



FY1999 ANNUAL REPORT
FY2000 PROGRAM PLAN

WATER
CONSERVATION
FIELD SERVICES
PROGRAM

LOWER
CHICAGO
REGIONAL AREA

**WATER CONSERVATION
FIELD SERVICES PROGRAM**

**FY 1999 ANNUAL REPORT
AND
FY 2000 PROGRAM PLAN**

**Lower Colorado Regional Area
Lower Colorado Region
Bureau of Reclamation**

**FY 1999 ANNUAL REPORT
LOWER COLORADO REGIONAL AREA
WATER CONSERVATION FIELD SERVICES PROGRAM**

GENERAL PROGRAM DESCRIPTION

The Water Conservation Field Services Program (WCFSP) was implemented by the Bureau of Reclamation (Reclamation) in fiscal year 1997 to actively encourage water conservation, assist districts with their responsibility to develop conservation plans, and complement and support State and other conservation programs.

Components of WCFSP

The WCFSP provides an opportunity to develop partnerships with districts and encourage the development and implementation of the following: (1) quality water conservation plans; (2) strong information and education programs; (3) demonstration of innovative conservation technologies; and (4) effective efficiency measures.

Authority for Plans

The principal statutory authority for requiring the submission of conservation plans to Reclamation is the Reclamation Reform Act of 1982 (RRA), Section 210 (P.L. 97-293).

- Section 210(a) of the RRA requires the Secretary of the Interior to encourage water users to adopt water conservation measures.
- Section 210(b) of the RRA requires each district who has a water service contract with Reclamation to develop and implement a water conservation plan containing: (1) definite goals; (2) appropriate water conservation measures; and (3) a time schedule for meeting the water conservation goals.
- Section 210(c) of the RRA directs the Secretary of the Interior to coordinate with and involve others in water conservation efforts.

In addition, Part 417 of Title 43, Code of Federal Regulations, directs Reclamation's Lower Colorado Region (Region) to consult with Colorado River water users on an annual basis regarding water conservation and reasonable, beneficial uses of Colorado River water.

Submission of Plans

The first component of the WCFSP (development and implementation of sound conservation plans) is achieved by working with districts to put plans in place. Under existing Reclamation policy, conservation plans are to be developed or updated and submitted to Reclamation on a 5-year schedule. Through Reclamation's WCFSP, Area Offices work with the users in their respective geographic areas to encourage, facilitate, and assist in the development and implementation of conservation plans. Each Area Office is assigned a WCFSP Coordinator who has technical and financial resources to help ensure the timely submission and implementation of plans by users in their areas. While Reclamation does not approve plans, it has the responsibility to review and comment on plans to ensure that sound water conservation plans are adopted by districts.

Exceptions

Reclamation law states that all water users who have entered into a water service contract with Reclamation are required to submit conservation plans. There are two exceptions to this stipulation:

- (1) Users who receive less than 2,000 acre-feet (AF) of water per year from any Federal project; or
- (2) Users who serve a population of fewer than 3,300 people.

Recommended Content of Plans

Reclamation recommends that a plan contain information in sufficient detail to identify and evaluate the district's water management issues and opportunities for improvement in water use efficiency. The level of detail contained in a plan should be commensurate with each district's individual situation, size, and complexity and should support a district's decision as to which water conservation measures it will implement.



Photo 1. Urban Conservation Guidelines

Water conservation measures are those methods, techniques, policies, practices, procedures, activities, institutional arrangements, structural projects, physical facilities, equipment, or devices which reduce water consumption, reduce water withdrawal or diversion, reduce water loss or waste, improve water use efficiency, or increase water recycling or reuse.

Reclamation recommends nine elements for inclusion in a district's water conservation plan. Reclamation views these elements as representative of the primary components of an effective water management and conservation planning process. This approach is intended to support

formulation of water conservation *goals*, identification of appropriate and economically feasible conservation *measures* to meet those goals, and development of a *time schedule* for implementation.

The nine elements recommended for inclusion in conservation plans are as follows:

- Description of the district
- Inventory of water resources
- Water management problems, opportunities, and goals
- Existing water conservation measures
- “Fundamental” water conservation measures
- Additional water conservation measures
- Selected measures and projected results
- Environmental review
- Implementation schedule and budget.

The “fundamental” water conservation measures are something that each district determines based on individual needs and situations. Reclamation recommends that these measures address (1) water measurement and accounting; (2) water pricing; (3) information and education; and (4) the designation of a contact person responsible for conservation activities.

Plans are very much living documents, and Reclamation encourages districts to revise or update their plans throughout the 5-year implementation period as districts' needs, situations, goals, priorities, and expectations may change.

Making Plans Work for the District

The other three components of the WCFSP (development and implementation of strong information and education programs, demonstration of innovative conservation technologies, and effective efficiency measures) are most commonly met by implementing conservation plans once they are in place.

As mentioned earlier, Reclamation law states that plans are to contain definite goals, appropriate conservation measures to implement the goals (Best Management Practices (BMP's) of plans), and a 5-year time schedule for meeting the plan's goals. This helps ensure that the development of plans is not merely a paper exercise but a realistic method for achieving the goals of the district. WCFSP Coordinators for each Reclamation Area Office have resources available to provide technical and/or financial assistance to help districts develop their 5-year plans and implement the goals and measures contained within those plans.

LOCAL PROGRAM DESCRIPTION

Reclamation's Lower Colorado Region consists of portions of California, Arizona, Nevada, Utah, and New Mexico. The Region contains four Area Offices whose responsibilities include working with the water users within individual Area Office boundaries to administer the WCFSP. The four Area Offices within the Region include the Lower Colorado Regional Area (LCRA), the Phoenix Area Office, the Southern California Area Office, and the Yuma Area Office.

Entitlement to Colorado River Water

The seven Lower Basin States of California, Arizona, Nevada, Utah, New Mexico, Colorado, and Wyoming and the Republic of Mexico rely on the Colorado River to meet their water supply needs. In 1922, the States entered into an interstate compact which included a provision for the equitable division and apportionment of Colorado River water.

The 1964 U.S. Supreme Court Decree in *Arizona v. California* established several additional dimensions to the apportionment of Colorado River water, including apportionments to the States of California, Arizona, and Nevada. It was ruled that of the first 7.5 million AF of mainstem water consumed in the Lower Basin, California was entitled to a consumptive use of 4.4 million AF/year; Arizona to 2.8 million AF/year; and Nevada to 0.3 million AF/year.

The Colorado River Basin Project Act of 1968 authorized the Central Arizona Project, providing for allocations to the Lower Basin States in years of insufficient mainstream water to satisfy the specified consumptive use of 7.5 million AF/year.

In 1995, water users utilized the full 7.5 million AF/year allocation, providing all stakeholders with significant incentive for further implementation of prudent water management.

Lower Colorado Regional Area

Location

The LCRA boundaries are comprised of the upper half of the Region, which includes the Colorado River and tributary areas from Lees Ferry to Davis Dam, with the exception of the Little Colorado River drainage. The tributary areas include portions of southern Nevada, southern Utah, and northwestern Arizona (see General Location Map on page 5).

Elevations range from 600 feet near Davis Dam to the mountain peaks of 12,000 feet above mean sea level near Las Vegas, Nevada. The average annual rainfall is very low for the majority of the LCRA, ranging from 200 millimeters (mm) or less in the lower desert areas to in excess of 800 mm in the mountains.

Vegetation, sparse throughout most of the LCRA due to low precipitation and warmer climactic conditions, consists mostly of typical desert plants. There are some forest areas in the LCRA; however, they are limited in size and are typically surrounded by desert terrain.

Colorado River Water Users

Water users within the LCRA who have water service contracts with the Secretary of the Interior include the following:

In Nevada:

- Basic Management/Basic Water Company (BMI)
- Big Bend Water District
- Boulder Canyon Project
- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Colorado River Commission of Nevada (Robert B. Griffith Water Project)
- Las Vegas Valley Water District
- National Park Service
- Nevada Department of Fish and Game
- Nellis Air Force Base
- Pacific Coast Building Products (PABCO Gypsum)
- Southern California Edison Company
- Southern Nevada Water Authority (SNWA)

In Arizona:

- Boy Scouts of America
- Bureau of Land Management
- City of Bullhead City
- City of Kingman
- City of Lake Havasu City
- City of Parker
- Golden Standard Mines
- Havasu Water Company
- Lake Havasu Irrigation and Drainage District
- Marble Canyon
- McAlister
- Mohave County
- Mohave County Water Authority
- Mohave Water Conservation District
- National Park Service
- Western States Minerals

In California:

- City of Needles

Water Supply and Use Within the LCRA



Photo 2. Residential water meter

The vast majority of water use in the LCRA is municipal and industrial (M&I), with little agricultural use in the tributary areas of the Colorado River. Most of the M&I water use is concentrated in the Las Vegas metropolitan area, the largest urbanized area within LCRA boundaries. Other municipalities within the LCRA include St. George (Utah), Kingman, Lake Havasu, and Bullhead City (Arizona), who rely on groundwater and tributary flows of the Colorado River.

Local Problems and Issues

Most of the issues surrounding WCFSP administration in the LCRA pertain to southern Nevada. Nevada is the driest state in the nation as well as one of the fastest-growing states (current figures show that 5,000 people move to southern Nevada each month), with a population of over 1 million people and a limited water supply of 300,000 AF/year to meet the needs of its residents. The majority of Nevada's Colorado River entitlement is diverted to southern Nevada, providing between 80 and 90 percent of its water supply, which is supplemented with local groundwater

supplies totaling 45,500 AF/year.

Local problems and issues at the forefront of community awareness include securing a sustainable water supply for southern Nevada as it quickly approaches its Colorado River entitlement. In 1998, Nevada utilized 245,303 AF of water in consumptive use. With 80 to 90 percent of Nevada's water supply being utilized in southern Nevada, northern Nevada is concerned that, as southern Nevada's population continues to grow at such a rapid rate and the maximum entitlement of 300,000 AF/year is approached, southern Nevada will need more water within a few short years and may look to northern Nevada (who receives its water from sources other than the Colorado River) for additional water supplies.

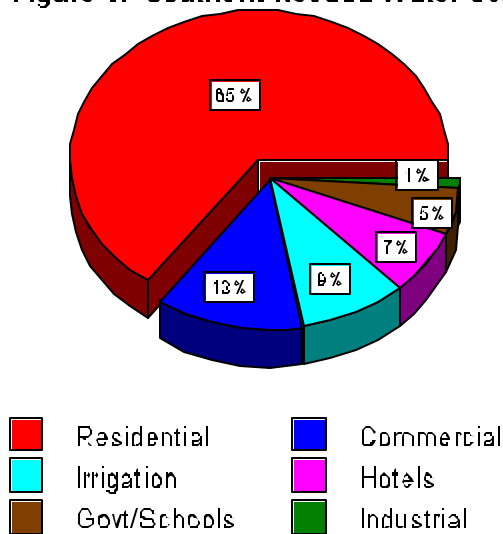
Negotiations are currently taking place among Nevada and other Lower Basin States to ensure a sustainable future water supply for southern Nevada as the population continues to grow. In October 1999, Secretary of the Interior Bruce Babbitt announced the publication of a final rule under which the States of Nevada, Arizona, and California could negotiate to bank Colorado River water for use at a later date. Approval of a plan among these states could result in a 30-year reprieve in meeting southern Nevada's growing water needs. Once Nevada reaches its full 300,000 AF/year allocation, it could begin drawing additional water from Lake Mead. Arizona would then draw an equivalent amount from its aquifers to compensate for the additional water being used by Nevada.

Local Priorities, Goals, and Objectives

Nevada's water supply issues provide the framework for LCRA priorities, goals, and objectives. As Nevada continues to approach its annual Colorado River entitlement, the priority for the LCRA is to first serve the needs of southern Nevada municipalities as they grapple with water management problems and opportunities. By working closely with the SNWA to assist with implementation of its 1999 conservation plan, Reclamation can concentrate on the areas of southern Nevada water use identified as needing the most attention with regard to conservation.

Foundation for Conservation in Southern Nevada. Figures compiled by the SNWA show the following breakdown for urban usage in southern Nevada:

Figure 1. Southern Nevada Water Uses



SNWA has a variety of incentive and retrofit programs in place to address the above-mentioned categories of water users with the goal of reducing overall water consumption in southern Nevada. These programs will be discussed in more detail under Common and New Measures Employed by Districts.

Figure 2. Residential Water Uses

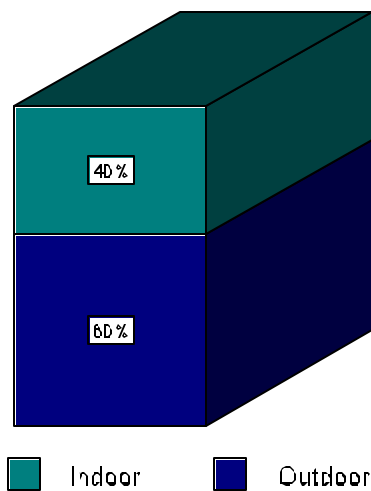


Figure 2 illustrates southern Nevada's residential water use, which is broken down as follows:

Outdoor water use consists of mostly irrigation of landscapes. Indoor water use consists of the following:

Toilets	15 percent
Showers	13 percent
Laundry	5 percent
Faucets	5 percent
Dishwasher	<u>2 percent</u>
Total	40 percent

Secondary LCRA Priorities, Goals, and Objectives. While southern Nevada poses the most pressing conservation needs of the LCRA, secondary priorities, goals, and objectives of the LCRA program include the needs of users in northwestern Arizona and southern Utah. Reclamation has worked to make itself more visible to the Arizona and Utah users in FY 1999 to plant the seed for future conservation partnering opportunities.

As a result, the LCRA sponsored a landscape guide published exclusively for Mohave County residents and University of Arizona workshops. This guide is the first publication of its type in Mohave County, which contains watering guidelines and planting specifications for vegetation exclusive to that community.

Other discussions were held in 1999 between the LCRA and the University of Arizona to provide groundwater flow models and training for 85 fourth grade classrooms in northwestern Arizona. A cooperative agreement will be executed in FY 2000 to conduct this Project WET (Water Education for Teachers) activity with the University of Arizona.

The LCRA staff's discussions with southern Utah in 1999 led to discovery of a conservation need/opportunity in Zion National Park. Plans are underway to implement a demonstration project in FY 2000 which will address the conservation needs of the Park, with visible results demonstrated to thousands of visitors each year.

In FY 2000, the LCRA will continue to contact the water users of northwestern Arizona and southern Utah in an effort to provide additional conservation planning assistance, further develop the information and education programs in place, and search for new projects and activities which demonstrate innovative technology and effective efficiency measures.

Emphasized Activities for LCRA. The most immediate conservation needs of the LCRA lie within southern Nevada. Activities to be emphasized to address the needs of southern Nevada will revolve around urban uses (that is, incentive and retrofit programs; information and education activities; and commercial, industrial, and institutional audits). The LCRA staff will continue to work with the SNWA to minimize water consumption through implementation of its comprehensive 1999 conservation plan (a collective effort among the seven member agencies) and providing technical and/or financial assistance, as needed, to implement the SNWA's conservation plan measures (BMP's). SNWA's BMP's are discussed in more detail under Common and New Measures Employed by Districts.

Secondary emphasis will be placed on developing partnerships with the users of Arizona and Utah in order to provide technical and/or financial assistance to meet the respective needs of their areas. Populations of the Arizona and Utah communities are much smaller than southern Nevada, placing fewer demands on current water supplies. Since most of the water use in northwestern Arizona and southern Utah consists of tributary flows of the Colorado River and not direct diversion, it is anticipated that their conservation needs and issues are less urgent than southern Nevada's current water management needs and issues.

PROGRAM ACCOMPLISHMENTS

In FY 1999, the LCRA achieved nearly all of its goals with respect to conservation planning assistance, information and education activities, demonstration of innovative technologies, and implementation of effective efficiency measures. Specific measures were identified and implemented to support achievement of FY 1999 LCRA goals in the following areas:

Conservation Planning Assistance

Consulted with LCRA water users regarding annual Colorado River diversions and status of water conservation efforts.

Provided technical reviews of SNWA's comprehensive water conservation plan in three phases. Comprehensive plan approved by SNWA Board resolution in March 1999.

Provided technical review of draft water conservation plans of BMI and Lake Havasu. Working with Needles, NPS, Nellis Air Force Base, and PABCO to put final plans in place. Followed-up with Bullhead City on their final conservation plan and its implementation.

Provided technical review of Nevada State Water Plan. Participated in discussions with State Water Planner to interface the WCFSP with State requirements.

Participated in monthly SNWA conservation workgroup meetings. Also held one-on-one consultations with the City of Boulder City.

Participating in Las Vegas Urban Resources Partnership meetings since April 1999.

The SNWA, an organization of seven urban water users located within the LCRA, received the Commissioner's 1999 Water Conservation Award for Conservation Planning in recognition of development and implementation of its 1999 comprehensive water conservation plan and water conservation goals set and achieved.

Information and Education

Sponsored November/December 1999 water conservation issue of *Wild Outdoor World* magazine and activity booklet for fourth grade students. Provided \$10,000 for the effort; distributed 10,000 copies of publication to Project WET-participating schools within the LCRA.



Photo 3. Educational conservation materials

Sponsored 1 month of Nevada's annual Water Education Calendar. Distributed 300 copies to local schools in exchange for \$2,000 in grant monies.

Sponsored Backyard Conservation Guide for Southern Nevada. Provided \$5,000 in exchange for 5,000 copies of publication. Publication distributed to local nurseries, chambers of commerce, public libraries, and neighborhood groups.

Prepared Denver service agreement for development and installation of water conservation software game tailored to southern Nevada's water issues. Provided \$27,650 for development and installation of five kiosk environments at Hoover's Visitor's Center.

Completed agreement to sponsor Nevada's Water Resource Map, currently in preparation. Will distribute to local schools upon completion of product. Provided \$10,000 for the effort in exchange for 2,500 copies of the map upon publication.

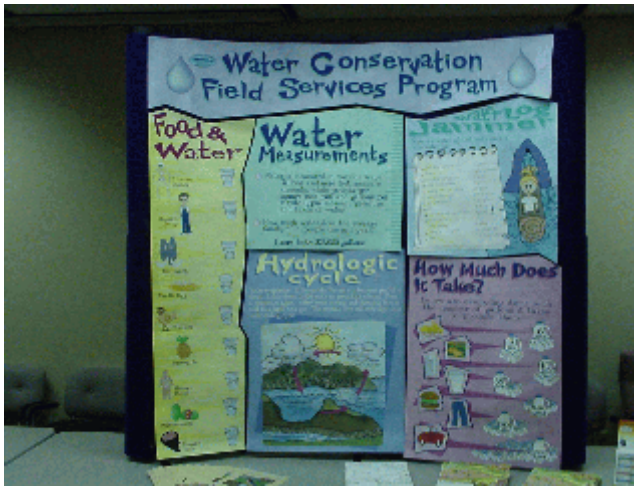


Photo 4. Conservation display for children

Developed water conservation display for children which included information on the hydrologic cycle and water use associated with everyday household tasks.

Provided water conservation display, hand-outs, and verbal information for approximately 100 children at Reclamation's annual Kids' Day on August 5, 1999.

Sponsored publication of Lawn Care Watering Guide in local newspaper through December 1999.

Distributed 2,000 copies of U.S. Geological Survey water resource maps during FY 1999 in response to requests for educational resources for grade and middle school students.

Completed agreement to sponsor May/June 2000 issue of *Wild Outdoor World* magazine and activity booklet on Big Rivers. Provided \$20,000 for the effort in exchange for 20,000 copies of the publication, which will be distributed to schools within the LCRA in FY 2000.

Held discussions with the University of Arizona to provide groundwater models for 85 classrooms in northwestern Arizona schools in FY 2000. LCRA and University staff will attend training sessions to train teachers on utilization of groundwater model in classroom.

Wrote three articles for Reclamation's electronic newsletter. One article was devoted to the purpose and benefits of the WCFSP; one article focused on the SNWA-USBR Xeriscape Conversion Study; and one article focused on the UNR-USBR Water-Efficient Plant Research Demonstration Project.

Implementation of Innovative Technologies/Effective Efficiency Measures

SNWA-USBR Xeriscape Conversion Study

Worked to completed modification to SNWA-USBR Xeriscape Conversion Study agreement, providing \$40,000 to extend parameters of data collection (dataloggers, analysis and interpretation, reporting, and development of a video for Study participants).

First report of data analysis completed, showing a 41 percent savings in water consumption by the Study participants who converted their landscapes from turf to Xeriscape.

Provided interview addressing Study progress for local Water Ways television program, which aired during the month of July 1999.

Completed financial audit of Study in August 1999.

Secured and reviewed annual progress and expenditure reports.



Photos 5 and 6. Converted Xeriscape sites in Las Vegas valley.

NPS-USBR Landscape Conversion Study

Completed modification to provide \$18,000 for completion of designs and specifications for landscape conversions at Echo Bay and Cottonwood Cove campgrounds.

Outlined schedule for construction in FY 2000.

Secured and reviewed annual progress and expenditure reports.

SNWA-USBR Horizontal Axis Washing Machine Study

Developed and completed agreement with SNWA to conduct a 1-year pilot study on front-loading washing machines in the Las Vegas valley. Conducted research on manufacturers, acceptable rebates for Study participants, and Study parameters. Reclamation has contributed \$10,050 for this effort, scheduled for completion June 30, 2000.

UNR-USBR Water-Efficient Plant Research Study

Developed and completed agreement with UNR to conduct a 3-year water-efficient plant research Study which will provide for an additional 10 trees, 10 shrubs, and 10 groundcovers to the list of sustainable, drought-tolerant vegetation available to southern Nevada residents for landscapes and conservation planning. Contributed \$16,650 to kick-off the Study in FY 1999.

Zion National Park Landscape Conversion Study

Participated in discussions with NPS to implement Study in FY 2000. Will provide \$20,000 for conversion of irrigation systems and replacement of non-native vegetation.

Mead Landscape Demonstration Project

Participated in concept development of a conservation demonstration project related to irrigation and landscaping on Federal property for public education purposes. Acquired services of landscape architect to prepare plans for subject Project (to be completed in FY 2000). Participated in meetings with landscape architect and management to review/discuss plans for Mead Project.

Success with Plan Submission and Content

All districts required to submit conservation plans in the LCRA are on schedule with development and implementation of their plans, with the exception of one district. This district has submitted a draft plan but needs supplemental information to complement their draft before a final plan can be adopted. Several districts who are not required to submit conservation plans under WCFSP criteria have agreed to prepare and implement conservation plans. The content of plans submitted have been of generally high quality and in accordance with Reclamation's recommended nine elements.

Efforts to Implement Effective Measures

Results of LCRA efforts to implement districts' plan measures which support plan goals have been encouraging. The LCRA has several demonstration and effective efficiency measure projects completed or underway, with more projects scheduled for implementation or continuation in FY 2000.

Correlation Between District Plans and LCRA Goals

The goals and measures contained in conservation plans submitted to the LCRA have been directly related to the success of the LCRA program accomplishment. For the past 3 years, LCRA goals have been framed around development of sound plans (conservation planning assistance); implementation of plans' goals and measures (demonstration and effective efficiency measure projects); and development of a strong education program (information and education).

Common and New Measures Employed by Districts

The vast majority of LCRA water users are urban. Most of the users of northwestern Arizona and southern Utah either receive tributary flows of the Colorado River or are not utilizing their Colorado River allocations. Therefore, in order to address measures utilized by districts, focus will be placed on the southern Nevada water users. Measures, or BMP's, employed by the SNWA and its member agencies in FY 1999 included the following:

- Water measurement and accounting system
- Incentive pricing and billing
- Water conservation/efficiency coordinator
- Information and education program
- Distribution system audit program
- Customer audit/incentive program
- Commercial and industrial audit/incentive program
- Landscape programs
- Wastewater management/recycling program
- Fixture replacement programs
- Plumbing regulations
- Water shortage contingency plan.

Specific programs and activities are in place to support each of the BMP's. For instance, the SNWA-USBR Xeriscape Conversion Study is an activity under SNWA's landscape programs BMP.

SNWA is implementing the following new activities to support its measures in FY 1999/2000:

- Horizontal Axis Washing Machine Program
- Leak Awareness Program
- Water Smart Technology Program
- Datalogger Analysis Program
- Database Management Needs
- Water Efficient Governmental Agencies Program
- Ultra Low-Flow Toilet Replacement Program
- Visitor Center Initiative

The SNWA has set a conservation goal of 25 percent by 2010. In 1998, the Las Vegas valley achieved 15.4 percent, surpassing its goal of 14.8 percent. In 1999, the annual conservation goal is 17.0 percent. Over the summer, 16.1 percent was achieved towards its conservation goal. Final 1999 results of conservation will be calculated in January 2000.

Progress with Districts in Adopting Fundamental Measures

The four fundamental measures, identified and recommended by Reclamation for inclusion in conservation plans, are (1) water measurement and accounting; (2) incentive pricing structure; (3) information and education programs; and (4) designation of water conservation contact persons. To date, all plans submitted to the LCRA for review and comment have addressed these four fundamental measures. There have been no major problems in working with districts in the LCRA to adopt the fundamental measures.

Summarized LCRA Performance Indicators for FY 1999

Table 1 represents a compilation of the WCFSP planning indicators.

Table 1. Conservation Planning Indicators		
Number of districts required to prepare/submit plans	14 (5 users not drawing Colo River allocation)	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, SNWA, Bullhead City, Kingman, Lake Havasu, Mohave County, MCWA, MWCD, Needles
Number of acres/water users/population represented by RRA districts required to submit plans	<100,000 ac 14 users >1 million population	
Number of districts with current plans	3 draft 7 final	Draft: BMI, PABCO, Lake Havasu Final: Big Bend, Boulder City, Bullhead City, Henderson, North Las Vegas, LVVWD, SNWA
Number of districts overdue for plan development or update	1	BMI (draft complete; final late)
Number of districts submitting plans in FY 1999	8	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, SNWA, Lake Havasu
Number of acres served/population served by districts submitting plans	-0- ac >1 million population	
Number of conservation plans reviewed by Reclamation in FY 1999	8	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, SNWA, Lake Havasu
Number of districts committed to developing/updating plan	12	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, NPS, PABCO, SNWA, Bullhead City, Lake Havasu, Needles

Table 2 represents a compilation of WCFSP program assistance indicators.

Table 2. Program Assistance Indicators		
Number of water districts/entities assisted with conservation planning	11	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, NPS, PABCO, SNWA, Lake Havasu, Needles
Number of water districts/entities assisted with conservation education	20	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, NPS, PABCO, SNWA, Lake Havasu, Needles, State of Nevada, U of A Cooperative Extension, UNR Cooperative Extension, Clark County Conservation District, Watercourse and International Project WET, Hoover Dam Visitors' Center, School Districts of Clark, Mohave, and La Paz Counties
Number of water districts/entities assisted with conservation demonstrations	3	SNWA (and member agencies), NPS, UNR Cooperative Extension
Number of water districts/entities assisted with conservation implementation	3	SNWA (and member agencies), NPS, UNR Cooperative Extension
Number of districts assisted in developing and implementing WC measures	11	BMI, Big Bend, Boulder City, Henderson, North Las Vegas, LVVWD, NPS, PABCO, SNWA, Lake Havasu, Needles
Number of districts with one-on-one meetings to review plans/explain WCFSP	15	BMI, Big Bend, Boulder City, Henderson, Las Vegas, North Las Vegas, CRC, LVVWD, NPS, PABCO, SNWA, Lake Havasu, MCWA, MWCD, Needles
Number of conservation measures/programs implemented by water districts/entities	12 average	
Number of water districts/entities assisted with fundamental measures	14	BMI, Big Bend, Boulder City, Henderson, Las Vegas, North Las Vegas, CRC, LVVWD, NPS, PABCO, SNWA, Lake Havasu, Needles, Nellis AFB
Number of water districts/entities implementing fundamental measures	15	BMI, Big Bend, Boulder City, Henderson, Las Vegas, North Las Vegas, CRC, LVVWD, NPS, Nellis AFB, PABCO, SNWA, Lake Havasu, Bullhead City, Needles

PROGRAM RESOURCES

Assessment of Staffing and Budget

In FY 1999, the LCRA administered its WCFSP by dedicating one full-time Water Conservation Coordinator to establish goals for FY 1999, implement conservation activities to meet the 1999 goals, work directly with LCRA water users to develop and implement plans, and manage day-to-day activities of the program.

Support staff were utilized, as needed, to accomplish the overall goals and needs of the LCRA program as follows:

- 1 staff day of the Regional Water Conservation Manager, who attended the annual Colorado River diversion meeting with southern Nevada users
- 6 staff days for Regional Office clerical and printing staff to assist with correspondence preparation and print program documents;
- 5 staff days of the Regional Office illustrator who created report covers and a children's display;
- 1 staff day of a Regional Office geographic information specialist to prepare a map of the LCRA geographical area;
- 4 staff days for Regional Office contracting staff to discuss and concur with agreement development and execution;
- 7 staff days of a Regional Office budget analyst who oversees the Water Management and Conservation (WMC) and Efficiency Incentives Program (EIP) accounts which fund the LCRA program;
- 4 staff days of Regional Office finance staff to conduct a financial audit of the SNWA-USBR Xeriscape Conversion Study;
- 15 staff days of a statistician from Denver, who provided technical assistance on the SNWA-USBR Xeriscape Conversion Study; and
- 10 staff days of a graphic illustrator and programmer from Denver, who provided technical assistance for development of a southern Nevada water conservation software program on CD-ROM for installation at the Hoover Dam Visitors' Center.

Funding for the LCRA program in FY 1999 consisted of \$145,000 in WMC funds and \$134,000 in EIP funds.

Planned and Actual Resources

Table 3 presents an accounting of program resources utilized in FY 1999. Table 4 shows the budget resources for the LCRA in FY 1999.

Table 3. Staff Resources		
Total number of Reclamation staff days planned for FY 1999		290
WCFSP Coordinator staff days used		250*
Support Staff staff days used	Area Office	-0-
	Regional Office	28
	Denver Office	25
Total number of Reclamation staff days used in FY 1999		303

Table 4. Budget Resources				
		WMC	EIP	Totals
Technical Assistance (staff and other)	Budgeted	\$96,000	\$ 22,650	\$118,650
	Expended	89,244	14,220	\$103,464
Financial Assistance (grants and other)	Budgeted	49,000	111,350	\$160,350
	Expended	49,000	111,350	\$160,350
Total WCFSP Program	Budgeted	145,000	134,000	\$279,000
	Expended	138,244	125,570	\$263,814
Total Program Accomplishment		95.34%	93.71%	94.56%

Coordinator and support staff days used in FY 1999 were in alignment with staff days planned.

PROGRAM EVALUATION

The WCFSP in the LCRA has been in existence since October 1, 1996. The program got off to a fairly slow start in the LCRA in FY 1997. Funding for the LCRA program was initiated at \$145,000, and the dedication of 1 full FTE was devoted to LCRA program accomplishment in May 1997. The LCRA held workshops with all 32 water users in the area and started building up the program with demonstration, efficiency measure, and information and education activities to complement development and implementation of conservation plans in the area. In FY 1999, combined WMC and EIP monies for LCRA administration totaled \$279,000.

The LCRA continued to meet regularly with water users in the area to assist with development and adoption of strong conservation plans. As the fiscal year came to a close, the LCRA staff was on track with development of all required conservation plans, with the exception of one district. The LCRA has commitments from several water users in the area to submit and implement conservation plans even though they are not required by law to do so. The LCRA was able to continue progress or implement five demonstration and effective efficiency measure projects and sponsored 10 information and education activities.

The goals that the LCRA has set to meet the needs of local water users have been appropriate and in alignment with program resources. Plans developed and implemented, to date, have been instrumental in saving considerable quantities of water in the LCRA; results are quantifiable and measurable, as reflected in this year's and previous years' accomplishment reports and mid-year assessments.

TABLE 5. SUMMARY OF LCRA FY 1999 GOALS

Goal		Measure	Status
Goal 1	All required districts have timely, completed conservation plans in place	Meet with/follow-up with LCRA users to ensure timely submission of plans. Review all plans for recommended content. Provide technical/financial assistance to users to implement goals of plans	All LCRA plans on schedule, with exception of 1 district
Goal 2	Save 1 percent of Colorado River used by SNWA businesses/residents	Continuation of Xeriscape Conversion Study. Gather and interpret data to measure water savings of converted sites against turf sites.	3,000 AF/year saved, or 41 percent of prior consumptive use
Goal 3	Save 70 percent of water being used at two LMNRA campground sites	Continuation of NPS-USBR Landscape Conversion Study at Echo Bay and Cottonwood Cove campgrounds	164 AF/year saved at two campground sites
Goal 4	Educate public in water-wise gardening methods	Washington County demonstration gardens	Completed (funded by UC Region)
Goal 5	Save 1,200 AF/year at Zion National Park	Discussions held with NPS for implementation of Landscape Conversion Study with retrofit to irrigation and landscape areas.	Scheduled for implementation in FY 2000
Goal 6	Educate public in water-wise gardening methods	Implementation of UNR-USBR Water-Efficient Plant Research Demonstration Project	Study to provide for additional 10 trees, 10 shrubs, and 10 groundcovers to southwest vegetation available
Goal 7	Reduce indoor water consumption by southern Nevada's residents	Implementation of pilot program using horizontal axis washing machines	Study implemented; assisting in achieving annual conservation goal of 17.0 percent in 1999
Goal 8	Develop conservation software pertinent to southern Nevada's needs	Working with Denver TSC staff to develop and install software at Hoover Dam Visitors' Center	In progress; scheduled for completion in FY 2000
Goal 9	Sponsor magazine addressing conservation	Provided \$10,000 for November/December 1998 conservation issue of <i>Wild Outdoor World</i> magazine and activity booklet	10,000 copies distributed to fourth grade students in LCRA
Goal 10	Sponsor workshops	Four Project WET workshops held to train teachers on program curriculum in southern Nevada area	Completed

TABLE 5. SUMMARY OF LCRA FY 1999 GOALS			
Goal 11	Sponsor conservation newspaper	Sponsor production of <i>Bare Essentials for Kids</i> newspaper, aimed at educating students in grades 2 through 8.	Postponed; publisher not ready for distribution in Nevada
Goal 12	Sponsor water resources map for Nevada	Provide \$10,000 to State of Nevada to assist with development costs associated with map	Map development in progress; to be distributed in FY 2000.
Goal 13	Train 2 percent of local teachers	Distribute Hydroexplorer software program to local elementary schools to educate students on Colorado River conservation issues	Distributed 100 copies of software program to local schools
Goal 14	Update website	Provide LCRA program issues and information for Colorado River stakeholders	Completed
Goal 15	Sponsor calendar	Sponsor 1 month of Nevada's annual Water Education Calendar	Provided \$2,000; distributed 300 copies of calendar
Goal 16	Publish newsletter	Keep water users and other interested parties informed of WCFSP activities and opportunities	Postponed; substituted provision of three articles to Reclamation's electronic newsletter

As Reclamation moves forward into its fourth year of program implementation in FY 2000, the LCRA will continue to focus on the four priority areas of the WCFSP: (1) conservation planning assistance; (2) demonstration of innovative technologies; (3) implementation of effective efficiency measures; and (4) information and education. The LCRA will continue meeting regularly with water users in the area to develop stronger partnerships, and will also continue to provide technical and financial assistance to water users as they develop and implement their conservation plans. The LCRA staff intends to continue progress on five demonstration projects, with plans to implement two new demonstration and effective efficiency measure projects in FY 2000. The LCRA has scheduled three new information and educational projects in FY 2000 in addition to ongoing educational program efforts.

Progress in the LCRA, since the WCFSP was implemented in FY 1997, has been steady. The dedication of 1 full FTE to the LCRA program has been adequate to date. Funding resources for the LCRA program have been growing in small increments since the WCFSP was implemented; total funding available for the LCRA program in FY 2000 is \$435,000. However, in order to continue to meet the needs of *all* of the water users in the LCRA in future years, stability of funding will be crucial to maintain WCFSP assistance to LCRA water users.

Local issues in the southern Nevada will most likely continue to be the pressing needs of the LCRA for the next several years. Where we want to go from here is to “round out” the LCRA program by working more with the water users in northwestern Arizona and southern Utah to assist in meeting the needs of all of the water users located in the LCRA.

PROGRAM OUTLOOK

The outlook for the LCRA is contained in the following FY 2000 Program Plan. The Plan contains the LCRA’s goals and priorities, scheduled activities, anticipated results, and program resources available to meet the needs of the area in FY 2000.

**TABLE 6. FY 2000 PROGRAM PLAN
LOWER COLORADO REGIONAL AREA
WATER CONSERVATION FIELD SERVICES PROGRAM**

(1) PRIO/ CAT	(2) GOALS	(3) MEASURES	(4) TARGET DATES	(5) PARTNER	(6) COST	(7) FTE	(8) RESULTS
1.H- TA/FA	All required districts have timely, completed water plans in place	Meet with/follow-up with all users required to submit plans to ensure timely submission of plans. Review all plans for recommended content.	1/00	USBR 2000 All users	\$42,635 \$42,635 Varies	.35	Plans contain goals, measures, and schedule for implementation.
	Goals of water plans in place are implemented	Offer financial/technical assistance to users to implement goals of plans.	1/00	USBR 2000 All users	See above		Plans implemented over 5-year period.
2.H- TA/FA	Save 1 percent of Colorado River water used by SNWA residents/businesses	Turf conversion to Xeriscape; continue data collection phase in FY00 to measure water saved by converted sites against turf sites.	9/00	USBR 2000 SNWA	\$30,000 \$30,000 \$30,000	.15	3,000 AF/year saved
3.M- TA/FA	Save 70% of water being used at two LMNRA campground sites	Provide assistance to NPS with design and installation of efficient landscape irrigation system at two campground sites.	9/00	USBR 2000 NPS	\$50,000 \$50,000 \$80,000	.15	164 AF/year saved at two campground sites
		Replace non-native vegetation at campgrounds with drought-tolerant vegetation.	9/01	USBR NPS	\$150,000 \$200,000		
4.M- TA/FA	Educate public in water-wise gardening methods	Install demonstration garden at Mead Complex in Boulder City, Nevada	5/00	USBR 2000	\$40,000 \$40,000	.15	Educate local community and students in effective conservation landscape methods

(1) PRIO/ CAT	(2) GOALS	(3) MEASURES	(4) TARGET DATES	(5) PARTNER	(6) COST	(7) FTE	(8) RESULTS
5.M- TA/FA	Save 1,200 AF/year at Zion National Park	Provide assistance to NPS with design and installation of efficient landscape irrigation system.	9/00	USBR 2000 NPS	\$20,000 \$20,000 \$25,000	.10	Save 50 percent of water currently being used for irrigation at Park. Demonstrate effective efficiency measures to Park visitors.
6.M- TA/FA	Educate public in water-wise gardening methods	Identify and research new drought-tolerant vegetation for urban landscapes in the Las Vegas valley; will be publicized on local TV show; articles to appear in <i>Sunset Magazine</i> , <i>Silver and Blue Magazine</i> , <i>Southwest Trees and Turf Magazine</i> .	9/00	USBR 2000 UNR Cooperative Extension	\$8,000 \$8,000 \$9,700	.10	Add 10 trees, 10 shrubs, and 10 ground covers to southwest vegetation available for efficient landscaping; help homeowners cut water usage by 50 percent
7.M- TA/FA	Reduce indoor water consumption by southern Nevada residents	Continue rebate program to customers using horizontal washing machines; measure water savings	7/00	USBR 1999 SNWA	\$10,050 \$10,050 \$14,100	.10	Assist in achieving conservation goal of 17.0 percent in 1999
8.M-IE	Develop conservation software pertinent to southern Nevada's needs	Work with Denver TSC to develop and install 5 hands-on computer stations for use by Hoover Dam visitors	5/00	USBR 2000	\$25,000 \$25,000	.15	Software available for educating thousands of Hoover Dam visitors on southern Nevada conservation
	Develop conservation display for Hoover	Provide financial/technical resources to develop conservation display for Hoover Dam tourists	5/00	USBR 2000	\$30,000 \$30,000		

(1) PRIO/ CAT	(2) GOALS	(3) MEASURES	(4) TARGET DATES	(5) PARTNER	(6) COST	(7) FTE	(8) RESULTS
9.M-IE	Sponsor magazine addressing conservation issues	Provide financial assistance to sponsor Big Rivers issue of <i>Wild Outdoor World</i> in May/June 2000; distribute to 4th/5th grade students in northwestern Arizona, southern Nevada, and southern Utah	6/00	USBR 1999 Watercourse Program	\$20,000 \$20,000 \$20,000	.025	Distribute conservation magazine to 20,000 students
10.M-IE	Sponsor educational workshops	Provide financial assistance and input to sponsor four Project WET workshops in southern Nevada	9/00	USBR 2000	\$20,000 \$20,000	.05	Train teachers to teach students on conservation issues; assist with maintaining southern Nevada Project WET program
11.M-IE	Sponsor conservation publication	Provide financial assistance to sponsor production and distribution of <i>Sunset Magazine's Southwest Waterwise Gardening Guide</i>	5/00	USBR 2000	\$5,000 \$5,000	.025	Distribute conservation education to LCRA communities
12.L-IE	Sponsor water resources map for Nevada	Provide financial assistance to sponsor production of map for all Nevadan students	5/00	USBR 1999 State of Nevada	\$10,000 \$10,000 \$10,000	.025	Educate all Nevadan students
13.L-IE	Train 85 fourth grade classrooms in utilization of groundwater model	Sponsor production and training costs associated with groundwater model for 85 classrooms in northwestern Arizona	12/00	USBR 2000	\$10,000 \$10,000	.05	Provide training and 51 models to schools

(1) PRIO/ CAT	(2) GOALS	(3) MEASURES	(4) TARGET DATES	(5) PARTNER	(6) COST	(7) FTE	(8) RESULTS
14.L-IE	Sponsor retrofit program	Provide assistance to Clark County School District with landscape retrofit program	12/00	USBR 2000	\$9,360 \$9,360	.025	Educate LCRA students and community in effective irrigation and landscaping methods
15.L-IE	Sponsor calendar	Serve as sponsor of annual Nevada Water Education Calendar	5/00	USBR 2000	\$2,000 \$2,000	.025	Distribute calendar to 300 classrooms
16.L-IE	Publish newsletter/develop technical conservation display	Distribute LCRA newsletter to keep water users and other interested parties informed of WCFSP activities and opportunities. Provide display at workshops and other arenas to inform stakeholders of WCFSP progress.	9/00	USBR 2000	\$5,000 \$5,000	.05	Keep LCRA water users and interested parties informed of WCFSP activities and opportunities
LCRA Program Administration					\$138,005	.10	
FY 2000 PROGRAM ACTIVITIES					\$435,000	1.63	

Legend for Program Plan

- (1) Priority of activity as H-High, M-Medium, or L-Low; Category of work as TA-Technical Assistance, FA-Financial Assistance, or IE-Information/Education.
- (2) Goals for water conservation local program.
- (3) Measures to be used to achieve goals of program.
- (4) Specific target dates by which to achieve measures.
- (5) Parties who will be providing assistance to achieve goal.
- (6) Projected costs to implement measures.
- (7) Reclamation's FTE allocation dedicated to the work.
- (8) Results, quantified or estimated, of the effort.

Strategic Plan and Annual Performance Goals

FY 2000 Annual Performance Goals fulfilled by activities scheduled to be implemented in the LCRA include the following:

- **Strategic Plan Strategy 2: Increase Water Availability**

Long-Term Goal: By 2002, increase water availability through encouraging water conservation by reviewing 100 percent of water conservation plans developed by Reclamation water users; by ensuring implementation of all those required by law or contract; by using incentive-based strategies; and by encouraging implementation of all plans not required under law or contract.

Annual Performance Goal 01.02.20.00: In FY 2000, increase the efficient use of water supplies associated with Federal water projects by assisting up to 157 districts through the Water Conservation Field Services Program and other regional or area office programs to develop, submit, and implement effective water conservation plans.

Long-Term Outlook

One of Reclamation's long-term goals for the WCFSP is to have all required conservation plans in place and under active implementation by 2002. The LCRA is working to meet this goal with the local water users by continuing its outreach efforts through workshops, one-on-one meetings, newsletters, by providing technical and/or financial assistance with plan preparation, and by providing assistance for implementation of plan measures (information and education activities and demonstration/effective efficiency measure projects).

The LCRA is working towards continuing its partnership with the southern Nevada municipalities who are being challenged with management of scarce water supply issues. Over the next few years, Reclamation will encourage the southern Nevada users to explore more advanced conservation concepts for incorporation into its local conservation efforts, such as reuse and recycling, supply and demand technologies, and integrated resource management.

While many of the priorities and needs of the LCRA lie in southern Nevada, Reclamation's staff will work to encompass the smaller water users in northwestern Arizona and southern Utah in order to fully develop the LCRA area. The LCRA will work with the smaller municipalities of northwestern Arizona and southern Utah to develop and implement plans for water users who are required to submit plans and to encourage the excepted water users to develop and implement conservation plans in order to take advantage of optimum conservation opportunities throughout the entire LCRA area.

Feedback

The LCRA welcomes your comments and suggestions on how to improve and ensure the successful administration of the WCFSP. Your local Water Conservation Coordinator to provide feedback to is:

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