surfaced. Obviously, it would have been painstaking and inefficient to address each identified challenge individually. Furthermore, it was clear that the individually identified challenges could be grouped into Water Challenge Areas. Because of the breadth of identified challenges, it became apparent that some level of sorting and consolidation was required in order to focus future efforts at meeting water resources needs. Therefore, the intention of the summary-level analysis was to aggregate the challenges into common Water Challenge Areas so that they could be further addressed and prioritized.

CHALLENGE DATABASE DEVELOPMENT

A database was developed (see Appendix A) listing all 542 challenges identified at the 14 sessions, along with session location, hosting Corps Division, number of dot votes for each challenge by location, total number of dot votes by location, and number of related stickies with public comments.

Each identified challenge was reviewed and interpreted, based on the context of the statement. The review of challenges was based on professional judgment and related information derived from attending the particular session where the challenges originated. A total of 18 water resources Water Challenge Areas were developed out of the 542 identified challenges. Through an iterative multiple-person review process, each of the 542 challenges was categorized (or assigned) into one of the 18 Water Challenge Areas. All challenges were assigned to Water Challenge Areas by the use of a key code. The text box below lists the 18 Water Challenge Areas and associated key words and concepts that relate to each Water Challenge Area. The Water Challenge Areas are intended to be broad, but not so broad that obvious overlap exists. Since the Water Challenge Areas were formulated from the challenges, all the challenges were considered to fit under a select number of Water Challenge Areas.

Because it was observed that many challenges had multiple concerns (thus being applicable to more than one Water Challenge Area), a secondary Water Challenge Area was also assigned to each identified challenge. What this implied was that a challenge may have focused on one Water Challenge Area, but may also have referenced another Water Challenge Area (e.g., channel dredging for navigation with environmental protection). If a particular challenge was

very concise and could only be categorized in one Water Challenge Area, for consistency it was assigned the same key code as both a primary and secondary Water Challenge Area⁴.

The dot votes associated with each challenge were also studied in the analysis of Water Challenge Areas. In 12 of the 14 listening sessions (not including St. Louis and Sacramento), dot voting was conducted to minimize the number of challenges discussed in the afternoon portion of the sessions. The dot voting depicted a certain level of concern regarding challenges, in that the challenges with more votes were of a bigger concern (regionally speaking). This does not mean the challenges with the most votes were more important, but rather were of higher priority to session participants.

The frequency of challenges and the aggregation of dot voting allowed for two different methods of analysis. The first type of analysis included counting the number of challenges that occurred within each Water Challenge Area. This analysis depicts the frequency of challenges by Water Challenge Area, which gives a regional and national perspective on the number of times a Water Challenge Area was mentioned. The second analysis involved counting the number of dot votes by Water Challenge Area, both on a national level and session location level. This second analysis provides a better understanding of what participants felt were the major Water Challenge Areas, based on their voting results. Both methods have been used to compare the concentration of Water Challenge Areas by location. The next section describes the 18 water resources Water Challenge Areas in more detail and summarizes the analysis of dot-voting and challenge identification.

⁴ Some of the challenges identified by participants may have been applicable to more than two Water Challenge Areas. In order to keep the analysis manageable, each challenge was assigned to only two Water Challenge Areas.

Keycode	Water Challenge Areas with Some Related Keywords
1	Integrated water resources management and planning (basin level planning; watershed planning; watershed management; multiobjective/systems/integrated planning; holistic approach to planning)
2	Communication, coordination, and education (partnerships; stakeholder participation with Corps; interagency coordination; public education, agency personnel education)
3	Regulatory issues/aspects of water resources (permitting processes; regulatory reform; Section 404 permits; 1125 permits)
4	Floodplain management (flood control, levees, insurance program; this “theme” relates more to the planning aspect, rather than the emergency response aspect, which is a separate theme)
5	Marine transportation system (navigation; deep draft: ports, harbors, dredging; shallow draft: locks, dredging, dams; navigable channels)
6	Environmental/ecosystem health and management (environmental preservation; environmental restoration; wetlands; species, habitat; biodiversity; reduction of human interference; may also include concerns about “invasive species” or “exotic species” that impact on water intake systems)
7	Federal funding (cost-sharing rules; allocations)
8	Water quality (source water protection; non-point source (NPS) pollution run-off; water quality issues may or may not be related to environmental/wetlands issues, some overlap expected)
9	Emergency response (disaster response; hurricane; flooding; dam failures; FEMA-related activities)
10	Water supply (water quantity issues; raw water supplies; potable demands; water withdrawals; related urban water infrastructure; water supply allocations and/or diversions; may also include concerns about “invasive species” or “exotic species” that impact on water intake systems)
11	Wastewater collection (stormwater; combined sewer overflows; sewer systems; septic systems)
12	General water resources infrastructure (more generic)
13	Data collection, analysis, and dissemination (model updates; map updates; dissemination of new technologies and/or data)
14	Corps planning process (Project Study Plans (PSPs); feasibility studies; reconnaissance studies; speed of planning/design/construction/implementation/operation process from inception to completion)
15	Federal and Corps water resources policy (Corps reform, simplification, mission adjustment, procedural changes)
16	Recreation
17	Smart growth and development
18	Coastal/shoreline management (beach erosion; seawalls; jetties; streambank restoration)

III. SUMMARY OF IDENTIFIED THEMES

When formulating the 18 general Water Challenge Areas, the objective was to have the Water Challenge Areas be distinctly different from each other. If a greater number of Water Challenge Areas was formulated, the areas would more likely be interrelated, thereby requiring consolidation. In the same respect, if a lesser number of Water Challenge Areas was formulated, the areas would more likely be too broad. The order in which the Water Challenge Areas are presented below makes no reference to the rank or level of concern. The following paragraphs list and give a brief description of each of the 18 Water Challenge Areas in no particular order.

DEFINITION OF WATER CHALLENGE AREAS

Integrated Water Resources Management and Planning (Water Challenge Area 1)

The challenges primarily associated with this Water Challenge Area focus on watershed basin-level planning and multi-objective/systems approaches. Terms used in connection with this Water Challenge Area include “holistic,” “watershed,” and “ecosystem.” Challenges that fit under this Water Challenge Area speak of managing connecting lakes, streams, and rivers as one whole system. This type of challenge calls for a different methodology for managing and planning, where water resources projects account for all stakeholders and outputs of the system within which it would operate.

Examples of challenges within this Water Challenge Area include:

- “Holistic system approach to the entire Mississippi river basin”
- “Think national river system”
- “Using a systems approach for water quality for both inland and ocean”
- “Concerted (greater) regional vision for the Great Lakes”
- “Holistic planning approach to water resources that brings political jurisdictions together.”

Note: Holistic watershed planning was defined to include all aspects of water resources (e.g., hydrologic, groundwater, recreation, streams, reservoirs, retention basins, environment, storm water runoff, urban sprawl, emergency response, water quality, development, etc.)

Communication, Coordination, and Education (Water Challenge Area 2)

The challenges primarily associated with this Water Challenge Area focus on involving stakeholders, such as state agencies, environmental groups, and community groups, in planning,

project implementation and collaboration, and decision making. Another main portion of this Water Challenge Area deals with interagency coordination and cooperation. Many challenges mention a lack of multi-agency approaches to project development and implementation. Additionally, challenges in this Water Challenge Area express a need for providing education to the public on water resources issues such as: federal policies, laws, Corps regulations and processes, hydrology, National Environmental Policy Act, etc. Participants from other federal and state agencies also request interagency training courses to educate agency employees on related fields.

Examples of challenges within this Water Challenge Area include:

- “Make sure there is good coordination with all agencies and municipalities”
- “Collaboration among local, state, and federal agencies in making decisions involving skills, resources, and missions”
- “Coordinate planning and funding for future water resources”
- “Information education”
- “Improve education of the public on the issues related to water resources”

Regulatory Issues/Aspects of Water Resources (Water Challenge Area 3)

The challenges primarily associated with this Water Challenge Area focus on the various aspects of the permitting process. Different permits are identified in the challenges related to this Water Challenge Area, such as those related to Section 404 and 1125 permits. The challenges also reference the relationship between regulations and land and water resources. A select number of comments go as far as saying that the Corps and other agencies could not provide the necessary modifications and that agency reform should be set forth to accommodate the changes.

Examples of challenges within this Water Challenge Area include:

- “Issue blanket permits for emergency situations”
- “Permitting process should be streamlined and more user friendly”
- “More stringent controls are needed over regulatory permitting”
- “Federal government needs to have consistency within the regulatory process”
- “Need for enforcement resources to support program”

Floodplain Management (Water Challenge Area 4)

The challenges primarily associated with this Water Challenge Area focus on traditional structural and nonstructural flood control activities. Levees, dams, and wetlands are flood control systems discussed in the challenges. Furthermore, a strong emphasis is given to updating floodplain maps. Land management within a floodplain and the involvement of the Federal

Emergency Management Agency (i.e., insurance and loans) are directly related to many of the challenges in this Water Challenge Area.

Examples of challenges within this Water Challenge Area include:

- “Protect water recharge areas, such as wetlands and floodplains”
- “Find non-structural flood control methods”
- “Steer development away from flood prone or environmentally sensitive areas”
- “Need to focus on prevention, not emergency response, for flooding”
- “Identify and delineate floodplains, including the ordinary high-water mark; it will prevent development from occurring in floodplains”

Marine Transportation System (Water Challenge Area 5)

The challenges primarily associated with this Water Challenge Area focus on many aspects of waterborne navigation. Emphasis was given to port development, lock modernization, and channel safety. Issues regarding deep draft and inland waterway improvements were also identified, such as channel dredging to accommodate larger vessels and keeping consistent draft levels in channels.

Examples of challenges within this Water Challenge Area include:

- “Maintenance of navigation channels depths and widths”
- “Need to protect and preserve our navigation channels and aging water infrastructures to protect the economic importance of the shipping industry”
- “Navigation approaches to dams are dangerous and time to get through locks are excessive”
- “Waterway transportation – think more comprehensively intermodal”
- “Proactive approach to harbor and navigable waterways issues”

Environmental/Ecosystem Health and Management (Water Challenge Area 6)

The challenges primarily associated with this Water Challenge Area focus on different concerns regarding environmental preservation and restoration. A lot is mentioned on issues related to habitat management and maintaining sufficient levels of biodiversity. Most of the comments discuss how human interference is the main contributor to environmental loss. Also identified under this Water Challenge Area is the introduction of invasive/exotic species in areas where they heavily impact the environment.

Examples of challenges within this Water Challenge Area include:

- “Improved maintenance of stream conveyance system through ecologically-sound methods”

- “Maintain and restore the environment and biodiversity”
- “Actively seek opportunities for environmental projects”
- “Protection of vanishing species”
- “Ensure effective mitigation for wetlands loss due to Corps projects”

Federal Funding (Water Challenge Area 7)

The challenges primarily associated with this Water Challenge Area focus on issues related to funding, with some emphasis on cost-sharing based on the ability to pay for communities that cannot afford the non-federal share of costs associated with large projects in their cities or towns. The allocation of federal funds across federal, state, and local agencies is also heavily emphasized in challenges related to this Water Challenge Area. Most of these challenges comment on the lack of funds for issues of immediate concern for the welfare of the nation (e.g., inland navigation operations and maintenance) and federal appropriation ceilings that cause projects to be lengthened, thus driving up construction costs.

Examples of challenges within this Water Challenge Area include:

- “Coming up with funds to replace aging infrastructure”
- “Funding for flood control projects – need full funding and more flexibility for how local sponsors meet their share”
- “Provide sufficient funding for 404(b) program”
- “Establish cost-sharing based on locally recommended or locally preferred plan”
- “Restructure cost-sharing formulas for smaller sponsors and include feasibility studies”

Water Quality (Water Challenge Area 8)

The challenges primarily associated with this Water Challenge Area focus on the different aspects of water quality, with many challenges related to protection of source water from pollution, such as non-point source pollution. Other potential contaminant sources include storm water runoff and saltwater intrusion. This Water Challenge Area deals with concerns relating to all water supply sources, including surface and groundwater sources.

Examples of challenges within this Water Challenge Area include:

- “Use good science to develop water quality protection standards”
- “Ensure clean water for this generation and future generations”
- “Maintain clean water through effective government cooperation”
- “Include water quality solutions in watershed studies”
- “Reduce all non-point source run-off”

Emergency Response (Water Challenge Area 9)

The challenges primarily associated with this Water Challenge Area focus on the failure of infrastructure (e.g., levees, seawalls, etc.) and the response to such emergencies. The main concern of this Water Challenge Area appears to be with the time and effort of federal responses to flooding, both inland and coastal. Additional concerns are presented that discuss dam failures and lack of prompt response to large navigation disasters, such as port-related spills.

Examples of challenges within this Water Challenge Area include:

- “Improve preparedness to minimize the destruction from natural disasters”
- “Post flood recovery assistance so that people can work through regulatory process”
- “Lack of emergency response on waterways – do not have resources”
- “Emergency response: 1) insuring adequate water supply, 2) preventative management approach = identifying aging structures”
- “Improvement and efficiency of natural disaster response”

Water Supply (Water Challenge Area 10)

The challenges primarily associated with this Water Challenge Area focus on the actual quantity of water available for use. This Water Challenge Area also relates to the status of infrastructures used to meet potable municipal and industrial water demands. These infrastructures may be reaching (or have reached) their limited capacities or life expectancies. Another portion of this Water Challenge Area relates to the disbursement/allocation of water among the many competing interests, which is becoming a concern in areas with limited supplies of water.

Examples of challenges within this Water Challenge Area include:

- “Greater emphasis by Corps on increasing the actual amount of water available”
- “Develop creative solutions to water supply, such as water marketing, desalination, or use of icebergs”
- “Ensure that water supply be maintained for agriculture – consistent supply and affordable”
- “Water quantity – balancing flow needs as well as groundwater and surface water allocation”
- “More emphasis on assessment of groundwater as it relates to surface water and development”

Wastewater Collection (Water Challenge Area 11)

The challenges primarily associated with this Water Challenge Area focus on the different forms of wastewater and its collection and subsequent treatment. Wastewater identified

in this Water Challenge Area includes storm water, sewer water, and septic systems. Additional comments are made on the operations and maintenance of wastewater infrastructure systems.

Examples of challenges within this Water Challenge Area include:

- “Aging wastewater treatment centers are wearing out and funding is gone to update”
- “Failing individual septic systems – need programs for people with limited means”
- “Wastewater management – increased volumes of waste – find alternative technologies other than traditional practices”
- “Combined sewer overflows [allowing] storm water run-off and sewage to combine and go to wastewater treatment”
- “Storm water management”

General Water Resources Infrastructure (not otherwise classified) (Water Challenge Area 12)

The challenges primarily associated with this Water Challenge Area focus on the generic concerns regarding water-related infrastructure. This includes challenges that identify infrastructure in a broad or general sense. By presenting the challenge in a general sense, it must be considered separate from other Water Challenge Areas, such as navigation, flood management, wastewater, or other related areas.

Examples of challenges within this Water Challenge Area include:

- “Finding balance between operating and maintaining what we have and building/acquiring new things”
- “National aging infrastructure – smaller projects cannot compete with larger ones – trust funds not sufficient”
- “Planning ahead to ensure that infrastructure is in place to support commerce, including navigation and dredging”
- “Cost impacts on infrastructure due to compliance with water quality standards, particularly in rural areas”
- “In this time of economic prosperity we are not spending money (local, state, federal) to repair, maintain, and improve infrastructure – if not now when?”

Data Collection, Analysis, and Dissemination (Water Challenge Area 13)

The challenges primarily associated with this Water Challenge Area focus on the lack of sufficient data to develop effective solutions. It could be that the data is not available or that it is not readily shared among agencies. Numerous challenges in this Water Challenge Area stress the need for more reliable, up-to-date information and technical models. In order to obtain the information, effective sharing of information among stakeholders, the public, and other federal

and state agencies plus the utilization of the most advanced equipment and procedures available. A large concern is expressed regarding the reliance on out-dated or unreliable information during project implementation, flood management, and other applications.

Examples of challenges within this Water Challenge Area include:

- “Improve data flow across jurisdictional borders. There are many projects and studies going on that cross state or watershed boundaries and we should avoid overlap and share data wherever possible”
- “Comprehensive data collection and distribution system”
- “Need to create better models of groundwater/surface water interface”
- “National clearinghouse for information and data. People are not aware of research underway and completed. Good information is available, but not being disseminated”
- “Establish a common GIS database and system that is easily accessible”

Corps Project Delivery Process (Water Challenge Area 14)

The challenges primarily associated with this Water Challenge Area focus on the Corps and how it operates in the planning process. This includes the procedures used to develop and implement projects, the time it takes from project inception through completion, and the logic and analytical framework used in evaluating projects. Furthermore, challenges in this Water Challenge Area deal with procedural changes that may occur without requiring a change in Corps policy.

Examples of challenges within this Water Challenge Area include:

- “The process in general with the Corps is cumbersome and should be streamlined”
- “Project managers should stay with a project through construction”
- “Corps projects must place emphasis on public beneficiary rather than private beneficiaries; funding comes from public sector and must have public benefit, rather than going to projects for special interest groups”
- “Assure that we can operate and maintain existing facilities before we build new ones”
- “Greater consideration of natural processes in project design”

Federal and Corps Water Resources Policy (Water Challenge Area 15)

The challenges primarily associated with this Water Challenge Area focus on how decisions are made regarding operations, maintenance, stakeholder participation, project development, and other procedural processes. Many of the challenges in this Water Challenge Area imply the modification of current processes to the point of reforming current policies. This could also mean modifying various federal agency missions and levels of responsibility. The

expansion and/or reduction in Corps involvement varies considerably among challenges identified in this Water Challenge Area.

Examples of challenges within this Water Challenge Area include:

- “Broaden guidelines to give more value to social, cultural, and/or environmental solutions”
- “Develop a clear policy on non-structural alternatives”
- “Establish a national sediment policy that can be reasonably implemented”
- “Revise Corps missions and policies (e.g., include shoreline protection and environmental restoration/improvement in mission)”
- “Broaden guidelines to give more value to social, cultural, and/or environmental solutions”

Recreation (Water Challenge Area 16)

The challenges primarily associated with this Water Challenge Area focus on the recreational uses of water and assorted water bodies. Most challenges in this Water Challenge Area discuss the need for more recreational opportunities and equal rights for recreationists where industrial or navigational uses are extensive. Some comments are made on the need to allow for sufficient consideration for the tourism groups that rely on water bodies to successfully operate their recreational attractions.

Examples of challenges within this Water Challenge Area include:

- “Enhanced water-based recreational opportunities; better access to Corps facilities; enhanced fishing opportunities”
- “River tourism – need to identify issues and interests of river tourism industry with respect to potential Snake River dam breaching”
- “Need to respond to changing water recreation activities and resolve conflicts”
- “Need ways to deal with increased recreation demands and the resulting environmental impacts”

Smart Growth and Development (Water Challenge Area 17)

The challenges primarily associated with this Water Challenge Area focus on issues relating to population growth and economic development and the stresses these factors create on the environment, city infrastructure, and land use. Specific concerns are expressed about the clean-up and potential use of brownfield sites, plus the adverse affects from additional urban pressures such as urban sprawl.

Examples of challenges within this Water Challenge Area include:

- “Redevelopment of urban waterfronts and brownfields”

- “Implement sustainable development that relies on innovative and creative solutions for water preservation (bio-regionalism)”
- “Equitable distribution of resources while taking into consideration historical issues”
- “More Corps technical support for brownfields programs”
- “Process for small communities to accomplish smart growth”

Coastal/Shoreline Management (Water Challenge Area 18)

The challenges primarily associated with this Water Challenge Area focus on the loss of sediment and/or sand along coastal and Great Lakes shores. This includes the effects of beach erosion from structural development or storm occurrences, along with structural and non-structural remedies. The need for shoreline restoration is heavily stressed in this Water Challenge Area, with some mention of the utilization of dredge materials.

Examples of challenges within this Water Challenge Area include:

- “Fulfill unmet needs for shoreline and coastal protection programs”
- “Prevent coastal erosion, flooding, and pollution”
- “Beach replenishment of coastline. Use dredge materials to replenish beaches”
- “Halt the destruction of Great Lakes beaches with special focus on dune protection”
- “Coastal protection and management: This is an important issue for the nation as a whole ... We need a national presence to take the lead in coastal management”

FREQUENCY OF CHALLENGES BY WATER CHALLENGE AREA

The 542 water resources challenges identified during the 14 regional listening sessions were categorized within the 18 general Water Challenge Areas described above. The intent of assigning challenges to Water Challenge Areas was to determine the type of water resources needs and concerns that stakeholders thought were important. Additionally, the consolidation of challenges into Water Challenge Areas would give the Corps an idea of what challenges were the highest priority and required the most attention (based on the amount of times certain challenges were identified within a theme). This prioritization of Water Challenge Areas could be studied either nationally or at the session level. Table III-1 depicts the frequency of challenges by Water Challenge Area. The percentage of challenges identified within each Water Challenge Area across the 14 listening sessions is presented in Table III-2.

Table III-1 shows the total number of challenges identified and how they sorted out by Water Challenge Areas. A ranking was done for Water Challenge Areas based on the primary assignment of challenges to Water Challenge Areas. Additionally, the Water Challenge Areas were ranked based on the sum of the primary and secondary assignment of challenges to Water Challenge Areas. Adding the number of primary and secondary Water Challenge Area assignments allows for a broader interpretation of the challenges and their overall meanings,

because more information from challenge statements is used. Based on the frequency of identification, the top five Water Challenge Areas are:

- Communication/coordination/education
- Maritime transportation system
- Environmental/ecosystem health and management
- Water Supply
- Federal and Corps water resources policy

Accounting for the addition of secondary assignments, the ranking of the top five Water Challenge Areas becomes:

- Communication/coordination/education
- Federal and Corps water resources policy
- Environmental/ecosystem health and management
- Maritime transportation system
- Corps project deliver process

Additional insights are provided when the challenges are broken down by location. Table III-2 depicts the percentage breakdown of identified challenges by Water Challenge Area at each session location. Some interesting points can be made regarding the locational breakdown of challenge identification. For example, during the St. Louis session, challenges related to communication/coordination/education were mentioned more than other Water Challenge Areas. In Louisville, the marine transportation system received the greatest number of stated challenges.

Another way to analyze the data is to observe where a particular Water Challenge Area accounted for at least 10 percent of the total number of identified challenges. For example, in 13 locations, communication/coordination/education received at least 10 percent of the challenges that were identified. Other challenges heavily identified by participants dealt with the marine transportation system, environmental/ecosystem health and management, and water supply, to name a few.

The number of identified challenges generated at each session location does not appear to correlate with the number of participants present at each session (refer to Table I-1), meaning some locations may have had fewer participants present but generated a substantial number of challenges (e.g., Honolulu). In contrast, some locations had large numbers of participants but generated a moderate number of challenges (e.g., Dallas).

TABLE III-1**FREQUENCY OF WATER CHALLENGE AREA IDENTIFICATION ACROSS 14 SESSIONS**

Theme	Primary Assignment	Secondary Assignment	Total Assignment	Rank Primary	Rank Total
Communication, Coordination, and Education (2)	84	67	151	1	1
Marine Transportation System (5)	53	30	83	2	4
Environmental/Ecosystem Health and Management (6)	50	42	92	3	3
Water Supply (10)	41	31	72	4	6
Federal and Corps Water Resources Policy (15)	40	98	138	5	2
Funding Issues (7)	35	30	65	6	8
Integrated Water Resources Management and Planning (1)	34	37	71	7	7
Corps Project Delivery Process (14)	34	48	82	7	5
Floodplain Management (4)	33	27	60	9	9
Data Collection, Analysis, and Dissemination (13)	29	31	60	10	9
Regulatory Issues (3)	27	15	42	11	12
Water Quality (8)	24	23	47	12	11
General Water Resources Infrastructure (12)	13	17	30	13	13
Smart Growth and Development (17)	12	12	24	14	14
Coastal/Shoreline Management (18)	12	8	20	14	16
Emergency Response (9)	10	12	22	16	15
Recreation (16)	6	6	12	17	18
Wastewater Collection (11)	5	8	13	18	17
TOTAL	542	542	1,084		

Note: Water Challenge Area key code in parentheses.

TABLE III-2

**PERCENT OF CHALLENGES IDENTIFIED BY WATER CHALLENGE
AREA WITHIN A LOCATION—PRIMARY ASSIGNMENT**

Water Challenge Area	CHI (n=39)	LOU (n=55)	STL (n=52)	WOB (n=24)	WIL (n=45)	NBR (n=34)	OMA (n=40)	VAN (n=62)	HON (n=37)	ANC (n=21)	ATL (n=28)	SAC (n=47)	PHO (n=23)	DAL (n=35)	Locations w/ > 10%
1	7.69	0.00	15.38	4.17	6.67	5.88	7.50	3.23	10.81	4.76	7.14	2.13	13.04	2.86	3
2	15.38	12.73	25.00	20.83	15.56	11.76	15.00	17.74	10.81	9.52	17.86	12.77	13.04	14.29	13
3	5.13	7.27	0.00	4.17	4.44	8.82	0.00	4.84	0.00	0.00	3.57	8.51	21.74	5.71	1
4	5.13	3.64	7.69	8.33	2.22	2.94	12.50	4.84	5.41	0.00	3.57	4.26	17.39	11.43	3
5	15.38	18.18	7.69	4.17	17.78	11.76	2.50	12.90	10.81	9.52	10.71	2.13	0.00	2.86	7
6	7.69	10.91	11.54	12.50	6.67	11.76	12.50	11.29	8.11	14.29	3.57	6.38	0.00	8.57	7
7	0.00	7.27	1.92	0.00	17.78	2.94	10.00	3.23	2.70	4.76	7.14	12.77	13.04	5.71	4
8	5.13	7.27	0.00	20.83	4.44	2.94	5.00	3.23	5.41	0.00	3.57	4.26	0.00	2.86	1
9	2.56	3.64	3.85	4.17	0.00	0.00	0.00	0.00	2.70	0.00	0.00	2.13	0.00	5.71	0
10	10.26	1.82	3.85	0.00	6.67	8.82	2.50	6.45	10.81	14.29	10.71	8.51	13.04	17.14	6
11	2.56	0.00	0.00	0.00	2.22	0.00	0.00	0.00	5.41	0.00	3.57	0.00	0.00	0.00	0
12	0.00	3.64	0.00	8.33	2.22	0.00	5.00	4.84	0.00	9.52	0.00	0.00	0.00	2.86	0
13	5.13	5.45	5.77	4.17	4.44	2.94	10.00	6.45	5.41	14.29	3.57	4.26	0.00	2.86	2
14	5.13	1.82	3.85	0.00	2.22	11.76	5.00	6.45	10.81	4.76	10.71	17.02	8.70	0.00	4
15	7.69	9.09	11.54	0.00	4.44	8.82	7.50	6.45	8.11	9.52	7.14	8.51	0.00	8.57	1
16	0.00	3.64	1.92	0.00	0.00	0.00	2.50	3.23	0.00	0.00	0.00	0.00	0.00	0.00	0
17	0.00	3.64	0.00	4.17	0.00	5.88	2.50	4.84	0.00	0.00	3.57	0.00	0.00	5.71	0
18	5.13	0.00	0.00	4.17	2.22	2.94	0.00	0.00	2.70	4.76	3.57	6.38	0.00	2.86	0
	100.0	100.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Note: Items in **bold** make up ≥ 10 percent of the challenges identified at each location.

LEGEND

Water Challenge Area # - Title

- 1 – Integrated Water Resources Mgmt./Planning
- 2 – Communication/Coordination/Education
- 3 – Regulatory Issues
- 4 – Floodplain Management
- 5 – Marine Transportation System
- 6 – Environmental/Ecosystem Health/Mgmt.
- 7 – Funding Issues
- 8 – Water Quality
- 9 – Emergency Response

Water Challenge Area # - Title

- 10 – Water Supply
- 11 – Wastewater Collection
- 12 – General Water Resources Infrastructure
- 13 – Data Collection/Analysis/Dissemination
- 14 – Corps Project Delivery Process
- 15 – Federal/Corps Water Resources Policy
- 16 – Recreation
- 17 – Smart Growth and Development
- 18 – Coastal/Shoreline Mgmt.

City Code – City Name

- CHI – Chicago
- LOU – Louisville
- STL – St. Louis
- WOB – Woburn
- WIL – Williamsburg
- NBR – New Brunswick
- OMA – Omaha
- VAN – Vancouver
- HON – Honolulu
- ANC – Anchorage
- ATL – Atlanta
- SAC – Sacramento
- PHO – Phoenix
- DAL – Dallas

DOT-VOTING ANALYSIS AND RESULTS

As previously mentioned, participants attending 12 of the 14 sessions (not including St. Louis and Sacramento) were given self-adhesive dots and asked to vote on the challenges they felt were of biggest concern. Five dots were provided at 10 of the 12 sessions (with four dots given to each participant in Phoenix and Woburn). Participants were told that the purpose of dot-voting was to help choose challenges to focus on during the second half of the workshop. The total number of votes varied from session to session based on the number of participants present at each session. The votes also became useful during data analysis, providing an alternate method of analyzing the challenges and their national or regional significance.

Whereas the frequency of challenges described in the preceding section depicts how many times a Water Challenge Area-related challenge was mentioned, the dot-voting analysis depicts a prioritization process, where the identified challenges were ranked based on the amount of dot-votes each challenge received. By conducting the analysis in this manner, the relative emphasis of Water Challenge Areas can be evaluated by comparing the number of dot-votes by Water Challenge Area. Additionally, the percentage of votes for each Water Challenge Area can be evaluated by location, thus showing which Water Challenge Areas were given the most emphasis at each location. Table III-3 shows the number of votes cast by Water Challenge Area using the primary assignment with an associated ranking. According to the dot-voting results based on the primary assignment, the top five Water Challenge Areas are:

- marine transportation system,
- communication/coordination/education,
- water supply,
- environmental/ecosystem health and management, and
- floodplain management.

Table III-4 shows the percentage breakdown of votes for each Water Challenge Area at each session location (using the primary assignment) and the number of locations where themes received at least 10 percent of the identified challenges. As shown, marine transportation system and communication/coordination/education received more than 10 percent of dot-votes in 8 of 12 locations where voting was used. Integrated water resources management and planning, environmental/ecosystem health and management, and water supply also received a relatively high concentration of votes at several locations.

Table III-5 summarizes the tally of votes according to the secondary Water Challenge Area assignment. Federal and Corps water resources policy and communication/coordination/education were found to be a significant secondary element among the identified challenges. What this implies is that many of the identified challenges associated with other Water Challenge Areas have an underlying concern associated with broader issues of policy, communication, and planning. On the other hand, other Water Challenge Areas, such as the marine transportation system, were identified more often as a primary challenge with fewer underlying secondary references. In cases such as this, the particular challenge may be more direct and/or simply easier to express.

Since all challenges identified in the listening sessions were categorized under a primary and secondary Water Challenge Area (in essence making a challenge two separate challenges), the votes were added together to determine an overall ranking. Table III-6 shows the results of adding primary and secondary votes. The top five Water Challenge Areas based on dot-voting become:

- communication/coordination/education,
- federal and Corps water resources policy,
- marine transportation system,
- water supply, and
- environmental/ecosystem health and management, respectively.

The percentage breakdown of dot-votes by Water Challenge Areas (using the sum of both primary and secondary assignments) across locations is shown in Table III-7. The locations where Water Challenge Areas received at least 10 percent of the total votes were tallied to determine what Water Challenge Areas were identified most often across all the sessions. Based on this analysis of relative vote tabulations at each location, the top five themes are:

- communication/coordination/ education,
- federal and Corps water resources policy,
- marine transportation system,
- environmental/ecosystem health and management, and
- integrated water resources management and planning, respectively.

TABLE III-3		
DOT-VOTING RESULTS BY WATER CHALLENGE AREA—PRIMARY ASSIGNMENT		
Theme	Total Votes	Votes Rank
Marine Transportation System (5)	473	1
Communication/Coordination/Education (2)	440	2
Water Supply (10)	402	3
Environmental/Ecosystem Health and Management (6)	311	4
Floodplain Management (4)	268	5
Integrated Water Resources Mgmt. and Planning (1)	252	6
Funding Issues (7)	189	7
Regulatory Issues (3)	184	8
Water Quality (8)	180	9
Federal and Corps Water Resources Policy (15)	180	9
General Water Resources Infrastructure (12)	141	11
Corps Project Delivery Process (14)	141	11
Data Collection/Analysis/Dissemination (13)	137	13
Smart Growth and Development (17)	62	14
Coastal/Shoreline Management (18)	53	15
Emergency Response (9)	30	16
Recreation (16)	30	16
Wastewater Collection (11)	13	18
Total Votes	3,486	

Note: Water Challenge Area key code in parentheses.

TABLE III-4

PERCENT BREAKDOWN OF VOTES PER SESSION BY LOCATION--PRIMARY ASSIGNMENT

Theme	CHI (n=232)	LOU (n=467)	STL (n=0)	WOB (n=118)	WIL (n=260)	NBR (n=313)	OMA (n=380)	VAN (n=427)	HON (n=164)	ANC (n=72)	ATL (n=336)	SAC (n=0)	PHO (n=132)	DAL (n=585)	Locations w/ > 10%
1	11.21	0.00	N/A	1.69	9.23	6.07	11.05	5.15	15.85	1.39	17.26	N/A	20.45	0.85	5
2	16.38	6.42	N/A	17.80	20.77	4.47	11.58	12.88	7.32	0.00	11.31	N/A	17.42	18.97	8
3	3.02	2.36	N/A	0.00	4.23	7.99	0.00	12.41	0.00	0.00	1.49	N/A	20.45	7.69	2
4	12.93	4.28	N/A	1.69	0.38	6.07	14.21	7.03	12.80	0.00	1.79	N/A	21.97	9.57	4
5	24.14	19.49	N/A	0.00	14.62	21.09	13.95	17.10	6.71	15.28	13.39	N/A	0.00	4.96	8
6	9.05	11.99	N/A	24.58	6.92	5.11	7.11	15.69	7.93	19.44	2.68	N/A	0.00	7.01	4
7	0.00	17.34	N/A	0.00	12.69	1.28	6.32	1.17	0.61	9.72	2.68	N/A	4.55	3.25	2
8	2.16	6.00	N/A	16.95	2.69	7.99	7.37	0.94	6.71	0.00	8.93	N/A	0.00	3.76	1
9	2.59	1.93	N/A	0.85	0.00	0.00	0.00	0.00	2.44	0.00	0.00	N/A	0.00	1.71	0
10	3.02	6.64	N/A	0.00	17.31	7.03	0.26	6.56	11.59	8.33	22.62	N/A	12.88	25.64	5
11	0.43	0.00	N/A	0.00	0.38	0.00	0.00	0.00	3.66	0.00	1.49	N/A	0.00	0.00	0
12	0.00	2.14	N/A	25.42	1.54	0.00	7.63	2.81	0.00	9.72	0.00	N/A	0.00	8.38	1
13	2.59	2.36	N/A	0.00	6.15	2.56	9.21	4.92	1.22	16.67	4.17	N/A	0.00	2.05	1
14	6.47	0.64	N/A	0.00	0.38	15.34	7.11	5.15	6.71	0.00	3.27	N/A	2.27	0.00	1
15	1.72	11.56	N/A	0.00	2.69	8.63	4.21	4.22	8.54	19.44	4.17	N/A	0.00	2.05	2
16	0.00	4.93	N/A	0.00	0.00	0.00	0.00	1.64	0.00	0.00	0.00	N/A	0.00	0.00	0
17	0.00	1.93	N/A	2.54	0.00	5.11	0.00	2.34	0.00	0.00	1.79	N/A	0.00	3.08	0
18	4.31	0.00	N/A	8.47	0.00	1.28	0.00	0.00	7.93	0.00	2.98	N/A	0.00	1.03	0
	100.0	100.0	N/A	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	N/A	100.0	100.0	

Note: Items in **bold** make up ≥ 10 percent of the challenges identified at each location.

LEGEND

Water Challenge Area # - Title

- 1 – Integrated Water Resources Mgmt./Planning
- 2 – Communication/Coordination/Education
- 3 – Regulatory Issues
- 4 – Floodplain Management
- 5 – Marine Transportation System
- 6 – Environmental/Ecosystem Health/Mgmt.
- 7 – Funding Issues
- 8 – Water Quality
- 9 – Emergency Response

Water Challenge Area # - Title

- 10 – Water Supply
- 11 – Wastewater Collection
- 12 – General Water Resources Infrastructure
- 13 – Data Collection/Analysis/Dissemination
- 14 – Corps Project Delivery Process
- 15 – Federal/Corps Water Resources Policy
- 16 – Recreation
- 17 – Smart Growth and Development
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- PHO – Phoenix
- DAL – Dallas

TABLE III-5		
DOT-VOTING RESULTS BY WATER CHALLENGE AREA—SECONDARY ASSIGNMENT		
Theme	Total Votes	Votes Rank
Communication/Coordination/Education (2)	557	1
Federal and Corps Water Resources Policy (15)	512	2
Integrated Water Resources Mgmt. and Planning (1)	299	3
Corps Project Delivery Process (14)	295	4
Environmental/Ecosystem Health and Mgmt. (6)	286	5
Water Supply (10)	238	6
Marine Transportation System (5)	195	7
Data Collection/Analysis/Dissemination (13)	176	8
General Water Resources Infrastructure (12)	174	9
Water Quality (8)	163	10
Funding Issues (7)	161	11
Floodplain Management (4)	113	12
Regulatory Issues (3)	73	13
Smart Growth and Development (17)	65	14
Coastal/Shoreline Management (18)	64	15
Wastewater Collection (11)	52	16
Recreation (16)	49	17
Emergency Response (9)	14	18
Total Votes	3,486	

Note: Water Challenge Area key code in parentheses.

TABLE III-6**DOT-VOTING RESULTS BY WATER CHALLENGE AREA—PRIMARY PLUS
SECONDARY ASSIGNMENT**

Theme	Total Votes	Votes Rank
Communication/Coordination/Education (2)	997	1
Federal and Corps Water Resources Policy (15)	692	2
Marine Transportation System (5)	668	3
Water Supply (10)	640	4
Environmental/Ecosystem Health and Mgmt. (6)	597	5
Integrated Water Resources Mgmt. and Planning (1)	551	6
Corps Project Delivery Process (14)	436	7
Floodplain Management (4)	381	8
Funding Issues (7)	350	9
Water Quality (8)	343	10
General Water Resources Infrastructure (12)	315	11
Data Collection/Analysis/Dissemination (13)	313	12
Regulatory Issues (3)	257	13
Smart Growth and Development (17)	127	14
Coastal/Shoreline Management (18)	117	15
Recreation (16)	79	16
Wastewater Collection (11)	65	17
Emergency Response (9)	44	18
	6,972	

Note: Water Challenge Area key code in parentheses.

TABLE III-7

PERCENT BREAKDOWN OF VOTES BY LOCATION--PRIMARY PLUS SECONDARY ASSIGNMENTS

Theme	CHI (n=464)	LOU (n=934)	STL (n=0)	WOB (n=236)	WIL (n=520)	NBR (n=626)	OMA (n=760)	VAN (n=854)	HON (n=328)	ANC (n=144)	ATL (n=672)	SAC (n=0)	PHO (n=264)	DAL (n=1,170)	Locations w/ > 10%
1	11.42	2.46	N/A	0.85	7.31	6.71	6.71	6.91	14.63	3.47	17.26	N/A	17.05	5.90	4
2	13.79	8.89	N/A	12.29	20.19	12.46	15.26	15.57	4.88	0.69	9.97	N/A	19.32	21.71	8
3	1.72	1.61	N/A	0.00	2.31	4.95	2.37	9.37	0.00	0.00	2.08	N/A	10.23	4.44	1
4	7.76	3.75	N/A	2.54	0.19	3.04	10.13	4.92	14.63	0.69	0.89	N/A	10.98	6.92	3
5	15.09	14.99	N/A	9.75	11.35	10.86	6.97	15.34	6.71	7.64	9.23	N/A	0.00	2.48	5
6	8.19	11.03	N/A	12.29	6.54	10.06	5.26	18.15	7.62	9.72	3.72	N/A	0.00	6.07	4
7	1.29	11.46	N/A	0.42	6.35	3.67	5.00	2.11	1.52	14.58	4.91	N/A	3.41	4.79	2
8	2.16	7.07	N/A	8.47	4.04	4.79	6.97	1.05	6.10	0.00	9.82	N/A	0.00	4.10	0
9	1.51	1.18	N/A	0.85	0.00	0.00	0.00	0.35	1.22	0.00	0.00	N/A	0.76	1.28	0
10	1.72	7.60	N/A	1.27	8.65	7.67	3.42	4.22	13.72	4.17	18.45	N/A	9.85	17.26	3
11	0.22	0.00	N/A	0.00	1.15	0.00	0.92	0.00	3.05	4.17	5.21	N/A	0.00	0.00	0
12	2.59	3.64	N/A	20.34	4.04	0.00	3.82	2.58	1.83	4.86	3.87	N/A	3.79	8.55	1
13	4.09	1.18	N/A	8.90	10.77	1.92	9.08	3.28	2.74	15.28	4.17	N/A	5.30	2.05	2
14	15.73	7.39	N/A	0.42	1.35	15.02	12.63	3.75	4.88	4.86	1.64	N/A	7.58	0.85	3
15	7.33	10.71	N/A	10.59	15.77	15.65	11.45	8.55	6.71	14.58	5.51	N/A	10.98	7.18	7
16	0.43	5.35	N/A	4.24	0.00	0.00	0.00	1.99	0.00	0.00	0.00	N/A	0.00	0.00	0
17	0.00	1.71	N/A	1.27	0.00	2.56	0.00	1.87	1.83	15.28	1.79	N/A	0.76	2.91	1
18	4.96	0.00	N/A	5.51	0.00	0.64	0.00	0.00	7.93	0.00	1.49	N/A	0.00	3.50	0
	100.0	100.0	N/A	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	N/A	100.0	100.0	

Note: Items in **bold** make up \geq 10 percent of the challenges identified at each location.

LEGEND

Water Challenge Area # - Title

- 1 – Integrated Water Resources Mgmt./Planning
- 2 – Communication/Coordination/Education
- 3 – Regulatory Issues
- 4 – Floodplain Management
- 5 – Marine Transportation System
- 6 – Environmental/Ecosystem Health/Mgmt.
- 7 – Funding Issues
- 8 – Water Quality
- 9 – Emergency Response

Water Challenge Area # - Title

- 10 – Water Supply
- 11 – Wastewater Collection
- 12 – General Water Resources Infrastructure
- 13 – Data Collection/Analysis/Dissemination
- 14 – Corps Project Delivery Process
- 15 – Federal/Corps Water Resources Policy
- 16 – Recreation
- 17 – Smart Growth and Development
- 18 – Coastal/Shoreline Mgmt.

City Code – City Name

- CHI – Chicago
- LOU – Louisville
- STL – St. Louis
- WOB – Woburn
- WIL – Williamsburg
- NBR – New Brunswick
- OMA – Omaha
- VAN – Vancouver
- HON – Honolulu
- ANC – Anchorage
- ATL – Atlanta
- SAC – Sacramento
- PHO – Phoenix
- DAL – Dallas

IV. PERSPECTIVES ON GOVERNMENT ROLES

At each of the 14 regional listening sessions, participants were asked to give suggestions of what roles the federal government or other state or local entities should play in addressing the identified challenges. However, not all groups addressed this aspect during their discussion. Further, specific roles for specific federal agencies were usually not defined within the discussion. In most cases, groups focused on identifying challenges and developing potential solutions rather than assigning each challenge and solution to any particular agency, government body, or organization. However, from evaluation of the data, several observations can be made with respect to possible government roles.

PARTICIPANTS' VIEWS ON THE ROLE OF THE FEDERAL GOVERNMENT

One objective of the listening sessions was to obtain feedback from participants on what the federal role may be when addressing water resources challenges (as well as the role of state and local government, citizens, and private groups). Participants voiced many concerns about water resources, and views varied widely regarding the roles of the federal government. Some participants felt that the federal government should get more involved, provide additional resources challenges funding, create new agencies, and expand the level of involvement to the utmost. However, other participants felt the federal government should relinquish control of many programs, press for more corporate funding, dissolve certain agencies, and allow for more public control and involvement. The 18 Water Challenge Areas are listed below with some examples of roles the participants felt the federal government should fulfill.

Integrated Water Resources Management and Planning

- Provide funding and technical expertise to assist watershed planning efforts.
- Coordinate watershed planning among local, state, and federal agencies.
- Change legislative authorization and resource allocation to promote regional planning.
- Create watershed-level standards that can be locally implemented.
- Direct the Corps to coordinate watershed-level planning.

Communication, Coordination, and Education

- Improve partnerships among the Corps, private stakeholders, and other federal, state, and local agencies regarding water resources management.

- Educate public officials in federal, state, and local agencies about basic watershed and environmental functions.
- Involve all stakeholders in the political decision-making process for a more unified approach to problem solving.
- Develop a network mechanism for the development of general consensus among competing interests.
- Create regional councils (consisting of federal, state, local, and private organizations) to meet regularly and share different perspectives.
- Encourage all government agencies to educate local communities on the roles of the federal, state, and local governments.
- Direct the Corps to serve as a federal clearinghouse and provide assistance to local sponsors who are navigating the federal requirements for project authorization.

Regulatory Issues/Aspects of Water Resources

- Provide all long-term permits when projects are turned over to local sponsors.
- Develop a database for study of cumulative impacts to use during permitting process.
- Direct the Corps to sponsor training workshops on the 404 permit process.
- Increase the number of Corps staff for processing permits.
- Take regional differences into account in the permitting process, rather than applying nationwide standards.
- Make the permit appeals process more publicly known.
- Streamline the permitting process by creating a “one-stop” permit source, rather than the current multi-agency system.
- Develop consistency among Corps Districts and Divisions in restoration applications and regulatory actions.
- Change permit approach to include constructive assistance to applicants, such as proposing alternatives.

Floodplain Management

- Provide funding and technical and administrative expertise for updating floodplain maps.
- Clarify the roles of federal agencies in flood prevention and response.
- Coordinate local, state, and federal agencies in developing a comprehensive approach to floodplain management.
- Direct the Corps to continue to assert its traditional flood control responsibility.
- Provide funding to help maintain flood control structures and buy out floodplain land.
- End subsidization of development in floodplains.

Marine Transportation System

- Fund and facilitate problem-solving forums with all stakeholders to build consensus about navigation improvements and environmental quality trade-offs.
- Shorten the plan/design/construct cycle for navigation improvements.
- Fully fund construction for inland waterway improvements to match Inland Waterway Trust Fund.
- Educate leadership and the public on the value of navigation infrastructure to prosperity and national defense.
- Provide funds to eliminate the maintenance backlog of navigation projects on an accelerated schedule.
- Streamline permitting processes for dredge material disposal.
- Provide tax incentives to encourage dredge material disposal plans.

Environmental/Ecosystem Health and Management

- Provide funding for assessing and monitoring environmental health, testing mitigation techniques, and developing environmentally friendly technologies.
- Create consistency among agencies in environmental regulations, especially wetlands.
- Educate the public on environmental issues.
- Assure that existing regulations for mitigation are being applied.
- Revise Corps planning policy to make the environment a co-equal goal with economic benefits in project selection.
- Create cost-sharing incentives to encourage environmental benefits.

Federal Funding

- Provide increased level of funding to implement projects.
- Provide automatic funding in order to complete a project in a timely manner and meet an optimum schedule.
- Be more proactive in informing communities about available funding.
- Use the same funding model across agencies.
- Obtain funding from Congress to eliminate project backlogs.

Water Quality

- Establish water quality as an objective for all Corps projects.
- Direct the Corps to take the lead in regional sediment management and coordinate with other federal, state, and local partners.

- Issue/reissue National Pollutant Discharge Elimination System permits to address point-source pollution.
- Review the Corps mission statement and decision-making criteria for ways to address water quality.
- Direct the Corps, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the National Resource Conservation Service to work towards consistent treatment of wetlands.

Emergency Response

- Pass legislation and direct funding to prevent emergencies and reduce the need for emergency response.
- Issue blanket permits for emergency situations, such as levee repair or dredging needed to address an immediate flood threat.
- Require coordination between the Corps, Federal Emergency Management Agency, and other federal agencies to clarify and define their jurisdiction.
- Focus on flood damage reduction rather than flood control.

Water Supply

- Provide federal financial and technical assistance to develop water supply projects.
- Help state/local governments develop water resource plans.
- Make the Corps water supply authority analogous with the flood damage reduction program.
- Resolve multi-state water supply disputes.
- Utilize existing authorities to address water supply and wastewater needs.

Wastewater Collection

- Reauthorize funding under the Clean Water Act to obtain operation, maintenance, and rehabilitation construction grants.
- Mandate water recycling in ways that protect human health and the environment, such as through systems.
- Provide federal funding for septic system improvement programs for low-income people.
- Support development of alternative technologies for wastewater management.
- Develop an accurate assessment of operation and maintenance costs for treatment facilities.

General Water Resources Infrastructure

- Develop an objective infrastructure project prioritization system.
- Increase funding for infrastructure maintenance.
- Provide more financial assistance for infrastructure in poor and rural communities.
- Provide continued maintenance funding for federally sponsored projects.
- Consider multi-purpose water resources projects whenever possible.

Data Collection, Analysis, and Dissemination

- Identify entities to collect data, such as public agencies, universities, private companies, and community entities.
- Create partnerships and develop a data clearinghouse.
- Create a universal geospatial database with a consistent level of reliability.
- Develop a real-time information system with shared access for all users of water resources.
- Provide additional resources for streamflow data collection and analysis.
- Update floodplain maps.

Corps Project Delivery Process

- Streamline the planning process to construct projects in a timely manner.
- Develop a consistent interpretation of National Economic Development benefits.
- Reinstigate or update cost modeling studies to support projects and economic/ environmental cost-benefit ratios.
- Provide internal flexibility in order to be a leader for innovative solutions for regional issues.

Federal and Corps Water Resources Policy

- Clarify the water resources missions and roles of federal agencies to avoid conflict and duplication.
- Review existing federal water resources policies to make sure they are current and are being properly implemented.
- Develop national, coordinated policies on various water resources issues.
- Ensure that federal water resources policies are flexible enough to address unique regional issues.

Recreation

- Consider recreation applications when conducting project planning, engineering, and design activities.
- Require the Corps, U.S. Fish and Wildlife Service, and Federal Emergency Management Agency to account for the value of recreation in the guidelines, principles, and criteria under which projects are justified.
- Make recreational use a legitimate purpose for water resources use/management.
- Assure that benefits from recreational water use are included in project benefit/cost ratios.

Smart Growth and Development

- Remove subsidies for sprawl, such as through funding for transportation, water, and sewer projects.
- Provide funds to upgrade water/sewer systems in older urban areas and to develop new systems in growing areas.
- Assist states and local governments in developing smart growth programs that protect the environment, economy, and quality of life.
- Encourage development practices that minimize environmental impact.
- Provide funds and encouragement to purchase and clean up brownfields.

Coastal/Shoreline Management

- Include periodic nourishment, monitoring and evaluation in operation, maintenance, repair, rehabilitation, and replacement projects.
- Designate beaches as “National Jewels” through the National Beach Service.
- Provide federal funds needed for important restoration programs.
- Establish national standards, including technical design, economics, and research.
- Coordinate efforts among federal agencies.

BROAD PERSPECTIVES ON GOVERNMENT ROLES

Generally, participants stressed a need for the federal government to work more closely with other water resources organizations and stakeholders, with better coordination and more unified partnerships. Specifically, participants expressed a need to clarify water resources missions of federal agencies to avoid inherent duplication and conflict. They thought that coordinated national policies should be developed for the various identified water resources issues. It was stressed that such policies be flexible enough to address unique regional water resources needs.

Many participants desired more simplified and streamlined policies and procedures relating to regulatory review, permitting, and project implementation. It was suggested that a “one-stop” source for water permits be developed, rather than the current multi-agency system. Many participants expressed frustration with the length of time between the problem recognition, planning, and response stages for water resources issues. In particular, several participants pointed to delays within the Corps project delivery process and desired a shortened cycle for planning, design, and construction of Corps projects.

General concerns were expressed about inadequate federal funding for areas such as the marine transportation system, general infrastructure, and environmental restoration. Many participants pointed out that a growing project backlog was developing because of the lack of federal funding. Another funding-related issue was the use of outdated and unreliable data due to a lack of investment in data collection. Participants felt water resources studies and projects would be shorter and more reliable if the federal government used the best methods, materials, and tools to develop them.

A large number of participants commented on the growing problem with coastal and inland waterway navigation and shipping. Participants felt the federal government should address and educate the public about this major national concern because of the effects it has on citizens nationwide. In reference to the nation’s economic prosperity, many participants felt the government should assure that U.S. ports and waterways can accommodate growing domestic and international demand for goods and related trade. The federal government was viewed as being in a position to develop a comprehensive plan for maritime transportation improvements. Participants stressed that the government could prioritize development opportunities while striking a balance with environmental concerns.

Participants saw a government role in educating the public on environmental issues. Many believed that environmental values and outputs were not treated equally with economic concerns. It was suggested that federal policies, particularly Corps policies, be revised to reflect equal consideration of economic and environmental benefits when selecting among alternative water resources projects. In the same vein, participants suggested that cost-sharing incentives be developed to encourage investment in environmental projects. Participants also mentioned that federal water resources policies generally do not account for cumulative environmental impacts from economic development and that the government should consider such project impacts.

Some participants suggested that the federal government could play a role in resolving cross-jurisdictional water supply issues. The federal government was cited as a possible source of expertise and assistance to help state and local governments develop water resource plans. Many participants suggested that the government organize its water resources planning efforts around watersheds instead of political and agency boundaries. The Corps was described as being in a good position to coordinate watershed-level planning, since watersheds define the geographic boundaries of its Districts and major Divisions.

Watershed-level planning was also seen as an important governmental function for managing the nation’s floodplains. Comprehensive management of areas prone to flooding was viewed as requiring cross-jurisdictional coordination and review of floodplain development

patterns. Many participants felt that the federal government has subsidized new developments at risk of flood damage which may subsequently be repaired or rebuilt at taxpayers' expense. Ending this real or perceived subsidization was a clearly defined avenue for federal involvement. Further, several participants suggested that federal agencies, specifically, the Corps and the Federal Emergency Management Agency, were slow in updating and providing floodplain maps as needed. It was also suggested that relevant government agencies could educate the public about the true meaning of the 100-year flood concept. It was believed that misunderstandings about the 100-year flood and 100-year floodplain had led to confusion and bad judgments about the safety of new developments.

Many participants felt that water-based recreation should be given greater consideration and priority in the management of lakes, rivers, and other waterways. Specifically, it was believed that the Corps, U.S. Fish and Wildlife Service, and other federal agencies should reevaluate guidelines, principles, and criteria under which projects are justified to explicitly account for the value of recreation. Recreational opportunities were seen as a regional benefit/stimulus that should be accounted for in the planning and management decisions of federal agencies.

V. NATIONAL SESSIONS OVERVIEW

Based on the information obtained in the 14 regional listening sessions and review of the 542 water resources challenges identified at the sessions, 18 general Water Challenge Areas were developed. The 18 Water Challenge Areas were then presented to participants at two national listening sessions. The national sessions included participants from around the United States and represented agencies with national perspectives (in addition to regional interests). The first national listening session was held in San Diego, California on October 24, 2000 and was hosted by the National Association of Flood and Stormwater Management Agencies (NAFSMA) as part of their NAFSMA 2000 Conference. The second national listening session was held in Washington, DC on November 9, 2000 and was hosted by the U.S. Army Corps of Engineers and its Institute for Water Resources (IWR). There were 94 non-Corps attendees at the San Diego session and 65 at the Washington, DC session. One of the objectives of the national sessions was to present the 18 identified Water Challenge Areas to national session participants and compare the results with the information developed by regional sessions participants.

RESPONSES FROM NATIONAL SESSION PARTICIPANTS

The purpose of the national sessions was to determine if the information generated from the regional sessions was accurate in identifying the key water resource challenges facing the nation and to gain additional input on roles of the federal government in addressing the challenges. Although the potential federal role was discussed during the regional sessions, additional information on specific roles of the federal government was needed. Therefore, greater emphasis was put on obtaining more federal-role data from the national sessions. In both San Diego and Washington, DC, participants were asked to vote on the Water Challenge Areas they felt were most important. Each participant was given five self-adhesive dots and asked to post their dot-votes on any of the 18 Water Challenge Areas (or “other” if applicable) posted on the butcher pads around the room. The top-ranking Water Challenge Areas were further discussed in small groups. The number of Water Challenge Areas chosen for further discussion was a factor of group size. The results of the voting varied between the two sessions and also varied slightly from the regional results. The following sections summarize the voting results and comments on federal roles from the two national sessions.

San Diego National Listening Session

After the casting of votes by participants, the seven Water Challenge Areas that received the most dot-votes were dispersed around the room for more detailed small group discussion. Each small discussion group was asked to present the problems associated with each water challenge area, decide what actions need to be taken to address the challenges, and attempt to identify the role of the federal government regarding the Water Challenge Area.

Based on the dot-voting results, the following seven Water Challenge Areas received the highest number of votes:

(67 votes)	Regulatory Issues (Water Challenge Area #3)
(47)	Floodplain Management (Water Challenge Area #4)
(41)	Water Quality (Water Challenge Area #8)
(37)	Integrated Water Resources Management and Planning (Water Challenge Area #1)
(35)	Corps Project Delivery Process (Water Challenge Area #14)
(31)	Communication and Coordination (Water Challenge Area #2)
(28)	Federal Funding (Water Challenge Area #7)

Overwhelmingly, the San Diego session participants felt that regulatory issues were critical regarding the nation's water resources. Not surprisingly, given the topic of the host conference, floodplain management issues were rated high in importance. Some comments on the roles of the federal government were provided as part of each discussion. The following are some examples of statements made regarding the seven Water Challenge Areas listed above:

Regulatory Issues

- *Federal government:* Set policy and stick to (enforce) timeframe or change the process to be less adversarial, to promote meeting multiple uses.
- *Federal government:* Increase staff, decrease permit requests (especially for small permits).
- *Congress:* Clarify statutory authority or stay within requirements – Endangered Species Act and habitat protection are not readily handled under current statutes.
- *Federal government:* Align wetlands and flood damage reduction policies and regulations to accomplish a clear, common national goal in a way that meets flood and habitat needs (respecting regional needs).
- *Corps:* Better integrate the Corps regulatory role with the national regulatory role – planners and regulators within the Corps.
- *Corps and U.S. Fish & Wildlife Service:* Align regulations, have better communication, and strive for a balance related to individual interpretations.
- *Federal government:* Get out in the field to see real needs.
- *Corps headquarters:* Give more authority to local Districts.
- *Corps headquarters:* Give more emphasis to regional general permits.

Floodplain Management

- *Federal government:* Need to look at the effectiveness of nonstructural flood control options.
- *Federal government:* Implement mapping based on future development.
- *Federal government:* Increase funding for floodplain property buyout.

- *Federal government:* Increase Federal Emergency Management Agency responsiveness to floods.
- *Federal government:* Update and maintain floodplain ordinances and mapping.
- *Federal government and local entities:* Develop real-time flood warning systems.
- *Federal government:* Apply a balanced approach (rather than forced) to the use of structural/nonstructural solutions.
- *Federal government:* Need long term coordination and assurances on destruction, construction, and operation and maintenance of projects (structural and nonstructural).
- *Federal government:* Address assumption of legal responsibilities without legal authority.
- *Federal government:* Narrow funding gap on property acquisition (required vs. provided).
- *Federal government:* Encourage best management practices (BMPs) to minimize increased run-off from development.
- *Federal government:* Discourage development in the flood zone.

Water Quality

- Congress must clarify responsibility of Municipal Separate Storm Sewer Systems (MS4s) with respect to Total Maximum Daily Loads.
- Need to keep the “big picture,” such as for cost feasibility, technical feasibility, relative to water quality improvements.
- *Federal government:* Conduct more monitoring plans and water quality thresholds.
- *Federal and state governments, Environmental Protection Agency, and Corps:* Assure that treatment facilities do not become wetlands.
- *Federal, state, and local government:* Consider funding for operations and maintenance when dealing with BMPs.

Integrated Water Resources Management and Planning

- Develop cooperation among agencies when solving problems (i.e., overlap).
- Implement and follow through on a developed watershed management plan.
- Need for federal government to evaluate the need for infrastructure.
- *Federal government:* Provide resources (funding/manpower) through information program to encourage initiatives relating to watershed approach.
- Initiate initial collaboration (federal summit) to discuss all policies concerning watersheds.
- *Federal government:* Collaborate the work of all federal agencies through the states rather than reams of isolated policies.
- *Federal government:* Develop a federal watershed planning guideline that integrates all of the federal and state policies related to watersheds.

Corps Project Delivery Process

- Eliminate the arrogance of the Corps and include local input and involvement (additional experienced personnel outside of Corps).
- Allow for more flexibility regarding the roles of Districts and partners.
- Increase the maturity of project management within the Corps.
- *Federal government*: Promote and facilitate both state and local roles.
- *Federal government*: Provide incentives as part of the cost-sharing process.
- *Corps*: Restructure the Corps to allow for better delivery.

Communication/Coordination/Education

- Resolve communication breakdown between the Corps and other federal agencies.
- Increase coordination relating to water resource planning projects.
- Develop better communication between the Corps and non-federal sponsors.
- Convey the findings from the listening sessions to other federal agencies upon completion.

Federal Funding

- *Federal government*: Conduct gap analysis on all 18 Water Challenge Areas.
- *Federal government*: Fund all water resources programs using a “water resources appropriation bill,” instead of funding individual programs.
- Need to apply a sliding scale approach to funding.
- Fiscal responsibility should be shared between local and federal agencies for long-term monitoring, environmental impacts, and operations and maintenance.
- *Federal government*: Develop a manual for federal funding of water-related projects.
- *Congress*: Fully fund projects over project term, instead of seeking annual appropriations.
- *Federal government*: Recognize the funding need and appropriate fairly.

Washington, DC National Listening Session

After the casting of votes by participants, the six Water Challenge Areas that received the most dot-votes were dispersed around the room for more detailed small group discussion. Each small discussion group was asked to present the problems associated with each Water Challenge Area, decide what actions need to be taken to address the challenges, and attempt to identify the role of the federal government regarding the Water Challenge Area.

Based on the dot-voting results, the following six Water Challenge Areas received the highest number of votes:

(34 votes)	Recreation (Water Challenge Area #16)
(32)	Marine Transportation System (Water Challenge Area #5)
(32)	Federal Funding (Water Challenge Area #7)
(31)	Environmental/Ecosystem Health and Management (Water Challenge Area #6)
(25)	Water Quality (Water Challenge Area #8)
(25)	Floodplain Management (Water Challenge Area #4)

The Washington, DC participants rated the Recreation Water Challenge Area as the most important. This is contrary to the conclusion of the regional listening sessions, which provided a much lower rating overall. However, the Washington, DC session did reaffirm the Marine Transportation System as a critical Water Challenge Area. Some comments on the roles of the federal government were provided as part of each discussion. The following are some examples of statements made regarding the six Water Challenge Areas listed above:

Recreation

- *Corps*: Optimize water management, management of dams, and when water is released.
- Increase ability to provide for quality recreation, visitor satisfaction, and adequate facilities.
- *Corps*: Develop a downstream policy to play a more significant role in downstream releases/uses.
- Give recreation appropriate consideration and a higher priority regarding the management of national recreation lakes.
- *Corps*: Expand capacity of lakes to deal with growing demand for recreation.
- *Corps*: Address the over abundance of debris in waterways.
- Improve lines of communication between federal agencies and recreation industry.
- Communicate and educate agencies about the sources of waterway debris.
- Need a chosen leader within Congress and other water management agencies to assist the Corps in making smart decisions, dealing with policy issues, enforcement for recreational purposes, and environmental sustainability.
- *Corps*: Need to consider hydrologic options vis-à-vis recreation (fishing, boating) in everything we do.
- *Federal government*: Review their understanding of recreational needs, plans, policies, interpretations, regulations, etc., across existing authorities and policies.
- *Federal government*: Start a leadership of agencies, where the Corps takes the lead and sets the example.

Marine Transportation System

- Prepare for future impacts and how they will affect the prosperity of future generations.
- *Corps/federal government*: Develop federal partnerships for bigger Corps budget and environmental budget.

- Improve the old and obsolete navigation structure.
- *Corps/federal government*: Develop a long-range plan to solve problem of aging infrastructure.
- Expand and improve the locks for increased agricultural demand.
- Look at the marine transportation system as more than an economical method.
- *Corps*: Recreational use needs to be factored in marine transportation system planning and development.
- *State and federal government*: Work together and develop an intermodal plan for the future.
- *Federal government*: Assist in deciding where funds should be allocated on a regional basis.
- *Federal government*: Provide mechanisms for funding, coordination, system-wide economic evaluation, and information dissemination and education.

Federal Funding

- Each agency should develop a specific funding role.
- The allocation of funds should be done with consistency, and funds should be utilized when they are needed, not when they are made available.
- Develop multi-objective approaches and increase interaction and communication within and between agencies and stakeholders.
- Make federal funding information readily available to the private and public sectors.

Environmental/Ecosystem Health and Management

- *National Aeronautics and Space Administration and United States Geological Survey*: Monitor and develop data.
- *Department of State*: Need to “get with the program.”
- *IPCC*: Partner with other agencies.
- *Intergovernmental Panel on Climate Change*: Partner with other agencies.
- *Corps*: Reduce flooding risks using reforestation techniques and other non-structural options.
- *Department of Energy*: Explore alternative energy sources and increase research.
- *Environmental Protection Agency*: Focus on air quality.
- *Department of Transportation*: Develop a transportation policy.
- *Federal government*: Promote public involvement in decision-making process.
- *Corps*: Assure the maintenance of navigation permitting and regulation.
- *Federal government*: Need to provide better oversight.

Water Quality

- *Federal government*: Implement integrated strategic planning at the federal level for water quality protection.

- Determine federal government role in Total Maximum Daily Loading planning.
- *Federal government*: Develop North American water law treaties with U.S., Canada, and Mexico.
- Apply consistent, cohesive legislation/action on drinking water.
- *Federal government*: Make source protection a priority of the federal government for humans and the environment.

Floodplain Management

- *Federal government*: Provide federal funding for the preservation (or restoration) of natural floodplain environments.
- Adjust formulation and evaluation processes to better weigh non-economic and environmental considerations.
- *Federal Emergency Management Agency*: Need better coordination between federal and state agencies on planning and education programs.
- *FEMA/Corps*: Resolve unintended, conflicting policies and practices between agencies.
- Large need for better coordination and sharing of agency data in various water resources areas.
- Reactivate/re-energize Interagency Task Force on floodplain management.
- *Federal government/FEMA*: Provide substantial funding to allow for FEMA to modernize maps and make maps readily available.

VI. CLOSING REMARKS

The purpose of the listening sessions were to:

- Begin a dialogue with stakeholders about water resources challenges
- Provide stakeholders and concerned citizens the opportunity to voice concerns about pressing water resources problems, opportunities, and needs impacting their lives, communities, and future environmental sustainability
- Learn what stakeholders believed to be the most important water resources challenges, and what the role of the federal government should be in addressing them.

The level of participation during the sessions varied by location, but all the sessions had a broad variety of interested stakeholders present to discuss the challenges relating to water resources and the many processes associated with water resources. Furthermore, the unique forum allowed for a great deal of discussion by all participants. The Corps responsibility was to listen to the participants' concerns and compile the information generated at each session for review. The Corps and its facilitation team obtained an extensive amount of information from participants regarding many different aspects of operations, planning, and coordination relative to water resources needs for the 21st century. The information presented by participants addressed concerns relative to the federal government, but also identified challenges associated with a much broader range of roles by both federal and state agencies. The objectives of the sessions were met, and the data derived from the sessions are expected to be of considerable importance in continuing the dialogue with the public and other federal agencies. The results from the listening sessions will play a significant role in the revision of the Corps Civil Works strategic plan.

After reviewing 542 challenges identified across the 14 regional listening sessions, some basic Water Challenge Areas were evident. The challenges were aggregated into 18 general Water Challenge Areas relating to water resources. The evaluation of challenges was performed by looking at the frequency of challenges by Water Challenge Area and the number of votes by Water Challenge Area. This information was also evaluated on a location level. From these different methods of study, some basic trends were determined, both on a national and regional level.

SUMMARY OF RESULTS

The ranking of Water Challenge Areas varies according to how the information is arranged and the method of analysis. When the results from each data set are compared, some distinct similarities are evident. The top five ranked Water Challenge Areas from each evaluation method are presented in Table IV-1 for comparison.

Upon examining the results of different methods of analysis, Communication/Coordination/Education can be considered a dominant Water Challenge Area. This particular Water Challenge Area has a relationship to other Water Challenge Areas identified by participants, in that many of the other Water Challenge Areas require sufficient communication and coordination to function properly. Other Water Challenge Areas heavily identified and voted on included the Marine Transportation System and Environmental/Ecosystem Health and Management Water Challenge Areas, which ranked among the top five Water Challenge Areas in all the analyses. Federal and Corps Water Resources Policy ranked in the top five in four of the six evaluations, which indicates that this Water Challenge Area was a concern to a large portion of participants. Additionally, the Corps Project Delivery Process, Water Supply, Floodplain Management, and Integrated Water Resources Management and Planning can be considered among the major Water Challenge Areas identified by participants.

Participants implied many related roles for government agencies in responding to the identified Water Resources Challenges, but only referred to specific federal agencies on occasion. Generally, there was an expressed need for the federal government to coordinate more closely with other water resources organizations and stakeholders to form stronger, more unified partnerships. Participants also voiced a need for simplified and streamlined policies and procedures relating to water resources problems and opportunities. The desire for faster and more efficient regulatory review, permitting, and project implementation processes was expressed by many participants. It was also felt that the federal government could provide better funding for water resources infrastructure and reduce or eliminate the backlog of unfunded projects and operation and maintenance activities.

With respect to the identified Water Challenge Areas, participants implied the following activities among a broader set of federal roles:

- Resolve cross-jurisdictional water supply issues.
- Develop comprehensive plan for maritime transportation improvements.
- Revise federal policies to reflect equal consideration of economic and environmental benefits.
- Reevaluate guidelines, principles, and criteria to explicitly account for the value of recreation.
- Undertake basin- or watershed-level planning.
- End indirect government subsidization of floodplain development.
- Educate the public on the general value of water resources and on more specific topics such as the meaning of the 100-year flood.

Finally, it is recommended that the dialogue continue among stakeholders and water resources agencies to refine and prioritize efforts and respective roles in meeting the water resources challenges identified over the course of the listening sessions. Greater communication and understanding will bring about more commitment and action in addressing the water resources challenges that confront the nation in the 21st century.

TABLE IV-1

WATER CHALLENGE AREA RANKING OVERVIEW (TOP FIVE ONLY)

Water Challenge Area Rank	Frequency of Water Challenge Area Identification (Primary Assignment)	Frequency of Water Challenge Area Identification (Primary plus Secondary Assignments)	Number of Locations Where Water Challenge Area Received ≥ 10% of Identified Challenges (Primary Assignment)	Dot-Voting Concentration (Primary Assignment)	Dot-Voting Concentration (Primary plus Secondary Assignments)	Number of Locations Where Water Challenge Area Received ≥ 10% of Votes (Primary plus Secondary Assignments)
1	Communication/ Coordination/ Education	Communication/ Coordination/ Education	Communication/ Coordination/ Education	Marine Transportation System	Communication/ Coordination/ Education	Communication/ Coordination/ Education
2	Marine Transportation System	Federal and Corps Water Resources Policy	Tie: Marine Transportation System Environmental/ Ecosystem Health and Management	Communication, Coordination, and Education	Federal and Corps Water Resources Policy	Federal Corps Water Resources Policy
3	Environmental/ Ecosystem Health and Management	Environmental/ Ecosystem Health and Management	Water Supply	Water Supply	Marine Transportation System	Marine Transportation System
4	Water Supply	Marine Transportation System	Tie: Corps Project Delivery Process Federal Funding	Environmental/ Ecosystem Health and Management	Water Supply	Tie: Integrated Water Resources Management and Planning Environmental/ Ecosystem Health and Management
5	Federal and Corps Water Resources Policy	Corps Project Delivery Process	Tie: Integrated Water Resources Management and Planning Floodplain Management	Floodplain Management	Environmental/ Ecosystem Health and Management	Tie: Floodplain Management Water Supply Corps Project Delivery Process

APPENDIX A

LISTENING SESSIONS WATER RESOURCES CHALLENGES AND DOT-VOTING DATABASE

Key for Table A-1 List of Identified Water Challenges

Water Challenge Area Assignment Numbers and Corresponding Water Challenge Areas

#	Water Challenge Area
1.	Integrated Water Resources Management and Planning
2.	Communication, Coordination, and Education
3.	Regulatory Issues
4.	Floodplain Management
5.	Marine Transportation System
6.	Environmental/Ecosystem Health and Management
7.	Funding Issues
8.	Water Quality
9.	Emergency Response
10.	Water Supply
11.	Wastewater Collection
12.	General Water Resources Infrastructure
13.	Data Collection, Analysis, and Dissemination
14.	Corps Project Delivery Process
15.	Federal/Corps Water Resources Policy
16.	Recreation
17.	Smart Growth and Development
18.	Coastal/Shoreline Management.

Legend of Host Corps Divisions

SWD	Southwestern Division
SPD	South Pacific Division
SAD	South Atlantic Division
POD	Pacific Ocean Division
NWD	Northwestern Division
NAD	North Atlantic Division
MVD	Mississippi Valley Division
GRD	Great Lakes and Ohio River Division

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SWD	Dallas	A	Intelligently ensure adequate water resource infrastructure and supply: 1) adequate water supply to growing urban areas; 2) meeting new drinking water regulations with present community budgets; 3) a reliable, continuous supply of water for all communities; ensure adequate water resource infrastructure and supply; 4) desalinization; 5) maintain water quality and availability at reasonable cost; 6) how to use brackish water in water supply; 7) water supply / watershed management; 8) need to re-invest in aging water resources infrastructure that provides water supply, flood protection, and water based recreation; 8) culture changes to make conservation more a way of life; 9) rapid growth exacerbates drainage problems; 10) expanded use of groundwater supplies, which are being depleted, affects surface water flows; 11) development and maintenance of raw water supplies;	6	10	12	1
SWD	Dallas	AA	Waterway development maintenance and repair to meet industrial and commercial advancement and progress: 1) national management of coastal waterway development and maintenance; 2) disposal areas for dredging; 3) port infrastructure; 4) waterway development to meet industrial and commercial advancements; 5) provide waterborne transportation facilities without damaging aquatic ecosystems or unnecessarily impinging on water related recreation	6	5	18	4
SWD	Dallas	B	Develop consensus on water resource priorities: 1) additional water resources must be pursued in an environmentally responsible strategy; 2) water availability / conservation; 3) develop public awareness of the competitive uses of water so that they can make informed choices of the trade offs; 4) as populations grow flood control projects must be considered; 5) balance environmental and economic development; 6) think outside the box to develop cooperative measures to increase water supplies; 7) securing federal funds to support programs such as beneficial use of dredge materials;	35	10	2	12

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SWD	Dallas	BB	Better management of lakes and reservoirs: 1) better management of lakes and reservoirs; 2) assistance with implementation of innovative water supply projects, particularly desalination; 3) retaining storm water for domestic use; 4) manage recreation benefits of reservoirs vs. water supply needs; 5) management of inadequate water supply for irrigation and livestock feed	0	10	14	6
SWD	Dallas	C	Technology and advances and real time data exchange: 1) flood warning that is timely and accurate; 2) real-time exchange of project releases; 3) hourly transmission of hydro met data from data collection platforms; 4) exchange of river forecast information; 5) need accurate stream flow information to evaluate risk; 6) technology is exploding from internet, digital video, to aerial imagery; 7) All levels of government should review needs and consider supporting technology – sharing initiatives	4	13	13	1
SWD	Dallas	CC	Adequate funding for water resource development and maintenance projects: 1) more local control to water management; 2) adequate funding and equitable funding for water resources development and maintenance; 3) get rid of ceilings / full fund projects; 4) length of time and cost of performing environmental requirements	1	7	7	1
SWD	Dallas	D	Public education and communication: 1) public education and communication within each of the challenges named; 2) public awareness; 3) public education on water supply needs	17	2	2	4
SWD	Dallas	DD	Accurate non-flood releases from reservoirs to consider water rights	4	15	4	1
SWD	Dallas	E	Educating general public and government agencies on the value of our water resource systems: 1) intergovernmental cooperation to deal with drainage issues; 2) educate general public and agencies staffers regarding water resources issues; 3) increase Congressional awareness	21	2	2	3

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SWD	Dallas	EE	Providing for instream flow and inflows to bays and estuaries while ensuring water supplies for human needs: 1) movement of water to the regions of greatest need from regions of lesser needs; 2) balance the zeal of environmentalists against the practical needs of living spaces, 3) water supply and other uses; provide instream flows and inflows to bays and estuaries while ensuring adequate water supplies for human use	0	10	6	3
SWD	Dallas	F	Need to protect floodplains and water quality resources: 1) placing reservoirs (lakes) in locations with minimum amount of environment impact or damage; 2) development in flood-prone areas needs to stop; 3) protect flood plains; recognize and protect the natural benefits of wetlands and riparian habitat; 4) geomorphologic impacts upon stream channels are not anticipated by public regulators; 5) environmental resources need to be addressed with increased water resource development for expanding economic development	9	4	8	1
SWD	Dallas	FF	Texas policy on groundwater - possibly modify the rule of capture.	5	15	10	4
SWD	Dallas	G	Coordinate planning and funding for future water resources: 1) coordinate federal programs that impact water resources; 2) provide safe, sufficient supplies of water to communities while also meeting natural needs; 3) funding for projects flooding from creeks and streams; 4) flooding in rivers is unchecked; 5) upgrade existing flood control lakes; 6) more input and cooperation between federal, state and local agencies, and stakeholder groups; 7) future water supplies; 8) growth vs. adequate and clean water supply; 9) water quality; 10) need for better coordination amongst all federal and state agencies for dealing with environmental permitting / restoration issues.; 11) need one stop shopping; 12) develop and maintain better information for decision makers; 13) develop collaboration between federal agencies to address water resources management	22	2	15	3

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SWD	Dallas	GG	Watershed planning with state agencies to improve (currently doesn't exist): 1) keep urban development out of the 100 year floodplain; keep floodplain maps current; 2) do planning with state agencies water resources process (in Texas senate) is defining solutions that are very expensive; 3) recognition and incorporation of true environmental benefits into a new project of remediation of an existing project	5	4	14	3
SWD	Dallas	H	Prevent coastal erosion, flooding, and pollution: 1) coastal flooding and restoration, beaches and wetlands, beneficial use dredge material, navigation channel; 2) coastal and shoreline erosion; 3) stream management-regulatory programs are after the fact;	13	18	18	4
SWD	Dallas	HH	Definition of desirable environment and quality of life: 1) balancing human needs with environmental preservation; 2) water use; 3) handling competitive uses such as recreation, power, municipal and industrial water supply; 4) flood control; local vs. regional; 5) define "desirable" environment and "quality of life"	2	17	1	3
SWD	Dallas	I	Provide sufficient funding for 404 program: simplify and standardize regulatory program: 1) simplify and standardize the permitting process; 2) identify "hot spots" or sensitive areas on GISD; 3) create consistency within districts / regions to aid applicants in staying within rules; 4) more funding is needed for permitting issues to effectively implement the CWA regulation but to be fair and timely; 5) establish reasonable rules for de-listing threatened and endangered species; 6) add staff to get permits processed timely and to do enforcement	14	3	7	7
SWD	Dallas	II	Ensure effective mitigation for wetlands loss due to Corps projects: 1) protecting the nations wetland and other water related aquatic habitats while allowing for some human uses, particularly in coastal areas; 2) ensure effective mitigation for wetlands lost due to Corps projects; give credit for the environmental enhancement resulting from the construction of a reservoir or channel	2	6	15	1

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SWD	Dallas	J	Improve awareness and communication to educate the public on the benefits of civil works projects and Corps responsibilities: 1) better coordination between Corps and watershed communities; 2) public awareness of benefits of Corps; 3) Corps communication with public on projects	11	2	2	3
SWD	Dallas	K	Importance of moving water from areas that are over-abundant to areas that are under-abundant: 1) increased distribution of water from existing lakes through pipelines to points at need; 2) drought planning; 3) lack of infrastructure to move water from areas where water is in great supply to areas where water is in shortage; 4) water transportation and storage systems are inefficient and inadequate	13	10	10	3
SWD	Dallas	L	Working through multi-objective water resource management desires: 1) provide recreational lake users and metropolitan areas a supply of water at the same time; 2) work through multi-objective water resource management desires; 3) multi-objective management	30	1	15	17
SWD	Dallas	M	Communication between Corps and property owners and what are the property owners rights. (What is jurisdiction?): 1) more specific definition of the waters of the U.S.; 2) create an objective mitigation process for areas impacted; 3) what are waters of the US; 4) identify restrictions to property development consistently and quickly; 5) property owners rights – what are they; 6) better communication between Corps and private sector; 7) mitigation for waters of US and wetlands – 404 process; 8) definition of and consistency with the new 404 NWP	32	2	2	9
SWD	Dallas	N	Restructure the permitting process and ignore the trivial and study the big problems: 1) quicker processing of 404 permits; 2) avoid one entity to frivolously block issuance of water rights to other entities; 3) reduce the ability of federal agencies to make rules related to water quality and the environment without significant oversight or direction	7	3	15	2
SWD	Dallas	O	All remediation from defense contamination should be turned over to the Corps.	7	15	3	1

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SWD	Dallas	P	Maintain and restore the environment and bio-diversity: 1) preserve the environmental process and bio-diversity; 2) balance needs of future human population growth with environment protection; 3) provide a sufficient amount of clean water for healthy fish population to meet demands of sport and commercial fisheries; 4) maintain and/or restore bio-diversity while meeting societies water demands; 5) water resources contaminated by long term historical releases of hazardous material often have concentration levels of certain "chemicals of concern" that pose identifiable potential "risks" to human or wildlife health; 6) endangered species act; 7) restoration of habitat injured by some human action such as an oil spill is often difficult to measure or predict the success of; 8) maintain and restoring wetlands that provide important habitat for the large number of wildlife species that depend on them	10	6	6	3
SWD	Dallas	Q	Scale of Corps projects matching available resources: 1) projects don't match the scale of the resources available; 2) funding flow isn't continuous; 3) local sponsors should have more control; 4) flood damage reduction measures driven by numbers – not people; 5) flood damage issues have to consider development / economic growth potential when formulating projects; 6) sharply reduce project with primarily private beneficiaries, including agriculture drainage projects and renourishment project for private beaches;	3	7	14	5
SWD	Dallas	R	Upgrading aging infrastructure while balancing environmental protection, flood control, and what the public desires Infrastructure needs: 1) aging treatment and distribution systems; 2) planning and construction of new infrastructure to meet regional water resources needs of the 21st century; 3) aging dams do not meet today's design and safety criteria; 4) maintenance of existing infrastructure, including water supply, flood control, hydropower, and ports; 5) replacing and maintaining existing infrastructure should be treated less strictly than new projects; dam safety –	49	12	1	10

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			development encroachments into floodplains, flood control, public water supplies; 6) maintain and reconstruct the aging water related infrastructure; 6) aging flood control structures – many of them are nearing the end of their 50 year design life; 7) rehabilitation of failing water, waste water; drainage infrastructure				
SWD	Dallas	S	Maintaining clean water through effective government cooperation: 1) renovation of flood and siltation control features; 2) preserve water quality in flowing streams; 3) roles and responsibilities need to be defined for federal, state, local government; 4) more responsibility given at COE district level as opposed to HQ; 5) coordinate between federal, state, and local programs to prevent conflict and impact to environment; 6) re-develop brownfields on and near waterways	22	8	2	5
SWD	Dallas	T	Cumulative assessment of environmental impacts: environmental degradation-loss of native plants, habitat wildlife; full analysis of primary, secondary, and cumulative impacts assessments of Corps projects involving wetlands; cumulative assessment of environment impacts-ranking and prioritizing of impacts before planned and on-going water projects; ensure independent cost/benefit review of all Corps projects with a cost greater than \$25 million or projects that are controversial	13	6	1	4
SWD	Dallas	U	Find nonstructural flood control methods: 1) methods to address flooding; 2) reduce flood property damage by reducing impediments in the PMF flood elevations within inland waterways – this will aid in restoration of riverine habitats and the environment by doing non structural projects; 3) flood control; 4) affordable, environmentally friendly flood control	21	4	4	4
SWD	Dallas	V	Improve preparedness to minimize the destruction from natural disasters: 1) storm water quality improvement and long term maintenance of qualities obtained; 2) improve to minimize the destruction from natural disasters; 3) getting	2	9	9	1

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			people out of the way during flood events; 4) flood warning/evacuation infrastructure; 5) effective public education				
SWD	Dallas	W	Management of inadequate water supply for irrigation and livestock: 1) prevention of agricultural and rural impacts on watersheds and water quality, and restoration of impacted watersheds; 2) meeting the water need for agriculture; 3) agriculture community facing great problems in trying to survive with crop production, livestock needs in drought situations – need new water sources built in rural communities	1	10	10	1
SWD	Dallas	X	Regional siltation basins and assessing dredging fees on a per acre basis: 1) desilt older reservoirs to maintain water supply storage volumes; 2) quantify regional impacts of erosion on downstream rivers, lakes and harbors	8	4	15	3
SWD	Dallas	Y	Improvement and efficiency of natural disaster response: 1) need s stream gauging program that addresses all agencies (federal, state, local) – if federal funding continues to be pulled, a more aggressive educational sales pitch to local governments for partnership on gage funding; 2) build stronger working partnership between Corps and FEMA; improvement in efficiency of natural disaster response	5	9	2	3
SWD	Dallas	Z	Need for sustainable development in water resources development: 1) transferring financial responsibility to state / local public entities for projects/ programs need to be combined with an education component that provides information the importance of continuing the funding for local interests; 2) water quality and quantity; 3) upgrading aging infrastructure and balancing environmental protection, flood control and public desire; 4) flood protection, response to natural disaster and repairs to damaged environment reflect the need for sustainable development; 5) research and development of water to seek new water resources	6	17	17	2
SPD	Phoenix	A	The Corps should become a national resource for national watershed programs, by acting as a broad-based resource for proactive, national watershed management:	5	1	1	4

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			1) The Corps should treat watersheds as a whole, looking at all of the needs within the watershed itself, because each watershed functions as a distinct unit: holistic approach is needed				
SPD	Phoenix	B	The 404 Permit process take too long: 1) funding opportunities are lost, or projects can't be maintained; 2) The Corps is perceived as a regulator, rather than a facilitator; 3) fast track simple projects;	7	3	15	5
SPD	Phoenix	C	Implement regional planning for water issues, including better regional cooperation and planning among various agencies, cities and municipalities. This approach can expedite projects and avoid litigation: 1) communities need to work together as a region to resolve potable water issues; 2) need to work together to get a system of water delivery to entire region	9	1	2	2
SPD	Phoenix	D	Take a holistic approach to natural resource management, there is too much emphasis on "Band-Aids," not enough attention to entire watershed system: 1) water is finite –we need to improve capture and safe release from watershed	13	1	1	1
SPD	Phoenix	E	The Corps must be more proactive instead of reactive: 1) it must adequately maintain flood control projects, and must take emergency maintenance actions quickly after damage has been done.	0	4	9	1
SPD	Phoenix	F	Clearly define the missions, roles and regulations of all federal agencies, including the Corps; it is very confusing to the public: 1) agencies should work together to solve problems; 2) many agencies have small pieces of pie – no one federal agency has all the answers – all agencies need to work together for timely solutions and more efficient use of federal resources	10	2	2	4
SPD	Phoenix	G	Lack of federal money means that problems get dumped on local agencies, which may not be equipped to handle the problem. Rural jurisdictions have the least resources to handle problems.	6	7	15	1

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SPD	Phoenix	H	More consistency in Corps regulatory functions/policies; this will avoid delays: 1) delays and circumventing regulations; 2) regulations are better suited for eastern watersheds; 3) COE seems to be the bad guy – not helping process; 4) political factors seem to be driving process more than adherence to regulations	2	3	15	2
SPD	Phoenix	I	Rural and urban water/sewer infrastructure needs to be improved; emphasize water re-use and maintenance of old structures.	0	10	12	
SPD	Phoenix	J	Need to recognize value of both structural and non-structural flood control projects; there is a need for both types of solutions.	12	4	14	1
SPD	Phoenix	K	Availability, reliability and accessibility of water resources; it is imperative to identify new sources of water and protect water quality: 1) need to address aging infrastructure, sources of water, quality of water, growth	6	10	17	8
SPD	Phoenix	L	Resolve changing and conflicting priorities among stakeholders (e.g., among users of a river system): 1) endangered species; special interest groups; 2) recreation, local	9	2	2	2
SPD	Phoenix	M	Open up communications to non-sponsor stakeholders; e.g. One city's waste water is the next city's water supply, so the Corps needs to talk to the second (i.e., non-sponsor) city as well.	1	2	14	1
SPD	Phoenix	N	Focus on non-structural solutions and approaches to flood control; people don't want concrete ditches, Congress should pay FEMA to implement non-structural solutions.	0	4	14	
SPD	Phoenix	O	Identify and delineate floodplains, including the ordinary high-water mark, it will prevent development from occurring in floodplains. Floodplain maps badly need to be updated: 1) 66% of flood damages occur outside of the mapped floodplains; 2) tributaries in rural communities are unmapped; 3) definition of average annual flow is undefined	0	4	13	

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			in the channels that may only flow every few years, and said channels do not even come close to confining the flows that do happen				
SPD	Phoenix	P	Federal money seems to go to those who need it the least; i.e., cities that know how to get funds from Congress receive more money, rather than the disadvantaged or rural communities: 1) Need more equitable disbursement of funds.	0	7	15	1
SPD	Phoenix	Q	Need to clarify water rights in the Western United States.	5	3	10	1
SPD	Phoenix	R	Corps projects must place emphasis on public beneficiary rather than private beneficiaries: 1) funding comes from public sector and must have public benefit, rather than going to projects for special interest groups.	0	14	7	
SPD	Phoenix	S	Regional regulations/solutions for regional problems: 1) Corps should develop more succinct definitions in its permitting process; 2) definitions created to solve problems in the East don't necessarily apply in the West; 3) rules and regulations developed for navigable rivers and bays are applied to dry rivers and washes where applicability is nonexistent	1	3	15	1
SPD	Phoenix	T	Environmental regulations are unfair and are based on poor science: 1) Federal government needs to have consistency within the regulatory process.	0	3	15	1
SPD	Phoenix	U	Develop creative solutions to water supply, such as water marketing, desalinization, use of icebergs. 1) Use the water supply that is closest to an area (e.g., Los Angeles should desalinate water from the ocean rather than taking water from sources far away).	0	10	10	
SPD	Phoenix	V	Corps must re-examine cost-sharing percentages of local sponsors: 1) percentages of funding required from local sponsors has been raised, and this can hurt rural areas that aren't able to fund the projects that they need.	0	7	15	
SPD	Phoenix	W	Corps must address lack of project implementation: 1) many emergency programs on the books have not yet been	0	14	9	

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			built by the Corps, and it is now necessary to revisit these programs to determine whether to fund/build them.				
SPD	Sacramento	A	Better coordination is needed between Corps and other federal agencies, both before and after a major disaster strikes: 1) establish regional water resources coordinating councils; 2) continue to hold facilitated sessions; 3) communicate.	0	2	9	
SPD	Sacramento	AA	Treat local sponsors as full partners: 1) For example, give local sponsors credit for participation in design by way of local engineering, rights of way, disposal sites, utility relocation, etc; 2) Cost sharing should include land, easements, rights of way, and relocations (LERRs).	0	2	7	
SPD	Sacramento	B	Develop a comprehensive and balanced approach to resolving natural resource issues: 1) Each group has its own issues, and we need someone to get all of the issues for each agency to a table so that they can be discussed. (e.g., water quality, wildlife, etc.)	0	2	1	
SPD	Sacramento	BB	Eliminate the 10% payback requirement for local sponsors.	0	7	15	
SPD	Sacramento	C	Establish appropriate and cost-effective dredge disposal sites. Regulatory reform seems to have increased the costs of disposing dredge material.	0	5	6	
SPD	Sacramento	CC	Cost-sharing to include over 45-foot channel depth.	0	7	5	
SPD	Sacramento	D	Steer development away from flood prone or environmentally sensitive areas: 1) Some sort of mechanism is needed, whether land use planning or another. 2) We need to solve the existing problems before creating new ones.	0	4	15	
SPD	Sacramento	DD	Eliminate 10% payback requirement for navigation projects.	0	7	5	

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SPD	Sacramento	E	Reduce the time and cost needed to implement flood control operations and maintenance (O&M): 1) Flood control projects are designed and built by the Corps, but are handed off to others to manage; 2) make them simpler to operate and fund. Also, make the process go faster.	0	14	4	
SPD	Sacramento	EE	Improve monitoring and enforcement of mitigation requirements for all Civil Works projects.	0	3	13	
SPD	Sacramento	F	The Corps should stay with projects after they have been built, rather than just walking away after completion (design for reduced cost of O&M; also stick with the operator to assist them.)	0	14	15	
SPD	Sacramento	FF	Delegate more authority to Corps Districts (streamline process).	0	15	15	
SPD	Sacramento	G	Apply a preventative orientation to all water resource challenges: 1) Consider prevention rather than correction (this could actually apply to all of the six original challenges).	0	15	14	
SPD	Sacramento	GG	Project managers should stay with a project through construction.	0	14	14	
SPD	Sacramento	H	The Corps has trouble finding funding to rapidly fix problems that develop after a disaster, in contrast with the Federal Emergency Management Agency (FEMA): 1) This leads to costs heaped on the local people; 2) Work with Congress to come up with a better rapid funding mechanism for the Corps.	0	7	9	
SPD	Sacramento	HH	In San Francisco Bay, use Bay Lands Habitat Goals document to guide mitigation and restoration activities.	0	13	2	
SPD	Sacramento	I	Fulfill unmet needs for shoreline and coastal protection programs. The Corps does not have the resources to fulfill its obligations.	0	18	7	
SPD	Sacramento	II	Develop a clear policy on non-structural alternatives.	0	15	4	
SPD	Sacramento	J	Provide the Corps with more funding to fulfill all of its current obligations, not just coastal protection programs.	0	7	7	

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LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SPD	Sacramento	JJ	Need to streamline Corps process for rehab under public law PL 84-99 to ensure completion of flood control projects prior to flood season.	0	4	15	
SPD	Sacramento	K	The value of environmental preservation should be included in all cost benefit analyses: 1) Need to find a way to quantify this value. 2) This will make it easier for local entities to meet cost sharing requirements, and make it easier to acquire permits.	0	14	13	
SPD	Sacramento	KK	Make groundwater recharge a priority of storm water (flood) control projects: 1) Use storm water for groundwater recharge where possible.	0	10	4	
SPD	Sacramento	L	Include water quality solutions in watershed studies.	0	8	1	
SPD	Sacramento	LL	Never use preservation of wetlands alone as a means of mitigation of wetlands. Always create equal area of wetlands when one is being destroyed. Preservation has a role, but never by itself.	0	6	15	
SPD	Sacramento	M	Broaden guidelines to give more value to social, cultural, and/or environmental solutions.	0	6	14	
SPD	Sacramento	MM	Greater emphasis by Corps on increasing the actual amount of water available.	0	10	10	
SPD	Sacramento	N	Adopt a watershed focus for the regulatory program, rather than site-by-site approach.	0	1	3	
SPD	Sacramento	NN	Analyze the impact of global warming on water transfers across the Delta region of California.	0	13	10	
SPD	Sacramento	O	Issue blanket permits for emergency situations.	0	3	9	
SPD	Sacramento	OO	Include local sponsor as a partner at Project Review Board and Project Review Summary, and include sponsor comments in Project Executive Summary.	0	2	15	
SPD	Sacramento	P	Water supply must be more reliable: 1) in some years there isn't enough water to go around and agriculture is often hurt 2) Agricultural users need long-term assurance that water will be available; 3) reduced uncertainty over water will lead to economic efficiency.	0	10	10	
SPD	Sacramento	PP	Implement national shoreline policy:	9	18	18	3

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SPD	Sacramento	Q	Better process for C64 authorizing emergency response work.	0	9	15	
SPD	Sacramento	QQ	Inter-agency dredging coordination: 1) An inter-agency body should be established to oversee all issues related to dredging	0	2	5	
SPD	Sacramento	R	Better implementation and enforcement of 404 program to better protect wetlands.	0	3	6	
SPD	Sacramento	RR	More reliable water supply: 1) water supplies must be made more reliable, particularly for agriculture; 2) seek new water sources for urban growth, rather than taking water away from farms	0	10	10	
SPD	Sacramento	S	Better process of informing the public of 404 administrative appeals.	0	2	3	
SPD	Sacramento	SS	Regional Sediment management: 1) Corps take lead role in regional sediment management and coordination with federal agencies; 2) recognize that all coastlines are not the same so- one size will not fit all	0	6	2	
SPD	Sacramento	T	Streamline the time to complete the design and construction process for projects.	0	14	14	
SPD	Sacramento	TT	Consider all benefits of shoreline protection projects: 1) take social benefits into account when calculating the NED plan for a coastal project; 2) recognize benefits from recreation and tourism; 3) benefits should be closely aligned with local plans	0	18	15	
SPD	Sacramento	U	Eliminate requirements for design agreements between Corps and local sponsor (design agreements were intended to put the design costs in the front end, to be shared with the local sponsor).	0	14	3	
SPD	Sacramento	UU	Proactive water quality role for the Corps: 1) Corps should take more proactive role in water quality issues and watershed studies; 2) Corps should do more research in water quality to find ways to protect water quality	0	8	15	
SPD	Sacramento	V	The process in general with the Corps is cumbersome and should be streamlined.	0	14	14	

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
SPD	Sacramento	W	Better coordination among the Corps missions (e.g. combine dredging, flood control and shore protection missions).	0	14	1	
SPD	Sacramento	X	Establish cost-sharing based on locally recommended or locally-preferred plan.	0	7	15	
SPD	Sacramento	Y	Allow the Corps to participate in groundwater remediation.	0	15	8	
SPD	Sacramento	Z	Improve public access to permit applications; currently, the public has to file a request under the Freedom of Information Act to see permit applications.	0	3	15	
SAD	Atlanta	A	Institutional changes are needed to better work together across agencies: 1) Institutional changes needed to better work together; 2) lack of cross coordination between agencies; 3) support other federal agencies; 3) negotiate in public and not behind closed doors; 4) more flexibility for examining operation of facilities; 5) aging expertise and philosophies faced with computer-age expectations; 6) aging expertise in Corps planning expertise;	5	2	15	2
SAD	Atlanta	AA	Federal agencies meeting schedules and commitments.	1	14	2	5
SAD	Atlanta	B	Federal agencies that restrict progressive action: 1) to stop permitting impacts to floodplains and wetlands (people's homes and businesses continue to flooded and public continues to pay cost – if building is restricted then public pays nothing); 2) federal agencies that restrict progressive action (length to get through process)	3	3	15	2
SAD	Atlanta	BB	Environmental costs and costs that municipal interest occur be included in the BC ratio (modernizing the cost benefit analysis).	7	15	6	1
SAD	Atlanta	C	Holistic planning approach to water resources that brings political jurisdictions together.	29	1	1	1
SAD	Atlanta	D	Continued wetland and stream loss with lack of adequate mitigation.	9	6	6	4

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SAD	Atlanta	E	Corps need to change image if its going to be a leader in water resources: 1) Eroding of expertise; 2) Eroding science capability; 3) focus future in water transportation	7	15	2	3
SAD	Atlanta	F	Water quality, quantity, funding	16	8	10	4
SAD	Atlanta	G	Balancing uses that return effluent with provisions of water quality for drinking and ecosystems: 1) balance between multi-uses of water; 2) lack of adequate water and sewer systems necessary for growth; 3) balancing use of water resources with natural system function; 4) wastewater collection and treatment	1	10	11	1
SAD	Atlanta	H	Enhancing and maintaining water quality and water quantity networks using appropriate monitoring techniques: 1) groundwater withdrawal; 2) maintain/increase water quantity /quality; 3) Monitoring networks; 4) meet state water quality standards below all federal reservoirs; 5) coastal waters	5	10	8	3
SAD	Atlanta	I	Challenges to plan for international commerce.	7	5	12	4
SAD	Atlanta	J	Comprehensive data collection and distribution system: 1) regional conservation and end use efficiency; 2) comprehensive systemic data acquisition and dissemination; 3) wetland issues	1	13	13	1
SAD	Atlanta	K	Regionalization of water management and water planning: 1) incorporating needs of natural systems into multiple-use planning and operation; 2) conflict resolution; 3) fragmented federal authority over water; 4) watershed analysis and control needs to be done on a basin basis not regional basis; 5) watershed and coastal zone management and control; 6) need to expand traditional planning process to better address potential climate change and population pressures of the future; 6) environmental and economic benefits should be co-equal goals of project planning	29	1	1	11
SAD	Atlanta	L	Dam safety – federal funding to repair non-federal dams: 1) match requirements on environmental authorities are too high for most stakeholders; 2) funding process takes too long;	12	7	12	7

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			3) remove unnecessary dams; 4) repair small non-federal dams; 5) prevent federal funding of non-federal dams				
SAD	Atlanta	M	Improvement of trust and integrity amongst all stakeholders: 1) dependable M&I water supply for future generations; 2) user/consumer pays fair share for water resource; 3) trust and integrity in negotiations (balance is needed)	30	2	10	8
SAD	Atlanta	N	Reduce flooding potential and enhance water quality by decreasing floodplain use and wetlands destruction.	30	4	8	4
SAD	Atlanta	O	Water quantity – balancing flow needs as well as ground water and surface water allocation: 1) competition for limited water resources; 2) water supply for future; 3) competition between economic development and resource management/protection	0	10	10	1
SAD	Atlanta	P	Training to address water resources.	1	2	2	1
SAD	Atlanta	Q	Use of dredge material and beach erosion: 1) beneficiaries pay for beach nourishment; 2) beach erosion; 3) use of dredge material	10	18	5	4
SAD	Atlanta	R	Improve and refine water project assessment process: 1) inland waterways and intermodal coordination; 2) inland waterways and economic/community development; 3) develop growth-independent economic model	7	14	3	3
SAD	Atlanta	S	Adequate water navigation channel maintenance and improvement funds without new taxes.	5	5	7	4
SAD	Atlanta	T	Environmental funding mechanisms are lengthy and cumbersome: 1) reduction of regulatory layers that inhibit efficient and continued operation of commercial navigation channels, hydropower, and flood control; 2) more flexibility in use of funds	2	7	3	2
SAD	Atlanta	U	Water conservation and non point source education in order to change our life styles: 1) education of public for water conservation; 2) water conservation and NPS education; 3) stop reducing our living standard so we can accommodate unsustainable growth	3	2	2	3

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SAD	Atlanta	V	Need for national level coordination for harbor deepening projects: 1) every port can't have everything; 2) need a "port use" proponent	7	5	5	4
SAD	Atlanta	W	Education of public on individual impact, user group roles, conflict resolution among stakeholders to educate political office holders.	17	2	2	4
SAD	Atlanta	X	Need funds for infrastructure needs for water and waste water facilities (federal and state levels): 1) to address modernization of water resource infrastructure and fund the effort as needed, particular for navigation; 2) aging infrastructure; capped O&M is not answer; 3) project maintenance should be paid by beneficiaries (electricity generated by federal projects should make money, people who own property in floodplains should pay for levy maintenance, shippers should pay for dredging)	6	11	7	1
SAD	Atlanta	Y	Equitable distribution of resources while taking into consideration historical issues.	16	17	17	6
SAD	Atlanta	Z	Public access and involvement in the process: 1) shifting public support for water resource mission; 2) require independent review of all Corps projects greater than \$25 million or projects that are controversial	12	14	15	1
POD	Anchorage	A	Restoration of degraded environment and maintenance of aquatic habitats: 1) Give water resources an emphasis in and of itself and not as part of another program; 2) protection and restoration of our urban wetlands and waterways, urban non-point pollution; 3) restoration of river system impacted by mining activity; 4) maintain wetlands in open spaces; 5) restoration of degraded aquatic habitat; 6) urban pollution of creeks from storm water / non-point source origin	5	6	17	4

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POD	Anchorage	B	Need to change or redefine the cost/benefit ratio policy (especially in rural areas) (more equity for low-income areas): 1) Cost benefit policy prevents needed projects for villages; 2) Change cost benefit policy to protect community in rural areas; 3) Quality of life is more than an benefit/cost ratio with intangible benefits/costs	5	15	7	1
POD	Anchorage	C	Implementing the backlog of authorized but unfunded (\$25 Billion) projects (safety, navigation).	0	7	15	1
POD	Anchorage	D	Lack of adequate engineering and environmental data to make good decisions (accurate maps, permafrost, and coastline): 1) lack of adequate environmental engineering database. Need to make informed decisions; 2) Many maps based on old technology which may be unreliable; 3) permitting on wetlands; clean water; 4) planned development of infrastructure and the impacts to water; 5) coordination between agencies	14	13	13	3
POD	Anchorage	E	Sanitation and water supply – how does Corps coordinate with other organizations to produce adequate improvements (cultural differences): 1) many communities lack safe drinking water and sewer systems; 2) maintaining adequate water supply	0	10	2	6
POD	Anchorage	F	Need for small and large marine transportation systems: 1) need for navigation; 2) need for ports; 3) no road access to many communities; 4) access to open water – can only use boats when tide is high	4	5	1	4
POD	Anchorage	G	Delivery of projects (e.g. navigation) as efficient and effective as other transportation systems.	0	5	14	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
POD	Anchorage	H	Planning and development of infrastructure projects and importance of interagency planned development – “who is in charge?”: 1) watershed planning from a resource and resource use base; 2) who has lead; 3) continued loss of watershed systems due to increasing development, wetlands, and floodplains; 4) think out of the box to solve problems to maintain and improve quality of life; 5) quality of life is more than just benefit/cost ratios.	14	1	17	10
POD	Anchorage	I	Attention needs to be focused more on environmental resource base rather than population / cultural issues.	13	6	14	4
POD	Anchorage	J	Restructuring cost sharing formulas for smaller sponsors and include feasibility studies.	19	15	7	1
POD	Anchorage	K	Marine transportation system – increase public awareness on the value of this transportation system: 1) raise public awareness of the value to each citizen of the MTS so public support produces the appropriate response from the government	0	2	5	1
POD	Anchorage	L	Provide adequate infrastructure so infrastructure can keep up with economic growth and still conserve the environment and manage water resources: 1) ports are needed to ship resources out to markets; 2) increasing use of water resources for economic development, tourism; balance infrastructure development with environmental protection; 3) need adequate small boat harbors statewide	2	12	17	3
POD	Anchorage	M	Updating floodplain maps – Poor quality in Alaska.	1	13	4	1
POD	Anchorage	N	Coastal and riverine erosion and flooding: 1) erosion in village sites; 2) seasonal flooding continues to threaten Alaska’s infrastructure; 3) how to manage shallow water table / groundwater; 3) flooding riverine and coastal; 4) erosion needs to be contained to protect community infrastructure	0	18	4	6
POD	Anchorage	O	Program and planning objectives that includes regional economic development: 1) include well-being of the people.	15	14	15	11

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POD	Anchorage	P	It is time to understand what is destroying Alaskan environment is occurring now – requires better understanding processes.	1	13	2	1
POD	Anchorage	Q	What is Corps role in clean up of contaminated abandoned sites (including mining sites): 1) groundwater contamination from abandoned sites; 2) building enough consensus; 3) water quality policies, programs, funding and activities need integration with contaminated site cleanup	6	12	17	1
POD	Anchorage	R	When and how can Corps participate in water export to regions in need of water.	0	10	15	3
POD	Anchorage	S	Dam removals to open up aquatic sites and ensure dam safety.	19	6	12	1
POD	Anchorage	T	Water and sewer infrastructure – some are old and need to be replaced (Physical facilities).	30	10	11	4
POD	Anchorage	U	Corps needs to aid and assist local planning capability.	10	2	13	3
POD	Honolulu	A	Old abandoned pipelines leaking petroleum: Pipelines left over from WWII	3	6	12	2
POD	Honolulu	AA	Include aesthetics as components to designs: 1) Balance between engineering and aesthetics especially in flood control projects	2	15	4	1
POD	Honolulu	B	Aging marine transportation structure (docks, piers, moorings).	10	5	5	2
POD	Honolulu	BB	Provide safe and adequate passengers terminals, harbor and ports for cruise industry.	3	5	15	1
POD	Honolulu	C	Coastal erosion - Protecting Hawaii coastlines from erosion (solutions other than concrete): 1) Restore shoreline/beach resources degraded and destroyed by past actions; 2) Coastal Erosion – better manage the coastline an feed backs to compatible with beach resources. 3) Promote sand nourishment & dune management; 4) maintain ocean recreational water quality in the face of urban runoff, shipping, etc.	0	18	18	
POD	Honolulu	CC	Recast terminology that puts negative connotations on wastewater, storm water, etc.	0	13	2	1

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POD	Honolulu	D	Increased runoff due to development (forest to hard surface) both quantity and quality: 1) Improve storm drainage systems to better exclude litter, debris, and oil run off from entering waterways; 2) Increased runoff is resulting from development, agriculture, and urban areas	6	8	17	1
POD	Honolulu	DD	Wastewater management - increased volumes of waste - find alternative technologies other than traditional practices.	7	11	11	1
POD	Honolulu	E	Drinking water supply for Pacific Islands: 1) over-pumping of aquifer; 2) insufficient water supply for growing populations	6	10	10	2
POD	Honolulu	EE	Aging wastewater treatment centers are wearing out and funding is gone to update.	2	11	7	1
POD	Honolulu	F	Using a systems approach for water quality for both inland and ocean.	16	1	8	1
POD	Honolulu	FF	Need for a standardized and quantified way - link values with water resource functions - deciding how to prioritize: 1) resolve dichotomy between our environment and our economy; 2) need for a standardized, quantitative and objective way to assess functions of water resources so that we can start to prioritize where money and effort are directed; 3) establish water management (and economic development) policies that are flexible enough to accommodate change/variability in water (e.g. climate changes in rainfall) and rainfall is the source of water	5	14	1	5
POD	Honolulu	G	Policy standards with federal regulations should recognize setting of islands - ecological and cultural: 1) hydrogeomorphology of volcanic islands is unique. Solutions that work in other regions can be disastrous in Hawaii	3	15	6	1
POD	Honolulu	GG	Assess human impacts of water resources practices: 1) insufficient water supply for growing population; 2) contamination of water resources from agriculture pesticides and termite treatment; 3) agriculture runoff and seepage into fragile coral reef	12	10	6	2

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POD	Honolulu	H	Integrated watershed management using island model: 1) need water strategy to dredge water supply in light of increased demands and drought conditions; 2) is there adequate supply and quality of water; 3) need to use integrated environmental and resource management practices resulting in potable water and flood control; 4) conserving, preserving and restoring water quality for drinking, agriculture, and recreational use	16	1	1	5
POD	Honolulu	HH	Mechanism for having community value drives priorities: 1) fresh water resource allocation must be based on the need of the community and the people	0	15	2	1
POD	Honolulu	I	Forum for all stakeholders to participate in water management and funding.	4	2	2	1
POD	Honolulu	II	Greater consideration of natural processes in project design.	4	14	13	1
POD	Honolulu	J	Lack of integrated land use planning - impact of increased urbanization: 1) preserving native ecosystems on islands where land is scarce; 2) Enforcement and updating building codes; 3) stop allowing people to build in wetlands, stream corridors and floodplains; 4) lack of centralized planning	0	1	14	1
POD	Honolulu	JJ	System approach to planning projects - use multi-objective approach: 1) integrating decisions about water resource management with related economic development and community planning decisions; 2) watershed repair and improvement of the system multi-objective approach to water resources planning	1	1	1	3
POD	Honolulu	K	Unfunded mandates for implementation.	3	7	7	1
POD	Honolulu	KK	Provide training and technical support for Pacific Island communities for water and wastewater systems.	3	2	11	1
POD	Honolulu	L	Implementation of projects has been based on historical need to be able to design for future (not the past).	3	14	15	1
POD	Honolulu	M	Flood control and flood management - stream management, capacity, channelizing.	19	4	4	1

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POD	Honolulu	N	Restoring streams that were channeled: 1) Restoration of man-modified streams to be more compatible with environment. 2) Dechannelize streams, promote green-scaping and vegetated banks; 3) maintenance of water shed; 4) soil loss / erosion from stream channel modifications or lack of stream channel maintenance	6	6	4	4
POD	Honolulu	O	Ensuring that water supply be maintained for agriculture - consistent supply and affordable: 1) Availability of affordable and consistent water supply; 2) maintaining adequate water supplies for growing population	10	10	10	1
POD	Honolulu	P	Use of dual water systems: 1) Identify, classify, and popularize the use of non-potable water for irrigation and industrial use	2	10	10	2
POD	Honolulu	Q	Do projects (planning to construction) faster - use competitive process so that Corps isn't only body doing work.	7	14	15	2
POD	Honolulu	R	Maintenance of navigation channels depths and widths - improve safety and efficiency - streamline permitting process: 1) adequate and safe shipping inland navigable waterway and port needs in anticipation and in advance of growth demands; 2) removal of wrecks and obstructions in navigation channels; 3) develop adequate commercial harbor facilities including entrance channels, turning basins, breakwaters, piers and shore side facilities; 4) Maintain channel depths and widths	1	5	5	6
POD	Honolulu	S	Improved and cost effective ground water remediation treatment process: 1) need balance between environment and economy; 2) water reuse; 3) reclaimed water use and its effects on environment; 4) protect ground water supplies from contamination resulting from increasing development	3	8	10	3
POD	Honolulu	T	Use pricing as an incentive for conservation flood management - cost should reflect actual value of water.	0	4	15	1
POD	Honolulu	U	Responsible management of hazardous materials - consider economic and social impacts as well: 1)	4	6	14	3

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			recycling of dredged material; 2) responsible management of hazardous materials				
POD	Honolulu	V	More consciously integrate traditional knowledge of previous history of how water was used and impacts.	3	2	13	1
POD	Honolulu	W	Emergency response: 1) Insuring adequate water supply; 2) Preventative management approach = identifying aging structure - clearing streams.	0	9	14	1
POD	Honolulu	X	Getting adequate representation from environmental and public issues into projects/studies - getting creative solutions.	0	2	13	1
POD	Honolulu	Y	Systematic and complete inventory of all surface water and groundwater for all uses: 1) systematic and complete inventory of all ground and surface waters for potable and non-potable uses; 2) update hydrologic floodplain maps	3	13	10	1
POD	Honolulu	Z	Proactive approach to harbor and navigable waterways issues.	1	5	14	2
NWD	Omaha	A*	Better coordination between federal agencies: 1) establish an inter-agency coordinator; 2) Corps serve as clearinghouse for federal agencies; 3) all federal agencies should participate in CWA teams; 4) collaborate – collaborate - collaborate	16	2	2	1
NWD	Omaha	AA	Corps should be able to look at non-structural flood control approaches, such as buyouts and CSO (combined sewer overflow) regulations.	6	4	4	1
NWD	Omaha	B	Consideration of environmental concerns beyond benefit/cost ratio	0	6	15	1
NWD	Omaha	BB	More Corps technical support for brownfields program.	0	17	2	1
NWD	Omaha	C*	Aging infrastructure as it relates to everything (agencies need to work with each other and Congress needs to resolve long-standing disputes).	18	12	2	1
NWD	Omaha	CC	Native American tribes have the same water resources issues as other citizens across the country, but the tribes often have fewer resources to draw on. Expand available resources.	3	10	7	1
NWD	Omaha	D	Get the message to Congress about these national needs.	5	2	2	1

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NWD	Omaha	DD	Continuing increases in cost-sharing requirements present a challenge for many communities, particularly those in rural areas. Corps projects are often unaffordable for these communities.	2	7	15	1
NWD	Omaha	E	Governance body for resolving issues and setting priorities on the Missouri River (i.e., a Tennessee Valley Authority-type organization).	1	2	15	2
NWD	Omaha	EE	Need ways to deal with increased recreation demands and the resulting environmental impacts: Recreation opportunities and impacts	0	16	6	
NWD	Omaha	F*	Streamline planning and permitting of repairs to aging water resources infrastructure.	18	14	3	1
NWD	Omaha	FF	Examine ways to estimate impacts of and manage exotic/non-native species, such as the zebra mussel.	14	6	10	1
NWD	Omaha	G	Decisions must be based on good science.	11	13	2	1
NWD	Omaha	GG	Greater Corps role in watershed management and education.	1	1	2	1
NWD	Omaha	H*	Holistic watershed approach (the Corps needs to take a broader approach when issuing permits, analyzing impacts of projects): 1) use models to facilitate the watershed approach; 2) better coordination and data sharing; 3) watershed analysis should come early in planning process;	4	1	15	1
NWD	Omaha	HH	Government should make better use of technology, such as geographic information systems (GIS), and make it available to the public.	5	13	2	1
NWD	Omaha	I*	Corps "Master Manual" for the Missouri River should take into account diverse needs; manual must be flexible.	53	1	14	3
NWD	Omaha	II	Streambed erosion, particularly along the Missouri River.	0	6	5	1
NWD	Omaha	J	Promote intergovernmental cooperation in storm water management. Recognize that improvements in one community have effects on other communities: 1) cumulative impacts of rivers and major creeks and promote intergovernmental cooperation in storm water management	0	2	11	

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LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Omaha	JJ	Congressional review of the Endangered Species Act and the species currently listed.	0	15	6	1
NWD	Omaha	K	Stakeholder involvement in projects from the outset: 1) Flooding; 2) channel degradation; 3) water quality; 4) wetland; 5) flood plain creep;	38	2	15	5
NWD	Omaha	KK*	More flood control: 1) develop more comprehensive approach to flood plain management; 2) agencies should combine efforts as partners on flood control projects; 3) B/C analysis should include tangible and intangible benefits; 4) use both structural and non structural solutions: spring rise effect on agriculture and flood control	1	4	15	1
NWD	Omaha	L	More floodplain coordination by the Corps. Private contractors need better guidance.	5	4	2	1
NWD	Omaha	LL	Need to create better models of groundwater/surface water interface. This interface should be a required part of all Corps studies.	8	13	1	1
NWD	Omaha	M	Ensure clean water for this generation and future generations.	11	8	10	1
NWD	Omaha	MM	Provide adequate funding for Corps projects and programs.	1	7	7	1
NWD	Omaha	N	Environmental issues- don't let the tail wag the dog.	12	6	6	1
NWD	Omaha	NN	Better education about waterways, particularly for younger people.	11	2	2	1
NWD	Omaha	O	Mechanisms for monitoring and managing depletion of water in the Missouri River Basin, including groundwater depletion: 1) establish agreements on how to handle depletion of water in the Missouri River basin	4	13	10	1
NWD	Omaha	P	Cost impacts on infrastructure due to compliance with water quality standards, particularly for rural areas.	0	12	8	

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Omaha	Q*	Marine transportation system is becoming less competitive. Study split navigation season and its impacts on agriculture and local economies: 1) Build consensus among adversaries; 2) create forum for resolving conflicts; 3) organizations with same interests should attend each others meetings	4	5	14	1
NWD	Omaha	R*	Environmental restoration and a knowledge base to make it work. Include monitoring and active management. Sustainability is the goal: 1) Monitor and reevaluate projects using good science; 2) collaboration at all levels in the federal government and the public; 3) invest in good science; 4) better education and increased public awareness	9	6	13	1
NWD	Omaha	S	Allow community access to Corps technical assistance for programs that don't fit authorized Corps programs.	13	15	15	4
NWD	Omaha	T	Floodplain management is not well funded: 1) The Corps and the Federal Emergency Management Agency (FEMA) could fund projects jointly.	13	7	4	1
NWD	Omaha	U	Concern by Agriculture sector about the impacts of water quality regulations (i.e., livestock waste management rules, TMDL (total maximum daily load) requirements, other nonpoint-source pollution regulations).	11	8	8	1
NWD	Omaha	V	Establish a national sediment policy that can be reasonably implemented: 1) It must include additional research on sediment and its potential uses.	4	15	4	1
NWD	Omaha	W	Examine how to fund all of the above additional needs.	0	7	15	1
NWD	Omaha	X	Accurate and balanced accounting of all beneficial uses of water resources.	14	14	13	3
NWD	Omaha	Y	Protect water recharge areas, such as wetlands and floodplains.	1	4	1	1
NWD	Omaha	Z	Operation and maintenance of existing levees: 1) Small communities can't meet Corps minimum requirements for maintaining local levees.	9	4	7	1
NWD	Vancouver	A*	Better coordination between regulators and permit applicants: 1) Consistent application of permitting	28	3	2	3

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			requirements; 2) sequential process of defining a problem and defining a solution are too long; 3) taking too long to process permits				
NWD	Vancouver	AA	Coordinate water resources planning at a watershed level: 1) deliver cost efficient improvements at a to water resources holistically in a basin; 2) promote orderly development by reducing consumptive and wasteful water uses and enforce laws governing water quality and quantity	10	1	2	4
NWD	Vancouver	AAA	Initiate training and education plan for recreation water users.	7	2	16	2
NWD	Vancouver	B	Government not investing in water resource projects: 1) resources are needed for smaller communities; 2) crisis is developing; 3) not addressing future needs	5	7	14	2
NWD	Vancouver	BB	Conduct public education about water quality in waterways: 1) communities see a need to solve their flood problems but need to be educated. Especially the local officials on non-structural/land use alternatives	4	2	8	4
NWD	Vancouver	BBB	Require independent economic review of large water resource projects.	3	14	15	1
NWD	Vancouver	C*	Need to protect and preserve our navigation channels and aging water infrastructures to protect the economic importance of shipping industry: 1) Emergency prevention is not adequate for certain natural disasters; 2) risk reduction through personnel training and education, technological advances, enforcement of safety standards, and contingency planning; 3) lock maintenance; 4) maintaining a viable, dependable navigation channel for inland barge; 5) maintain channel depths; 6) need deeper channels	31	5	5	17

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	CC	Need to focus on prevention, not emergency response, for flooding (floodplain management): 1) increased urbanization has created a higher potential for flooding in many areas; 2) reduce social costs of flood through increased complimentary partnerships at federal/state/local levels to coordinate operations, increased flood hazard mgmt, cross jurisdictional mapping and datum levels and public education	12	4	4	7
NWD	Vancouver	CCC	Maintain and deepen the Columbia River channel to accommodate modern ocean going ships.	8	5	5	3
NWD	Vancouver	D	Not a shared vision between Corps and national marine fish industries.	2	2	6	1
NWD	Vancouver	DD	Do not let disaster strike – aggressively approach aging water infrastructure and natural disaster preparedness: 1) aging infrastructure, disaster impact.	1	12	9	1
NWD	Vancouver	DDD	Need to protect private property rights (e.g. during restoration projects etc.).	4	15	6	6
NWD	Vancouver	E	Need for integrated approach to balance demands on the system: 1) Integrating environmental restoration (watersheds, forest lands, riparian systems, flood plains, wetlands, estuaries) with social and economic growth; 2) approach needs to consider river dredging, shoreline, adequate water for fish, natural disasters, infrastructure maintenance along waterways, water resource permits, economy, urban growth;	12	1	1	5
NWD	Vancouver	EE*	Collaboration among local state and federal agencies in making decisions involving skills, resources, and missions: 1) assistantship / partnership with research to address watershed issues; 2) many agencies have overlapping missions and interests – federal agencies need to coordinate and collaborate resources; 3) many institutional barriers seem to exist that seem to preclude cooperation at all levels even though the resources seem to exist; 4) no forum for small business to provide input and involvement in water resources; 5) lack of public and political will to resolve issues	17	2	2	10

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			to reach common vision; 6) need structure to allow collaborative solutions/ partnerships that transcends all levels of government; 7) create better relationships with all federal agencies				
NWD	Vancouver	EEE	Essential fish habitat - identify processes, resources, and actions.	5	6	13	1
NWD	Vancouver	F	Environmental restoration and how it impacts the local economy: 1) Need to define restoration in the same view as environmental/regulatory agencies do; 2) rehabilitate/ red-design of existing facilities/ process to mitigate for impacts or restore natural process	6	6	15	2
NWD	Vancouver	FF	Need to develop a real time information systems for all users of water resources – shared access: 1) Develop a real time information system for port use by private interests and public interests	10	13	13	5
NWD	Vancouver	FFF	Need to encourage public support in financing of environment and habitat restoration projects.	4	2	6	2
NWD	Vancouver	G	Need to decide the greatest benefits for use of water resources: prioritizing water needs and uses – water rights and planning infrastructure upgrades to restore the environment w/o reducing quality of life;	11	14	1	2
NWD	Vancouver	GG*	Streamline permitting process and make it easier to understand: 1) permitting process is difficult for applicants to understand without professional assistance. Process needs to be simplified; 2) There appears to duplication /confusion between Corps and state governments; 3) process to design and complete restoration are too long, complex, and bureaucratic;	21	3	3	7

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	GGG	Need to bridge the divide between economic and environmental concerns: 1) Balancing the need for cheap power, adequate irrigation water, transportational, flood control, and endangered species survival in a holistic and sustainable path forward; 2) right now too many of the groups involved in water resources issues seem adversarial leading to a competition of whose on top	5	17	1	2
NWD	Vancouver	H	Reauthorize reservoirs and reallocate for other demands: 1) release of stored water for a purpose other than for what the reserve was intended for (environmental) needs to be considered; 2) reauthorize existing reservoirs for expanded use to include today's highest use	16	10	15	1
NWD	Vancouver	HH*	Implement major Columbia River estuary restoration projects for endangered salmon and "de-link" from channel deepening: 1) Public needs information to enable them to participate in water quality /watershed enhancement and restoration; 2) Need to prioritize river/stream restoration	17	6	5	3
NWD	Vancouver	HHH	Need to balance environmental and navigation interests in a timely manner for Corps projects: 1) unmet mitigation and environmental issues continue to be a bottleneck for infrastructure projects; 2) O&M in-water dredging in environmental arena; 3) better response time and interaction at local levels; 4) bridge chasm between environmental protection and economic activity between environmental groups and economic/industry	7	14	6	1
NWD	Vancouver	I*	Maintaining infrastructure waterways while preserving environmental resources: 1) balance environmental needs with regions ability to be economically competitive; 2) need to maintain channel depth while not adversely impacting fishing resources and livelihood; 3) resolving conflicts between fisheries and maintenance of water trade infrastructure; 4) environmental restoration	0	5	6	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	II	Corps authority may be too narrowly focused whereas problems have broader focus: 1) Bring issue to people earlier so that everyone can be a part of the solution; 2) Authorities drive problem solving along narrowly defined paths	4	2	15	1
NWD	Vancouver	III	ESA in urban environment – expedite agency reviews and approvals and add resources: 1) permitting process too complicated and takes too long; 2) rules keep changing; 3) streamline ESA consultation process and providing non-regulatory incentive based approach to engage landowners/ water users in stream restoration	3	2	14	3
NWD	Vancouver	J	Redevelopment of contaminated sites (hindered by environmental concerns) in economically feasible manner: 1) clean up contaminated sediments; 2) clean up of brownfields sites;	5	17	12	4
NWD	Vancouver	JJ*	Remove incentives for developing in hazard prone areas: 1) Increase buy-out programs and disaster avoidance assistance; 2) urban sprawl is placing more development into hazardous areas, especially flood plains and the wildlife urban interface; 3) federal government needs to stop subsidizing urban sprawl; 4) develop the systems and resources to continuously improve and streamline the processes to efficient; 5) have cost-effective process for hydroelectric ops.	0	4	15	6
NWD	Vancouver	JJJ	Develop a strategy to address the decommissioning of aging hydropower dams.	1	15	12	5
NWD	Vancouver	K	Improve habitat for threatened and endangered steelhead populations: 1) Decline in salmon; 2) need to improve habitat for threatened species; 3) limiting impacts of development is not the answer - impacts need to be fully mitigated/avoided	21	6	6	2
NWD	Vancouver	KK	Need to review ancient memorandum of understandings (Coast Guard to reclaim review of Navigation safety; authority regarding mounds that are built by navigation dredging).	2	13	5	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	L	How to bring four dams in Snake River into compliance with Clean Water act: 1) allow true science and economics prevail; 2) bring dams into compliance with CWA	0	8	8	1
NWD	Vancouver	LL	Address the challenges associated with bed loading in small streams and rivers: 1) Nutrient runoffs from agriculture; 2) protection of natural resources; 3) NMFS, Corps, Tribal comprehensive agenda for implementation of agriculture	2	5	6	1
NWD	Vancouver	M	Rehabilitation of water resources projects - dams and reservoirs.	6	12	12	2
NWD	Vancouver	MM	Reduce property and archeological damage due to water level fluctuation.	16	4	6	10
NWD	Vancouver	N	Adequate and consistent water supply: 1) study water supply and make sure that they support growing regions and economy while meeting in-stream demands of aquatic species	1	10	10	2
NWD	Vancouver	NN	Environmental restoration funding 1135 / 206: 1) make it easier to get the funding and loosen restrictions; 2) de-link from past projects.	8	7	6	5
NWD	Vancouver	O	Agency reps don't know rules that they should or are dishonest when dealing with public.	1	2	2	1
NWD	Vancouver	OO	River tourism – Need to identify issues and interests of river tourism industry with respect to potential Snake River dam breaching.	0	16	16	1
NWD	Vancouver	P	Need to increase water conservation efforts and maximize life cycle productivity: 1) restoration of damaged waterway; 2) flow in rivers	2	10	10	6
NWD	Vancouver	PP	Need to protect Indian fishing sites (historic and prehistoric) from hazards to environment and cultural impacts caused by dam hydro-licensing, re-licensing, and settlements: 1) Protect interest of commercial and tribal fisheries; 2) do not overlook the commercial fisheries and the economic effect. 3) Specifically, the Tribal fisheries and the Corps commitment to them.	4	6	15	2

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	Q	How do we support continued hydropower yet comply with environmental regulations.	14	3	15	4
NWD	Vancouver	QQ	Better ballast water management.	12	5	6	3
NWD	Vancouver	R	Address loss of wetland and riparian habitat: 1) many wetlands have been lost resulting in negative watershed impacts, especially habitat, water quality and recreation	5	6	6	2
NWD	Vancouver	RR	Concerns of local communities are overlooked and adversely affected by regional projects: 1) Corps should continue to dialogue with stakeholders; 2) regional projects may adversely effect local areas, their concerns tend to be overlooked, smaller communities have less ability to provide resources and funding	0	2	14	2
NWD	Vancouver	S	Don't reduce funding for maintenance of navigation locks and channels.	3	5	7	1
NWD	Vancouver	SS	Need to develop consistent and integrated investment plan for water projects.	0	15	7	2
NWD	Vancouver	T*	Apparent lack of accountability of state and federal agencies (unfunded mandates and lack of good science).	14	13	2	1
NWD	Vancouver	TT	Not enough for biologists to fulfill program responsibilities under CWA regulatory programs.	0	13	3	1
NWD	Vancouver	U	Managing growing number of water traffic (safety and environmental impact): 1) sharing in waterways by many users (boaters, recreationists, fisherman; 2) lock delays; barge traffic; 3) attaining a supportable level of growth; 4) rural areas and small town water supply shortages, funding, water rights, etc; attaining a supportable level of growth; 5) growing water traffic and the affect on the environment;	3	5	17	2

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	UU	Implement sustainable development that relies on innovative and creative solutions for water preservation (Bio-regionalism): 1) development and effects on water quality and wetlands; 2) to make sure that in planning in future water quality that we don't overlook the environment as it relates to fish; 3) transportation of products; 4) influence growth of communities, facilities and infrastructure to reduce flooding and water contamination	0	17	6	2
NWD	Vancouver	V	Consider cost implication that water decisions have on people.	19	14	15	5
NWD	Vancouver	VV	Address lock scheduling and prioritizing issues related to current and emerging users.	0	5	5	1
NWD	Vancouver	W	Better coordination of Tribal treaty rights with Corps permitting process (predictability and certainty): 1) Tribal veto authority in water projects	6	2	3	2
NWD	Vancouver	WW	Maintain an efficient hydro system for inexpensive power.	0	12	12	1
NWD	Vancouver	X*	Look at how western states regulate water use (western water law favors consumption): 1) revamp western water law and replace with water rights system with renewable permit system	0	10	15	1
NWD	Vancouver	XX	Need to respond to changing water recreation activities and resolve conflicts.	1	16	17	3
NWD	Vancouver	Y	Address local concerns with local entities (involve local people), water issues are complex and "science" can often give conflicting answers: 1) How do resource managers articulate choices and tradeoffs to the public so that we get decision making that reflects local values?; 2) lack of consistency in local area projects	8	15	2	4
NWD	Vancouver	YY	Corps should repackaging documents so that benefits and costs are more understandable for agencies and public – increase visibility and understandability by public.	2	2	13	1
NWD	Vancouver	Z	Resolve endangered species Act through regional planning approach.	9	6	1	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NWD	Vancouver	ZZ	Comprehensive nutrient management plan for the Northwest.	4	8	8	4
NAD	New Brunswick	A*	Corps - Streamline delivery services and partner with other agencies: 1) Consistency of Corps PMs; 2) Increase authority of DE; 3) Corps take leadership role in evaluating regional issues and regional decision making; reduce projects study time; 4) encourage brainstorming	30	14	2	12
NAD	New Brunswick	AA	Improve funding for monitoring and research and monitoring techniques for utilization in adaptive management programs.	25	7	13	1
NAD	New Brunswick	B*	Protect and manage watersheds/wetlands in order to protect water quality and management: 1) Partnership with other agencies and sponsors; 2) preserve wetlands; 3) minimize/control/treat storm water runoff/ upgrade water treatment plants; 4) better educate public; 5) Corps should take/have leadership role in promoting watershed management; 6) safe and adequate water supply; 7) give maximum protection to drinking water supply watersheds	1	8	10	2
NAD	New Brunswick	BB	More emphasis on flow management and in-stream flow needs: 1) Dam/stream flow/impoundment management	1	1	1	1
NAD	New Brunswick	C	Resolve inherent conflict between responsibility for development and environment protection: 1) balance regional environmental need vs. project costs; 2) Environmental impact related to flooding and what appears to be reckless development; 3) habitat protection/estuary habitat loss;	1	17	6	1
NAD	New Brunswick	CC	More emphasis on assessment on ground water supplies as it relates to surface water and development. : 1) study groundwater resources to better understand the relationship[p between ground and surface water flows and determine carrying capacity of land	0	10	10	1
NAD	New Brunswick	D	Revise Corps missions and policies – e.g. Include shore protection and environmental restoration and improvement in mission: 1) Continue with beach	4	15	15	4

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			replenishment program; 2) Coastal protection projects should be full federal expense since revenues from coastal tourism pays for itself many times over.				
NAD	New Brunswick	DD	Marry environmental restoration with port construction projects.	6	6	1	1
NAD	New Brunswick	E*	System approach is preferred to independent project approach – long range regional plan or holistic ecosystem and multi-objective planning: 1) Develop strategic planning objectives; 2) consider cumulative impacts as part of system approach; 3) system approach should apply from headwaters to ocean; 4) what will larger harbors and ports do to other modes of transportation	1	1	14	1
NAD	New Brunswick	EE	Rational national maritime policy approach.	2	5	1	1
NAD	New Brunswick	F	Have project specific panels for peer review (scientific review and stakeholder board – initiated at federal level).	13	15	14	5
NAD	New Brunswick	FF	Attention to impacts of global climate change.	8	6	14	1
NAD	New Brunswick	G	Need to have ecological emphasis rather than economic emphasis: 1) Environmental concerns sometimes outweigh economic concerns; 2) water quality and economic benefits should be considered the same way as economic benefits; 3) need a balance between environmental benefits and commercial benefits	3	15	6	3
NAD	New Brunswick	GG	Lack of enforcement and make polluters' pay.	4	3	15	3
NAD	New Brunswick	H*	Provide internal flexibility in order to be leader for innovative solutions for regional issues: 1) Consistency of Corps PMs; 2) Increase authority of DE; 3) Corps take leadership role in evaluating regional issues and regional decision making; 4) reduce projects study time; 5) encourage brainstorming	10	14	2	4
NAD	New Brunswick	HH*	Use of buyouts and other non-structural approaches: 1) Long term land use contracts; 2) End federal subsidies to	4	4	7	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			flood prone areas; 3) Use graduated tax relief when buy-outs are used; 4) structural solutions not effective; 5) serious environmental ramifications; 6) temporary solutions not addressing problems; 7) COEs role not clear; 8) use nonstructural solutions more often				
NAD	New Brunswick	I*	Stresses and consequences created by the national deepwater port race: 1) Develop national plan; 2) Initiate and analyze to assess national long-term MTS requirements; 3) Involve stakeholders; 4) reduce backlog of CW projects; 5) timeframe to approve/authorize projects is too long; 6) balance between economic growth and environmental protection	4	5	15	1
NAD	New Brunswick	J*	Disposing of dredge material (where to put dredge material – difficulty of finding sites – project impacts – lack of alternatives): 1) Educate public on issues/facts; 2) Streamline PCA process; 3) subsidize the creation of beneficial use of dredge material;	11	5	6	7
NAD	New Brunswick	K*	Special problems related to urban watersheds (environmental justice and brownfields): 1) Develop strategic planning objectives; 2) consider cumulative impacts as part of system approach	16	17	14	1
NAD	New Brunswick	L	Land use management – disconnect between local planning and permitting (state and federal): 1) Confusion of Corps role vs. state role vs. local government – need education; 2) Land use decisions are at local level and regulated at federal/state level prevents comprehensive planning	2	14	2	3
NAD	New Brunswick	M	Cooperation between Corps and EPA on environmental dredging.	2	2	5	1
NAD	New Brunswick	N	Greatly reduce the time required for project decision.	6	14	3	2
NAD	New Brunswick	O	Improve local partnerships – especially with external customers and key environmental organizations.	4	2	2	3

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NAD	New Brunswick	P	Bring local municipalities into process early and ensure they know responsibilities and costs: 1) Bring in local municipalities early in comprehensive management	1	2	14	1
NAD	New Brunswick	Q	More safety awareness is required in ports. Keep ports modern and up-to-date: traffic is increasing but waterway isn't	7	5	2	4
NAD	New Brunswick	R	Responsiveness, respect for and receptive to local/state/public: 1) Need to better explain actions taken on permits; 2) too many polluting facilities are approved; 3) wetlands and deconstruction continuous problems – need to protect them; 4) public being excluded from process	11	3	2	8
NAD	New Brunswick	S	Enhance cooperation and coordination to all federal agencies (e.g., Corps play a leadership role in MTS): 1) Corps should work closely with USFWS on environmental restoration projects; 2) Assume the leadership role which involves multi-agency participation	10	2	15	1
NAD	New Brunswick	T	Need for new strategies for beach replenishment: 1) too much sand pumping; let locals pay for beach replenishment	25	18	15	1
NAD	New Brunswick	U*	Consider all cumulative impacts when assessing environmental impacts: 1) water supply issues associated with over development; 2) impact of construction in rivers/streams on navigation channels and their cumulative impacts on navigation and water quality	14	10	1	2
NAD	New Brunswick	V	Need a national water resource program: 1) Sufficient safe water supply for present and future needs are need for future quality of life; 2) protection from people and property subject to catastrophic flooding; 3) develop nationwide federal water resources development program	11	10	15	2
NAD	New Brunswick	W	Actively seek opportunities for environmental projects: 1) CSO's are serious source of water quality degradation	14	6	8	1
NAD	New Brunswick	X	Create long term monitoring of completed projects to assess project success.	5	13	14	1
NAD	New Brunswick	Y	More stringent controls are needed over regulatory permitting – Corps needs to say no to projects.	24	3	15	9

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NAD	New Brunswick	Z	Give consideration to using pre-existing historical structures for environmental restoration for educational purposes.	7	6	15	5
NAD	Williamsburg	A	Clear authority for identifying and handling of abandoned vessels	6	15	5	2
NAD	Williamsburg	AA	Permitting process should be streamlined and more user friendly. E.g., out-sourcing, experience level of staffing.	7	3	15	8
NAD	Williamsburg	B	Cost of dredging (cost-sharing): 1) Corps to consider 100% funding for dredging projects as opposed to cost sharing.	8	7	5	2
NAD	Williamsburg	BB	Corps to provide additional resources for habitat restoration. Ecosystem protection and restoration.	4	6	6	2
NAD	Williamsburg	C	Establish a common GIS database and system that is easily accessible: 1) Common GIS database to be operating between Corps and Coast Guard (that is easily accessible to both agencies).	10	13	2	3
NAD	Williamsburg	CC	Prioritize ecosystem restoration projects.	1	6	15	1
NAD	Williamsburg	D	Need for consistency in 404 permitting actions. Need accountability for decisions made at local level.	2	3	15	1
NAD	Williamsburg	DD	Upgrade current facilities to match existing standards.	2	5	15	1
NAD	Williamsburg	E	No one agency leading (and coordinating) water resources development.	16	2	15	5
NAD	Williamsburg	EE	Reduce all non-point source pollution run-offs.	3	8	8	1
NAD	Williamsburg	F	Legislative requirements get in the way of holistic watershed planning approach. E.g. EPA rulemaking on sanitary sewer flows.	1	1	3	1
NAD	Williamsburg	FF	Establish a vessel management traffic system. Third crossing.	4	5	13	1
NAD	Williamsburg	G*	Total watershed management from headwaters to ocean: 1) Current lack of total watershed management (from headwaters to ocean). 2) No systematic approach to handling exists. 3) Impacts on land use, water quality, environmental health, dredging requirements; 4) Establish roles and responsibilities for all participants; 5) create a database that shows all projects and who built them; 6) set	7	1	15	5

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			standards for watershed; 7) create vision; 8) develop action plans				
NAD	Williamsburg	GG	Increase communications between Corps and Coast Guard HQ offices: 1) At the COE and Coast Guard HQ levels with respect to a number of issues (e.g., scheduling of projects; 2) coordination of appropriation processes).	3	2	2	1
NAD	Williamsburg	H	Impact of dredging on bottom fish and other natural resources: 1) Impact of dredging on living marine resources; 2) Maintenance and improvement of dredging and the impact on ecosystem (clams). 3) Need sanctuaries so that stocks can be replenished.	10	5	6	3
NAD	Williamsburg	HH*	Coming up with funds to replace aging infrastructure: 1) Determine beneficiaries; 2) develop implementation strategy; 3) New policies	9	7	12	7
NAD	Williamsburg	I*	Preservation of wetlands - as it affects water quality: 1) Education, communication and assessment of impacts; Coordination between levels of government; 2) address backlog of projects; 3) Address competing land use interests; 4) coordinate with other agencies to develop consistent treatment of wetlands	14	6	2	4
NAD	Williamsburg	II*	Planning ahead to ensure that infrastructure is in place to support commerce, including navigation and dredging: 1) Support projections of commerce with infrastructure: Identify replacement areas for dredging; 2) Integrate land-side and ocean-side transportation planning; 3) regional and coast-wide planning for navigation-related commerce	12	5	1	7
NAD	Williamsburg	J	Concern over deepening of main channels. Be careful of infrastructure (need for new infrastructure) (must ensure defense needs).	12	5	12	4
NAD	Williamsburg	JJ	Failing individual septic systems. Need programs for people with limited means.	6	11	8	1
NAD	Williamsburg	K*	Improving coordination between stakeholders. 1) Give more credence to local and state projects. 3) Take local and state projects into account.	8	2	15	3

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NAD	Williamsburg	KK	Linking infrastructure improvements and environmental restoration. Look for opportunities to do both on same project.	1	12	6	1
NAD	Williamsburg	L	Urban water infrastructure. What is Corps mission, with respect to maintenance, placement, and funding?	2	10	15	1
NAD	Williamsburg	LL	Coordinating and funding economically-linked land-side projects: 1) Need to fund all components of projects before all projects can work.	2	7	1	1
NAD	Williamsburg	M	Education of the public on water resources issues: 1) Ease of access to information that is available. 2) How to streamline the access of information; 3) inform decision makers and staffers regarding local issues.	5	2	13	3
NAD	Williamsburg	MM	Support smaller port growth. Priority for Hampton Roads port (e.g., overall economic impact of the Port of Hampton Roads).	4	5	5	1
NAD	Williamsburg	N	Different federal agencies have different regional boundaries and different views on issues. 1) Public may have to go to two or more regional offices. 2) Different standards of definitions (e.g., wetlands). 3) Overlap of federal agencies.	4	2	15	1
NAD	Williamsburg	NN	Keeping up with advancing technology through public/private partnerships in order to maintain agency viability: 1) Federal government seeking partnerships and coordination with respect to advancing technology (e.g., GIS, design, modeling).	1	2	13	1
NAD	Williamsburg	O	Utilize watershed approach to planning and management. Since Corps is defined by watershed, then Corps should help facilitate between various jurisdictions: 1) Utilize Corps expertise on watershed planning; 2) work and do jobs on watershed basis; 3) watersheds do not stop at state lines	4	1	2	3
NAD	Williamsburg	OO	Work holistically in partnerships for Corps projects.	1	2	14	1
NAD	Williamsburg	P	Combined sewer overflows (funding issues).	18	7	11	10

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NAD	Williamsburg	PP	Corps of Engineers costs. 1) Need to continually assess Corps costs. 2) Corps too expensive. 3) Corps costs may eliminate some potential partners.	1	7	15	1
NAD	Williamsburg	Q	Focus on inland waterways. To include Corps to work with FEMA to update floodplain maps.	2	4	13	2
NAD	Williamsburg	QQ	Find mechanisms to minimize frivolous lawsuits. Cost to project proponent during litigation.	0	15	14	3
NAD	Williamsburg	R*	Safety of, and protection of, source water for drinking water: 1) Water quality; 2) inventory sources of contamination; 3) source water monitoring; 4) Land use control; 5) mitigation of existing contamination sources	1	10	13	2
NAD	Williamsburg	RR	Do port planning on regional basis vs. project by project.	3	5	5	1
NAD	Williamsburg	S	Beach replenishment of coastline: 1) Use dredge materials to replenish beaches; 2) Use holistic planning approach.	0	18	1	1
NAD	Williamsburg	SS	Cost-sharing formula should consider ability-to-pay. Look at a community's ability to cost-share.	8	7	15	5
NAD	Williamsburg	T	Cost and availability of dredge material disposal.	2	5	6	1
NAD	Williamsburg	U	Scaling the scope of the project to the scope of the problem. E.g., environmental restoration projects.	12	14	13	1
NAD	Williamsburg	V	Acid runoff from mines.	6	8	8	1
NAD	Williamsburg	W	Funding that has been set aside for cleanup purposes has not been used. E.g., Superfund sites.	1	7	7	1
NAD	Williamsburg	X*	Need for adequate supply of raw water: 1) To provide an adequate supply for future (competition for water); 2) Need for unified actions between federal/state/local agencies.	20	10	2	9
NAD	Williamsburg	Y	Incorporate new monitoring techniques and tools into existing monitoring systems. Operations. Water quality and other infrastructure.	0	13	8	2
NAD	Williamsburg	Z	Continue Corps cost participation in stream gaging. Corps contributions to USGS for stream gage surveys have been decreasing over the years.	17	7	13	6
NAD	Woburn	A*	Water quality problems associated with flooding and storm water runoff: 1) Eliminate Combined Sewer Overflows (CSOs); 2) inadequate storage to hold the storm	0	8	12	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			water during high flows, therefore it goes directly into the rivers; 3) Non-point source pollution is the largest contributor to water quality problems and most difficult to address due to numbers (different groups must coordinate and share their data with one another); 4) Increases in storm water runoff due to development and resulting increase in impervious surfaces (impervious surfaces create an increase in peak flows and decrease in base flows).				
NAD	Woburn	B*	Improve and update how information is delivered to political decision-makers: 1) Also, the information must be based on good science. 2) Decision-makers need unbiased information on climatic change, the effects of development, dredging, and environmental sustainability, including wildlife habitat issues related to sprawl.	1	2	13	1
NAD	Woburn	C*	Dredging and disposal of contaminated dredge material. This is related to the issue of water quality: 1) It is difficult to find disposal sites for this material, and the costs of dredging are increased; 2) Habitat/species restoration; 3) streamline permitting process; 4) establish consensus on dredging issues;	23	6	5	5
NAD	Woburn	D*	Aging infrastructure: 1) Age is affecting such structures as dams and water treatment facilities. 2) Corps should join with states in finding comprehensive solutions. 3) Need to agree on process for making decisions on aging infrastructure: address safety, prioritization of restoration; 4) How to agree on the usefulness of A structure. 5) Right now there is no agreed upon process for deciding what projects are no longer needed versus those that should be maintained; 6) Streamline regulatory process; 7) national assessment of aging infrastructure that asses condition and value of each structure;	10	12	15	4
NAD	Woburn	E*	Improve education of the public on the issues related to water resources: 1) public service announcement; 2) educational info. at various projects, parks, public service events with companies/groups; 3) educational programs at	6	2	2	4

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			elementary and high schools; 4) web sites; 5) press releases; 6) scholarships				
NAD	Woburn	F	Improve data flow across jurisdictional borders: 1) There are many projects and studies going on that cross state or watershed boundaries and we should avoid overlap and share data wherever possible.	0	13	2	1
NAD	Woburn	G	Regional watershed management: 1) People who make decisions in one jurisdiction must understand how their actions will affect other jurisdictions. 2) This topic also includes inter-basin and intra-basin management issues.	2	1	2	8
NAD	Woburn	H	Establish better standards for water quality and water quantity on a regional basis.	0	8	10	2
NAD	Woburn	I*	Deadbeat dam owners: 1) Private, municipal and even state dams must be inspected more thoroughly; 2) There is a lack of maintenance and inspection in many instances; 3) Some owners don't take responsibility and their dams may eventually fail; 4) Increase awareness of the issues, create consensus between private rights vs. public good; 5) maintain in-stream flows; 6) limit inter-basin transfers of water	0	12	13	1
NAD	Woburn	J*	Coastal protection and management. 1) Sea level rise due to global warming is a concern; 2) impact is threat to property. 3) We need a national presence to take the lead in coastal management. 4) Need to study impact of hard structures on shorelines; 5) study beach restoration projects; 6) complete a national needs assessment; 7) establish a national policy for coastal protection;	2	18	16	1
NAD	Woburn	K	Use good science to develop water quality protection standards. For example, we need to find a replacement for MTBE (methyl tertiary-butyl ether), a fuel additive meant to help gasoline burn cleaner thereby improving air quality, but which is causing problems for water quality.	0	8	8	1
NAD	Woburn	L	Redevelopment of urban waterfronts and brownfields.	3	17	18	1
NAD	Woburn	M	Eutrophication (effects of nutrients in water bodies).	1	8	9	1
NAD	Woburn	N	Prioritize expenditures for environmental improvements.	21	6	15	9

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
NAD	Woburn	O	Restore natural in-stream flows: 1) One participant noted that every single stream in Massachusetts has at least one dam on it.	4	6	4	2
NAD	Woburn	P	Lack of consumer confidence in the public water supplies. U.S. Environmental Protection Agency (EPA) is currently trying to address this issue. We also need better protection of public water supplies from contamination.	6	8	11	2
NAD	Woburn	Q	Beaver overpopulation in Massachusetts is causing flooding and property damage, as well as water supply contamination in some areas.	9	4	7	3
NAD	Woburn	R	Need to update Federal Emergency Management Agency (FEMA) floodplain studies, particularly taking into account dam safety: 1) FEMA's current flood maps do not take into account flows from dam failures.	7	9	14	4
NAD	Woburn	S	Address the apparent reduction in the Corps' regional flood control and disaster relief expertise.	2	4	10	1
NAD	Woburn	T	Combine state and federal dam permits to encourage better compliance and maintenance.	0	3	15	1
NAD	Woburn	U	Streamline and coordinate flood control services between FEMA and the Corps.	1	2	9	1
NAD	Woburn	V	Improve safety of water transport of hazardous substances.	2	5	15	2
NAD	Woburn	W	More consistency and coordination between the planning and regulatory functions of government at federal and state levels. 1) Governments need to look for efficiencies in the ways they provide their services to the public.	7	2	15	1
NAD	Woburn	X	Clarify the roles of the public and private sectors in policy implementation.	0	2	15	1
MVD	St. Louis	A	Aging infrastructure: aging Coast guard equipment: 1) recapitalization of Inland Aids to Navigation, deteriorating lock systems and port facilities, declining quality of residential areas adjacent to ports	3	5	12	3

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
MVD	St. Louis	AA	Groundwater depletion and utilization of available supplies	0	10	8	
MVD	St. Louis	B	Environmental restoration: degradation of resources, water quality, and habitats; protection of environment: 1) could solve problem by watershed approach, deauthorization navigation projects, promotion of non-structural flood damage reduction	0	6	1	
MVD	St. Louis	BB	Control of importation of exotic species	0	6	6	
MVD	St. Louis	C	Emergency response: 1) too many agencies involved in stream gage monitoring; 2) lack of involvement of local people; 3) aging Coast guard fleet for navigation safety	3	9	9	3
MVD	St. Louis	CC	Holistic system approach to entire Mississippi river basin sustainable economic of ecosystem, monitoring, floodplain mgmt, basin surface/groundwater uses; balance of water resources issues	0	1	15	
MVD	St. Louis	D	Flood control	0	4	4	
MVD	St. Louis	DD	Communication drives funding	0	2	7	
MVD	St. Louis	E	Floodplain management and flood damage reduction: 1) coordinate federal programs; 2) agriculture techniques; 3) keeping people off of or restrict development in floodplains; 4) conserving family farms; 5) evolve away from buy-outs	0	4	4	
MVD	St. Louis	EE	Think national river system	0	1	15	
MVD	St. Louis	F	Water supply/conveyance: 1) insure that water supply from groundwater and surface are adequate; 2) create national inventory that could be used to identify areas of depletion and long term impacts during planning studies; 3) identify environmental benefits for effective protection of underground aquifers; 4) drought planning; 5) water supply vs. water rights	7	10	10	2
MVD	St. Louis	FF	Military/civilian roles in water planning	0	2	14	
MVD	St. Louis	G	Marine transportation system: 1) Aging lock system; 2) educate public about the diverse needs and purpose of the inland navigation system	0	5	5	
MVD	St. Louis	GG	Regional sediment management in watershed context: 1) view entire watershed, develop computer model for monitoring	0	1	6	

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			and management, effects on habitats, biotic features and ecological processes, improve partnerships.				
MVD	St. Louis	H	Socioeconomic, outreach, and community input	0	2	2	
MVD	St. Louis	HH	Environmental enhancement and stewardship: 1) design and implementation of cost effective and innovative ecosystem and watershed approaches were needed; 2) consideration of cumulative impacts on a watershed should be applied	0	6	1	
MVD	St. Louis	I	Reform of Army Corps of Engineers Create a new agency form old Corps and parts of BUREC	0	15	15	
MVD	St. Louis	II	Economic viability context	0	14	15	
MVD	St. Louis	J	Adjust societies demands to fit the river	0	1	6	
MVD	St. Louis	JJ	Coordination among local government agencies	0	2	2	
MVD	St. Louis	K	Policy based on consensus	0	15	2	
MVD	St. Louis	KK	Storm water management	5	2	11	1
MVD	St. Louis	L	Effective forums of partnerships: 1) mandatory tracking; 2) education in high schools, community monitoring programs; 3) increase manpower of Corps, educate public officials in federal, state, and local governments	0	2	2	
MVD	St. Louis	LL	Policy on long range vision (35 years) with balance of watershed usage: 1) viewing systems as a whole, resource allocations, infrastructure maintenance; 2) manage projects with long term (35 yrs) holistic approach; 3) water resources allocations; 4) maintenance	0	1	15	
MVD	St. Louis	M	Balance; benefit/cost analysis	0	15	14	
MVD	St. Louis	MM	Waterway transportation - think more comprehensively intermodal: 1) what effects do other modes have water; 2) develop system models to assess all impacts including environmental	0	5	1	
MVD	St. Louis	N	Recreation: 1) benefits of recreation need to be considered in B/C analysis; 2) should be a part of project development; modify policy to include recreation at all federal agencies	8	16	15	2
MVD	St. Louis	NN	Finding balance between operating and maintaining what we have and building/acquiring new things: 1) balancing	0	5	6	

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			navigation and environmental; 2) Congress determine river uses; 3) balance between operating and maintaining existing facilities/projects and new projects				
MVD	St. Louis	O	Solving multiple problems at the same time: 1) uses of water for a growing population, networking all competing interests needs to be established to develop consensus	0	1	14	
MVD	St. Louis	OO	Climate change could alter basic assumptions	0	9	13	1
MVD	St. Louis	P	Funding needed: 1) obtain funding for water resources, reduce backlog of projects;	0	7	7	
MVD	St. Louis	PP	Information education: 1) provide water resources education via TV; 2) provide water resources education in public schools by water resources agencies;	0	2	13	
MVD	St. Louis	Q	Agreement on how challenges are solved	0	2	15	
MVD	St. Louis	QQ	Floodplain management	0	4	4	
MVD	St. Louis	R	Prioritization of federal and land acquisition (interagency)	0	2	15	
MVD	St. Louis	RR	Lack of vision of Army Corps of Engineers - need to go and try to influence congress	0	15	15	
MVD	St. Louis	S	Better coordination between agencies	0	2	2	
MVD	St. Louis	SS	Comprehensive planning of watersheds: system wide approach that includes waterway systems, flood damage reduction, and environmental stewardship	0	1	15	
MVD	St. Louis	T	Land use planning, controls, and incentives: 1) Control over development in floodplain areas; 2) consistent permitting policy with new laws; 3) assessments on impacts of ecosystem; 4) standardized economic cost analyses	0	1	4	
MVD	St. Louis	TT	Revalidate assumptions prior to project implementation	0	13	14	
MVD	St. Louis	U	Restoration; protection of base flows: 1) Watershed hydrology and identification of wetlands	0	6	6	
MVD	St. Louis	UU	Full cost accounting which includes costs and benefits - water quality; low income communities	0	13	14	
MVD	St. Louis	V	More complete monitoring program: 1) Include network communication program; 2) tell story depicting current health of the river system and describe water quality problems	1	13	8	1
MVD	St. Louis	VV	Protection of vanishing species	0	6	3	

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MVD	St. Louis	W	Evolve away from federal land management	0	15	4	
MVD	St. Louis	WW	Trimming costs of project planning	10	14	7	2
MVD	St. Louis	X	Floodplain compatible uses: 1) evaluation, restoration, and preservation of wetlands; 2) prohibit residential development in the floodplain	0	4	4	
MVD	St. Louis	XX	Corps drop back and focus on traditional roles such as flood control and navigation	7	15	14	4
MVD	St. Louis	Y	Ecologically equivalent mitigation	7	6	6	1
MVD	St. Louis	YY	Look at other models of consensus building - Breaux Act, Chesapeake Bay	0	2	13	
MVD	St. Louis	Z	Engage environmental non-governmental organizations in partnerships: 1)include NGO's in project planning and formulation process	0	2	14	
MVD	St. Louis	ZZ	Visibility for Mississippi River: 1) Need to nationally recognize Mississippi river system for its ecological and navigation importance; 2) focus on water quality; 3) education in schools, create multi-purpose federal web page for education and tourism	0	2	5	
GRD	Chicago	A	Better national coordination with regional solutions.	14	2	1	7
GRD	Chicago	AA	Pollution in general How to safeguard water quality with movement of hazardous material. Toxic issues.	6	9	5	1
GRD	Chicago	B	Jetties – Cause shoreline erosion, similar effects for streams & rivers	3	18	18	1
GRD	Chicago	BB	Cut costs by rewriting dredging disposal regulations: 1) Need interagency coordination.	1	15	2	1
GRD	Chicago	C	National policy being applied to great lakes may not apply anymore.	1	15	1	1
GRD	Chicago	CC	Promote alternatives to large-scale retention basins.	2	10	4	1
GRD	Chicago	D	What are the physical models and economic models? Do existing models still work? COE economic models are flawed related to B/C analysis of commercial water way projects	12	5	13	7

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
GRD	Chicago	DD	Impact of highway construction and road repair on water quality: 1) Promote utilization of Best Management Practices (BMPs) among agencies.	0	8	2	1
GRD	Chicago	E	Dredging vs. Restoration: 1) Adequate funding for dredge disposal facilities; 2) Restoration of environmental damages/prevention of future problems	20	5	6	9
GRD	Chicago	EE	Concerted (greater) regional vision for the Great Lakes.	4	1	15	1
GRD	Chicago	F	Commercial needs of smaller ports on the Great Lakes vs. U.S. Coastal ports. All the attention in the past has been paid to coastal ports (NY, NY) - what about us?	2	5	5	1
GRD	Chicago	FF	Multi-objective planning approaches for shoreline and streambank restorations.	7	1	18	4
GRD	Chicago	G	Exotic species (e.g., zebra mussels). Related to infrastructure problems, fisheries, permitting issues; national issue not just a state issue.	0	6	6	2
GRD	Chicago	GG	Streamlining of procedures must balance commercial and environmental interests.	1	14	1	1
GRD	Chicago	H	Commercial navigation improvements. The nation's waterways are important enough to be continually improved. For example, on the St. Lawrence system, the Corps needs to retrofit the system to be economically viable. The Corps needs a role in improving this system: 1) Need to do serious analysis of volume and business patterns and the effect it has on demand for trade lanes; 2) Self-examination of Corps 3) Does the Corps perform spontaneous or continuous analysis of needs? Why preserve all of the pieces? 4) Specify minimum project depth of harbors.	14	5	14	3
GRD	Chicago	HH	Improve partnerships and shared decision making processes (multiple players working on project). Clearly articulate relationship with project sponsors. Who has ownership?	31	2	14	12
GRD	Chicago	I	Water quality--bacterial contamination of waters: 1) Urban rivers and coastal waters; 2) Better understanding of causes	26	8	8	11

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
			of bacterial contamination of near coastal waters; 3) What is the source? How do we get rid of it?				
GRD	Chicago	II	Thinking beyond waterways toward watersheds (stewardship).	11	1	1	4
GRD	Chicago	J	Flood control (greater level of service being demanded; dysfunctional cooperation among agencies; manner in which wetland restoration being used for flood control): 1) Urban flooding vs. stream flooding.	22	4	2	10
GRD	Chicago	JJ	Locks and dams are getting old and need replacing.	51	5	12	33
GRD	Chicago	K	Streamline the time it takes to move a project from inception to completion. Time is a barrier for non-federal sponsors, demand for need and actual construction is disjointed.	2	14	14	6
GRD	Chicago	KK	Water supply (potable demands).	1	10	10	1
GRD	Chicago	L	Need for improved dissemination of new technologies in Corps projects. Public is not getting enough information on all alternatives.	4	2	13	4
GRD	Chicago	LL	Use of containers from overseas on internal waterways (Great Lakes and rivers).	3	5	5	2
GRD	Chicago	M	Corps not responsive to requests for information. Don't know who to talk to. Lack of response between Corps and other agencies (need an ombudsman).	2	2	15	4
GRD	Chicago	MM	Water diversions vs. water withdrawals in the Great Lakes.	38	10	10	4
GRD	Chicago	N	Halt the destruction of Great Lakes beaches with special focus on dune protection: 1) Need is becoming urgent; 2) sand moving out to the lake; 3) need to maintain some level of sand to maintain some protection of the lake. 4) Sand is for protection of beaches (recreation, aesthetics).	29	18	18	6
GRD	Chicago	O	Expedite permitting process.	1	3	3	3
GRD	Chicago	P	Education in schools on water issues: 1) Long-term, not crisis-oriented; 2) Issue of asset management, water education, in school curriculum.	8	2	13	2

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GRD	Chicago	Q	Nonstructural and environmental flood control approaches. Nonstructural solutions, wetland conservation, flood damage reduction, Find Eco-friendly treatments	8	4	6	4
GRD	Chicago	R	Corps needs to have a consistent message, approach, focus, and balance: 1) Civil Corps vs. Building Corps vs. Regulatory Corps vs. Contractor Corps.	8	2	15	3
GRD	Chicago	S	Corps to develop new policies for changing uses of waterways (particularly recreation).	16	15	16	2
GRD	Chicago	T	Mitigation policy for wetlands. Imbalance of policy.	4	6	15	2
GRD	Chicago	U	Enforcement responsibilities for 404 permits and Section 10. If Corps does not have money for enforcement, quit issuing permits. No more permits until enforcement staffing is adequate.	23	3	7	9
GRD	Chicago	V	More research on beneficial uses of dredging materials.	3	13	5	1
GRD	Chicago	W	National clearinghouse for information and data: 1) People are not aware of research underway and completed; 2) Good information is available, but not being disseminated.	3	13	2	2
GRD	Chicago	X	Better manage diversion of water so we can maximize use of drinking water. Communities could use Great Lakes water, but cannot get it because of allocation formula.	5	10	15	3
GRD	Chicago	Y	Stream conveyance. Improved maintenance of stream conveyance system through ecologically sound methods.	4	6	4	1
GRD	Chicago	Z	Combined sewer overflows: 1) Storm water runoff and sewage combined to go to wastewater treatment; 2) Sewage back up into rivers and people's homes - too long to rectify problem when identified.	5	11	9	5
GRD	Louisville	A	Water table maintenance at older dams. Shoaling of rivers from locks and raising water levels. Affecting Navigation	37	5	10	1
GRD	Louisville	AA	Catastrophic failure of navigation infrastructure.	2	5	9	1
GRD	Louisville	AAA	Lack of development control.	2	17	17	1

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
GRD	Louisville	B	Healthy aquatic ecosystems – restoration and multiple purposes. Waterways are neglected and abused with dumping. Littering, overflows.	18	6	8	1
GRD	Louisville	BB	Development of Ohio River as an economic resource.	0	5	1	1
GRD	Louisville	BBB	Response to the fact that 80% of all bacteria born disease is transmitted by water.	4	8	8	1
GRD	Louisville	C	Waterway users conflict with commercial and recreational use.	11	5	16	2
GRD	Louisville	CC	Improvement of navigation infrastructure – coordinate with other federal agencies – develop a maritime navigation policy to assess demands on waterways by intermodal transportation and determine how to partner with other entities.	10	5	2	3
GRD	Louisville	CCC	In this time of economic prosperity we are not spending money (local, state, federal) to repair, maintain, and improve infrastructure – if not now when?	10	12	7	1
GRD	Louisville	D	Adequate and dependable water supply. Withdrawing water from source must not impact environment or habitat	33	10	6	12
GRD	Louisville	DD	Recognition of contribution that waterborne commerce makes to minimizing environmental impacts.	13	5	6	3
GRD	Louisville	E	Navigation – locks and dams are deteriorating and time to study and construct is unbearable.	17	5	14	1
GRD	Louisville	EE	How to control sedimentation on rivers – to reestablish streams that are no longer navigable.	19	5	1	6
GRD	Louisville	F	National aging infrastructure – smaller projects cannot compete with larger ones – (User board) trust funds not sufficient.	3	12	7	2
GRD	Louisville	FF	Predominance of commercial and industrial perspective in the permitting program which is in conflict with community and environmental values.	1	3	15	1
GRD	Louisville	G	Change in Corps mission statement to include water supply.	25	15	10	16
GRD	Louisville	GG	Leadership at Corps - political support for budget.	19	15	7	6

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Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
GRD	Louisville	H	How to implement flood control projects – process that results in consensus.	16	4	2	4
GRD	Louisville	HH	Water quality – wetland protection and restoration and aquifer depletion and groundwater contamination.	31	8	6	1
GRD	Louisville	I	Funding for inland waterway projects – projects should be funded at full capability so that benefits are not lost.	30	7	5	1
GRD	Louisville	II	Watershed habitat restoration process needs to be user friendly.	8	6	2	1
GRD	Louisville	J	Construction delays as a result of inadequate funding.	5	7	14	1
GRD	Louisville	JJ	Economic costs and benefits – includes fish and wildlife benefits and recreation benefits.	0	15	14	1
GRD	Louisville	K	Failing infrastructure with no funds to replace any failed infrastructure.	10	7	12	1
GRD	Louisville	KK	Need to maintain navigation charts.	5	13	5	1
GRD	Louisville	L	Water quality enforcement – need overarching national and mission statement for the Corps.	8	8	15	1
GRD	Louisville	LL	Post flood recovery assistance so that people can work through regulatory process.	4	9	3	1
GRD	Louisville	M	Make sure that there is good coordination with all agencies and municipalities.	15	2	2	1
GRD	Louisville	MM	Assure that we can operate and maintain existing facilities before we build new ones.	6	14	7	1
GRD	Louisville	N	Coordinated national policy on water issues that gives equal emphasis to environmental values.	11	6	15	3
GRD	Louisville	NN	Industry needs to get more politically active.	2	2	2	1
GRD	Louisville	O	Process for smaller communities to accomplish smart growth.	7	17	15	2
GRD	Louisville	OO	Fundamental problem with publicity of what we do good and how money is saved.	2	2	2	1
GRD	Louisville	P	Funding for flood control projects – need full funding and more flexibility for how local sponsors meet their share.	13	7	4	1
GRD	Louisville	PP	Need for enforcement resources to support program.	5	3	7	2
GRD	Louisville	Q	Challenge 21.	0	6	4	1

TABLE A-1

LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
GRD	Louisville	QQ	Need for additional guidance and clarity on criteria – good explanation of jurisdictions.	1	2	14	1
GRD	Louisville	R	Maintenance and protection of green spaces along the inland waterway to improve water quality.	0	6	8	1
GRD	Louisville	RR	Development of information system for basin wide planning.	4	13	1	1
GRD	Louisville	S	Develop a recreational users education and licensing program regarding rules of the waterway.	10	2	5	1
GRD	Louisville	SS	Fix loophole in 404 permitting authorities.	1	3	15	1
GRD	Louisville	T	Lack of clear consistency for recreation and waterfront projects that results in inconsistencies between projects.	18	16	14	5
GRD	Louisville	TT	How to achieve motivation in government to act to address water issues.	0	2	2	1
GRD	Louisville	U	Lack of emergency response on waterways – Limited capabilities of resources to clean up spills. Best management issues..	0	9	7	1
GRD	Louisville	UU	Need for coordinated program on acquisition of high-risk flood plain properties. Federal government should buy land in the 100 flood plain.	14	4	15	1
GRD	Louisville	V	Accuracy or inaccuracy of river stage reporting – problem for flood forecasting and levy operators: 1) Keeping up with charting, accuracy issues, maintenance of gauges.	2	13	4	2
GRD	Louisville	VV	Distribution and allocation of water resources among various sectors of economy: 1) Integration of water conveyance into urban rehab opportunities (Brownfields, drain fields, straight pipes.)	1	15	17	1
GRD	Louisville	W	Navigation approaches to dam are dangerous and time to get through locks are excessive (industry concern).	4	5	5	1
GRD	Louisville	WW	The pollution of water resources and how to address source pollution and non-point pollution.	5	8	8	1
GRD	Louisville	X	Need for guidance and assistance for incorporating design features that are environmentally sensitive – process to gain local support for designs.	31	2	14	1

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LIST OF IDENTIFIED WATER CHALLENGES

Host Division	City	Challenge Letter	Identified Water Challenge: Supporting comments	Number of Dot Votes Received	Primary Water Challenge Area Assignment	Secondary Water Challenge Area Assignment	Number of Stickies
GRD	Louisville	XX	Need to address policy, politics, and operations considerations while addressing any water resource issue.	12	15	14	1
GRD	Louisville	Y	Enhanced water based recreational opportunities: 1) better access to Corps facilities; 2) enhanced fishing opportunities.	3	16	16	1
GRD	Louisville	YY	Corps to continue supporting clean water act – do not change definition of dredge fill to include mining.	4	3	15	1
GRD	Louisville	Z	Improved maintenance and stability schedule for navigation infrastructure.	21	5	12	3
GRD	Louisville	ZZ	Restore river and stream riparian corridors – focus on corridors and not watershed.	0	6	4	1
			Totals	3,486			1,226

