Sustainable Water Resources Roundtable
December 1 & 2, 2009
Meeting Summary

(Full sets of PowerPoints presented at the meeting will be posted at http://acwi.gov/swrr)

Day 1 Tuesday December 1

Rick Swanson of the US Forest Service and SWRR Co-chair welcomed the participants to the meeting mentioning the benefits to his agency and others of their years of participation in the Sustainable Water Resources Roundtable. David Berry, SWRR Facilitator, also welcomed the attendees and told the newcomers that a SWRR meeting was not something that people came merely to observe but that each of those present was a full participant in the forum and was invited to share their perspectives.

Roundtable Background

John Wells of the Minnesota Environmental Quality Board and Rich Juricich of the California Department of Water Resources gave a summary of SWRR activities and history for new participants.

SWRR has more than 400 active participants from federal, state and local governments; corporations; nonprofits and academia. Meetings have been held in California, Colorado, Maryland, Michigan, Minnesota, Virginia, and Washington, D.C. SWRR has created many publications and conference presentations, including the 2005 Preliminary Report http://acwi.gov/swrr/Rpt_Pubs/prelim_rpt/index.html and another SWRR Report to be posted on at http://acwi.gov/swrr early in 2010.

Wells and Juricich presented the principles of water sustainability that SWRR has discussed:

1. *The value & limits of water:* People need to understand the value and appreciate the limits of water resources and the risks to people and ecosystems of unbounded water and land use.

2. *Shared responsibility*: Because water does not respect political boundaries, its management requires shared consideration of the needs of people and ecosystems up- and downstream and throughout the hydrologic cycle.

3. *Equitable access*: Sustainability suggests fair and equitable access to water, water dependent resources and related infrastructure.

4. *Stewardship:* Managing water to achieve sustainability challenges us while meeting today's needs to address the implications of our decisions on future generations and the ecosystems upon which they will rely.

The presentation continued with a summary of the SWRR Indicator Framework. The roundtable promotes indicators in the following:

Water Availability
- **Renewable water**
  - Upper limit of water availability
- **Water in the environment**
  - Water remaining after human uses

- **Water use sustainability**
  - Degree to which water use meets current needs while protecting ecosystems and the interests of future generations

Water Quality
- **Quality of water for human uses**
  - Drinking, recreation, industry and agriculture, etc
- **Quality of water in the environment**
  - Flora and fauna and related ecosystem processes
- **Water quality sustainability**
  - degree to which water quality satisfies human and ecosystem needs

Human Uses and Health
- **Withdrawal and use of water**
  - amount of water withdrawn from the environment and the uses to which it is put
- **Human uses of water in the environment**
  - extent to which people use water resources for waste assimilation, transportation and recreation
- **Water-dependant resource use**
  - extent to which people use resources like fish and shellfish that depend on water resources
- **Human health**
  - extent to which human health may be affected by the use of water and related resources

Environmental Health
- **Indices of biological condition**
  - health of ecosystems
- **Amounts and quality of living resources**
  - productivity of ecosystems

Infrastructure and Institutions
- **Capacity and reliability of infrastructure**
  - capacity and reliability of infrastructure to meet human and ecosystem needs
- **Efficacy of institutions**
  - efficacy of legal and institutional frameworks in managing water and related resources sustainably

Rich Juricich discussed highlights of the California Water Plan released in draft form in October and on California's Water Blueprint for Integrated Water Management and Sustainability.

Round of Self Introductions

David Berry invited attendees to mention not only their organizational affiliation but also what had attracted them to work in sustainability and water resources. Many participants gave moving testimony regarding their connections with nature early in life and how that planted the seeds for an interest in environment and sustainability later in order to pass on the opportunity for those kinds of experiences to their children and the next generations.

The NEST Indicators Project, Current Status and Next Steps:
http://www.fs.fed.us/NEST/
      Rich Guldin, Director of Science, Policy, Planning, Inventory and Information, USFS

Rich Guldin explained that NEST is the latest incarnation of ongoing national-level interest in having a national set of environmental indicators spanning the science-policy interface. It traces its lineage back to the 1992 UNCED Conference through multiple national and international activities associated with sustainable development and sustainable natural resource indicators. There has been at least a 15-year thread of interest by OSTP, CEQ, and OMB in accurately and timely reporting on current environmental conditions and trends important to national and regional environmental policy makers. NEST was launched in June 2008 to pilot test institutional relationships for developing environmental indicators, using water as the pilot.
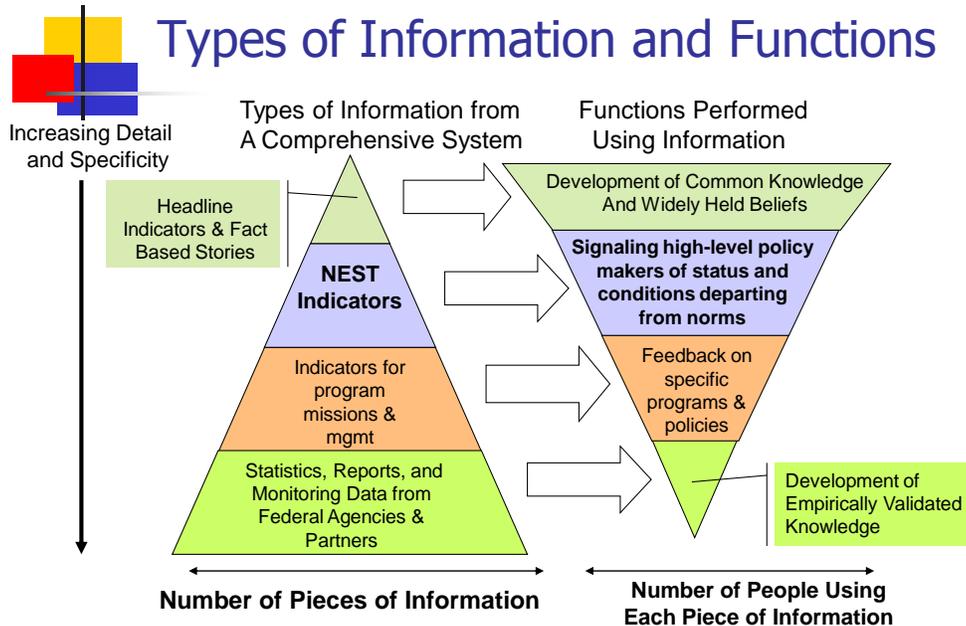
A Policy Memo was signed by three White House Offices (CEQ, OSTP and OMB) that stated "*The pilot project is designed to test the vision for the NEST Indicators. It will demonstrate the collaborative interagency processes that will be used to select and implement indicators and will improve the consistency and interoperability of data. In addition, a national forum will be convened to identify the topics and questions that should be addressed by the indicators of water availability.* (17 Jun 2008)"

The agencies currently participating in NEST are the Forest Service, The Natural Resources Conservation Service, the US Geological Survey, EPA and NOAA.
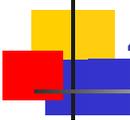
4 Key Products of NEST Project

- Desirable attributes of high-level environmental and natural resource indicators
- Set of core policy-related questions that guide indicator creation/selection for water availability
  - Frame broad, high-level policy questions & issues
  - Reflect enduring, recurring interests
- Initial set of indicators for water availability (5 to 7)
  - Results of an initial test of data interoperability and the ability to report on them
  - Recommended changes to existing programs at the participating agencies to improve reporting
- "After Action Review" of institutional collaboration and any recommended changes to improve institutional capacity

Types of Information and Functions

Increasing Detail and Specificity

Types of Information from A Comprehensive System

Functions Performed Using Information

- Headline Indicators & Fact Based Stories
- **NEST Indicators**
- Indicators for program missions & mgmt
- Statistics, Reports, and Monitoring Data from Federal Agencies & Partners

- Development of Common Knowledge And Widely Held Beliefs
- **Signaling high-level policy makers of status and conditions departing from norms**
- Feedback on specific programs & policies
- Development of Empirically Validated Knowledge

Number of Pieces of Information

Number of People Using Each Piece of Information

At the end of his presentation Rich Guldin opened the floor to a very frank and open discussion of the issues and difficulties related to moving toward a nationally accepted set of environmental indicators. Participants were very supportive of the effort and many offered to help move the initiative forward. Comments included:

- NEST implements the spirit of the Obama Executive Order on Sustainability

- The energy and water sectors think so differently; NEST can help them understand their ties

- NEST should be connected to concerns like climate change adaptation and mitigation

- Non-federal participants expressed interest in submitting a multi-stakeholder letter in support of NEST

- NEST would enable CEQ and others to produce periodic reports on environmental trends based upon real and current data

Lunch Keynote Speaker: Building Strong Collaborative Relationships for a Sustainable Water Resources Future, http://www.building-collaboration-for-water.org
Steve L Stockton, Director of Civil Works, U.S. Army Corps of Engineers

This was the first time a Director of Civil Works for the Corps of Engineers had participated in a SWRR meeting and the steering committee is appreciative of Steve Stockton's contribution and the leading role played by Ada Benavides in the Collaboration for Water program and in working with SWRR to arrange the presentation.
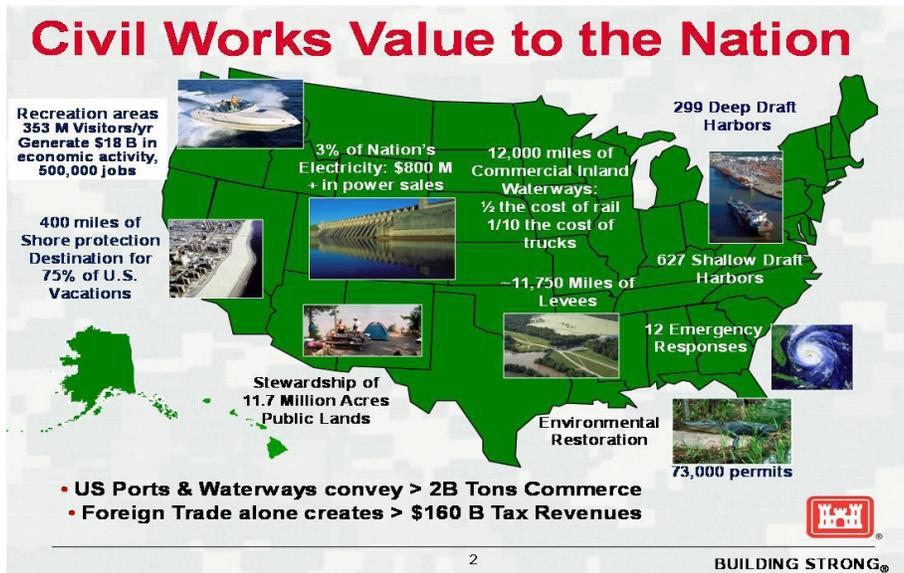
Steve began by giving a brief summary of the role and responsibilities of the US Army Corps of Engineers. Water infrastructure and other water topics are central to the work of the USACE. Then he proceeded to outline a number of water resource challenges:

Water Resources Challenges

Demographic shifts
- World population to increase 2.2 billion by 2025
- U.S. population to reach 440 million by 2050
- Population more urbanized, concentrated in coastal communities at risk from severe weather and lack of fresh water

Persistent Conflict
- Population growth leads to increased demand for scarce water, environmental degradation
  - >900 million people without access to clean water, >2.5 billion without adequate sanitation
- Terrorist threat – need to protect infrastructure from attack
- U.S. role to promote regional stability

Aging Infrastructure
- ASCE overall grade of U.S. infrastructure in 2009: *"D"* Would need $2.2 trillion to fix
- Over half of Corps locks, many other facilities, beyond 50-year "design life, need extensive maintenance & rehabilitation
- Failure poses risk to populations, economy

Globalization
- Foreign trade is increasing share of U.S. economy – could reach 30% by 2010
- Inability of ports and inland waterways to handle greater cargoes could limit economy.

Energy
- Development of hydropower as clean source
- Role of waterways in transport of coal, petroleum and natural gas
- Volumes of water needed for new sources

Environmental Values
- Pressure from increased development impacts natural environment

- Developing sustainable water resources will require cultural shift, lifestyle changes as well as technical innovation

Climate Change
- Earlier spring snowmelts, river pulses seen in western U.S.
- Potential to affect all aspects of water resource management
- May exacerbate water scarcities, lead to increased conflict over uses.

Declining Biodiversity
- 3 times as many freshwater species as land species lost to extinction
- Need for habitat restoration

Governance
- Determining proper roles for Federal, State, local and non-government entities
- Gaps in jurisdiction as watersheds cross political boundaries
- Perceived lack of national direction on water resource issues

Continued Pressure on Federal Budget
- More older people = more entitlement spending, less available for discretionary programs
- Rigorous analysis needed to ensure projects and programs are prioritized to ensure greatest value for taxpayer funds

The USACE Campaign Plan

One of the four major goals of this initiative of the USACE is to "Engineering Sustainable Water Resources Solutions: Deliver enduring and essential water resource solutions through collaboration with partners and stakeholders." The goal has four elements:

- Safe, Resilient Communities & Infrastructure
- Sustainable Water Resources, Marine Transportation Systems & Healthy Aquatic Ecosystems
- Effective, Reliable, Adaptive Life-Cycle Project Performance
- Sustaining a Competent Team

Strategies to Achieve the Goals

Integrated Water Resource Management
- Systems Approach
- Collaboration & Partnering
- Risk-Informed Decision Making & Communication
- Adaptive Management
- State-of-the Art Technology

Systems Approach
- Look at river basins, watersheds and coastal zones as a whole
- Shift focus from individual projects to interdependent system
- Shift from immediate to long-term solutions
- Recognize that any single action triggers one or more responses and reactions in other parts of the system

Collaborating and Partnering
- Allow multiple organizations to contribute to problem-solving
- Leverage funding, data and talent

- – Efficiencies, given scarce resources
- – Sophisticated state and interstate organizations
- – Tribes, local governments, non-profit organizations
- – Public-Private Partnerships

Building Strong Relationships for a Sustainable Water Resources Future
- Identify & leverage opportunities for collaborative efforts
- Identify roles and opportunities where roles can be leveraged
- Create a joint national dialogue for water priorities
- Leverage Federal resources to assist states in their water resources planning and management

Risk-Informed Decision Making & Communication
- Consequence analysis, especially risks to populations
- Forestall possible failure mechanisms
- Quantify & communicate residual risk
- Ask which projects will fail to perform as designed, the likelihood and consequences of failure.
- Recognize limits in disaster prediction
- Recognize limits in protection provided by structural means

Adaptive Management
- Principle commonly used in ecosystem restoration
- Measure responses to interventions within systems to adjust planning, construction and operations in response to changing conditions.

State-of-the Art Technology
- Research that improves resiliency of structures
- Updated design criteria
- Improved approaches to planning & design
- Take advantage of advances in communication, information access, remote sensing, GIS's & nanotechnology
- Coastal & River Information System

The presentation was followed by a discussion of how the USACE multi-stakeholder collaboration has been carried out in several locations across the country. Some SWRR participants had taken part in some of the meetings and other expressed interest in getting involved. Several stated that they would like to see a continued cooperation between SWRR and the collaborative efforts of USACE. One participant described the relationship this way between the resource and people: "The music is the water; we're all the orchestra."

The Alliance for Water Stewardship   http://www.allianceforwaterstewardship.org

AWS Overview: Matt Ries, Water Environment Federation
The Alliance for Water Stewardship is a partnership of many organizations with interests in water resources. AWS is specifically focused on water and has on its board organizations (EWP, WWF, WWI, PI, WEF, WSI and TNC) that understand both water and certification processes. They seek standards that are multi-regional, cross-sectoral, comprehensive, and harmonized to have watershed-level impacts and resolution. The effort has been and will always be an open, transparent multi-stakeholder process.

Social, environmental and economic impacts of depleting freshwater resources highlight the need for a well-designed freshwater stewardship system. There are enormous, sometimes almost seemingly unsolvable, water issues involving humans. This picture is from Tanzania, where AWS organizer and facilitator, WaterWitness International, is working. They report that each year in Tanzania people are killed in conflicts that arise over water. Inequitable water development and rights are at the root of it.

AWS partners assert that existing mechanisms are not adequately dealing with water issues. There is more and more demand for guidance on water use and risk from the business sector. AWS's Water Roundtable is aiming for consensus-based water stewardship standards founded on the understanding of impacts of poor water stewardship.

Water Stewardship

▸ Responsible use of fresh water that is both socially beneficial and environmentally sustainable

  ▹ Water use that is <u>environmentally sustainable</u> maintains or improves biodiversity and ecological processes at the watershed level
  ▹ Water use that is <u>socially beneficial</u> recognizes basic human needs and ensures long-term benefits (including economic benefits) for local people and society at large
  ▹ Water use that is <u>economically sustainable</u> minimizes corporate risk while ensuring that water is available for a multitude of economic benefits and uses over the long-term

AWS Roundtable Process: Andy Murphy, World Wildlife Federation
AWS is supporting greater sustainability of water resources by establishing a global water roundtable, regional water stewardship initiatives and sector-specific work. They are building from similar roundtable models used in various aquaculture and agriculture standards setting processes. AWS and the

Water Roundtable are aware there are several important water stewardship issues that interplay at the global, sectoral, and regional levels: all of which require further attention.

In the international work done over the past 10 to 15 years on developing sustainable standards and practices for various natural resources: forest products, marine fisheries, and others; and for certain commodities, the "roundtable process" has been an extremely effective device. It has proven to be effective at bringing diverse institutional interests to the table to talk about and work in a sustained manner to find solutions to sustainability issues. The purpose of roundtables has been not just to gab or define issues, but to exchange views, agree to best practices, and to make commitments in regard to building stewardship systems and organizations to house and implement these systems.

The AWS Global Water Roundtable process will be modeled after similar successful initiatives convened and facilitated by WWF, including standards setting processes for 12 species produced from aquaculture, 4 global agriculture commodities and generic standards for US row crops (covering 80% of agricultural land in the US). The roundtable process centers on a sequence of meetings intended to achieve consensus first regarding key impacts to be addressed. The idea is to identify and sequence the most important impacts to be addressed in order to be strategic rather than comprehensive. The first meet of the round table will be a 2-day event focused on impacts.

We need to determine where there is agreement, where there is disagreement, and ensure balance of perspectives is presented. After the identification of impacts, the next step will be to develop the Principles and Criteria that derive from the impacts, that will form the framework for the international standards, and any regional or sectoral variation that are created in the process.

Preliminary Thinking on Impacts, Principles and Criteria for Water Stewardship

Impacts:		
~The problems we want to minimize		
Principles:		
~The guiding principles for addressing the impacts		
Criteria: ~Areas to focus on to address the impacts	**Indicators:** ~What to measure in order to determine the extent of the impacts	**Targets:** ~The number and/or performance levels that must be reached to determine if the impacts are being minimized.

AWS's current task is preparing for first Global Water Roundtable meeting in early 2010 focusing on impacts of poor water stewardship. The work is being organized at several levels of responsibility:

- Full Global Water Roundtable: The full group of stakeholders interested in reviewing and commenting on the progress of the GWRT and committed to supporting its goals and objectives.

- External Stakeholders: Individuals who do not attend GWRT meetings, but are free to provide input on GWRT documents and participate in GWRT surveys.

- Steering Committee: The Steering Committee (SC) will serve as the decision-making body and be made up of approximately 5-15 people. Members of the SC will agree upon and document its decision-making process at the onset of the Global Water Roundtable. (See the "Decision-Making Process" section below for more information about committee structure/roles.) SC members will commit to the funding and time (usually two in-person meetings and six phone meetings per year) to participate in the GWRT. To eliminate confusion when key decisions need to be made, SC members will not represent more than one group (e.g., an NGO and coalition of NGOs).

- Technical Working Groups: These groups will be made up of people, such as researchers and scientists and processors, with expertise in a sector. They will provide the Global Water Roundtable with input on technical aspects of water impacts but do not provide input on any political discussions related to the GWRT. Roles of the groups can include delivering policy-neutral advice on the state of research, identifying significant gaps or areas of disagreement, recommending terms of reference for additional research needs, and developing draft standards. They suggest appropriate indicators and performance levels and then justify such recommendations.

- Advisory Groups: These groups will be made up of Global Water Roundtable participants who offer advice on particular aspects and results of the roundtable process or provide collective input on their needs as a stakeholder group (e.g., retail advisory committee or government advisory committee).

After the presentation there was a discussion on the following topics:

- SWRR Participation in North American Regional Initiative,
- Relationship between Regional Initiative and the Global Roundtable,
- Feedback on Draft Standard (Principles, Criteria, Indicators)

Members identified the following points worthy of consideration in a certification program:

- Embodied water exports

- Use and quality in the face of changing conditions and limits due to climate change

- Need for a system to understand the percentage of withdrawals that a watershed can withstand

- The wide variations in the capability of regional entities to quantify the system

- The significance of scale in setting up any certification system

- The challenge of a certification system affecting point sources of pollution where nonpoint sources may cause the lion's share of the problem

- Need to understand context, which will be extremely important

SWRR members were very interested in being kept informed of the progress of the effort and several inquired how their organizations might participate.

Day 2: Wednesday December 2

Presentation on plans for broad participation in Water Census http://water.usgs.gov/wsi/
Eric Evenson USGS

Eric began by defining the Water Census: *Accounts for the changing amount, quality, and use of water resources across the nation aimed at answering the following primary questions:*

- *Does the nation have an adequate availability of freshwater to meet both human and ecological needs?*
- *Will this water be present to meet both existing and future needs?*

The USGS objective for the Water Census is to place the technical information and tools into the hands of stakeholders, allowing them to evaluate water availability for the questions that they are facing. The kinds of information that might interest an organization with responsibility for water could include:
- **Status** of freshwater resources and how they are changing
- **Water use** for human, environmental, and wildlife needs
- How freshwater availability is related to natural storage and movement of water as well as engineered infrastructure
- **Water sources not commonly thought to be a resource**
- Forecasts of likely outcomes of water availability, quality and aquatic ecosystem health due to changes in land use and cover, natural and engineered infrastructure, water use, and climate.

Eric presented the language of P.L. 111-11Subtitle F (SECURE Water Act as signed by the President March 30, 2009) that directs USGS to undertake the work of Water Data Enhancement and Sustainability Assessments. The details on this language are in Eric's PowerPoints which will be posted on the SWRR website.

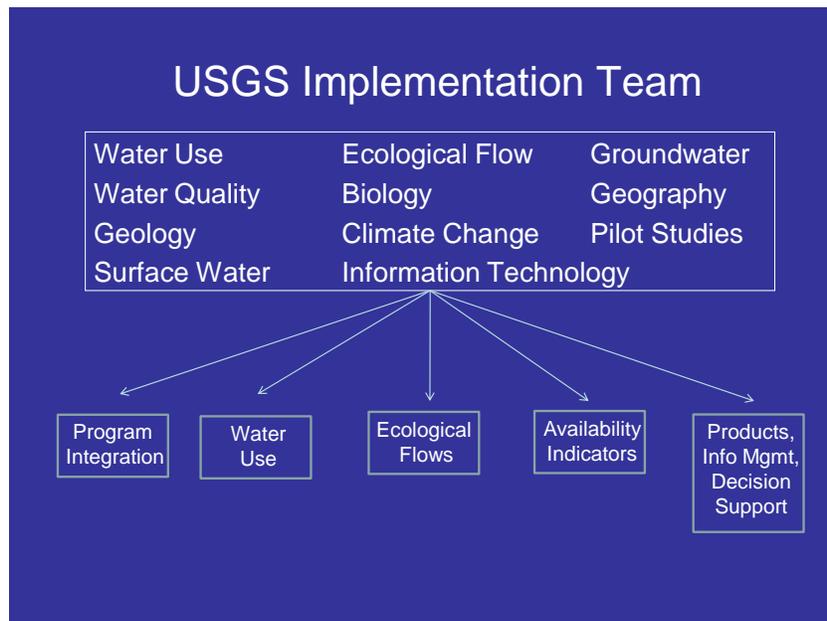**Water Census Program Elements**:

(1)   WATER USE-
- comprehensive national water use inventory
- incorporate water use science principles
- integrate datasets maintained by Federal or State agency
- scientific integration - relating to water use, water flow, water quality

(2) WATER AVAILABILITY-
- nationally consistent indicators
    - surface water indicators
    - groundwater indicators
        » natural recharge;
        » withdrawals;
        » saltwater intrusion;
        » mine dewatering;
        » land drainage;
        » artificial recharge; and
        » other relevant factors,
    - impaired surface and groundwater supplies used for existing demands;
    - Maintain a national database of water availability data that--
    - maps, reports, and other forms of interpreted data;
    - electronic access to the archived data of the national database;
    - provides for real-time data collection;
    - Predictive modeling tools - integrate groundwater, surface water, and ecological systems.

(3) REPORT to CONGRESS - Every 5 years thereafter:
1. The **current availability** of water resources in the United States,
2. **Significant trends** affecting water **availability**, including documented or projected impacts as a result of global climate change,
3. The **withdrawal and use** of surface water and groundwater by various sectors,
4. **Significant trends** relating to each **water use** sector, including significant changes in water use due to the development of new energy supplies,
5. **Significant water use conflicts or shortages** that have occurred or are occurring,
6. Each **factor** that has **caused**, or is causing, a conflict or shortage.

The USGS has formed an internal team of scientists to start planning the implementation of the Water Census. That team has written position papers on 1) Program Integration, 2) Water Use, 3) Ecological Flows, 4)Availability Indicators, and 5)Products. The USGS plans to create a multi-stakeholder ad hoc committee under SWRR to review and refine these position papers for the census so that the views and needs of stakeholders will be reflected. The Implementation Team will work with the SWRR ad hoc committee to refine the concepts to meet stakeholders' goals. The output from the committee will be brief report to the Associate Director for Water, USGS, on the consensus reached for the Water Census. The timeframe for this effort is January – June, 2010.

 The USGS Implementation Team will then develop a draft implementation plan from the work with the SWRR ad hoc committee after which the USGS will finalize and publish a plan for the National Water Census.

After the presentation, the roundtable discussed the Water Census plan for stakeholder design and participation. Several SWRR members expressed interest in supporting the work and others said they would check back with their organizations. Eric said that some organizations had already agreed to participate in the ad hoc committee and that SWRR would help find others to get a good cross section of water related organizations.

Next steps for the Sustainable Water Resources Roundtable:
- Continuing roundtable outreach
    - Building regional connections
    - Adding new private, nonprofit & public sector partners
- Refining the sample indicators
    - Addressing sustainability and scale
    - Linking to national and regional indicator sets
- Collaborating with NEST and the national Water Census
- Assisting agencies in describing the need for programs to collect indicators information

The participants discussed future meetings and David Berry reported that negotiations were underway to have a meeting in the San Francisco Bay area in April and in the summer or early fall in Minnesota.