RECLAMATION
Managing Water in the West

January 2012
Mid-Pacific Region

Conservation Connection

$5 Million in Grant Funding Available: Applications Now Being Accepted!

Reclamation is now advertising a new Funding Opportunity Announcement (FOA) on grants.gov: The **Bay-Delta Restoration Program Water Use Efficiency Grants** offers two different opportunities to apply for grants; the Agricultural Water Conservation and Efficiency Grants and the CALFED Water Use Efficiency Grants.

Agricultural Water Conservation and Efficiency Grants

Reclamation and Natural Resources Conservation Service (NRCS) partner to provide complementary funding opportunities for improving water supply reliability through water conservation or improved water management, improving energy efficiency, and addressing endangered species and other environmental concerns.

This grant is a result of the Interim Federal Action Plan (IFAP) created in 2009, which addresses the actions to be taken during the California water crisis. The IFAP specifically focuses on water conservation and the alignment and coordination of federal water conservation programs to leverage limited resources and maximize benefits of water conservation in areas served by the Central Valley Project and State Water Project.

The objective of this Agricultural Water Conservation and Efficiency grant is to invite Indian Tribes, irrigation districts, water districts and other organizations with water or power delivery authority to leverage their money and resources by cost sharing with Reclamation on projects that save water, improve water management, and create new supplies for agricultural irrigation. Projects should also increase the capability or success rate of on-farm water conservation or water use efficiency projects that can be undertaken by farmers and ranchers through irrigation system improvements and irrigation efficiency enhancements.

Success Stories:

- *Installation of Pressure Regulating Float Valves*
- *Utilization of Pipeline Leak Detection Device*
- *Implemented Rapid Appraisal Process*

See how agencies utilized federal funding to implement these programs.

For more details see page 2

CALFED Water Use Efficiency Grants

The CALFED Bay-Delta Program is a unique collaboration among 25 state and federal agencies that came together with a mission: To improve California's water supply and the ecological health of the San Francisco Bay/Sacramento-San Joaquin River Delta. The Bay-Delta system serves water to 25 million Californians making it the single largest and most important source of water in California for drinking, irrigation, and industrial use.

A key element of the CALFED program and mission is water use efficiency. The CALFED Water Use Efficiency Grant was established to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. The goal of the CALFED Water Use Efficiency Grant Program is to accelerate the implementation of cost-effective actions that provide state-wide benefits through water conservation. Water use efficiency can reduce the demand for Bay-Delta water and can result in significant benefits to water quality, water supply reliability, and in stream flows.

Water conservation and water use efficiency are critical elements of any plan to address Bay-Delta water issues. With leveraged water sustainability grants, an important step will be taken towards increasing conservation for a more efficient use of water in California.

Applications are due by February 29, 2012. For more information on this FOA, please visit www.usbr.gov/mp/watershare/.

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***Conservation Connection* is going *GREEN*...**

This newsletter is going to be distributed by email and posted on our website. See how you can continue receiving the newsletter on **page 3.**

Water Conservation Success Stories: Lessons from the Field

Delano-Earlimart Irrigation District

In December 1999, Delano-Earlimart Irrigation District (DEID) began an extensive project to renovate each of its 625 farm turnouts serving District water users. Managing a system that was designed and constructed nearly a half century ago has its challenges from both an operational and efficiency standpoint. Aging turnouts were causing delivery reliability problems and increased maintenance costs to the District and ultimately to the grower.

The renovation project resulted in the installation of a new "up-and-over" design, with most delivery piping brought above the ground. New valves and meters were installed and are now all a standard size and design resulting in new turnouts being more accessible and user friendly. Another goal of the project was to provide for greater stability on ordered flow rates at each turnout. Installation of a pressure regulating float valve system can accomplish this. The float valve systems were funded in part by a 2007 Challenge grant.

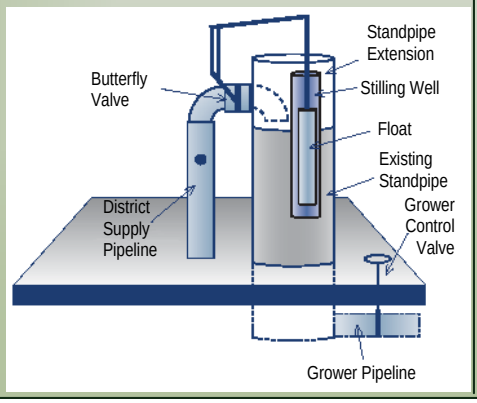
What is a pressure regulating float valve?
A pressure regulating float valve is a device that adjusts automatically to provide a constant flow of water regardless of flow-altering conditions on the District side or the farm side of a turnout.

What are the benefits?
The pressure regulating float valve gives growers the ability to turn water on or off 24 hours a day without waiting for District personnel to make the change.* Controlling when water is shut off allows the grower to stop flows when irrigation is done, saving time, energy and money by reducing excess water flows.

**Normal water ordering procedures must be followed.*

How does the pressure regulating float valve system work?

This diagram shows the components of a float valve system. It uses an additional butterfly valve that is operated by a float that rises and falls with the level of the water in the delivery stand. The float valve requires the installation of a new operating valve on the downstream, or grower side of the system. This allows the grower to make his or her own water changes at the end of an irrigation cycle.



Fluctuations in flow are due to changing pressures in the District's distribution system, or pipelines. These pressure changes can be caused by varying water levels in the Friant-Kern Canal, District pumps turning on and off or changes in flow rates in neighboring turnouts. This leads to either rising or falling water levels in the delivery stand. The float system is designed to react to these variations by keeping the water level in the stand at a constant level at all times.

System Improvements

In partnership with Reclamation, DEID had committed more than $2 million in a modernization program designed to create a delivery system based on their water user's irrigation schedule. DEID implemented many improvements that have resulted in increased water delivery flexibility without compromising reliability. Along with turnout improvements, DEID installed a remote telemetry system that allows central control of the District's 18 pumping stations as well as variable speed drive pump motors that help economize operations and save money. An internet-based water ordering system and hand-held data recorders help improve the process of placing water orders and collecting important data that helps keep the District's system running smoothly. The benefits are many: greater opportunities for grower flexibility; delivery system improvements; reduction of operational and maintenance costs – all while saving and improving the efficient use of our most precious resource – water.

As a result of these system improvements, DEID has seen a 14% reduction in water use.

East Bay Municipal Utility District

By: Dave Wallenstein

The gap between science and art in pipeline leak detection has begun to close recently at the East Bay Municipal Utility District (EBMUD), with the help of two grants from the Reclamation. EBMUD, a large water and wastewater utility serving a population of approximately 1.3 million people in the eastern San Francisco Bay Area, recently completed two large scale leak detection pilot projects. The utility has approximately 4,000 miles of small pipelines and 330 miles of large pipelines.

The two pilot studies focused on two separate ranges of pipe diameter. The Berkeley Pipeline Leak Detection Project used acoustic logger and correlators and focused on approximately 250 miles of smaller pipe ranging from two to twenty inches in diameter. The Aqueduct Leak Detection Project focused on approximately 85 miles of larger pipes and tunnels ranging from twenty inches to nine feet in diameter.

In the Berkeley project, 850 Gutermann loggers

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MID-PACIFIC REGIONAL OFFICE NEWS

NEW ADDITIONS TO THE WATER CONSERVATION TEAM

Gene Lee joined the Mid-Pacific Region Water Conservation Team in November 2011. He comes to the Division of Resources Management where the Water Conservation Team resides, from the Division of Planning where he spent the last eight years serving as a water quality specialist and then the Regional Water Quality Coordinator. Although his focus will change from addressing water quality issues in the region, especially salinity in the San Joaquin basin, he looks forward to working with the same group of stakeholders in a resources management capacity. Prior to joining Reclamation in 1999, Mr. Lee worked in the private environmental industry addressing environmental cleanup sites, drinking water quality issues, groundwater monitoring, hazardous waste testing, and water resources management.

Mr. Lee was born and raised in Sacramento and received a Bachelor of Science in Environmental Toxicology from the University of California, Davis. In his free time, Gene enjoys traveling, photography, cycling, hiking, and camping with his wife and three sons.

Angela Anderson also joined the Mid-Pacific Region Water Conservation Team in November 2011 and comes from an extensive urban water use background through the California Urban Water Conservation Council, Brown and Caldwell, and the cities of Napa and Sacramento. Over the course of 20 years in the water industry, she has designed, implemented, and managed water use efficiency programs and assisted agencies with theirs. Her knowledge spans from water resources, treatment, distribution and end-use and conservation, where she finds most of her enjoyment. Angela possesses experience in Best Management Practices (BMPs) programs for residential, commercial, institutional, and industrial customers; and on-site and off–site water recycling and reclaimed water processes.

Angela spends most of her free time cooking, painting, traveling, and spending time with her family, which includes 14 grandkids.

"Being able to help as many agencies throughout the region with implementing their water use efficiency efforts is my passion," says Angela.

Reclamation Going *GREEN*…

In consideration of the environment, less waste, reducing production costs, and providing a more flexible product, Reclamation will be publishing this newsletter electronically, effectively Jan 2012 (after this issue). It will also be posted on our WaterShare Website at:

http://www.usbr.gov/mp/watershare/index.html

If you wish to receive an email notification by adding you to our email list, please send your email address to:

aanderson@usbr.gov .

2011 Conservation and Efficiency Standard Criteria

Reclamation revised the Conservation and Efficiency Standard Criteria (Criteria) used for preparing 5-year Water Management Plans (Plans) for 2011.

The purpose of the Criteria is to promote, using the best available cost-effective technology and Best Management Practices (BMPs), the highest level of delivery water management achievable by Contractors and the implementation of water-use efficiency measures reasonably achievable by their customers. Section 210(b) of the Reclamation Reform Act of 1982 requires each district entering into a repayment contract or water service contract with Reclamation to prepare and submit Plans every five years with definite goals, appropriate water conservation measures, and timetables. Section 3405 (e) of the Central Valley Improvement Act (CVPIA) requires the Secretary of the Interior establish the Criteria to evaluate Plans and requires the Criteria be reviewed at least every three years and revised if necessary. Reclamation developed and distributes a Water Management Planner detailing the type of information required by the Criteria and providing examples of how BMPs have been implemented by other districts. The Water Management Planner is also updated to conform to the revised Criteria and can be found at

http://www.usbr.gov/mp/watershare/documents/Water_mgmt/index.html

A PowerPoint presentation which discusses the 2011 Criteria and edits made is available at our web site at

http://www.usbr.gov/mp/watershare/documents/Water_mgmt/index.html

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WaterSMART

WaterSMART grants are part of the strategic plan for implementing the Secure Water Act that includes the facilitation of basin-wide water management improvements. The Water Conservation Initiative includes two types of Challenge Grants that focus on water conservation and water use efficiency:

1. Water and Energy Efficiency Grants: Emphasize water use efficiency projects that produce "real water savings," improve water management by increasing the use of renewable energy or efficient energy use, address endangered species concern and create water banks/markets. http://www.usbr.gov/WaterSMART/weeg/prev.html
2. System Optimization Reviews: for system wide efficiency planning. http://www.usbr.gov/WaterSMART/sor/prev.html

Since 2004, WaterSMART has funded 249 Challenge Grant projects that, when coupled with local cost-shares, represent over $280 million in water system and water management improvement across the West. Reclamation has awarded 30 System Optimization Reviews for approximately $4.4 million.

Applications are due January 19, 2012.

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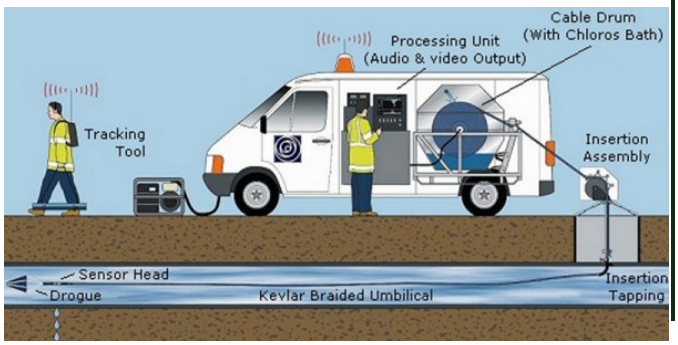
were magnetically attached to strategically selected pipeline appurtenances covering nearly all pipes within the City of Berkeley. Each logger sampled pipeline noise levels at five second intervals for a total of 2,400 samples daily. The loggers then assigned a leak index number to each location based on the distribution of the noise levels. EBMUD staff periodically downloaded the logger data over an 18-month study period then used correlators to pinpoint the location of any potential leaks identified by the loggers. The study of over 200 leaks during this period produced a wealth of information on the nature of leaks and provided valuable feedback on the effectiveness of using logger technology in water loss control.

The Aqueduct Project demonstrated and compared three different types of leak detection technologies on representative large transmission pipelines throughout EBMUD's untreated and treated water systems. The first of these technologies, the Sahara System, used a tethered parachute system to pull an acoustic sensor and an optional video camera through flowing pipelines with the purpose of providing real-time leak information. The second system, known as a SmartBall, used a free swimming foam ball to carry an acoustic sensor through flowing pipelines. Acoustical data and position information was downloaded from the SmartBall and used to analyze potential leak information. The third technology, the Echologics LeakfinderRT, used a modified correlation device specifically designed for use with hydrophones to correlate leaks based on acoustic signatures in pipelines. The first two technologies required insertion of equipment through existing appurtenances or new taps into active pipelines but the third used hydrophones that monitored sounds in the water column through open hydrants or other appurtenances. Each of the technologies, while successful in identifying leaks, had advantages and disadvantages and each are useful in their own way.



The success of these studies will enhance EBMUD's efforts to optimize its pipeline replacement programs and further develop its leak detection and water loss control programs. EBMUD is integrating lessons learned from these studies into the Supply Side portion of its Water Conservation Master Plan update.

For more information on this project please contact Dave Wallenstein at dwallens@ebmud.com.

San Luis Canal Company

By: Tracy Slavin

The San Luis Canal Company (SLCC) has been working in conjunction with the Irrigation Training and Research Center (ITRC) at California Polytechnic State University in San Luis Obispo on modernizing the company's canal facilities. In 2004, the District requested ITRC to perform a Rapid Appraisal Process (RAP) of the District facilities and water management. RAPs are conducted to allow for the systematic determination of various indicators in a 1 to 2 week period of time. The District then undertook a modernization process to improve their capability to add flexibility to their distribution system which stemmed from the SLCC RAP and resulted in the following objectives:

> ***What is a Rapid Appraisal Process (RAP)?***
>
> *RAP is a diagnostic tool with a fresh look at local and regional water issues through a systematic and independent assessment to provide an examination of water management by a variety of indicators. The indicators look at water balances, financial components, agricultural aspects of productivity and economics, and salinity impacts to find potential improvements and efficiencies that can be implemented.*
>
> *For more details on RAP, visit: http://www.itrc.org/projects.htm*

Development of a conceptual operations plan that resulted in most of the flow rate fluctuations being re-regulated to reduce water ordering lead times.

Conversions of long crested weirs and ITRC Flap gates to maintain tight control of water levels regardless of flow-rate changes.

Installation of interceptor canals to pick up drainage water and excess water from canals at designated spill/re-regulation points.

Construction of regulating reservoirs

Computerization of control at key sites.

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Technical Assistance Room at 2012 Water User Conference

The Water Conservation Team will again be hosting a technical assistance room at the 2012 Water User Conference. The 2012 Water User Conference is being held at the Eldorado Hotel and Casino in Reno, Nevada. Reclamation will be providing water conservation planning and technical assistance during the Water Users Conference. We are currently accepting requests for individual meetings on January 25 & 26, from 9 am – 12 pm and 1 pm – 5 pm in Eldorado Room 2516.

Please contact Melissa Crandell, 916-978-5208, mcrandell@usbr.gov to schedule an appointment.

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Installation of a SCADA system providing staff real-time information regarding key points throughout the system.

After the RAP, SLCC began implementing plans for data collection on flows and water quality throughout the conveyance system. These included installing flow measurement devices and gathering water quality information throughout the district along with the purchase of a GPS system to tie specific information to district facilities. Interviews with the canal operators were conducted to learn about the operations pool-by-pool and structure by structure. Finally, information about well salinity concentration and cost were collected and organized on a monthly basis to develop an understanding of management expenses, operating rules and salt load in the drainage water. Based on the information obtained from these activities, the District, working closely with its water users, developed a phased approach for modernizing the District's facilities. The phased plan spanned a period of over 8 years during which the District could combine its resources with available cost share funding from Reclamation and other sources. During the first seven phases of the plan, the District has been able to:

Automate the District's Central Reservoir's inlet and outlet Variable Frequency Drive Pumps and sluice gates by installing Supervisory Control and Data Acquisition (SCADA) instrumentation.

Automate the Control Structures on two of the District's main delivery canals in order to improve water level control to better meet downstream delivery requests.

Construct and install 25 long crested weirs and 9 ITRC flap gates throughout the District resulting in reduced water level fluctuations, improved water delivery reliability and flexibility, improved accuracy in the measurement and accounting of water. The final phase currently underway is the construction of a conveyance/drain re-circulation system that can re-route water to the District's Central Reservoir.

The ITRC in partnership with the Mid-Pacific Region, has made the RAP program available to all Central Valley Project customers.

Calendar of Events

USBR Mid-Pacific Region
2012 Water Users Conference
Eldorado Hotel and Casino
Reno, NV
Jan. 26-27, 2012
http://www.usbr.gov/mp/watershare/index.html

California Irrigation Institute
50th Annual Conference
Hilton Sacramento Arden West Hotel
Sacramento, CA
Jan. 30-31, 2012
www.caii.org

SBx7-7 Agricultural Stakeholders Committee Meeting
Center for Collaborative Policy
Sacramento, CA
Feb. 7, 2012
http://www.water.ca.gov/calendar/index.cfm?meeting=18102

For more information please visit
http://www.itrc.org/projects.htm
or Dr. Stuart Styles at ITRC.

Initial construction (above) and post construction (right) of vertical weir on Santa Rita Canal.

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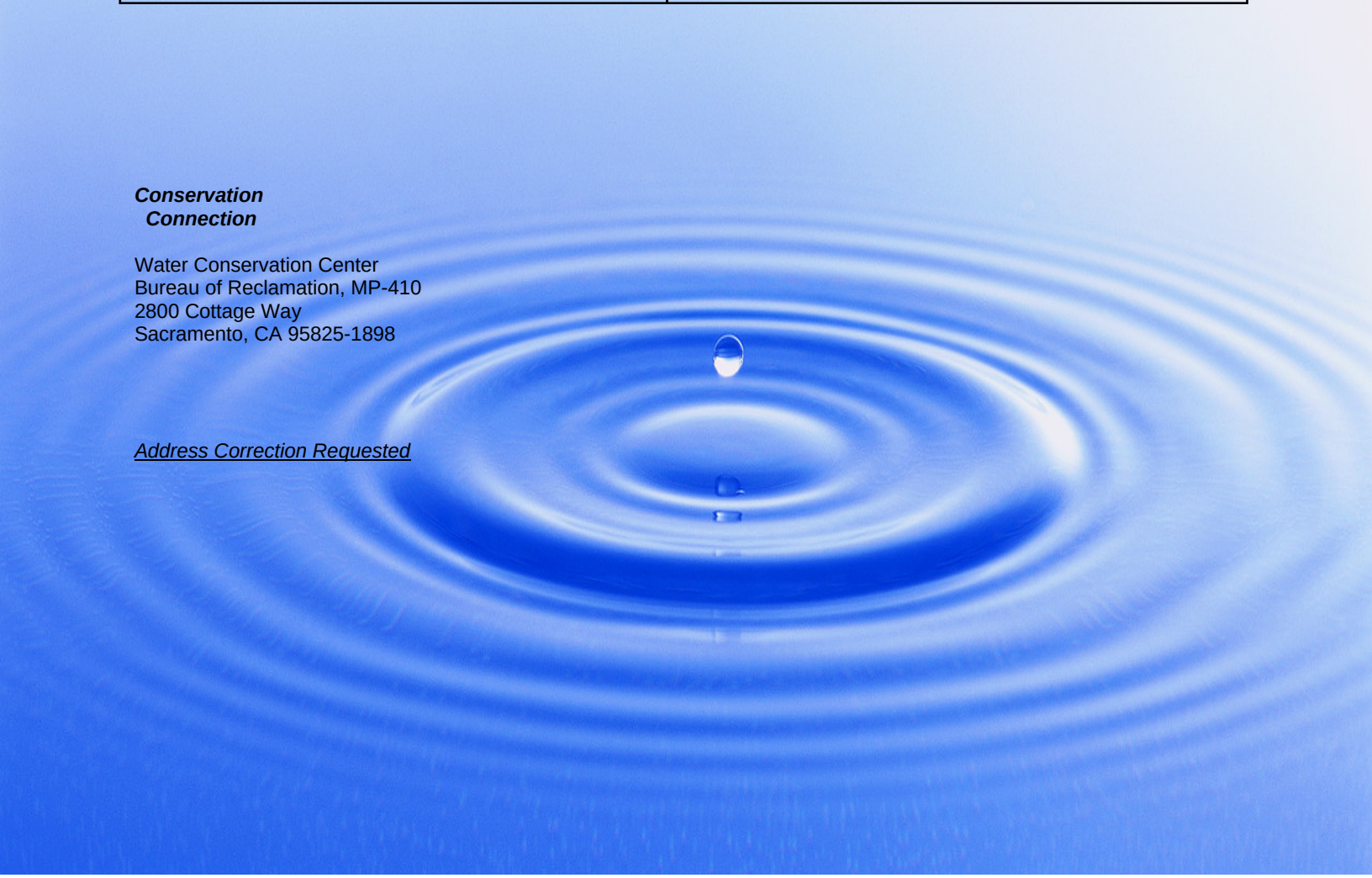

Conservation Connection

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Address Correction Requested