

# DOI WaterSMART Strategic Implementation Plan

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## Section 1. A Sustainable Water Resources Future

Adequate supplies of water are essential to people, the economy and the environment. Yet the Nation faces an increasing set of water resource challenges. Aging infrastructure, rapid population growth, depletion of groundwater resources, impaired water quality associated with particular land uses and covers, reservoir sedimentation, water needed for human and environmental uses, increased domestic energy development, and climate variability and change all play a role in determining the amount of fresh water available at any given place and time. It is increasingly recognized that water is the primary means through which climate change impacts the earth and people's livelihoods and well being. Water shortage and water-use conflicts have become more commonplace in many areas of the United States.

Collaborative partnerships that go beyond political and institutional jurisdictions must be developed to ensure that the Nation's limited water resources are used efficiently, sufficient amounts are retained to protect and restore the environment, and supplies are managed to reliably meet new demands. Future generations depend upon the leadership we provide today to ensure that they have opportunities to prosper and to enjoy and benefit from one of our Nation's most important resources -- fresh, clean water. The Federal government must provide leadership and assistance, but cannot do it alone. States, tribes, local governments, private associations, and organizations representing the citizens and resource users also must join in leading towards a sustainable water resources future. Past divisions must be broken down and new relationships forged with policies and programs that recognize the many needs, resource limitations and opportunities, and uncertainty.

To ensure that the Department of the Interior is positioned to meet these challenges, the Secretary issued an order (Secretarial Order 3297) in February 2010 establishing the WaterSMART (Sustain and Manage America's Resources for Tomorrow) Program. WaterSMART will work with states, tribes, local governments, and non-governmental organizations to secure and stretch water supplies for use by existing and future generations to benefit people, the economy, and the environment, and will identify adaptive measures needed to address climate change and future demands.

Section 5(a) of the Secretarial Order calls for the development of a written strategic plan to implement the WaterSMART Program. This DOI WaterSMART Strategic Implementation Plan fulfills that requirement and will provide the framework the Department of the Interior will use to provide Federal leadership in moving toward a sustainable water resources future.

## Section 2. Program Coordination

Section 4(a) of Secretarial Order 3297 provides that the Department of the Interior (DOI) will coordinate across agencies and programs to implement water sustainability efforts. Secretarial Order 3297 also lists specific programs, including the Bureau of Reclamation's Title XVI, Basin Study Program, and WaterSMART Grants, and the U.S. Geological Survey's (USGS) WaterSMART Availability and Use Assessments. All WaterSMART programs recognize that, while the Federal government can provide leadership, working with states, tribes, local governments, and non-governmental organizations (NGO) will lead to greater accomplishments towards a sustainable future. Additionally, within the Federal government DOI will coordinate activities with the U.S. Department of Agriculture (USDA), U.S. Department of Commerce, U.S. Department of Energy (DOE), and the Environmental Protection Agency (EPA). Coordination with states will leverage existing entities such as the Western States Federal Agency Support Team (WestFAST). All DOI bureaus are working with partners within the Landscape Conservation Cooperatives (LCCs) and Climate Science Centers (CSCs), identified within Secretarial Order 3289, which include outreach and coordination activities with water, fish, wildlife, cultural, and land resources. This section of the Secretarial Order will be implemented through the following activities.

- a. *Assistant Secretary for Policy, Management, and Budget*
  - i. The Assistant Secretary for Policy, Management and Budget is DOI's Senior Sustainability Officer and chairs DOI's Sustainability Council with the responsibility, among others, to improve water use efficiency and management at DOI's owned and managed facilities. The Sustainability Council includes cross-functional representation from DOI senior managers, bureau and office program managers, and technical work groups for sustainable practices and environmental compliance.
- b. *Assistant Secretary for Water and Science*
  - i. The office of the Assistant Secretary for Water and Science is responsible for ensuring implementation of all aspects of Secretarial Order 3297.
  - ii. The office of the Assistant Secretary of Water and Science is leading the implementation of the Cooperative Watershed Management Program, authorized by the Omnibus Public Land Management Act of 2009, P.L. 111-11 (P.L. 111-11), which brings together local watershed stakeholders to design and implement projects that enhance water conservation, improve water quality, increase ecological resiliency, and reduce the potential for water conflict. This program will include DOI bureaus as well as state and local governments and other interested entities.
- c. *Fish and Wildlife Service (FWS)*
  - i. The National Wildlife Refuge System (NWRS) is collaborating with EPA, states, local agencies, and USGS to identify watershed-

- level factors contributing to Clean Water Act 303(d)-listed waters within or near refuges.
- ii. FWS will continue to coordinate with EPA through a National Memorandum of Arrangement to help ensure that water quality criteria and state water quality standards adequately protect threatened and endangered species.
  - iii. The National Fish Habitat Action Plan (NFHAP) is coordinating with states and communities to protect and restore aquatic habitats.
  - iv. FWS will continue to conserve clean water through its water pollution prevention activities. These include coordinating with industry on the SmartRx Disposal program for pharmaceuticals and with EPA, U.S. Army Corps of Engineers (USACE), and other agencies on the potential for their actions to affect threatened or endangered species inhabiting, or depending on, water.
- d. *Bureau of Indian Affairs (BIA)*
- i. BIA will continue to assist tribes in protecting and managing their trust water resources with appropriated funds in the BIA's Water Management, Planning and Pre-development Grant Program.
  - ii. BIA will continue to identify opportunities to protect groundwater basins for tribal, municipal and urban needs such as through DOI/BIA Tribal water rights settlements (e.g., Soboba Water Right Settlement establishing a partnership with water districts to recharge groundwater basins in Southern California).
  - iii. BIA will coordinate with tribes and USGS to identify within the WaterSMART Availability and Use Assessment the basins in which tribes have adjudicated or otherwise enforceable (e.g., congressionally approved settlements) water rights.
  - iv. BIA will coordinate with tribes and Reclamation to identify basins that are suitable for inclusion in the Basin Study Program.
  - v. BIA will work with tribes to encourage cooperative studies with other Federal, state, and local agencies to identify adequate water supplies for the future.
- e. *Bureau of Land Management (BLM)*
- i. As part of its landscape approach for managing public lands, the BLM will conduct Rapid Ecoregional Assessments (REAs) to determine, among other key resource values, areas of regionally significant aquatic habitats. BLM will work with partner agencies and stakeholders to develop broad-level management strategies for the public lands in an ecoregion.
- f. *National Park Service (NPS)*
- i. NPS is supporting LCCs and CSC activities through positions within those organizations and providing expertise on scenario planning, cultural resource adaptation, coastal adaptation, landscape ecology, renewable energy, and policy.
  - ii. NPS is participating in the implementation of USGS WaterSMART Availability and Use Assessment with an emphasis

on the USGS Colorado River Pilot Study and implementation of the environmental needs component of the WaterSMART Availability and Use Assessment in National Park units.

*g. Bureau of Reclamation (Reclamation)*

- i. Reclamation is coordinating its water conservation activities with partners and stakeholders and expanding existing partnerships through programs such as LCCs, CSCs and, the Basin Study Program. LCCs will include a broad set of missions and views from the Federal, state, tribal and NGO sectors, as well as existing partnerships.
- ii. Reclamation coordinates with non-Federal partners through WaterSMART Water and Energy Efficiency Grants and its Water Reclamation and Reuse Program (Title XVI).
- iii. Through the Basin Study Program, Reclamation will conduct West-Wide Climate Risk Assessments to provide identification of risks to water supplies and demands and impacts to operations within the eight major river basins identified in the SECURE Water Act.
- iv. Reclamation is responsible for meeting and quarterly reporting on the Secretary's Water Conservation Priority Goal. The Goal gauges progress in implementing actions in partnership with others to conserve water. The goal is - Enable capability to increase available water supply for agricultural, municipal, industrial, and environmental uses in the western United States by 350,000 acre-feet by 2012 through the bureau's conservation-related programs, such as Title XVI and WaterSMART Grants, and an additional 140,000 acre-feet through the end of FY 2012 for a total of 490,000 acre-feet of water savings. Reporting and tracking is coordinated through the Office of Planning and Performance Management in Policy Management and Budget.

*h. Office of Surface Mining Reclamation and Enforcement (OSM)*

- i. Pursuant to the Surface Mining Control and Reclamation Act (SMCRA), OSM establishes the minimum Federal standards governing the regulation of coal mining to, among other things, minimize the adverse impacts of mining on streams both within and beyond the SMCRA permit area. With input from FWS, EPA, and USACE, OSM is considering refining its coal mining regulations to better protect streams from the adverse impacts of coal mining, some impacts have only recently been identified by the scientific community. The proposed rule may establish more stringent criteria for mining in or near streams, improve baseline data collection and monitoring requirements, and require better restoration of streams to their pre-mining form and function. The proposed rule would define material damage to the hydrologic balance, which could have the effect of providing increased protection for both ground and surface waters.

- ii. OSM is continuing its collaboration under an MOU with EPA and USACE to improve coordination among the three agencies, and with state and local governments, regarding regulatory and other activities related to surface coal mining operations governed under SMCRA and the Clean Water Act (CWA).
- iii. Through its OSM/VISTA community partnerships, OSM-sponsored Watershed Teams are collaborating with local communities affected by past coal mining degradation to improve watershed quality and the environment through water monitoring, water quality project development, water quality training, and environmental education and outreach.
- i. *U.S. Geological Survey (USGS)*
  - i. USGS is coordinating with stakeholders and partners through its implementation of the WaterSMART Availability and Use Assessment (National Water Census) and through involvement in implementing CSCs and LCCs.
  - ii. USGS will also continue to coordinate with other federal agencies, including EPA and USDA on efforts to follow up on water use efficiency recommendations in the October 2010 Interagency Climate Change Adaptation Progress Report.

### **Section 3. The Energy/Water Nexus: Water Used in Energy Production and Energy Used in Water Supply**

Water and energy are inextricably linked. An increased emphasis on domestic energy development will pose additional pressure on limited water supplies. Water is utilized in electric power generation, as well as natural resource extraction and refinement. Significant amounts of water may be required for unconventional and renewable energy development, such as the production of feedstock, and for sequestration of the carbon byproducts of power generation. Energy is utilized in water transmission, treatment, and heating for domestic uses, and for the treatment of wastewater. Section 4(a)(1) of Secretarial Order 3297 directs DOI to identify how much water is used for various energy production technologies and to incorporate such information into decision-making on the development of energy and water resources. DOI coordinating across programs and with other Federal agencies, with states, local governments, tribes, and non-governmental organizations will accomplish this through the following activities.

- a. *Department of the Interior (DOI)*
  - i. General communication of water footprints to occur through the LCCs, CSCs, and the USGS WaterSMART Availability and Use Assessment.
- b. *Fish and Wildlife Service (FWS)*
  - i. FWS water programs are examining energy development projects for their potential to adversely affect water rights, groundwater levels, and water quality FWS lands.

- ii. Energy audits are conducted on FWS facilities on a 4-year cycle and are used to identify potential savings in the facilities energy budget. Water pumping and conveyance are large energy consumers at many FWS facilities. Improvements to pumping infrastructure can have significant positive impacts on energy costs. Also, reductions in water use can have significant energy savings. Energy audits also identify technologies for both efficient operation and green energy generation. Installation of variable speed drives on motors use only as much wattage as needed for the purpose. Wind power, photo voltaic, geothermal, and micro hydro turbines generated power are used to offset peak demand or assume full loads at times.
- c. *Bureau of Indian Affairs (BIA)*
  - i. BIA will look for opportunities, in coordination with affected Indian tribes, to improve conjunctive use of water and energy at BIA's Indian irrigation projects to the extent feasible.
  - ii. BIA will work with tribes to identify opportunities for saving water and energy through research and in coordination with state and local water resource agencies.
  - iii. BIA will work with tribes to find opportunities to use geothermal energies such as with the Fort Bidwell Indian Community in Northern California.
- d. *Bureau of Land Management (BLM)*
  - i. BLM will continue to encourage the sustainable development of water resources and work closely with partners to evaluate efficient uses of the resources while reducing impact to water quality. In the case of energy development through the implementation of best management practices, BLM will continue to protect important water sources and local water quality. BLM will also consider reduced water alternatives for solar thermal energy projects on public lands.
- e. *National Park Service (NPS)*
  - i. NPS is working with BLM's Programmatic EIS for Solar Energy Development with a major focus on water use and sustainability and protection of park water-dependent resources.
  - ii. NPS coordinates across parks and with other Federal agencies responsible for leasing and permitting of energy projects on public lands through its service-wide energy team. This team focuses on protection of park water-dependent resources, as well as water quality and use and sustainability of energy development technologies.
  - iii. NPS has staff co-located with BLM's California Renewable Energy Action Team in Sacramento, California.
- f. *Bureau of Reclamation (Reclamation)*
  - i. Reclamation's implementation of the SECURE Water Act provisions of P.L. 111-11 will include the Power Resources Office

- activities under Section 9505 and implementation of the Basin Study Program (including Basin Studies, LCCs, and West-Wide Climate Risk Assessments) under Section 9503.
- ii. Criteria for WaterSMART System Optimization Review Grants prioritize proposals that evaluate potential renewable energy and energy efficiency improvements in the delivery of water, in addition to identifying options to improve water efficiency.
  - iii. Criteria for the WaterSMART Advanced Water Treatment Grants prioritize projects that consider reduced energy requirements and renewable energy components as new sustainable water supplies are brought online.
  - iv. WaterSMART Water and Energy Efficiency Grants provide funding for projects that conserve water and projects that address the connection between water use and energy use. For example, through 2010 WaterSMART Grants, the Laguna Madre Water District in Port Isabel, Texas, will make improvements to its non-potable water system, including installation of an energy recovery turbine to create an expected 17,520 kilowatt-hours per year of electricity from wastewater flows. The Lower Colorado River Authority in Texas will automate eleven check gate structures, improvements expected to result in approximately 2,560 acre-feet of water savings annually. The Authority estimates that completion of the project will decrease pumping needs and will reduce energy consumption by approximately 132,000 kilowatt-hours per year.
- g. *U.S. Geological Survey (USGS)*
- i. USGS will lead development of information and science on amount of water used by different types of electrical generation plants and water required for carbon sequestration.
  - ii. USGS will analyze and collect information on water footprints through the National Water Use Information Program.
  - iii. USGS will participate with coordination activities under GAO Report 10-23 with DOE's Energy Information Administration (EIA). This GAO report calls for USGS to expand its efforts to provide information on alternative water sources used for thermoelectric power generation, such as treated effluent and saline groundwater, to reinstating collection and distribution of water consumption data at thermoelectric power plants, and to improve the overall quality of data collected on water use from power plants by establishing a process for regularly coordinating with the EIA, water and electricity industry experts, environmental groups, academics, and other Federal agencies.
  - iv. USGS will be working with Reclamation, USACE, DOE, and the Tennessee Valley Authority to assess the water use aspects of hydropower facilities throughout the Nation.

- v. USGS will be working with the DOE EIA to develop new methods for surveying and reporting water use-energy use information and how it can be interpreted to provide new insights to energy development.

#### **Section 4. Best Available Science**

Under Section 4(a)(2) of the Secretarial Order, the Department will work through the Energy and Climate Change Council, CSCs, and LCCs to obtain best available science to understand the impacts of climate change on water supplies, and to ensure integration of sustainable water strategies within the field offices of DOI's bureaus and agencies. To ensure that the Nation is well prepared to adapt to climate change, it is necessary to evaluate current changes in snowpack, timing and quantity of runoff, changes in groundwater recharge and discharge, environmental conditions, and changes in demands for water. The measurement of available water supplies and changes in those supplies over time, both in surface and ground water, will lead to a better understanding of shortages now and in the future, and which will facilitate the resolution of conflicts over water. Downscaled climate models are necessary, as well as thorough scientific analysis of the historical data. This information must be presented in a format that is useful to the water resources community, to aid in the development of long-term plans flexible enough to adapt to climate change. This section of Secretarial Order 3297 will be implemented through the following activities.

- a. *Department of the Interior (DOI)*
  - i. Bureaus will communicate with CSCs and other programs that are in support of Secretarial priorities as specified with developing the CSCs.
  - ii. The LCCs will develop climate change science focused on landscape conservation decisions and provide a forum and mechanism to facilitate the communication and development of best available science for resource conservation to be shared with partners for bureau-specific and stakeholder-specific activities.
- b. *Fish and Wildlife Service (FWS)*
  - i. The NWRS is implementing a system-wide inventory and assessment of water resources (quantity and quality) in conjunction with NWRS Inventory and Monitoring program. The inventories will establish baselines for NWRS water quantity and quality, and the assessments will identify needs and threats to Refuge System water resources, including threats from climate change. In addition, the assessments will provide information on the efficiency of water use on NWRs. This information will also be important to LCCs for identifying vulnerabilities and assessing future impacts of climate change.
  - ii. The NWRS is conducting hydro-geomorphic (HGM) analyses at multiple National Wildlife Refuges across the country. HGM

- analyses will identify ecological functions and help the NWRS in the restoration and management of refuge wetlands.
- iii. NWRS is hiring a full-time water resources coordinator to address national and multi-regional water resource issues in the Refuge System, and to work collaboratively with other bureaus/agencies on projects of mutual concern.
  - iv. FWS funding will help provide science needed to support LCCs in assessing impacts of climate change on aquatic habitats and DOI trust resources.
  - v. FWS, through its Fisheries Program and in partnership with EPA, will be using GIS-based overlays to identify water quality issues that may impact National Fish Hatcheries and the imperiled aquatic species propagated and held in refugia at NFHs.
  - vi. Private landowners own and manage 73 percent of our Nation's land. FWS Partners for Fish and Wildlife Program and the Coastal Program will continue to strengthen partnership efforts at local levels, across the country, to restore and enhance wildlife and coastal habitats. A key component in many of these efforts is restoring and enhancing wetlands, riparian areas and streams to improve water quality and quantity. These Programs also will continue to work with the USDA Farm Bill Programs to provide technical assistance to the design and delivery of national conservation programs administered through the National Resources Conservation Service.
- c. *Bureau of Indian Affairs (BIA)*
- i. BIA will continue to use the best available science in support of the development and administration of Indian water rights.
  - ii. BIA will seek CSC and regional LCC recommendations, along with utilizing USGS and Reclamation water resource assessment manuals and guidelines, as appropriate, for improving water resource program activities and projects.
  - iii. BIA will explore implementing a climate and water resources monitoring program to provide baseline data for climate change impacts and water resource assessments on Indian trust lands.
- d. *Bureau of Land Management (BLM)*
- i. A key component of BLM's landscape approach for managing public lands is the completion of the REAs. REAs will establish baseline ecological data to gauge the effect and effectiveness of future management actions on areas of regionally significant aquatic habitats and other areas. In this way, REAs provide a foundation for an adaptive management approach that enables implementation strategies to adjust to new information and changing conditions.
  - ii. As part of its role in the stewardship of the National Hydrographic Dataset, BLM will continue to develop GIS-based tools capable of analyzing a variety of hydrologic characteristics, including

- locations of impaired streams and estimation of flow from contributing sources.
- iii. BLM's Assessment, Inventory, and Monitoring (AIM) Strategy will standardize data collection and retrieval so information is comparable over time, and can be readily accessed and shared. The goal of the AIM Strategy is to provide the information needed to understand trends in resource conditions from climate change, including water quantity and quality, and to evaluate and refine implementation actions.
  - iv. BLM is implementing its Geospatial Services Strategic Plan.
- e. *National Park Service (NPS)*
- i. NPS will engage in short- and long-term water resources monitoring and science in support of the protection of park water resources. For example, NPS provides support to and participates in interagency basin-wide assessments of aquifer sustainable yields in water scarce areas such as the Great Basin and southern Nevada, and conducts site-specific aquifer drawdown assessments of proposed water developments to determine the potential for impacts to park water resources. NPS also conducts and supports studies to quantify instream flow needs for flow-dependent park resources potentially influenced by water developments or the operation of water storage projects.
  - ii. The NPS Inventory and Monitoring program engages in the acquisition of scientifically sound information obtained through systems-based inventory and monitoring (I&M). NPS inventories park natural resources to determine their nature and status and conducts long-term ecological monitoring, known as Vital Signs Monitoring, to better understand the dynamic nature and condition of park resources and to provide reference points for comparisons with other altered environments. NPS conducts park Vital Signs Monitoring through 32 eco-regional networks covering 270 parks with significant natural resources. The information obtained through the I&M program has multiple applications for management decision-making, park planning, research, education, stakeholder involvement, and promoting public understanding of park resources.
  - iii. NPS will pursue enhanced or expanded monitoring of climate-sensitive indicators by the NPS Vital Signs Monitoring Networks to better understand the extent, rate, and magnitude of climate effects on park resources, including park water resources.
- f. *Bureau of Reclamation (Reclamation)*
- i. Reclamation's WaterSMART Grants to develop Climate Analysis Tools will provide funding to improve the ability to evaluate the impacts of climate change on water resources.
  - ii. Reclamation's Research and Development Science and Technology Program activities will be shared and coordinated to

- complement activities by the CSCs and USGS to support Secretarial priorities.
- iii. In implementing the Basin Study Program (including Basin Studies, LCCs, and West-Wide Risk Climate Assessments), Reclamation collaborates and shares information with LCC partners, other Federal agencies, including USGS, NOAA, NOAA-Regional Integrated Sciences & Assessments (RISAs), and USACE, as well as non-federal stakeholders, to evaluate the risks and impacts of climate change to water supply, demand and energy production. This is consistent with Section 9503 of the SECURE Water Act, which also mandates that Reclamation report to Congress every five years on these factors and the adaptation options identified.
  - iv. Reclamation will continue to utilize the best available science to maintain infrastructure for a sustainable water management system.
- g. *U.S. Geological Survey (USGS)*
- i. USGS will support CSCs. CSCs will provide science support to LCCs to meet identified needs related to the assessment of climate change impacts to natural resources.
  - ii. The National Water Use Information Program, which will be an integral part of the Water Availability and Use Assessment, will provide more accurate assessments of water resources in terms of past and current supplies and uses and how these factors result in conflicts and shortages. This is consistent with Section 9508 (d) (5) of the SECURE Water Act, which also mandates that USGS report to Congress every five years on the factors responsible for these conflicts and shortages. This information will assist in shaping public policy to reduce conflicts in water management. Water Data Enhancement through the National Streamflow Information Program, as reviewed by the National Research Council in 2004, will ensure that the streamflow and related environmental variables throughout the Nation are collecting the data necessary to facilitate water resource management and better understanding of hydrologic extremes. This is consistent with Section 9507(a) of the SECURE Water Act.
  - iii. USGS will gather and dissemination data from Landsat thermal infrared sensor to assist in understanding national moisture and drought conditions.
  - iv. USGS will work with USACE through the ACWI Subcommittee on Sedimentation to catalog rates of sedimentation within selected reservoirs of the Nation.

## **Section 5. Water Footprint Reduction Program**

Section 4(a)(3) of the Secretarial Order calls for a water footprint reduction program for DOI facilities and water-consuming operations. Accordingly, DOI will provide input and information on water conservation methods and technology to bureaus and offices and will work with the Senior Sustainability Officer to achieve and exceed goals set forth in Executive Order 13514. DOI will implement this section through the following activities.

- a. *Department of the Interior (DOI)*
  - i. Assistant Secretary Policy, Management, and Budget is leading the implementation of DOI's Strategic Sustainability Performance Plan (SSPP), as authorized by Executive Order 13514 – Federal Leadership in Environmental, Energy, and Economic Performance. The SSPP provides a roadmap for managing and reducing the Department's environmental impacts while meeting our mission responsibilities.
  - ii. DOI has implemented a Department-level environmental management system (EMS) to manage and track progress on achieving the goals of the SSPP. The foundation of the EMS is the Department's Sustainability Council. The Council is the implementing and oversight body for the EMS and SSPP and is responsible for coordinating and integrating departmental programs and staff to achieve the goals of the SSPP.
- b. *Fish and Wildlife Service (FWS)*
  - i. FWS is tracking, reporting, and reducing potable water use per the requirements of Executive Order 13423, including potable water used for landscape irrigation. For the second consecutive year, the Director has issued a memorandum to approximately 125 field stations reminding them to achieve water use reductions and to report potable (domestic) water consumption (as opposed to production water use). This memorandum emphasizes that full compliance with Executive Order 13423 will only be achieved by making radical changes in our operations and maintenance practices, and includes technical guidance on how to conserve water in buildings and landscaping.
  - ii. FWS will continue to pursue water conservation activities including through emphasizing water reuse at National Fish Hatcheries, identifying infrastructure investments that will increase efficiency of refuge water use.
- c. *Bureau of Indian Affairs (BIA)*
  - i. BIA will work with tribes and other Federal, state, and local agencies to identify opportunities to reduce water use in activities and programs.
- d. *Bureau of Land Management (BLM)*
  - i. BLM's draft Strategic Plan for *Integrating Greening Activities* includes the Energy and Water Conservation goal to reduce water

consumption intensity 16 percent by the end of FY 2015 from baseline of FY 2007.

- e. *National Park Service (NPS)*
  - i. *Green Parks Plan*: To contribute to the responsible use of fresh water supplies and preserve fresh water in-flows in rivers and streams, as well as groundwater supplies, the NPS will demonstrate leadership in water conservation, gray water reuse, rainwater capture, and the reduction of wastewater conveyance. NPS intends to set a target of a 3% annual reduction in Service-wide water consumption and a 30% reduction in wastewater generation by 2020. NPS will also set a target to reduce stormwater runoff from existing buildings and new construction/major renovation sites. NPS expects to finalize the *Green Parks Plan* in 2011.
- f. *Bureau of Reclamation (Reclamation)*
  - i. Reclamation's development of the Strategic Sustainability Performance Plan and implementation through EMS activities and Energy scorecard.
- g. *U.S. Geological Survey (USGS)*
  - i. USGS, through the National Water Use Information Program, will provide information on water use and trends in water use by the various sectors it tracks and reports.
  - ii. USGS will work with the Federal Energy Management Program's Interagency Water Working Group to track progress on achieving the water footprint reduction goals laid out in Executive Order 13514.

## **Section 6. WaterSMART Clearinghouse**

Section 4(b) of the Secretarial Order directs the establishment of a WaterSMART Clearinghouse to provide information to the public through a website which will include information on best practices case studies, education and outreach, financial assistance, laws, regulations, policies, research, and water data and information. This information will allow for better coordination at the Federal level but also support state and local governments, tribal nations, and others in coordinating and integrating water conservation and sustainable water strategies. DOI's activities to accomplish this section are as follows.

- a. *Advisory Committee on Water Information (ACWI)*. At the annual meeting of ACWI on July 13 – 14, 2010, the Assistant Secretary for Water and Science requested ACWI's participation in reviewing and improving the WaterSMART Clearinghouse Website. ACWI's Sustainable Water Resources Roundtable (SWRR) has assembled a workgroup of members from throughout the ACWI organization to review the Clearinghouse and has provided recommendations to DOI.
- b. *Fish and Wildlife Service (FWS)*

- i. FWS will contribute information for the WaterSMART clearinghouse including case studies, best practices, conservation activities and other information on how the agency is conserving water resources.
- c. *Bureau of Indian Affairs (BIA)*
  - i. BIA will regularly review and, as appropriate, release relevant, and adjudicated trust water resource data to the WaterSMART Clearinghouse.
- d. *Bureau of Land Management (BLM)*
  - i. BLM will contribute information for the WaterSMART clearinghouse relevant to sustainability of water resources and its stewardship responsibilities.
- e. *Bureau of Reclamation*
  - i. Reclamation will work in the development of the WaterSMART Clearinghouse; provide information on conservation programs and activities, case studies, and best practices.
- f. *U.S. Geological Survey (USGS)*
  - i. USGS will work in the development of the WaterSMART Clearinghouse; Clearinghouse to represent information on water conservation information, science, and tools from bureaus.

## **Section 7. Promoting Sustainable Water Strategies**

Section 4(c) of the Secretarial Order calls for DOI to apply criteria that promote sustainable water strategies and development of incremental hydroelectric power generation. This section of Secretarial Order 3297 will be implemented through the following activities.

- a. *Fish and Wildlife Service (FWS)*
  - i. FWS will coordinate with Reclamation and USGS to identify sustainable strategies including healthy aquatic habitats and the DOI trust resources that depend on them.
  - ii. The NWRS will continue to use instream flow protections to maintain sustainable water supplies for fish, wildlife, and habitats.
  - iii. The NWRS water resources inventories and assessments will help lead to sustainable water strategies by identifying and promoting efficient water use.
  - iv. FWS will protect water rights. Water rights (especially in the West) must be protected and maintained in order to sustain the habitat and species that rely on an adequate water supply for our National Wildlife Refuges and Fish Hatcheries.
  - v. FWS will maintain National Pollution Discharge Elimination System (NPDES) permits at National Fish Hatcheries to demonstrate FWS's commitment to protecting water for fish and wildlife as well as for downstream users.
- b. *Bureau of Indian Affairs (BIA)*

- i. BIA will coordinate with tribes and USGS to identify within the WaterSMART Availability and Use Assessment the basins in which tribes have adjudicated or otherwise enforceable (e.g., congressionally approved settlements) water rights, and what those water rights are.
  - ii. BIA will coordinate with tribes and USGS to identify within the WaterSMART Availability and Use Assessment basins in which considerable conflict exists between existing water uses and tribal trust or treaty resources, and the tribal water rights have not yet been adjudicated.
- c. *Bureau of Land Management (BLM)*
  - i. BLM will continue to participate in, and provide funding for, ACWI's SWRR in support of its mission to promote sustainability of the nation's water resources through the evaluation of information, development and use of indicators, targeting of research, and the engagement of people and partners to improve the management, conservation, and use of water and related resources.
- d. *Bureau of Reclamation (Reclamation)*
  - i. Reclamation will provide WaterSMART Grants (Water and Energy Efficiency, System Optimization Review, Advanced Water Treatment Pilot and Demonstration, and Research) to support sustainable water resources in the Western United States.
  - ii. Reclamation will continue to implement the Water Reclamation and Reuse Program (Title XVI) program. Title XVI projects require coordination and compliance with all applicable Federal, state and local laws.
  - iii. Reclamation will continue to implement the Water Conservation Field Services Program (WCFSP) to encourage water conservation and efficient use of water supplies on Reclamation's projects and to foster improved water management on a watershed basis throughout the western states.
  - iv. Reclamation is working with USACE on the Hydropower Modernization Initiative to assess the potential for increased capacity and efficiency gains at its existing hydroelectric plants.
  - v. Reclamation is conducting an operations optimization study that will implement hydropower dispatch optimization programs at Reclamation's hydropower plants.
  - vi. Reclamation is participating in a Memorandum of Understanding for Hydropower with DOE and DOA (through USACE). The MOU parties will focus both on increasing renewable energy generation from Federal hydropower facilities and reducing the environmental impact sometimes associated with historical hydropower development in the U.S. by focusing on sustainable, low impact and small hydropower projects and collaborate on efforts to implement projects at these locations, including joint

- studies, demonstration projects and other mutually supported partnership arrangements with private entities, Indian tribes, and state and Federal agencies.
- vii. Reclamation is performing an updated 1834 resource assessment a draft of which was completed in October 2010.
- e. *U.S. Geological Survey (USGS)*
- i. USGS to identify programs and activities related to promoting sustainable water strategies. One way to promote sustainable water strategies is through thorough characterization of the water resources and the stresses influence that resource. USGS can assist by careful long-term monitoring of the major components of the hydrologic cycle and by quantifying the degree of uncertainty associated with those measurements. USGS will strive to do this through its monitoring programs.

## **Section 8. Evaluation of Needed Information**

Under Section 4(d) of the Secretarial Order, the WaterSMART Program will include evaluation of information needed for sound decision-making on sustainable water, along with a determination as to whether existing information about the availability, quality, and use of water is adequate or requires enhancement. The evaluation of needed information will be done through the coordination with other Federal agencies, state, tribal, and local governments as well as non-governmental organizations. Specific activities to meet this portion of Secretarial Order 3297 are identified as follows.

- a. *Department of the Interior (DOI)*
  - i. All Bureaus participating in providing to and using information from the USGS WaterSMART Availability and Use Assessment.
- b. *Fish and Wildlife Service (FWS)*
  - i. FWS will coordinate with LCCs and specifically with USGS to identify science and data needs for sustaining healthy aquatic habitats and DOI trust resources that depend on them.
  - ii. The NWRS System-wide inventory and assessment of water resources (quantity and quality) will provide information on the efficiency of water use on NWRS and provide the Refuge System with needed information to prioritize water resource needs.
- c. *Bureau of Indian Affairs (BIA)*
  - i. BIA will evaluate on an annual basis, in conjunction with the Indian water rights negotiation and litigation teams, technical information needed to support sound decision-making for the protection and development of Indian water rights and resources.
  - ii. BIA will facilitate outreach and education to local communities to address tribal water resources concerns and shared water resources needs within the watershed regions.
- d. *Bureau of Reclamation (Reclamation)*

- i. Reclamation can use information provided through the USGS WaterSMART Availability and Use Assessment to inform water demand projections for project specific work, Basin Studies, and West-Wide Climate Risk Assessments.
  - ii. Reclamation and its LCC partners will assess what information gaps exist with the LCCs and will attempt to address those gaps by working with LCC partners, including USGS and CSCs, and universities and research institutes, among others.
  - iii. Reclamation, with USGS, NOAA, EPA, and USACE continues to develop an ongoing needs assessment, updated in 2010, to identify the current and future science related to climate change information to inform climate change planning decisions. This activity builds upon USGS Circular 1331 published in 2009.
- e. *National Park Service*
- i. NPS will work with others to enhance the application of hydrologic modeling to help bracket potential alternative water availability futures for parks. NPS will apply climate, surface and ground water models necessary to assess influences of climate change on precipitation, runoff, and aquifer recharge, and to help evaluate alternative water development proposals, reservoir operations, and allocation scenarios.
  - ii. NPS will continue to work with other agencies on actions that may affect water available to park resources including surface water withdrawals, reservoir operations plans, ground water development, Clean Water Act sections 401 and 404 permits, and endangered species considerations.
  - iii. NPS will strengthen its understanding of the relationships between water availability and environmental needs. NPS will identify water dependent resources in parks that are vulnerable to the effects of increased water demand, or climate changes and initiate studies to determine their instream flow and/or ground water needs.
- f. *U.S. Geological Survey (USGS)*
- i. USGS will implement the WaterSMART Availability and Use Assessment
  - ii. Complementary to the above assessment, the USGS with Reclamation, NOAA, EPA, and USACE will identify the best ways to develop the science and data necessary to meet the water management needs to support sound decision-making on water conservation and sustainability. This analysis will be done in concert with the activities under Section 9506 of the SECURE Water Act and will be available for review by April 2011.

## **Section 9. Education and Awareness**

Section 5(b) of Secretarial Order 3297 directs that appropriate education, awareness, and outreach actions be taken. These actions will be coordinated with other Federal, state, tribal, and local governments as well as non-governmental organizations. The following activities will be undertaken or continued to meet this section of the Secretarial Order.

- a. *Department of the Interior (DOI)*
  - i. An outreach plan will be developed that will include talking points, presentation materials, fact sheets, and other necessary and commonly used briefing material for internal and external communications.
  - ii. The WaterSMART Clearinghouse as identified in Section 6 is also a component of Education and Awareness.
  - iii. DOI's Sustainability Council is responsible for promoting and achieving departmental goals for sustainability and compliance. This includes the internal dissemination of information regarding water use efficiency and management of their bureau program and field offices.
- b. *Fish and Wildlife Service (FWS)*
  - i. FWS will feature WaterSMART information, case studies, and best practices using existing communications tools such as the website, news releases, speeches, and internal communications tools.
- c. *Bureau of Indian Affairs (BIA)*
  - i. BIA will promote education and training for tribal members sponsored by their tribe to participate in the Bureau's Water Resources Technician Training Program.
- d. *Bureau of Land Management (BLM)*
  - i. BLM will increase its outreach efforts through the development of "At-A-Glance" factsheets for each of its water-emphasis programs: Surface Water, Water Rights, Water Quality, and Groundwater. In part, these factsheets will relay BLM success stories in areas of water sustainability
- e. *Bureau of Reclamation (Reclamation)*
  - i. Reclamation conducts education and awareness activities through the WCFSP in some regions.
- f. *National Park Service (NPS)*
  - i. NPS will advocate for water education by proposing a partnership project with Project WET called "Discover the Waters of Our National Parks."
- g. *Office of Surface Mining Reclamation and Enforcement (OSM)*
  - i. OSM will continue outreach and education through its OSM/VISTA partnerships with states and local communities to promote water quality improvements to address past coal mining degradation.
- h. *U.S. Geological Survey*

- i. The USGS will continue to promote water education and awareness through its on-going programs in “Water Basics” (<http://water.usgs.gov/education.html>), its distribution of selected products of educational interest, its support of multimedia resources for water education, and its support of internships and research grants. USGS maintains online science education resource materials at: <http://education.usgs.gov/>

## **Section 10. Collaboration with States and Tribes**

Section 5(c) of Secretarial Order 3297 provides that DOI will work within existing relationships, and develop new partnerships, with states and tribes to collaborate on implementation of the WaterSMART strategy.

- a. *Department of the Interior (DOI)*
  - i. LCCs can facilitate the development of new partnerships with states and tribes to collaborate on WaterSMART implementation and strategy.
- b. *Fish and Wildlife Service (FWS)*
  - i. FWS will collaborate with states and tribes within the LCC network.
  - ii. FWS Tribal grants will consider climate change effects on aquatic resources.
  - iii. The National Fish Habitat Action Plan (NFHAP) is a collaborative effort among many organizations, including FWS, states and tribes, to protect and restore aquatic habitats.
- c. *Bureau of Indian Affairs (BIA)*
  - i. BIA will continue coordination with tribes as well as state and local governments in the development of water resources needs and plans through the use of cooperative agreements, Integrated Regional Water Management programs, and promotion of Indian water right requirements and perspectives.
  - ii. BIA will identify alternative funding sources with Federal, state and local agencies to study shared watersheds (e.g., Cooperative Watershed Management Program authorized by P.L. 111-11) and assist tribes in developing cooperative agreements for shared management of local resources that include both state and Federal concerns.
  - iii. BIA will look for opportunities in the context of Indian water rights negotiations where tribes and the non-Indian parties can consider water supply projects which promote sustainability and conservation of water sources as part of Indian water settlements.
  - iv. BIA will encourage follow up actions on the results of a Tribal Water Summit held in November 2009 with the California Department of Water Resources, tribal governments and federal agencies to obtain tribal comments on California’s Water Plan

2009. One of the outcomes of the meeting was a list of recommended actions to address tribal water issues within California.

- d. *Bureau of Land Management (BLM)*
  - i. BLM will continue to participate in the WestFAST consortium and the Western States Water Council on sustainable water use and development issues.
- e. *Bureau of Reclamation (Reclamation)*
  - i. Desert and Southern Rockies LCCs can serve to develop new partnerships with states and tribes and collaborate on WaterSMART implementation and strategy.
  - ii. Reclamation also collaborates with partners and creates new partnerships through WaterSMART Grants, Basin Studies, Title XVI and WCFSP.
- f. *National Park Service (NPS)*
  - i. NPS participates in state water court and administrative processes to protect park water-dependent resources and values. NPS played a key role in the development of the precedent-setting Water Rights Compact between the state of Montana and the United States. The compact resolved NPS Federal-reserved water rights claims in six national parks in Montana and protected the hydrothermal features of Yellowstone National Park. NPS works through state administrative processes to protect park water-dependent resources from water development proposals such as the large-scale groundwater development in southern and east-central Nevada, and conventional and renewable energy projects. NPS focuses on the acquisition and application of high-quality science, including development of regional-scale groundwater models, and effective communication with stakeholders in addressing water development proposals that could impact park resources.
  - ii. NPS will coordinate with tribes to address water allocation on a basin-wide scale.
  - iii. NPS works with states to protect and preserve high quality waters in units of the National Park System through Clean Water Act designations such as Outstanding National Resource Waters.
- g. *Office of Surface Mining Reclamation and Enforcement (OSM)*
  - i. Once its Stream Protection Rule is finalized, OSM will work with state and tribal regulatory authorities to educate them on the changes they must make to their programs. OSM will also provide training to help local regulators understand and implement the new measures to provide additional protection for groundwater and surface water.
- h. *U.S. Geological Survey (USGS)*
  - i. USGS will work through CSCs to develop new partnerships with state governments, universities, tribes, NGOs, etc.

- ii. USGS will work through its Cooperative Water Program partners, which include both states and tribes, to explore opportunities to further the requirements of WaterSMART.
- iii. USGS will develop new strategies and science consistent with WaterSMART goals.

## **Section 11. Planning Efforts**

Section 5(d) of Secretarial Order 3297 calls for recommendations to incorporate water conservation criteria and the water/energy nexus into DOI's planning efforts, including recommendations to reduce conflict in water management. Planning efforts will be coordinated with other Federal, state, tribal, and local governments as well as non-governmental organizations. The activities that will accomplish this are listed below.

- a. *Department of the Interior (DOI)*
  - i. DOI's Asset Management Program requires that all building projects, regardless of type, must follow all applicable mandatory energy, water, and sustainable buildings requirements within the scope of the project. Specific requirements for new and existing buildings are provided in the DOI Sustainable Buildings Assessment and Compliance Tool.
- b. *Fish and Wildlife Service (FWS)*
  - i. FWS through the NWRS is implementing a System-wide inventory and assessment of water resources (quantity and quality) in conjunction with NWRS Inventory and Monitoring program that will help prioritize needs to obtain, protect, and manage water resource quantity and quality in the NWRS.
  - ii. FWS has completed a preliminary analysis of climate change water vulnerabilities in FY09, and identified vulnerable Refuges and Fish Hatcheries in each Region. Eastern and western water workgroups put forward two Refuges and a Hatchery from each Team as potential projects.
- c. *Bureau of Reclamation (Reclamation)*
  - i. Reclamation will explore where planning activities could include water/energy nexus information. For example, water/energy nexus criteria have been included in WaterSMART Grant criteria and Title XVI criteria. Reclamation has also incorporated an emphasis on the water/energy nexus into its Rural Water Program, which provides financial assistance to plan rural water projects.
  - ii. Reclamation through its Basin Studies will evaluate the impacts of climate change to water and power facilities, including environmental response and natural hazards and will identify mitigation and adaptation strategies that include water conservation, and will look to the development of feasibility studies that incorporate these options.
- d. *U.S. Geological Survey (USGS)*

- i. Through the WaterSMART Availability and Use Assessment Geographic Focus Studies, USGS will be looking to identify areas of the Nation where there is significant conflict over water resources or water shortage issues. This is consistent with Section 9508 (d) (5) of the SECURE Water Act, which also mandates that USGS report to Congress every five years on the factors responsible for these conflicts or shortages. This information will assist in shaping public policy to hopefully reduce conflicts in water management.

## **Section 12. Colorado River Basin Pilot**

Perhaps nowhere is a single water resource more important to a varied user community, (including many states, tribes, fish and wildlife) than the Colorado River. As an area to focus WaterSMART efforts to sustain and stretch this water resource for people, the economy, and the environment, DOI is piloting many efforts within this shared resource. The Department of the Interior recognizes the diversity and significance of all Federal, state, tribal, local, and non-governmental activities along the Colorado River Basin and will coordinate with all of these activities. Within the Colorado River Basin, DOI will have the following specific activities:

### **Program Coordination**

- i. Reclamation is co-lead with FWS in the effort to establish two LCCs, the Desert and Southern Rockies and will develop shared science needs focused on the Colorado River Basin. This activity will be coordinated with the ongoing Basin Study in the Colorado River Basin and current and potential future Title XVI activities.
- ii. The USGS will coordinate across WaterSMART activities within the Colorado River Basin, including a focus area study within the WaterSMART Availability and Use Assessment.
- iii. NPS is participating on the Colorado River Basin Study with Reclamation and within the USGS Water Availability and Use Assessment.
- iv. To improve internal and external communication and coordination, NPS formed a Colorado River Steering Committee comprised of superintendents of Colorado River parks and pertinent regional directors and Washington staff. NPS has become fully engaged in communicating and coordinating its interests in Colorado River management across DOI bureaus through a variety of forums including regular meetings of senior leadership at the regional and Washington levels, participation in development of the Colorado River Annual Operating Plan, and participation on the Glen Canyon Dam Adaptive Management Workgroup.
- v. BLM is coordinating efforts on their Colorado Plateau Ecoregional Assessment with Reclamation's Colorado River Basin Study. These efforts including policy, objective, and methodology discussions and to integrate data sharing.

- vi. BLM's Salinity Control Program is participating in a remote-sensing, inter-agency study with the USGS Center for EROS, Pacific Northwest National Laboratory, and others that will provide vegetational health information with climate-changing conditions. Water availability for vegetation determines phenological-stage temporal and spatial progressions. The study is creating a model to "now-cast" rangeland health, identify production anomalies, quantify effects of different management treatments and determine growth curves of certain critical plant species.

#### **Water Used in Energy Production and the Energy Used in Water Delivery**

- i. The USGS WaterSMART Availability and Use Assessment will have a regional focus area study focused on the Colorado River Basin. The assessment will include uses of water within the basin for energy production and energy used for water delivery.
- ii. Reclamation's WaterSMART Water and Energy Efficiency Grants will provide funding for projects that address the connection between water use and energy use. As an example the Eastern Municipal Water District in Southern California will construct a facility to treat water that is currently discharged to the sewer so that additional water can be provided to the Perris Water Filtration Plant for ultimate use as potable water. Once completed, the project is expected to save approximately 950 acre-feet of water each year, resulting in a decrease in imported raw water consumption by the District. The recovery facility is also projected to result in savings of 4,412 kilowatt-hours of electricity for every 1 million gallons of water diverted from the sewer.
- iii. BLM will review NEPA analysis for energy projects on public lands, including renewable energy projects, to ensure best management practices and alternatives are considered to minimize impacts to water resources and water quality.

#### **Best Available Science**

- i. The Desert and Southern Rockies LCCs will convene water resources specific subgroup focused on the science needs of the Colorado River Basin. The first scoping meeting of this subgroup was held in September 2010 in Las Vegas, Nevada
- ii. The Desert and Southern Rockies LCC will work with the Southwest CSC to identify regional scale science information needed to support the water resources management decisions within the Colorado River Basin.
- iii. The USGS WaterSMART Availability and Use Assessment will have a regional focus area study on the Colorado River Basin to develop the necessary science to inform current and future water resources decisions.
- iv. NPS uses best available science to support all natural and cultural resource management actions in the Colorado River Basin, including actions supporting species recovery, riparian restoration, exotic species control, and the management of recreational use.

- v. BLM's AIM effort to develop a framework structure for scientific resource (water, air, soil, vegetation) information will house historical and ongoing science-project data from the Upper Colorado River Basin Salinity Control Program.
- vi. USGS National Streamflow Information Program will provide necessary information within the Colorado River Basin.
- vii. USGS working with the ACWI Subcommittee on Sedimentation are evaluating effects of sedimentation in reservoirs within the Colorado River Basin.

### **Promoting Sustainable Water Strategies**

- i. Reclamation through the WaterSMART Water and Energy Efficiency Grants will provide funding for projects focused on sustainable water strategies within the Colorado River Basin. Additionally adaptation options will be explored through the Colorado River Basin through Basin Study and pilot assessment by Reclamation and the USGS, respectively.
- ii. Through its National Fish Hatcheries, FWS will continue to employ reuse and recirculation strategies to rear native and mitigation sport fish. Additionally net pens will continue deployment in the Colorado River to further reduces electrical demands and pumping. Other extremely cost-effective measures also will be employed, including covering hatchery raceways to reduce evaporation rates in rearing units, which allows more spring water to leave hatchery property and flow to the Colorado River.

### **Evaluation of Needed Information**

- i. The Desert and Southern Rockies LCCs will convene water resources specific subgroup focused on the science needs of the Colorado River Basin. The first scoping meeting of this subgroup was held in September 2010 in Las Vegas, Nevada. One focus of the meeting was to identify needed information that can be addressed with science organizations including the Southwest CSC and the NOAA-RISAs and USGS.

### **Education and Awareness**

- i. The Desert and Southern Rockies LCCs, through the water management subgroup, will plan to hold science dissemination and collaboration workshops that are focused on establishing the science priorities within the Colorado River Basin and sharing the science that has already been developed.

### **Coordination with States and Tribes**

- i. Reclamation's Basin Study and the USGS assessment within the Colorado River Basin will actively encourage and outreach to states and tribes.
- ii. NPS has a full time Colorado River parks coordinator to interact and coordinate with other Federal agencies (e.g., Reclamation, FWS), various organizations (e.g., Glen Canyon Dam Adaptive Management Workgroup), and tribes.

- iii. FWS will continue to explore and utilize novel strategies in close consultation and coordination with its Tribal partners, including using hatchery effluent to fill Colorado River Indian Tribes fishing ponds. Effluent is also used on acreages to provide upland and water fowl hunting habitats, which reduces both water demands on the Colorado River and associated pumping costs.

**Planning Efforts**

- i. Reclamation's Basin Study is a cost shared study of climate change water supply and demand risks and impacts study on the Colorado River Basin. The study includes major stakeholders and will explore adaptation options under climate change scenarios.
- ii. FWS will be implementing risk analyses on its National Fish Hatcheries to determine potential water issues and other factors that could impact work on imperiled aquatic species within the Colorado River Basin.

## List of Acronyms

ACWI	Advisory Committee on Water Information
AIM	Assessment, Inventory, and Monitoring
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CSC	Climate Science Centers
CWA	Clean Water Act
DOA	Department of the Army
DOE	Department of Energy
DOI	Department of the Interior
EMS	Environmental Management System
EPA	Environmental Protection Agency
EROS	Earth Resources Observations and Science
FWS	Fish and Wildlife Service
GIS	Geographic Information System
HGM	Hydro-Geomorphic
LCC	Landscape Conservation Cooperatives
MOU	Memorandum of Understanding\
OSM	Office of Surface Mining Reclamation and Enforcement
NFHAP	The National Fish Habitat Action Plan
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NWRS	National Wildlife Refuge System
REA	Rapid Ecoregional Assessment
RISA	Regional Integrated Sciences & Assessments
SECURE	Science and Engineering to Comprehensively Understand & Responsibly Enhance
SMCRA	Surface Mining Control and Reclamation Act
SSPP	Strategic Sustainability Performance Plan
SWRR	Sustainable Water Resources Roundtable
Title XVI	Reclamation Wastewater and Groundwater Study and Facilities Act (Title XVI of P.L. 102-575), as amended – Reclamation Water Reclamation and Reuse Program
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WCFSF	Water Conservation Field Services Program
WestFAST	Western States Federal Agency Support Team