

Water Challenges



The WaterSMART program, launched in February 2010, is showing great promise in ensuring this and future generations have sufficient supplies of clean water for drinking, economic activities, recreation, and ecosystem health.

***Ken Salazar, Secretary of the Interior
February 13, 2012***

The Nation continues to face increasing water resource challenges. Aging water infrastructure, population growth, depletion of groundwater resources, impaired water quality, increasing demand for human and environmental uses, and climate variability and change all play a role in determining the amount of fresh water available at any given place and time.

Water shortage and water use conflicts have become more commonplace in many areas of the United States, even in normal water years. As competition for water resources grows, the need for information and tools to aid water resource managers also grows. Water issues and challenges are increasing across the Nation, but particularly in the West and Southeast due to prolonged drought. Drought and increasing demands for water are exacerbating the challenges facing water managers, and traditional approaches no longer meet today's needs. State governments and a complex array of laws and ownership govern water allocation and use, but the Federal government has a role to play in providing leadership on the path to sustainable water supplies and helping to provide the means to get there.

Adequate supplies of water are essential to people, the economy and the environment. The Administration places a priority upon ensuring clean and safe water supplies and restoring and protecting ecosystems. To do so, Federal agencies must work together with State and local governments, Tribes, industry, and the agriculture sector. These integrated efforts will lead to improved strategies and results that better protect this vital resource.

More than 50 percent of the people in the United States, including almost everyone who lives in rural areas, use ground water for drinking and other household uses. Ground water is also used in some way by about 75 percent of cities and by many factories. The largest use of ground water is to irrigate crops.

***U.S. Geological Survey
Open File Report 93-643
December 23, 2009***



WATERSMART SUSTAIN AND MANAGE AMERICA'S RESOURCES FOR TOMORROW



During 2011, the Department of the Interior built on the foundation established by Secretarial Order 3297, issued in February 2010, to launch a new water sustainability strategy, including identifying adaptive measures needed to address water issues related to a changing climate and future demands.

In November 2011, Interior's WaterSMART Task Force finalized the WaterSMART Strategic Implementation Plan, one of the key requirements of the Secretarial Order, documenting actions already begun and planned. The WaterSMART Strategic Implementation Plan is the Department's framework for the next five years to provide Federal leadership to move toward a sustainable water resources future. The Plan's 12 sections align with strategies that focus on improving water conservation and helping water and resource managers make wise decisions about water use. The Plan outlines the water challenges the Country faces and summarizes initial action taken through the WaterSMART program. The Plan also delineates responsibilities and activities to integrate and coordinate water sustainability efforts of the Department and its Federal, State, tribal, and private partners. The Plan frames Interior's WaterSMART strategy as follows:

- Program Coordination – Clearly identifies roles and responsibilities for the bureaus and offices in Interior that have a role in the WaterSMART initiative, providing a basis for the identification and protection of water resources, partnerships to promote conservation, and improved water management strategies.
- The Energy/Water Nexus – Water Used in Energy Production and Energy Used in Water Supply – Specific strategies identify how Interior bureaus and offices will work with partners and stakeholders to protect water supplies, promote

conservation and sustainability in the development of energy infrastructure, and improve water use efficiencies by identifying amounts of water used or impacted by various energy technologies.

- Best Available Science – This strategy outlines how the best available science will be used to improve understanding of impacts of climate change on water availability and timing in order to resolve conflicts and facilitate the conservation of both surface and groundwater.
- Water Footprint Reduction Program – Interior's stewardship responsibilities for 500 million acres and 48,000 facilities mandate that it adopts conservation and sustainability strategies. This strategy directs actions to Interior's land and facility managers who are engaged in the implementation of sustainability and conservation practices.
- WaterSMART Clearinghouse – An information clearinghouse helps to inform Federal, State, local, tribal, and other water managers. This strategy assigns specific tasks to improve the clearinghouse and use it to promote collaboration, research, and water data and information.
- Promoting Sustainable Water Strategies – The Plan identifies specific programs that can focus on achievable goals to promote sustainable water practices in implementing resource use activities.
- Evaluation of Needed Information – This strategy focuses on the identification of information gaps, the prioritization of data collection and research, and lays the groundwork for making information available in order to support sound decisionmaking.
- Education and Awareness – Coordination of outreach and education efforts is a key aspect of WaterSMART that aims to improve knowledge about water management strategies.
- Collaboration with State and Local Governments, and Tribes – Implementation of water management goals is greatly

improved through coordination and collaboration with others. The strategy identifies existing relationships and new partnerships with States and Tribes to collaborate on implementation of the WaterSMART strategy.

- Planning Efforts – This strategy identifies planning efforts that can be greatly improved by incorporation of WaterSMART strategies, thereby reducing conflicts in water management.
- Colorado River Basin Pilot – As a key area for coordinated strategies in water management, the Plan identifies the Colorado River Basin as an area to pilot the WaterSMART efforts to sustain and stretch water resources for people, the economy, and the environment.



PARTNERSHIPS IN THE COLORADO RIVER BASIN DEMONSTRATE NATIONAL PROMISE OF INTERIOR'S WATERSMART PROGRAM

On December 16, 2011, Assistant Secretary – Water and Science, Anne Castle, announced the release of a report on the effectiveness of the Department of the Interior's National WaterSMART Program as demonstrated by its work within the Colorado River Basin.

The Colorado River Basin has really served as a pilot project area to test and demonstrate the various tools available through WaterSMART to address water supply and demand imbalances around the Nation. The report demonstrates the diversity and significance of the activities undertaken by the Department in cooperation with the States, local governments, Tribes, and others to sustain Colorado River resources for people, the economy, and the environment.

*Anne Castle, Assistant Secretary – Water and Science
December 16, 2011*

The report highlights the provision of 15 WaterSMART grants by the Bureau of Reclamation to organizations in the Colorado River Basin to improve water and energy efficiency and to develop climate change analysis tools.

Interior has several scientific efforts underway in the Colorado River Basin focused on water, including the USGS Water Census, the newly formed Southwest Climate Science Center established by USGS at the University of Arizona, and Reclamation's ongoing Basin Supply and Demand Study. Through the latter study, Reclamation has partnered with the Colorado River Basin States to identify and analyze supply and demand imbalances within the Basin and to explore strategies for addressing such imbalances. An interim report was released in June 2011 and a final report is expected to be complete in July 2012.

Many important water rights settlement agreements have been signed and are being implemented in the Basin, resolving tribal water right claims and protecting State water supplies. Work is underway to fulfill settlement requirements including the construction of the Navajo-Gallup Pipeline Project and construction of the White Mountain Apache Tribe Rural Water System.

River restoration efforts through the Upper Colorado River and San Juan River Recovery Programs, and the Lower Colorado River Multi-Species Conservation Program are making significant strides to recover listed and native fish species and protect current and future water uses within the Colorado River Basin.

2013 Investments in WaterSMART – The 2013 budget focuses on key aspects of the WaterSMART implementation strategy including Bureau of Reclamation programs that fund partnerships in water management and U.S. Geological Survey programs to improve understanding of water resources.

In April 2011, Reclamation issued its “SECURE Water Act Section 9503 – Reclamation Climate Change and Water Report” pursuant to Section 9503 of the SECURE Water Act. The report analyzes the potential impacts of climate change on several major river systems, and includes an extensive section on the Colorado River Basin. The report features an assessment of climate change implications for snowpack and natural hydrology in the eight major Reclamation river basins. The 2013 budget funds investments in Reclamation programs that support the WaterSMART Implementation Plan in concert with the results of this report.

In October 2011, the Interior Department released a report, entitled “Strengthening the Scientific Understanding of Climate Change Impacts on Freshwater Resources of the United States,” fulfilling the requirements of Section 9506 of the SECURE Water Act. The report was prepared by a Federal interagency panel led by USGS and developed in concert with the Council on Environmental Quality, the National Oceanic and Atmospheric Administration, and the Office of Science and Technology Policy. The report underscores the importance of adequate water measuring and monitoring systems to track water availability and quality to assist water managers in decisionmaking about water allocations and infrastructure. The report also suggests ways to modernize data systems, management, modeling and water measurement tools and highlights the need to coordinate data among agencies. The report recommends enhancing the National Streamflow Information Program and the National Water Quality



Monitoring Network and establishing the National Groundwater Monitoring Network.

Additionally, other Interior bureaus, while not participating directly in the WaterSMART program, do support the WaterSMART implementation strategy in many critical ways through their ongoing programs for land and resource management. Some examples include:

- **Best Available Science Strategy** – The Fish and Wildlife Service’s national wildlife refuge system is implementing a system-wide inventory and assessment of water resources in conjunction with its inventory and monitoring program. The inventories will establish baselines for wildlife refuge water quantity and quality. 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 wildlife refuges. This information will also be important to Landscape Conservation Cooperatives for identifying vulnerabilities and assessing future impacts of climate change.
- **Promoting Sustainable Water Strategy** – Within the WaterSMART Availability and Use Assessment, the Bureau of Indian Affairs is coordinating with Tribes and USGS to identify where tribal water rights have not yet been adjudicated and basins in which considerable conflict exists between existing water uses and tribal trust or treaty resources.
- **Program Coordination Strategy** – The Bureau of Land Management, as part of its landscape approach to managing public lands, will conduct rapid ecoregional assessments to determine areas of regionally significant aquatic habitats.
- **Energy/Water Nexus Strategy** – The National Park Service is working with BLM on the Programmatic Environmental Impact Statement for Solar Energy Development, with a focus on water use and sustainability and protection of park resources that are dependent on water.

WATER CHALLENGES

(dollars in millions)

	2012	2013	Change
BUREAU OF RECLAMATION			
WaterSMART Grants	12.2	21.5	+9.3
Basin Studies	4.9	6.0	+1.1
Cooperative Watershed Management.....	0.3	0.3	0.0
Title XVI Projects	24.7	20.3	-4.4
Water Conservation Field Services.....	5.0	5.9	+0.8
Subtotal, Reclamation	47.1	53.9	+6.8
U.S. GEOLOGICAL SURVEY			
Fisheries: Aquatic and Endangered Resources	0.5	1.7	+1.3
Geographic Analysis and Monitoring.....	0.5	0.5	0.0
Contaminant Biology	0.0	1.0	+1.0
Toxic Substances Hydrology.....	0.0	2.5	+2.5
Groundwater Resources	2.7	5.2	+2.5
National Water Quality Assessment.....	0.0	3.5	+3.5
Hydrologic Networks and Analysis.....	4.3	4.8	+0.5
National Cooperative Geologic Mapping.....	0.0	1.0	+1.0
National Geospatial Program	0.0	0.8	+0.8
Subtotal, U.S. Geological Survey	8.0	21.0	+13.0
TOTAL, WATERSMART PROGRAM	55.1	74.9	+19.8

2013 BUDGET SUMMARY

Interior’s 2013 budget request includes \$74.9 million for the WaterSMART program, including \$53.9 million for Reclamation and \$21.0 million for USGS.

Bureau of Reclamation – Reclamation is the largest supplier and manager of water in the 17 western States. It maintains 476 dams and 348 reservoirs with the capacity to store 245 million acre-feet of water. These facilities deliver water to one in every five western farms, including about ten million acres of irrigated land, and provide water to over 31 million people for municipal, rural, and industrial uses. Reclamation is also the Nation’s second largest producer of hydroelectric power, generating 40 billion kilowatt hours of energy each year from 58 power plants. Hydropower is the Nation’s primary source of renewable energy. Reclamation is improving operational efficiencies at existing hydropower generation facilities and looking into integration of hydropower production with other renewable resources. In addition, Reclamation’s facilities provide substantial flood control, as well as many recreational and fish and wildlife habitat benefits. Reclamation has an important role to play in providing leadership and assistance to States, Tribes,



and local communities to address these competing demands for water.

The Department’s 2013 budget request includes \$53.9 million for water sustainability efforts through Reclamation, an increase of \$6.8 million above the 2012 enacted level. In 2013, Reclamation will continue implementing the five WaterSMART programs: WaterSMART Grants, Basin Studies, Water Reclamation and Reuse programs, the Cooperative Watershed Management program, and the Water Conservation Field Services program.

PRIORITY GOAL

To track the progress made in implementing WaterSMART, the Department established a Priority Goal for water sustainability in 2010. The goal commits Interior to annual targets, including the following for 2013:

Enable capability to increase the available water supply in the western States through conservation-related programs to ensure adequate and safe water supplies.

By September 30, 2013, Interior will further enable the capability to increase the available water supply for agricultural, municipal, industrial, and environmental uses in the western United States through Reclamation water conservation programs to 730,000 acre-feet, cumulatively since 2009.

In 2011, Reclamation's conservation-related programs contributed over 230,000 acre-feet toward meeting Reclamation's Priority Goal for Water Conservation, or enough water for more than 900,000 people.

A number of 2011 WaterSMART grant projects address the connection between water and energy use. These projects not only achieve water savings, but can lead to significant increases in energy efficiency by decreasing pumping and reducing the amount of water imported across long distances.

In 2011, over 25 of the 58 new WaterSMART grant projects included energy savings in addition to water savings. Based on applicants' estimates, the annual energy savings expected to result from these projects is over 15,000,000 kilowatt hours, enough electricity for more than 1,300 households. For example, the Municipal Water District of Orange County expects an annual energy savings of 1,848,000 kWh from its project to facilitate the installation of residential and commercial irrigation meters, which is also expected to result in water savings of 560 acre-feet per year.

WaterSMART Grants – The 2013 budget request includes \$21.5 million for WaterSMART Grants, an increase of \$9.3 million over the 2012 enacted level. In 2013, Reclamation anticipates funding approximately 50 projects at a level of up to \$300,000 each. Reclamation will continue to award competitive cost-share grants that exceed the minimum 50 percent non-Federal cost-share requirement and include:

- Water and energy efficiency improvements that save water, increase the use of renewable energy in water management, include endangered species protections and other environmental benefits, and facilitate transfers to new uses. WaterSMART recognizes the connection between energy and water use and emphasizes the need to continue to develop sources of renewable energy.
- Pilot and demonstration projects that address the technical and economic viability of treating and using brackish groundwater, seawater, impaired waters, or otherwise creating new water supplies within a specific locale.
- System optimization reviews that assess the potential for water management improvements and identify specific ways to implement those improvements.
- Projects to develop tools to more efficiently manage water resources in a changing climate.

Reclamation generally funds new water conservation projects that can be completed within two years to encourage near-term impacts on water savings. Reclamation believes that water conservation, the



use of water markets, and improved efficiency are crucial elements of any plan to address western water issues. With leveraged water sustainability grants, the 2013 budget takes an important step by increasing conservation and advancing the efficient use of water in the West.

Basin Studies – The Department’s budget request includes \$6.0 million for Reclamation’s Basin Studies program, which funds Reclamation’s partnerships with State and local entities to initiate comprehensive water supply and demand studies in the West. The 2013 request is an increase of \$1.1 million from the 2012 enacted level. The Basin Studies program includes three activities:

- Conducting state-of-the-art projections of future water supply and demand on a basin-wide scale. These studies include an analysis of how the basins’ existing water and power operations and infrastructure will perform in the face of changing water supplies and needs, and recommendations on the optimization of operations and infrastructure to supply adequate water in the future. Basin Studies funding may also be used to fund one or more feasibility studies to assess previously identified adaptation strategies, as authorized by Section 9503 of the SECURE Water Act.
- West-Wide Assessments will continue to provide consistent projections of risks to water supplies and demands and impacts to Reclamation operations due to the potential impacts of climate change across the eight major Reclamation river basins identified within the SECURE Water Act. The West-Wide Assessments provide a constant source of information and baseline data across Reclamation projects to better adapt to risks and impacts from a changing environment and provide key information needed for more in-depth analysis.
- Continued participation in and support to the Desert and Southern Rockies Landscape Conservation Cooperatives. These LCCs are partnerships between Interior and other Federal agencies, States, Tribes, non-governmental organizations, and other stakeholders, to bring together science and sustainable resource conserva-

tion activities to develop science-based solutions to on-the-ground challenges from a changing environment within an ecological region or “landscape.” The LCCs leverage the resources and expertise of the partners and work across jurisdictional barriers to focus on natural resource issues specific to a particular ecosystem or landscape.

In 2013, Reclamation and its partners will initiate two or three comprehensive, two-year water supply and demand studies in the western U.S. and provide funding for basin studies on a competitive basis.

Cooperative Watershed Management – Through this program, the Department implements the Cooperative Watershed Management Act of 2008, Sections 6003-6006, providing financial assistance to establish and expand collaborative watershed groups and to fund watershed management projects, including restoration projects. In 2013, Reclamation will continue to oversee the process for selecting and awarding financial assistance for the establishment of watershed groups and the funding of watershed management projects. Funding of \$250,000 will be used to expand implementation of the program. Watershed management projects eligible for program funding include those that enhance water conservation, improve water quality and ecological resilience, reduce water conflicts, and advance other goals related to water quality and quantity.



Title XVI – The Department’s budget request includes \$20.3 million for the Title XVI Water Reclamation and Reuse program, a major component of the WaterSMART strategy. The 2013 level for Title XVI is a \$4.4 million decrease from the 2012 enacted level. Title XVI projects will identify and investigate opportunities to reclaim and reuse wastewater and naturally impaired ground and surface water in the

17 western States and Hawaii. Title XVI provides authority for project sponsors to receive Federal funding on a cost-shared basis for planning, design, construction, and pre-construction activities. These include feasibility studies and financial capability preparation or environmental compliance, as well as construction of specific water recycling projects. Only congressionally authorized Title XVI projects are eligible to receive funding.

Title XVI projects have the potential to stretch water supplies using time-tested methodologies and piloting new concepts. By making use of recycled and reused water, these projects also yield significant investments, creating long-term water supplies for communities and avoiding the need to develop new supplies. Federal investments in Title XVI projects, including all projects funded since 1992, made available an estimated 260,000 acre-feet of water in 2011. The 2013 budget includes funding for five ongoing Title XVI projects and includes \$16.6 million for distribution, on a competitive basis, to those authorized projects that best reduce existing diversions; address specific water supply issues in a cost-effective manner; resolve and address environmental and water quality concerns; and meet other program goals.

Water Conservation Field Services – The 2013 budget request includes \$5.9 million to provide small scale, cost-shared financial assistance at the local level for water conservation planning activities, on-the-ground efficiency improvements, demonstration projects, education, and training. Applicants must compete for funding that is capped at \$100,000 per project. The 2013 budget is \$839,000 above the 2012 level, which will add about eight new projects.

U.S. Geological Survey – The USGS provides a broad range of expertise in geography, geology, hydrology, biology, and data integration that is used by other Federal agencies, Tribes, States, local communities, and others. The USGS data and analyses of water quality and quantity help resource managers develop, regulate, and monitor management practices to ensure the continued availability of water resources for human consumption, agriculture, industry, recreation, and ecosystems.

The need to quantify and forecast fresh water sources in order to protect and secure these sources to meet human, environmental, and wildlife demands now and into the future has been well established. The need was recognized by Congress when it established a National Water Availability and Use



Assessment program through passage of the Omnibus Public Land Management Act of 2009. The last assessment of the availability and use of water resources in the United States was completed in 1978 – over 30 years ago. Support for this program is vital to collecting new and continuing assessment data of the Nation’s water resources to ensure future water supplies.

The 2013 budget request includes \$21.0 million for the USGS WaterSMART Availability and Use Assessment program. This is a \$13.0 million increase from the 2012 enacted level. An interdisciplinary science approach will be used to implement this assessment, and will include:

Estimating Water Budget Indicators – The USGS is developing a system to enable water managers and the public to access and use information in water availability analyses. The USGS will make available databases containing key hydrologic information including precipitation; water in snowpack, ice fields and large lakes; evapotranspiration; stream and river run-off characteristics; total water withdrawals by source; stream and river baseflow characteristics; interbasin transfers; groundwater level indices; consumptive uses; rates of groundwater recharge; changes in groundwater storage; and return flows. Access to this information will facilitate the ability of water managers to develop water allocation protocols and anticipate water needs.

Ecologic Water Science – The USGS will advance the understanding of water availability needs for wildlife and habitat by classifying the streams across the Nation based on their hydro-ecological type; systematically examining the ecological response to hydrologic alteration; and developing flow alteration – ecological response relationships

for each type of river or stream. Efforts in 2011 and 2012 have concentrated on the classification system for streams and supporting ecological water needs work in the geographic focus areas—Colorado River Basin, Delaware River Basin, and Apalachicola-Chattahoochee-Flint River Basin. In 2013, USGS will complete the classification system and develop a means to efficiently access biological databases to allow for the systematic analysis of ecological responses to hydrologic alteration.

Glacial Groundwater Studies and Regional Groundwater Indices – Currently, the Ground Water Resources Program is conducting large-scale multidisciplinary regional studies of groundwater availability. The purpose of these studies is to quantify current groundwater resources, evaluate how those resources have changed over time, and provide tools to forecast system responses to stresses from future human and environmental uses. The USGS WaterSMART effort will rely on the results derived from these regional groundwater availability studies as part of a comprehensive national water availability assessment. The GWRP will expand its efforts to document the effects of human activities and climate variability and change on groundwater levels, depletions, storage, and interactions with surface water resources. In 2013, the GWRP will continue a study of the glacial aquifer system in the northeastern and north central States begun in 2012. The GWRP will also investigate means of better estimating recharge and interactions between groundwater and surface water in areas not currently part of a regional aquifer study.

Water Quality Enhancement – The overall objective of this WaterSMART component is to produce a national synthesis of knowledge on the degree to which water quantity and quality combine to influence water resource availability for both human and ecosystem uses. Specific to water quality and quantity, it will focus on understanding the natural and human-induced variability in the linkage; developing fundamental ways of assessing the degree to which they combine to influence water availability for human uses and ecosystem services; and improving the understanding of the cause and effect linkages between water quantity and quality. This involves the integration of water quality and quantity information and relating it to the human and ecological needs for the water.

Geographic Area Focus Studies – In 2013, USGS will continue geographically focused studies of water availability and use in the Colorado River Basin

States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming; the Delaware River Basin States of Delaware, New Jersey, New York, and Pennsylvania; and the Apalachicola-Chattahoochee-Flint River Basins in the States of Alabama, Florida, and Georgia. The USGS will work with watershed stakeholders and the various agencies involved in these areas to plan and conduct these studies.



National Groundwater Monitoring Network – The SECURE Water Act Section 9507(b) authorizes the National Groundwater Monitoring Network, a systematic groundwater monitoring program for each major aquifer system located in the United States. In 2013, USGS will begin implementation of the Network as conceptualized by the Advisory Committee on Water Information, Subcommittee on Ground Water in its 2009 report *A National Framework for Ground Water Monitoring in the United States*. With these additional funds, USGS will:

- Provide day-to-day management of the Network as well as provide guidance to data providers.
- Transition from the pilot-scale Network data portal to a production-scale portal.
- Use the hydrologic understanding and modeling tools currently available and being developed for selected major aquifers, as part of the Groundwater Resources Program groundwater availability studies, to identify monitoring locations to enhance the national network.

- In consultation with State and local agencies, incorporate groundwater-level and groundwater-quality data from selected wells and springs into the Network.
- Incorporate qualified wells and springs from State and local agencies, giving priority to those wells and springs for which a State or local governmental entity agrees to provide for a substantial share of the cost of establishing or operating the monitoring well or spring.
- Establish a National Program Board composed of Network data providers.
- Begin expansion of the groundwater climate response network to improve the understanding of the effects of global climate change on groundwater recharge and availability.

The proposed Network will bring comparable monitoring data together from disparate sources in order to close spatial data gaps and evaluate national-scale groundwater levels, quality, and rates of change.

Information Management – Managing the various data streams and integrating this information into a cohesive picture is a major effort under WaterSMART. The USGS is currently developing a system to manage the data for estimating stream flows at stations that do not have streamgages and make this data available to the public. Efforts in 2013 and in the future will concentrate on storing, integrating and providing all of the information about water budget components within a defined watershed.



RESOLVING LAND AND WATER CLAIMS

Water is the lifeblood of our communities, and I'm pleased that we can now begin a new chapter on water in this region – one marked by certainty, restoration, and economic activity.

*David Hayes
Deputy Secretary of the Interior
November 29, 2011*

In 2011, the Department moved forward to implement four Indian water rights settlements, signed into law in December 2010, as part of the Claims

WHITE MOUNTAIN APACHE TRIBE SETTLEMENT

On October 11, 2011, \$11.8 million was awarded to the White Mountain Apache Tribal Government to greatly expand the existing water delivery system and meet critical needs of the reservation. An agreement between the Department of the Interior, the Bureau of Reclamation, and the Tribe funds planning and design activities for the Miner Flat Project on the Tribe's reservation in Arizona. The project includes construction of a concrete dam, pumping plants, a water treatment plant, and water distribution pipelines on the White River in southeastern Navajo County, Arizona. The project is expected to create over 120 jobs.

This funding agreement is an important step toward developing a dependable, long-term water supply for the White Mountain Apache Tribe who, for too long, has had to depend upon shallow, unreliable wells. Advancing Indian water rights settlements like this one is a critical piece of President Obama's efforts to empower tribal governments and help them build stronger and more prosperous communities.

*Ken Salazar
Secretary of the Interior
October 11, 2011*

CROW TRIBE SETTLEMENT



The Bureau of Reclamation's Great Plains Region and the Crow Tribe signed the Crow Irrigation Project Rehabilitation and Improvement Contract on September 13, 2011. With the signing more than \$74 million in settlement funds was released as part of the Crow Tribe Water Rights Settlement.

These funds will create vital jobs and improve the Crow Irrigation Project. I am proud that Reclamation was able to facilitate the execution of this contract which will ultimately bring more than \$131 million to the Crow Nation to rehabilitate critical infrastructure and support the development of local energy resources.

**Michael J. Ryan, Director
Reclamation's Great Plains Region
September 13, 2011**

Construction of the irrigation project began in the fall of 2011. It will rehabilitate and improve the Crow Irrigation Project, which began construction in 1885. The water rights settlement also provides for the planning, design, and construction of a modern and robust municipal, rural, and industrial water system and gives the Tribe exclusive rights to develop hydropower at the Yellowtail Afterbay Dam. These projects offer significant opportunities for the Tribe to improve quality of life on tribal lands and to generate economic benefits for the Nation and its members.

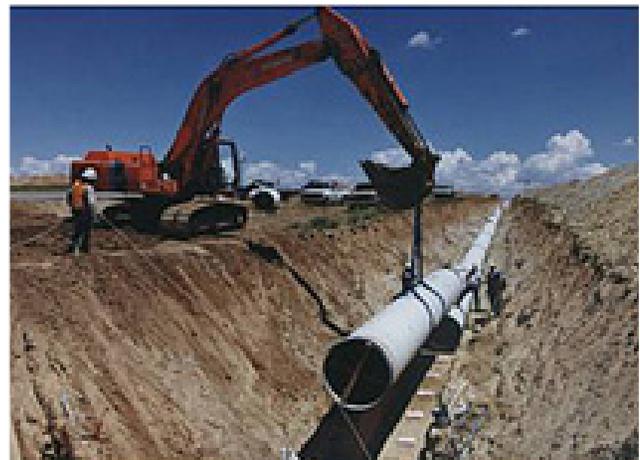
Resolution Act of 2010. The four settlements provide permanent water supplies and offer economic security for the Taos Pueblo of New Mexico; the Pueblos of Pojoaque, Tesuque, San Ildefonso, and the Nambé involved in the Aamodt settlement in New Mexico; the Crow Tribe in Montana; and the White Mountain Apache Tribe in Arizona. Together, these settlements will provide funding to complete and improve reservation water systems, rehabilitate irrigation projects, construct a regional water system, and will codify water sharing arrangements with neighboring communities.

The Claims Resolution Act authorizes the establishment of trust funds for each of the Tribes to manage the development of these projects. Reclamation has primary responsibility for constructing the water systems, while the Bureau of Indian Affairs is responsible for funding the trust funds.

The 2013 budget request for Indian land and water claim settlements in these two bureaus totals \$82.8 million, including \$36.3 million in BIA's budget and \$46.5 million in Reclamation's budget.

Bureau of Reclamation – In 2013, Reclamation's budget includes \$21.5 million for projects that are part of the Claims Resolution Act settlements, including \$2.5 million for the White Mountain Apache Settlement; \$10.0 million for the Crow Settlement; \$4.0 million for the Taos Pueblo Settlement; and \$5.0 million for the Aamodt Settlement.

The 2013 budget proposes establishment of a separate Indian Water Rights Settlements account within Reclamation to highlight and enhance transparency in managing and budgeting settlement funds. This proposal would establish an account that parallels the BIA settlement account. The account will include the four settlements discussed above, as well as



\$25.0 million for the Navajo-Gallup Water Supply project authorized in 2009. The Navajo-Gallup project will provide reliable and sustainable municipal, industrial, and domestic water supplies from the San Juan River to 43 Chapters of the Navajo Nation including the Window Rock, Arizona area; the city of Gallup, New Mexico; the Navajo Agricultural Products Industry; and the southwestern portion of the Jicarilla Apache Nation Reservation in New Mexico.

Bureau of Indian Affairs – In 2011, the Claims Resolution Settlement Act provided \$207.2 million in mandatory funding, composed of \$50.0 million for the White Mountain Apache Settlement; \$81.8 million for the Crow Settlement; \$50.0 million for the Taos Pueblo Settlement; and \$25.4 million for the Aamodt Settlement.

The 2013 budget includes \$36.3 million for the BIA Land and Water Claim Settlements account, which will fund ongoing settlements including:

- *Nez Perce/Snake River Water Rights Settlement* – The budget includes \$9.5 million for the seventh and final payment for the Nez Perce/Snake River Water Rights Settlement. This Settlement authorizes the Department to provide the Nez Perce Tribe and the State of Idaho a total of \$170.9 million to be funded over seven years. The \$95.8 million BIA portion of the Settlement funds water supply, habitat restoration, and other purposes.
- *Shoshone-Paiute Tribes of the Duck Valley Reservation Settlement* – The Omnibus Public Land Management Act of 2009 authorizes \$60.0 million over five years for the Shoshone-Paiute Tribes of the Duck Valley Reservation Water Settlement. The budget includes \$12.0 million, the fourth of five payments to satisfy this requirement.
- *Navajo Nation Water Resources Development Trust Fund* – The Omnibus Public Land Management Act of 2009 authorizes \$50.0 million over ten years for the Navajo Nation Water Resources Development Trust Fund. The BIA budget includes \$6.0 million, the fourth payment to satisfy this requirement.

- *Navajo-Gallup Water Supply Project* – The budget includes \$7.8 million, an increase of \$3.4 million, for San Juan Conjunctive Use Wells and San Juan River Navajo Irrigation Project Rehabilitation, which are part of the Navajo-Gallup Settlement.
- The budget request also includes \$1.0 million for other smaller Indian land and water settlements.

REGIONAL WATER ISSUES

The Department is engaged in water resource and supply activities across the West in areas such as the Klamath region, the Colorado River, and in California's Bay-Delta.



Klamath Basin – Two agreements designed to restore the Klamath River Basin while also sustaining the communities that rely on the resources of the Basin were approved and executed by a broad cross section of stakeholders in February of 2010. The Klamath Hydroelectric Settlement Agreement, to which the Interior Department is a party, is an agreement to study the potential removal of four privately owned dams on the Klamath River. Under this Agreement, congressional action is needed before the Secretary may make a determination whether, based on the studies, removal is in the public interest. The Klamath Basin Restoration Agreement, which the Department has not executed, restores the natural resources of the Basin while also seeking to provide as much certainty as possible for water supplies to be used by the irrigation community. Although the Department is not yet a party to the Agreement since authorization is pending in Congress, there are a number of restoration/water supply enhancement actions called for under the Klamath Basin Restoration Agreement that are authorized under existing law.

The 2013 budget request includes \$7.1 million for Reclamation to begin implementation of actions that address water supply enhancement and restoration of natural resources that support the Klamath Basin Restoration Agreement. The budget includes \$7.0 million to fund acquisition of former reservation lands that will support economic and cultural activities which make settlement possible. The Fish and Wildlife Service budget includes \$1.6 million that will be leveraged with funding from other sources to support projects listed in both the Klamath Basin Restoration Agreement and the Klamath Hydroelectric Settlement Agreement. Projects will include fish related monitoring and modeling – such as fish population, water temperature, hydrology, water quality, fish disease, stock assessments, fish and watershed habitat planning and assessments; fish and watershed habitat planning and restoration projects; and projects to improve instream flows for fish. The USGS budget includes \$901,000 for science activities to understand the relationship between water quality and availability and fish habitat and survival.

Colorado River – The Colorado River and its tributaries provide municipal and industrial water and recreation opportunities to approximately 27 million people and irrigation water to nearly four million acres of land in the Basin States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming. The River also serves approximately 2.3 million people and 500,000 acres of land in Mexico.

As highlighted earlier in this chapter, on December 16, 2011, Assistant Secretary – Water and Science, Anne Castle, announced the release of a report on the effectiveness of the Department of the Interior’s National WaterSMART program as demonstrated by its work within the Colorado River Basin. The report highlights Interior’s scientific efforts underway in the Colorado River Basin and the Bureau of Reclamation’s issuance of 15 grants to organizations in the Colorado River Basin to improve water and energy efficiency and to develop climate change analysis tools.

The Colorado River Basin Study began in January 2010 and is scheduled to be completed in July 2012. The Study will identify recommended adaptation strategies to address climate change and future water supply and demand imbalances within the Basin. On November 29, 2011, Reclamation announced the initiation of Phase Four of the study which will focus on options and strategies to meet supply and demand imbalances.



Reclamation and FWS are leading the Southern Rockies and Desert Landscape Conservation Cooperatives. These LCCs were created to address the landscape impacts of change on America’s water, land, and other natural and cultural resources. Additionally, river restoration efforts are being advanced through the Upper Colorado River and San Juan River Recovery Programs, and the Lower Colorado River Multi-Species Conservation program. These efforts are making significant strides in recovering listed and native fish species and protecting current and future water uses within the Colorado River Basin.

California Bay-Delta – The California Bay-Delta is the hub of the Nation’s largest water delivery system and one of the most important estuary ecosystems in the Nation. The Bay-Delta provides drinking water to 25 million people and sustains about \$400 billion of annual economic activity, including a \$28 billion agricultural industry and a robust set of recreational opportunities. It irrigates more than seven million acres of farmland on which 45 percent of the Nation’s fruits and vegetables are grown. Until recently, it



supported a thriving commercial and recreational fishing industry that contributed hundreds of millions of dollars annually to the California economy. It is home to 55 species of fish and 750 species of plants and wildlife.

Successfully developing a science based Bay-Delta Conservation Plan holds the promise of breaking from the unsustainable status quo and being a game changer for California... that is why the Obama administration is joining with Governor Brown and recommitting funding and technical assistance to support what could become the largest restoration project in history.

**Ken Salazar, Secretary of the Interior
December 19, 2011**

In December 2011, Secretary Salazar reaffirmed his strong support to move forward with the California Bay-Delta Conservation Plan and reinforced his commitment to achieve the dual goals of a healthy Bay-Delta ecosystem and a reliable water supply for California. The Conservation Plan is coordinated by six Federal agencies and calls for the restoration of tens of thousands of acres of marshes, wetlands, and habitat, and the construction of a new water conveyance system to move water from north of the California Bay-Delta to water users in the Central Valley and the southern part of the State.

The Plan is one part of a comprehensive commitment to address California water issues. It promotes water conservation and efficiency improvements throughout California, expedites and expands voluntary water transfers in the Central Valley, dedicates funding for immediate drought relief projects, and makes historic investments in modernizing California's water infrastructure.

Over the past three years, Interior has invested over \$600 million in major water projects in the region, including construction of the Delta-Mendota Canal/California Aqueduct Intertie to relieve conveyance limitations, allow for maintenance and repair activities, and provide the flexibility to respond to Central Valley Project and State Water Project emergency water operations. Also included are the Red Bluff Diversion Facility; Contra Costa fish screens; a large number of water reuse and water conservation projects; and seismic safety improvements at Folsom Dam. The 2013 budget for Reclamation includes \$110.8 million for California Bay-Delta, a decrease of \$63.3 million from the 2012 enacted level. The decrease is primarily due to the completion of the Red Bluff Diversion Dam Fish Passage Project and limitations on the use of mandatory funding for San Joaquin River Restoration Program because of a congressionally mandated spending cap.

Reclamation is proposing \$36.0 million in the 2013 budget for its California Bay-Delta Restoration account, \$3.7 million below the 2012 enacted level. The funds will support implementation of the Bay-Delta Conservation Plan as modified by the Interim Federal Plan. This account focuses on the health of the Bay-Delta ecosystem and improving water management and supplies.

San Joaquin River Restoration – Beginning in late 2009, the Department reinstated flows in a 330-mile stretch of California's San Joaquin River, much of which had been dry for over 60 years. The 2013 budget supports the settlement of *Natural Resources Defense Council v. Rodgers*. The Settlement includes a provision to establish the San Joaquin River Restoration Fund to implement the two primary goals of the Settlement, which are to restore and maintain fish populations and to restore and avoid adverse water impacts. Reclamation is proposing \$12.0 million in discretionary funding in 2013 for this effort.

RECLAMATION YUMA DESALTING PLANT

Concluding ahead of schedule and under budget, Reclamation's Lower Colorado River Region successfully completed the pilot run of the Yuma Desalting Plant in March 2011. The previously idled desalination plant demonstrated the potential to augment Lower Colorado River water supplies.



The year-long operation of the Plant was conducted in collaboration with The Metropolitan Water District of Southern California, Central Arizona Water Conservation District, and Southern Nevada Water Authority. In return for co-funding, the agencies received water credits in proportion to the water produced during the pilot run and in proportion with their funding contributions.

During the pilot run, the plant operated effectively and efficiently with no substantial equipment problems or accidents. The pilot run produced the amount of water used by about 116,000 people in a year. The run demonstrated innovative ways to increase water supplies for the region and other Colorado River water users, providing options for the Lower Colorado River Basin, which is in the midst of an eleven-year drought.

Throughout the operation, the YDP performed above expectations. The YDP recycled about 30,000 acre-feet of irrigation return flow water which was included in Colorado River water deliveries to Mexico.... This resulted in the same amount of water conserved in Lake Mead and available to the sponsoring water agencies when needed in the future.

***Lorri Gray-Lee, Director, Reclamation's Lower Colorado Region
March 31, 2011***

We are hopeful that Reclamation, in cooperation with interested water users and stakeholders, will use the cost and performance data gathered, along with the research and environmental monitoring information, to prepare plans for the long-term operation of the plant...as demonstrated by the pilot operations, water recycling and conservation are important tools to stretch our precious Colorado River water supplies.

***David Modeer, General Manager, Central Arizona Water Conservation District
March 31, 2011***

Beyond what we've learned about the Yuma Desalting Plant, the pilot run also demonstrated how the Federal government, water users, environmental groups, and our neighbors to the south in Mexico can find common ground and collectively craft solutions.

***Patricia Mulroy, General Manager, Southern Nevada Water Authority
March 31, 2011***

The pilot run was part of an international agreement between the U.S. and Mexican governments as well as environmental groups on both sides of the border. In addition to the pilot run, the pact calls for actions to monitor the Cienega de Santa Clara, a wetland in Mexico maintained by agricultural drainage.