

**PROJECTS TO ENHANCE ARIZONA'S ENVIRONMENT:
PILOTING A VOLUNTARY MECHANISM FOR SECURING WATER
FOR ENVIRONMENTAL ENHANCEMENT PROJECTS**

PHASE III REPORT

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**Projects to Enhance Arizona’s Environment:
Piloting a Voluntary Mechanism for Securing Water for Environmental Enhancement Projects
Phase III Report**

Introduction

This report documents the results of Phase III of the Bureau of Reclamation funded project at the University of Arizona’s Water Resources Research Center entitled, “Projects to Enhance Arizona’s Environment: Piloting a Voluntary Mechanism for Securing Water for Environmental Enhancement Projects.” Phase III represents an important extension of the project team’s efforts to characterize environmental enhancement projects in Arizona and the funding mechanisms that might be used to support their water needs. Previous studies completed for this project describe, respectively, environmental enhancement projects in Arizona (Phase I) and a voluntary mechanism using money saved through water conservation to secure water for environmental enhancement projects, called Conserve to Enhance (Phase II; Megdal et al., 2006; Schwarz and Megdal, 2008).

The interim Phase III report submitted in February 2009 details project activities completed during 2008. The interim report was submitted with minor modifications and accepted to the International Journal of Environmental, Cultural, Economic, and Social Sustainability in 2009 (Appendix A). That paper also provides a list of key elements for implementing a pilot Conserve to Enhance program, identified through a process of stakeholder engagement and investigation of existing checkbox donation programs.

During 2009, outreach efforts have been targeted to reach regional communities with an existing interest in water conservation and to increase awareness about Conserve to Enhance in communities where partners were interested in establishing pilot programs. To these ends, the Conserve to Enhance concept was presented to several local and regional audiences (Table 1).

Table 1. Educational/informational/Outreach presentations on the Conserve to Enhance and related funding mechanisms in 2009 (Oral presentation unless otherwise noted)

Location	Event	Date
Tucson, AZ	University of Arizona Water Resources Research Center’s Annual Conference (poster and survey)	March 17, 2009
Tucson, AZ	Tucson Water’s Commercial Conservation Committee	March 25, 2009
Tucson, AZ	Tucson Earth Day Festival (poster and survey)	April 4, 2009
Tucson, AZ	University of Arizona Earth Day Celebration (poster and survey)	April 22, 2009
Glendale, AZ	Arizona Water Association’s Annual Conference	May 6, 2009
Tucson, AZ	Pima Association of Government’s Watershed Planning Subcommittee	May 18, 2009
El Paso, TX	World Wildlife Fund and Coca Cola Meeting (by phone)	September 4, 2009
Tucson, AZ	Pre-Launch Meeting for Tucson Environmental Water Banking Program	September 10, 2009

Tucson, AZ	Sustainability of semi-Arid Hydrology and Riparian Areas Annual Meeting (poster)	September 23, 2009
Las Vegas, NV	Water Smart Innovations Conference	October 8, 2009
El Paso, TX	World Wildlife Fund and Coca Cola Rio Bosque Field Trip (by phone)	October 13, 2009
Phoenix, AZ	Statewide Water Conservation Information Sharing Group	October 30, 2009
Tucson, AZ	Brief Update to the T-Break Tucson Area Environmental Group	November 5, 2009
Scott Valley, CA	Scott River Water Trust Board Meeting (by phone)	December 9, 2009

In addition to distribution of outreach materials (e.g. brochures, presentations, etc.; Appendix B), a webpage was developed for the project (“Conserve to Enhance”; Appendix C). Project activities expanded to include assessing public attitudes about program design with a survey and providing intensive assistance to partners interested in establishing pilot programs. Outcomes from this work include directing the efforts of communities to establish pilot programs to secure water for the environment through savings achieved with water conservation. Also, this report identifies areas of future inquiry that will inform the application of the Conserve to Enhance concept to real-world situations.

Public Attitudes

A newspaper article and two editorials alternately in favor of and opposed to the Conserve to Enhance concept were published in the Arizona Daily Star during the summer of 2008 (Appendix D). In the spring of 2009, a survey was developed to gather information about public support for environmental enhancement or restoration projects (Appendix E). The survey obtained information from 137 respondents at a number of public events and through use of an online survey tool - SurveyMonkey.com. Despite the non-random nature of the survey¹, the results indicate that one group of people within Arizona is interested in contributing to environmental enhancement and river habitat protection programs, with individual contributions pledged at an average of \$10 a month. Given several options, respondents preferred using the Conserve to Enhance mechanism (42%) for generating contributions over options like a monthly pledge (28%) or flat fee (18%). Respondents only chose one other option – a tax on water use - over Conserve to Enhance as the preferred mechanism for contributing to an environmental water fund.

Survey respondents indicated that the four rivers most preferred for receiving funds from this type of program are the Verde, San Pedro, Santa Cruz, and Rillito Rivers. Responses in the open “Comment” field varied widely, including concerns that generated funds only be used for the intended purpose, interest in increasing the cost of water to inspire more efficient use, interest in supporting projects with both ecological and human value, and general support for the program concept.

¹ The responses may not be used to predict statewide attitudes about supporting environmental enhancement projects, as the survey did not achieve a random distribution of responses.

Piloting Efforts

Current Status

Outreach efforts have garnered interest in piloting a Conserve to Enhance program from individuals from at least 7 communities around the West. Interested parties have included professionals from environmental organizations, city conservation programs, water utilities, and water trusts. Efforts to implement a program as innovative as Conserve to Enhance may require at least a year of partnership development and program design, as evidenced by our status in establishing a program in Tucson, Arizona, where project outreach began (Figure 1).

Discussions with interested partners have highlighted a variety of ways to focus pilot programs, tailored specifically to each community's constraints and opportunities. In some communities, partners have suggested that they could offer a Conserve to Enhance mechanism to one or more of their largest water users, providing the participants a marketing tool as well as using these companies as an example to later motivate the rest of the community to participate.² In Tucson, where funds are available for subsidizing water harvesting installations, the program will in part target low-income users who might otherwise not be interested in donating their financial savings from water conservation. In smaller communities, partners might focus on recruiting as many participants as possible, without limiting outreach to certain segments of the population.

Another key element that varies among communities is the ability to identify potential receiving projects that the fund will support. This key pilot program element was identified in the interim report. In some communities, existing efforts to improve a watershed have coalesced, providing an obvious choice of receiving project. In other places, a multitude of riparian restoration projects need assistance, each providing different social and environmental benefits in the community.

Tucson's Pilot Program

The greatest success story of this project thus far is the progress that has been made in establishing a pilot program in Tucson. In Tucson, a team of local partners is working to implement a pilot Conserve to Enhance program, which they are calling the "Tucson Environmental Water Banking Program." In response to outreach efforts, the Sonoran Institute (SI) and Watershed Management Group (WMG) came forward in early 2009 with interest in pursuing outside funding to support a local pilot program in Tucson.

² A recent study of green pricing programs, which are similar in nature to donation programs for environmental water needs, indicates that providing private benefits to non-residential participants (e.g. business recognition) can enhance program success (Wiser and Olsen 2004).

Pilot program development in Tucson has involved 15 meetings over the past year with local partners and city and utility staff. Initial meetings focused on developing a basic program outline and considering potential funding sources to support development of critical pilot program elements. Businesses, homeowners, and residents who enroll in the program will receive advice on water saving practices and technologies, along with subsidies for installing water harvesting features, provided by a grant from the Environmental Protection Agency via the Sonoran Institute.

As part of developing a proposal for the Bureau of Reclamation's Water Marketing and Efficiency Grants, discussions about pilot program design were initiated with the City of Tucson and Tucson Water. During these discussions, the city and water utility pledged support for various aspects of the pilot program design. With the help of all of these partners, a brochure, program synopsis, webpage, and draft program administration plan have been developed for the pilot program (Appendix F). Additional meetings have been conducted with potential outreach partners and a potential business participant. The chronology of the development, shown as Figure 1, of essential pilot program elements in Tucson may be instructive for other communities wishing to establish a pilot program.

Since January of 2009, we have assisted the partners in Tucson in developing six different grant proposals for submission to a variety of federal and non-federal funding sources. The grants are needed primarily to support program staff that could continue developing the accounting mechanism, gathering information needed for selection of a receiving project, as well as perform an expanded environmental education and outreach component for a pilot program.

Piloting Efforts: Emerging Questions

An Evolving Mechanism

Interest in securing water for the environment is a topic receiving increased attention in the last decade. There is an extensive literature describing and analyzing ongoing efforts to obtain water supplies to support riparian and aquatic ecosystems (Aylward et al., 2005). Policy mechanisms for securing water for the environment may involve a state or local government dedicating available water rights for in-stream flows (Urquhart, 2009) and in some cases using conserved water as the source supply for these dedications (Aylward, 2008). But in the absence of sweeping policy change, securing water for the environment requires raising funds to purchase water from existing users and water providers.

Figure 1. Tucson Pilot Project Chronology

Fall 2008

1. Link to existing environmental organizations
2. Program mechanism identified: Conservation Calculator

Spring 2009

3. Link to local river identified: Santa Cruz *
4. Simple program description developed (brochure, website)
5. Support from city clarified
6. Connection with conservation incentives (subsidies for water harvesting)

Fall-Winter 2009

7. Oversight commission formed (*in progress*)
8. Water identified for purchase (*in progress*)

*Receiving project still needs to be selected

Utilities in Bend, Oregon, Santa Fe and Albuquerque, New Mexico offer a checkbox donation program to their water customers as a way for these water users to contribute to local efforts to preserve river flows (Megdal et al., 2009; Appendix G). Bonneville Environmental Foundation offers visitors to their website the opportunity to purchase a Water Restoration Certificate (WRC) to offset their water usage (BEF, 2009). The Pinchot Institute in Washington, D.C., is working to develop a similar checkbox program to protect source waters in the Delaware River Basin (Lien, 2009).

One critical element of a successful program to secure water for the environment will be the selection of an appropriate funding mechanism (Megdal et al., 2009). The Conserve to Enhance concept was originally intended to provide an innovative, easy way for water customers to designate their water savings to support the purchase of water for the environment using their utility bills. However, some utility billing systems would require costly upgrades to accommodate the measurement of historic and current water usage for each participant. Thus, other mechanisms for linking voluntary municipal water conservation with environmental benefits may be necessary for implementing similar programs in these communities.

Checkbox donation programs that support environmental flows provide a simpler method for gathering donations from water users, but these programs do not currently make a connection with water conservation (Megdal et al., 2009). At a September 2008 piloting workshop, a professional from Tucson Water proposed using an accounting mechanism that would reduce the burden of integrating the required calculations into the utility's billing system (i.e. a Conservation Calculator). The conservation calculator would be a worksheet where the user can identify conservation actions that would generate money savings that are then donated to the environmental water fund through a checkbox donation system.³ Development of the conservation calculator is currently limited by a lack of funds to do this work at either the city or the partnering organizations.

Funding Pilot Programs

Establishing a pilot program requires significant inputs of time to develop partnerships, determine program design, and plan for advertising and managing the program. Funding is needed to support staff to develop relationships with city officials, utility staff, local environmental organizations, and other stakeholders. Additionally, personnel resources must be dedicated to forming an advisory board, establishing a program structure, and advertising the program to potential participants. Through our work with partners interested in establishing a pilot program in Tucson, we have identified the need for a plan that describes potential short-term and long-term sources of funding needed for the aforementioned tasks. Neither the city nor the partnering organizations have sufficient funds available to commit to all of these elements.

Given these challenges, to sustain a program in its early stages, program partners may want to identify elements of program management that overlap with currently funded projects going on at each

³ Existing water footprint calculators may provide the information needed to develop a conservation calculator with limited adaptation (e.g. H2OConserve.org).

organization. For example, water education professionals have indicated a potential overlap between existing environmental educational programs targeting school children and community outreach about water conservation as a mechanism to provide water for the environment. Both programs seek to inspire water conservation at the household level, often by describing the impact of inefficient water use on degrading the natural environment.

Long term support for a Conserve to Enhance program may require contributions from city or county environmental restoration programs, perhaps designated as matching funds for citizen contributions. Additionally, water utilities that are concerned about supporting conservation to the point that they suffer lost revenues may find a Conserve to Enhance program appealing, as it may result in revenues from purchases of water for the environment using generated funds. Whatever the method, sustaining a pilot program past the first year or two will be critical for achieving optimal levels of participation in the community (Wiser and Olsen, 2004; Megdal et al., 2009).

Selecting a Receiving Project

The initial stages of partnership development around the Tucson pilot program involved selecting a watershed – the Santa Cruz River Basin – for implementation of the mechanism. However, there are several ongoing restoration projects in the Santa Cruz Basin that could be potential recipients of funds generated through a Conserve to Enhance program. The draft pilot structure directs the advisory board, once formed, to select receiving projects. In support of this decision-making process, partners involved in the pilot program have begun gathering information about local restoration projects, focusing on the following criteria:

- a. Managing Entity/ies
- b. Project Status (planned, ongoing, completed)
- c. Water Needs
- d. Water Delivery Infrastructure
- e. Public Accessibility
- f. Hydrologic Capacity of Waterway
- g. Habitat Quality
- h. Funding Sources/Needs
- i. Permitting Needs

Because of the constraints of a small pilot program, several stakeholders have suggested the importance of collaborating with an organization managing an existing restoration project. The task of gathering information about all of the criteria listed above may be daunting to all but the most experienced of environmental organizations. To that end, we are initiating the Statewide Environmental Water Needs Assessment, a new project that seeks to clarify the environmental water needs of rivers across Arizona.

Since participation in the pilot is likely to be limited, the funds generated in the first year will likely be able to provide only supplementary funding for purchase of water supplies. Additionally, because staff time is currently limited by small project budgets, the experts working on existing restoration projects

will need to be responsible for the technical and legal aspects of acquiring water supplies with the generated funds.

Oversight and Evaluation

Besides developing program administration plans for a pilot, one of the major elements of partnership development involved in establishing a program is the formation of an oversight committee, such as an advisory board, to manage the funds generated by the program. This oversight committee should represent the community's interests in environmental enhancement. Personnel are needed to recruit advisory board members, translate information about potential receiving projects, and facilitate the advisory board's final selection of a project.

Additionally, staff can play an important role in evaluating the outcomes of a pilot Conserve to Enhance program, by reporting on water savings realized and donations made by participants and providing analysis of the program for dissemination to other interested communities. Data collected for the measurement of water savings offers a chance to increase knowledge about the impacts of water conservation technologies on water usage. The pilot program also provides an important opportunity to demonstrate the possible water savings and funds that could be generated through a larger-scaled program. Pilot program partners will need to determine the best approach for scaling-up a smaller program.

Summary and Future Directions

This report details how the work funded by Reclamation has stimulated community consideration of mechanisms to secure water for environmental enhancement. The Conserve to Enhance mechanism, though simple in concept, is novel, and many considerations factor into its implementation. The checkbox donation program, while even simpler, also involves many community decisions. Throughout this effort, the University of Arizona investigators have worked in partnership with representatives of Reclamation, communities, and non-governmental organizations to better understand the constraints that emerge in establishing this type of program. It will take time to sort through the many issues raised in working towards establishing a pilot program. Thus, despite the willingness of several communities to undertake this innovative approach to securing water for the environment, continuing support from the project staff are needed to ensure future progress.

Issues raised in one community can inform development of programs that are appropriate for other community's situations. Partners from multiple communities recognize a need for continued involvement of University of Arizona personnel to provide the information and analyses necessary for successful program design, implementation and evaluation. Our continued involvement can ensure that these programs are not disconnected and all are able to take advantage of opportunities for learning from each other's experiences. The authors of this report look forward to continued partnership opportunities with Reclamation and others.

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Appendix A. Paper Published from Interim Report:

“Securing Water for Environmental Purposes: Establishing Pilot Programs”, International Journal of Environmental, Cultural, Economic, and Social Sustainability, vol. 5, Megdal, S.B., Bate, J., and A. Schwarz. (2009).

Securing Water for Environmental Purposes: Establishing Pilot Programs

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Abstract: This paper focuses on programs that provide water for the environment through direct check box donation programs or through voluntary municipal water conservation. Existing water conservation programs may not effectively target water users that are motivated by environmental concerns. Megdal et al. (2006) recognized the ongoing need for supplemental inputs of water in riparian restoration projects, which are increasingly common. Also, public concern surrounding the need to protect natural water flows is growing (Katz, 2006). In recent papers, the authors proposed a mechanism by which voluntary municipal water conservation could provide funds to cover the cost of acquiring and delivering water to environmental enhancement projects (Schwarz and Megdal, 2007; Megdal, 2008). These studies explored some of the basic elements as well as challenges involved in implementing this concept. Further, the study identified a need to implement one or more pilot projects using the “Conserve to Enhance” mechanism. Some cities have check box donation programs that generate a new source of funding to pay for riparian restoration projects. Existing check box programs demonstrate some of the critical elements previously identified for successful program development. Through outreach conducted across Arizona over the past year, stakeholders have helped to identify local opportunities and challenges for implementing the concept. Stakeholders have also generated possible variations on the original mechanism that reflect their local setting. This paper describes the Conserve to Enhance mechanism as well as check box donation programs and offers recommendations for implementing this type of program.

Keywords: Water Conservation, Municipal Water Use, Environmental Water Needs, Environmental Restoration, Check Box Fundraising Programs, Water Leasing Programs, Instream Flows

Introduction: Conserve to Enhance

A MIDST GROWING DEMANDS for water in almost all water-using sectors, meeting environmental water needs requires innovative strategies. Megdal, Lacroix, and Schwarz (2006) established that many environmental enhancement projects¹ in Arizona have ongoing needs for supplemental irrigation or secure water supplies. Growing public interest in protecting natural flows in rivers, returning water to the environment, and enhancing riparian habitats has supported several targeted fundraising efforts for meeting environmental water needs (Katz, 2006). With stakeholder input, Schwarz and Megdal (2007) developed a program concept that uses voluntary municipal water conservation

¹ Environmental enhancement projects are projects that improve the quality of the natural environment, often through restoration or revegetation efforts.

to provide funds to support environmental water needs. This mechanism, called Conserve to Enhance, connects individual water use behavior with environmental concerns to generate funds for the purchase of water for the environment (Megdal, 2008; Schwarz and Megdal, 2008). This program has the potential to invigorate a community's water conservation efforts and support environmental enhancement projects.

As explained by Schwarz and Megdal (2008), the basic Conserve to Enhance program offers water customers the option of donating the money they save through water conservation to a fund that purchases water supplies for environmental enhancement projects. Thus, as individual households make voluntary reductions in their water consumption, these reductions are measured against prior year's usage for the same month. Participants pay for the higher level of usage, and the money saved by conserving water is deposited into the fund. The fund is used to purchase water for environmental enhancement such as instream flow rights or water transfers.

The perception that municipal water conservation does not directly benefit the environment, cited in Schwarz and Megdal (2008), may currently limit the effectiveness of water conservation initiatives². A Conserve to Enhance program activates a new motivation for participating in water conservation, which has been identified as a low-cost source of water for future water needs (Gleick et al. 2003). This mechanism also generates a revenue stream to purchase water for the environment, thereby contributing to a region's environmental sustainability efforts. Because the water needed for environmental enhancement is often of a lower quality than that needed for municipal supplies, this program should lead to a more cost-effective distribution of available water supplies.

Schwarz and Megdal (2008) identify critical factors for successful implementation of a Conserve to Enhance program, drawn from stakeholder outreach and research of similar programs, such as green pricing, used by energy utilities. These factors include: use of a simple mechanism to account for conservation savings and related donations; an accounting method tailored to the local utility's billing system; an automatic donation system that ensures continuous participation; and demonstration of tangible results of the program³.

The authors indicate that water providers or communities interested in implementing this concept might benefit from starting with a pilot program. A pilot would provide an opportunity to measure public support for buying water for the environment and build some of the necessary partnerships and administrative mechanisms for a larger program. Specifically, a pilot effort could involve testing the predictions made by Schwarz and Megdal (2008) about participation levels, conservation savings, and program revenues.

This paper discusses ongoing efforts to initiate a pilot program to pay for water for the environment using municipal water conservation efforts. This paper also reviews the development and success of existing check box donation programs that seek to protect or restore environmental flows in riparian areas. Based on these elements, guidance is provided for communities who are interested in implementing a voluntary, community-based program to pay for water for the environment.

² See Syme, Nancarrow, and Seligman (2000) and Bauman, Opitz and Egly (1992) for additional information.

³ Schwarz and Megdal (2008) provide an in-depth discussion of the critical factors for implementation.

Stakeholder Outreach

As part of earlier phases of the project, project staff conducted multiple meetings with local stakeholders, which culminated in a stakeholder roundtable in February 2007 in Tucson, Arizona. These early outreach efforts sought to explain the concept and obtain general feedback about the proposed mechanism. Starting in the spring of 2008, outreach efforts were expanded to identify possible levels of interest in and obstacles to implementing a Conserve to Enhance program (Table 1). In addition, two half-day, interactive stakeholder workshops were held with the specific intent of identifying one or more communities to pilot a Conserve to Enhance program in Arizona.

Table 1: Outreach Presentations of Conserve to Enhance in 2008 and 2009

University of Arizona Water Resources Research Center	April 2008
Arizona Riparian Council Annual Meeting	April 2008
Tucson Stakeholder Workshop	September 2008
Watershed Management Group	September 2008
Arizona Hydrological Society/American Institute of Professional Geologists	September 2008
Northern Arizona Stakeholder Workshop	October 2008
American Water Resources Association Annual Conference	November 2008
Tucson Water's WaterSmart Businesses	March 2009
Arizona Water Association Conference	May 2009
Pima Association of Governments Watershed Planning Subcommittee	May 2009
Water Smart Innovations Conference	October 2009

Feedback from local and national stakeholders has helped to confirm common strengths and weaknesses of the original concept as well as to identify innovative variations on the proposed mechanism. Also, feedback from stakeholders in three different cities in Arizona may be useful in determining local factors that may guide appropriate program development. This feedback is summarized below.

Stakeholder Feedback

Public officials from several Arizona communities with existing water conservation programs have expressed interest in starting a Conserve to Enhance program. City and utility staff and representatives from environmental organizations generally liked the idea of providing individuals with a way to directly contribute to environmental enhancement projects. Additionally, stakeholders from all regions acknowledged the value that such a program would have as an educational tool for increasing awareness about local environmental issues. In outreach meetings, stakeholders often recognized that a Conserve to Enhance program would help cities address the common question: "Why should I conserve if the water I save goes to support more growth?"

Stakeholders recognized that environmental concerns would motivate additional water conservation behavior for some people. However, many stakeholders have expressed concern that the costs of making household improvements for conservation might deter individuals from contributing additional money to a Conserve to Enhance fund. On the other hand, willingness-to-pay studies have shown that most people are willing to contribute as much or more than the amount of money they could save through conservation behavior to protect and restore local riparian areas and waterways (e.g. Colby, 1993; Berrens et al, 1996; and Loomis et al, 2000). And, all of the cities in Arizona who participated in the implementation workshops already run conservation incentives programs that subsidize homeowners' implementation of conservation technologies. Additionally, stakeholders have repeatedly suggested the use of tax incentives to encourage participation, most frequently in terms of making contributions tax-deductible.

Discussions with stakeholders about selecting enhancement projects to receive generated funds raised some concerns about the administrative and hydrological feasibility of local water transfers. As part of a Conserve to Enhance program, managers would need to identify available water sources to buy with generated funds. In communities where surface water is not available for reallocation, groundwater and reclaimed water may be the only available water supplies for enhancement projects. The potential legal, financial, or administrative restrictions on the purchase and delivery of these types of water supplies should be explored as part of program development in a local setting. Because the proposed mechanism allocates money, rather than water, saved through conservation, this money can purchase water for enhancement projects at a different time, location, or quality than water saved. This provides more flexibility and efficiency in the allocation of limited supplies.

Findings from earlier phases of the project were echoed in the recent phase of stakeholder outreach as well. For example, stakeholders repeatedly emphasized that identification of tangible projects, such as a specific river segment or enhancement project, is critical for motivating public support. Specifically, stakeholders suggested that, where possible, ongoing, successful local restoration projects be selected to receive generated funds. Stakeholders also cautioned that a pilot program must be made available to all water users and be described simply. A recent study found that participants in water conservation programs preferred messages that involved saving rivers for future generations as opposed to messages about protecting the environment (Simbanin and Lee, 2007). Communities implementing a pilot program may wish to investigate a range of program designs and messages to best reflect the economic considerations and societal values of local water users (Schwarz and Megdal, 2008).

Stakeholders in recent outreach meetings have proposed a few variations to the Conserve to Enhance concept to address local circumstances. For example, in a community where rivers are currently in good condition, and the general concern is future overdevelopment of aquifers and streams, one city representative proposed their city might "Conserve to Preserve" instead of Conserve to Enhance. The program could be used to generate funds to buy groundwater pumping credits or instream flow rights for local streams, thereby preserving local water resources for the future.

Due to their complex billing system, one community considered the proposed mechanism too expensive and burdensome for the utility to implement. In light of this, stakeholders at the Tucson workshop proposed a variation on the mechanism that requires less from the utility but still connects conservation action with benefits for environmental enhancement.

In their proposal, customers would be invited to participate in a check box program and would receive a worksheet, or calculator, that helps them identify conservation actions that would save them money. Thus, through conservation savings, the customer could generate the same amount of money that they chose to donate to the environmental enhancement fund.

Most potential partners expressed interest in starting with a pilot program as an opportunity to test participation levels and work out fund management details. While thus far no community has initiated a pilot program for Conserve to Enhance, some cities have check box donation programs to provide water for the environment.

Check Box Water-for-Environment Programs

Like the Conserve to Enhance program, check box donation programs seek to protect or restore environmental flows and riparian areas by generating a new source of funding to pay for water for the environment. These check box programs offer water customers the opportunity to contribute directly to projects that benefit the environment, and they increase public awareness about local rivers and environmental issues. Existing check box programs may provide a model for the development of similar programs in other places.

In Bend, OR, Santa Fe, NM, and Albuquerque, NM, water users are provided with the option of making a donation on their water bills that supports protection of a local river. These check box programs are being implemented in a variety of forms by partnerships among city water authorities, private water utilities, and local environmental organizations. Funds raised by the Blue Water program in Bend have been used to leverage other funds to lease water for instream flows. The success of existing check box programs has often been affected by local circumstances. Findings from these examples can help guide local communities in starting their own programs to provide water for the environment.

Bend, Oregon

The Deschutes River Conservancy (DRC) was founded in 1996 by a tribal confederation, an environmental advocacy group, and several irrigation districts to restore the Deschutes River's degraded fish habitat and poor water quality (Deschutes River Conservancy, 2009a). After years of conversations, the Avion Water Company partnered with the DRC to create the Blue Water program, which provides Avion customers an opportunity to support DRC efforts to increase flows in the Deschutes River (Hubert, 2009). Funds raised through the Blue Water program are allocated to the DRC's streamflow enhancement efforts on the River (Deschutes River Conservancy, 2009b). The DRC's extensive water leasing program compiles funds from many sources to lease water for instream flows in the Deschutes River.

The Blue Water program was launched in March 2007 and was initially promoted through press releases and inserts included in Avion water bills (Hubert, 2009). The Blue Water program is prominently featured on the Deschutes River Conservancy website, where the program design is summarized. Customers who sign up for the Blue Water program see donations automatically added to each month's bill until they choose to discontinue their enrollment. Four monthly donation levels are offered to Avion customers, ranging between \$1.60 and \$6.40 per month. The Avion Water Company collects Blue Water donations and sends a check to the DRC.

The partnering organizations predicted that \$10,500 could be raised in the first year, given a 5% enrollment at the lowest contribution level. While this goal was not initially achieved, as of January 2009, close to \$1000 a month is being donated to the Blue Water program by 250 participants (2.3% enrollment), and a total of \$14,589 has been raised to date (Hubert, 2009). Thus far, Blue Water funds have been used to pay for 1470 acre-feet of water leases in the Deschutes River, and another 1668 acre-feet of instream flows will likely be paid for by Blue Water in 2009.

Santa Fe, New Mexico

American Rivers designated the Santa Fe River “America’s Most Endangered River” in 2007 (American Rivers, 2007). In July of the same year, the City of Santa Fe introduced the Santa Fe River Fund as part of a larger initiative to restore the Santa Fe River, in partnership with the Santa Fe River Watershed Association and the WildEarth Guardians (City of Santa Fe, 2009). The City cited the impact that municipal water needs have had on the river’s flows as one of the reasons for starting the initiative. This initiative has drawn donations from a local tobacco company and a profit-sharing agreement with a local hotel (Matlock, 2007; “Hotel Wants S.F. River Restored”, 2007). These monies financed public meetings about river restoration priorities and studies of environmental flows in the River.

The Santa Fe River Fund was created to raise money for the purchase of water rights for the Santa Fe River. The River Commission, the City’s Water Division, and the Santa Fe River Watershed Association have been working for several years to identify sources of water for restoring environmental flows in the River. The WildEarth Guardians invited people to sign up for the Fund with a \$1 monthly pledge to promote the program before it officially began (WildEarth Guardians, 2007). Newspaper articles and an insert in the utility bill promoted the program when it started (Friedman, 2009). To encourage participation and demonstrate commitment, the City promised to match every dollar donated to the Fund by individuals.

The Santa Fe Living River Fund is managed by the City’s Water Division, which promotes the program and collects funds for the program. The citizen-staffed River Commission and the non-profit Santa Fe Watershed Association, which advocates for restoration of the river, provide program oversight. Both the City and the Watershed Association provide promotion on their websites, each with a page or more devoted to describing the River Fund efforts (City of Santa Fe, 2009; Santa Fe Watershed Association, 2009). The City’s website posts frequently asked questions (FAQs) about the Fund, a printable application form for making donations, and semi-monthly reports on the status of the River Fund.

Information on fund management is reported to the River Commission throughout the year. The City reserves funds for River Fund administration in an escrow account. While the City anticipated that \$1.5 million could be raised in the first year, only \$100,000 (including matching funds) had been raised as of January 2009, a year and a half after the program began (Friedman, 2009). City staff reports that no purchases of instream flow rights have yet occurred, due to the limited availability of leases in the Santa Fe River Basin.

Albuquerque, NM

In 1999, a collection of six environmental groups, which includes the Forest Guardians and Defenders of Wildlife, filed a lawsuit (*Rio Grande Silvery Minnow vs. Martinez*) over endangered species needs in the Rio Grande. In February 2005, the City of Albuquerque and the Albuquerque-Bernalillo County Water Utility Authority entered into an agreement with these groups to settle the lawsuit (Defenders of Wildlife, 2007). As part of the agreement, the Water Authority and the environmental groups contributed \$225,000 and \$25,000, respectively, to the newly established Living River Fund. This money will support the implementation of an agricultural water-leasing program to preserve instream flows in the Rio Grande. In addition, the agreement required that the Water Authority establish a Living River Fund check box program to allow residents to contribute to the Fund.

In October 2008, the Water Authority started offering its customers a \$1 check box donation option for the Living River Fund on their bill (“Water Authority Starts Fund”, 2008). While the check box donation on the bill is limited to \$1, customers can make donations of any amount in person at City Hall. The check box program was promoted through a bill insert that went out to all customers and was publicized in a short Albuquerque Journal news piece (Morris, 2009). On their website, the Water Authority posts a list of frequently asked questions (FAQs) about the program (Albuquerque Bernalillo County Water Utility Authority, 2009). As of January 2009, three months after the program commenced, \$1,642 had been donated to the fund by 60 out of 175,000 total customers (Morris, 2009).

Check Box Program Findings

In Albuquerque, the Living River Fund was established in response to a legal challenge, as part of an agreement for protecting fish habitat in the Rio Grande. The Santa Fe Living River Fund was developed in response to the designation of the Santa Fe River as “America’s Most Endangered River” in 2007. The Avion Water Company in Bend, Oregon initiated the Blue Water program not because of a legal mandate but due to a desire to contribute to the local community. While the drivers for each program differ, these check box programs all target restoration of a specific river, are promoted through easily-readable websites and bill inserts, and allow water customers to make donations through their water utility bills. These programs have also faced a common challenge: fund participation in the first year is generally less than predicted. However, all of the programs are less than two years old, and donations to all of the funds are increasing. All of the existing check box programs studied had planned to use program funds to obtain instream flow rights for surface water that is otherwise diverted. The unavailability of water rights for purchase has hindered the success of the programs in Santa Fe and Albuquerque, New Mexico.

In Bend, funds generated by the check box have been used to support existing river restoration programs, producing tangible benefits for the Deschutes River. The success of the Blue Water program reflects local circumstances to some extent, because of the pre-existence of local riparian restoration projects and available water rights for lease. In all studied programs, the city or utility partnered with established environmental organizations, but the New Mexico programs emerged in an environment where water rights are over allocated. In Al-

buquerque, the partners intend generated funds to be used to purchase water leases from farmers, but they await establishment of a local agricultural water market for this purpose.

The Santa Fe Living River Fund program demonstrates the role that the city and utility can play in promoting a check box program and demonstrating commitment and accountability. In Santa Fe, the City features the Living River Fund prominently in information about their river initiative, both in press releases and on websites, and reports regularly on funds raised. Additionally, the city has kept its promise to match donations made by citizens, further demonstrating the city's level of commitment to the project. The citizen-staffed River Commission, which receives reports on fund management, ensures accountability.

Several partners from the check box programs described above have acknowledged the potential for linking conservation actions with providing water for the environment. The Santa Fe River Watershed Association and Santa Fe Mayor David Coss both identified water conservation as a key element in preserving river flows (City of Santa Fe, 2009). Mayor Coss was quoted as saying that water saved through conservation should be dedicated to river flows. John Horning, the executive director of Forest Guardians, who works with both the Albuquerque and Santa Fe programs, has also suggested that conserved water should be allocated to the river (Horning, 2007). The City of Santa Fe has several ongoing conservation programs, including a water-wasting ordinance, rebate programs, and a water conservation program charge that is added to the April water bill. Despite the apparent interest, none of these communities has implemented a Conserve to Enhance-type program.

Recommendations for Water-for-Environment Program Implementation

As stated in Schwarz and Megdal (2008), development of a Conserve to Enhance program or any variation on this concept should be done with input from multiple stakeholders. The review of existing check box programs has confirmed the importance of local circumstances in determining the success of any program to pay for water for the environment. Existing check box donation programs demonstrate some of the critical elements in program development that were identified in Schwarz and Megdal (2008), such as the importance of partnering with existing organizations, the need to describe the program simply, and the value of using an independent board to oversee fund management. Also, lessons learned from these programs suggest that development of any program to pay for water for the environment should involve consideration of the hydrological and administrative feasibility of environmental water transfers.

Communities with a vibrant environmental ethic and existing water conservation programs are best suited to attempting a Conserve to Enhance program. The Conserve to Enhance mechanism addresses the same ecosystem goals as the check box programs and, in addition, it seeks to utilize water conservation as a source of water for the environment. The design of a Conserve to Enhance program to pay for water for the environment should involve consideration of the local water utility's billing system and possible connections with existing water conservation programs in the program area. A successful pilot program for Conserve will benefit from development of the following:

1. Links to a local river or specific environmental enhancement projects;
2. Use of a program mechanism tailored to utility billing systems;
3. Identification of available water supplies for purchase;

4. A simple program description communicating the importance of local rivers for local heritage;
5. Support from city – e.g. promotion, matching funds, etc.;
6. Links to an existing environmental organization with known success;
7. Connection to existing conservation incentives programs to reduce homeowner costs;
8. Development of a citizen-staffed commission to provide oversight; and
9. A mechanism for reporting publicly on program accomplishments⁴.

Most potential partners involved in past outreach have been interested in starting a pilot program of Conserve to Enhance as an opportunity to test participation levels and work out fund management details. A pilot program should include a method for monitoring participation levels, conservation savings, and funds generated over time to test the assumptions made thus far about possible program outcomes.

Schwarz and Megdal (2008) describe a Conserve to Enhance program that measures and accounts for conservation, involves the local water utility, and requires development of decision-making bodies. All billing and money collection is done by the water provider, and the money collected is channeled through the water provider to an external account managed by a third party. Management of the full program may involve direct costs associated with advertising the program to potential participants, modifications to the billing system, and administration of program details, as well as reduced revenues associated with increased water conservation. Federal and private grants for improving the efficiency and sustainability of municipal water management could potentially cover some of these costs for a pilot program.

The simpler check box donation approach does not create the same link between conservation actions and environmental enhancement projects, but it may be an appropriate first step in establishing a larger program. As demonstrated by the existing check box programs, a year of donations may be required to raise enough money to make the first environmental water purchase. Additionally, the fact that participation levels in existing programs continued to increase past the first year suggests that measurements of participation in the first year of a pilot may not accurately indicate the funds that would be generated over a longer period of time.

Efforts are underway to implement a pilot Conserve to Enhance program in Arizona. Outreach will continue to identify additional partnerships for piloting Conserve to Enhance, with the intention that lessons learned from establishing pilot programs will inform future program development in other communities.

Acknowledgements

The authors and the University of Arizona Water Resources Research Center wish to thank the U.S. Bureau of Reclamation for funding and representatives from several cities and environmental organizations for providing their input to this effort.

⁴ In addition to the use of annual reports and water bill inserts to communicate results, communities may wish to explore the use of signage at sites receiving funds from a Conserve to Enhance program. See Adopt a Highway (<http://www.adoptahighway.com/index.html>) and the Thames River Adopt a River (<http://www.thames-rivercleanup.ca/ThamesRiverCleanUp/TRCU-AdoptRiver.pdf>) programs for examples.

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Appendix B. Conserve to Enhance Outreach Materials

Brochure: Conserve to Enhance

Research Posters: Establishing Pilot Programs to Support Environmental Water Needs, 1 and 2

Presentation: Securing Water for the Environment: Establishing Pilot Programs (given Oct. 8, 2009 at WaterSmart Innovations Conference, Las Vegas, NV).

Conserve to Enhance



Conserving water to support environmental restoration

A concept brought to you by the
Water Resources Research Center,
University of Arizona,
and US Bureau of Reclamation



Water Resources Research Center
College of Agriculture and Life Sciences

University of Arizona
350 N. Campbell Ave.
Tucson, AZ 85719



Conserve to Enhance

The Conserve to Enhance mechanism has been developed to connect individual water conservation with environmental concerns. This innovative mechanism encourages consumers to conserve water as a means of funding the allocation of water for environmental restoration projects.

The Conserve to Enhance program can be tailored to a local setting to provide tangible environmental benefits for the community. Find out more about this promising program that can invigorate your community's water conservation efforts and support environmental enhancement projects at the same time!

The Basic Program

- Households make voluntary reductions in water consumption.
- Reductions are measured against prior year's usage during same month.
- Participant pays difference to fund.

Program administration

- Money saved by conserving water is deposited into fund.
- Fund is used to purchase water for environmental enhancement.
- Water purchases may include instream flow rights, transfers to secure or increase flows, or other purchases.

Program Benefits

Social benefits of a Conserve to Enhance program include greater public awareness of environmental water needs, increased water conservation actions and reduced demand for potable water.

A Conserve to Enhance program will provide a new source of funding for supplemental water for environmental enhancement projects.

Innovative Approach

Growing public interest in protecting natural flows in rivers, returning water to the environment, and enhancing riparian habitats has led to initiation of small fundraising efforts for environmental water needs. The Conserve to Enhance mechanism makes a direct connection between individual water use behavior and environmental concerns. This innovative approach can expand the level of participation in water conservation programs.

Elements for Success

Understandable Mechanism

Allow participants to track their conservation efforts and the amount of money they have contributed

Targeted to Include all Users

Set baseline for each individual based on their past use, encouraging reductions from all users

Clear Link to Benefits

Advertise projects receiving funds to participants and identify on site as supported by Conserve to Enhance

Partnerships

By partnering with ongoing projects, less program funds are needed for administrative and operational support



For more information
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www.cals.arizona.edu/azwater/publications.php

Establishing Pilot Programs to Support Environmental Water Needs

Joanna Bate, Dr. Sharon B. Megdal, and Andrew Schwarz



Background:

Meeting environmental water needs requires innovative strategies. Riparian areas in the Southwest have been lost or degraded in the last hundred years, and many riparian enhancement projects have insecure or insufficient water supplies (Ohmart and Anderson, 1986; Megdal, LaCroix, and Schwarz, 2006). Public interest in preserving and enhancing riparian areas has increased (Katz, 2006).

With stakeholder input, Schwarz and Megdal (2007) developed a program concept that relies on voluntary municipal water conservation to provide funds to support environmental water needs. This mechanism, called Conserve to Enhance, connects individual water conservation with environmental concerns (Schwarz and Megdal, 2008). As existing water conservation projects may not effectively target water users that are motivated by environmental concerns, a Conserve to Enhance program has the potential to invigorate a community's water conservation efforts, while providing needed financial support to environmental enhancement projects.

The basic Conserve to Enhance program offers water customers the option of donating money they save through water conservation to a fund that purchases water supplies for environmental enhancement projects (Figure 1).

Objective:

This project explores the implementation of innovative community-based programs to provide water for the environment and provides a framework for communities interested in initiating this type of program.

- (1) Conduct a review of existing check-box programs to identify critical elements for successful implementation of a program to pay for water for the environment. *Poster 1*
- (2) Continue stakeholder outreach to pursue implementation of a Conserve to Enhance program. *Poster 2*

Existing Check-box Programs

Several communities have initiated check box donation programs to raise funds to secure water in riparian areas. These donation programs increase public awareness of local water issues and offer water customers the opportunity to contribute directly to projects that improve local environmental amenities. In Bend, OR, Santa Fe, NM, and Albuquerque, NM, water users are provided with an option on their water bill to donate to support protection of a local river (Figure 2).

Figure 2. EXAMPLE FORM FROM CHECK-BOX PROGRAM

ENROLLMENT FORM

YES! I would like to "GIVE TO THE FLOW" through the Blue Water program and help put water back into the Deschutes River. I agree to sign up for the selected level and pay the extra charge on my monthly water bill. Please return the completed form with your current water bill.

BLUEWATER LEVELS

<input type="checkbox"/> River Only	\$8.00
<input type="checkbox"/> Blue Water	\$4.00
<input type="checkbox"/> Mountain Trail	\$2.00
<input type="checkbox"/> Squashed Frog	\$1.00

Thank you for your contribution to the Deschutes River! 100 percent of your donation goes to the Deschutes River Conservancy, a local 501(c)(3) non-profit. Your donation is tax deductible. Please print and mail as directed.

Santa Cruz River, North Simpson - Effluent/Groundwater



Rio Salado Phoenix - Groundwater dependent



Esperanza Ranch, Arizona - Mix of sources

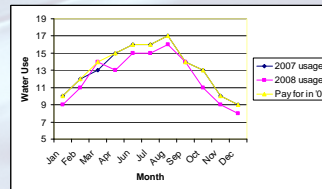


Figure 1. CONSERVE TO ENHANCE

Voluntary reductions in water consumption

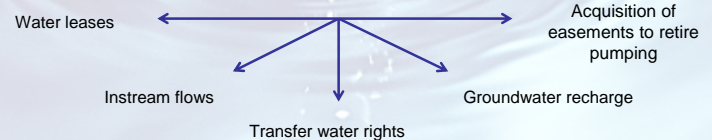


Pay for previous (higher) rate of use



Money saved by conserving water deposited to fund

Fund used to acquire water for environmental enhancement



Lessons Learned from Check-box Programs

Partnerships are important

These programs were initiated through partnerships between cities or water utilities and local environmental organizations. In Santa Fe, NM, the City provides funds to match donations, promotes the program through their website and collects donations. The local Watershed Association also promotes the program and invites its members to participate in the program.

Water can be hard to find!

All three programs planned to use program funds to buy instream flow leases for surface water. Only the Blue Water program (Bend, OR) has resulted in actual purchases of water leases for the Deschutes River. Both New Mexico programs have been challenged by the limited availability of water for lease in their basins.

Demonstrate results

The City of Santa Fe provides reports of funds generated on their website, and the Deschutes River Conservancy reports on leases purchased with Blue Water funds in its annual report.

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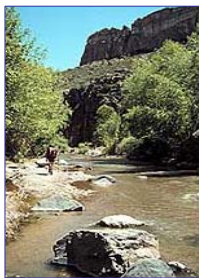
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San Pedro River, Arizona

Establishing Pilot Programs to Support Environmental Water Needs

Joanna Bate, Dr. Sharon B. Megdal, Andrew Schwarz

Background:

Meeting environmental water needs requires innovative strategies. Riparian areas in the Southwest have been lost or degraded in the last hundred years, and many riparian enhancement projects have insecure or insufficient water supplies (Ohmart and Anderson, 1986; Megdal, LaCroix, and Schwarz, 2006). Public interest in preserving and enhancing riparian areas has increased (Katz, 2006).

The basic Conserve to Enhance program offers water customers the option of donating money they save through water conservation to a fund that purchases water supplies for environmental enhancement projects (see Poster 1).

Objective:

This project explores the implementation of innovative community-based programs to provide water for the environment and provides a framework for communities interested in initiating this type of program.

- (1) Conduct a review of existing check-box programs to identify critical elements for successful implementation of a program to pay for water for the environment. *Poster 1*
- (2) Continue stakeholder outreach to pursue implementation of a Conserve to Enhance program. *Poster 2*

Stakeholder Outreach

The Conserve to Enhance mechanism was the outgrowth of several years of study, which involved significant stakeholder involvement. This project has had stakeholder involvement since the start of the 2006 study of environmental enhancement projects. Stakeholders were involved throughout study development, through workshops in Tucson and in Phoenix in 2007. Outreach efforts were expanded starting in the spring of 2008 to identify levels of interest in implementing a pilot program. The Conserve to Enhance concept has been presented to several regional and national audiences and at two interactive, half-day workshops in Arizona communities.

Stakeholder Feedback

Benefits:
Value of program as educational tool
May invigorate existing water conservation programs

Concerns:
Reduced flexibility in managing water use
Lost revenues from reduced demand
Increased competition for limited supplies

In combination with reviews of existing check-box programs, stakeholder feedback influenced the development of a framework for successful implementation of a program to pay for water for the environment (Figure 3).

Next Steps

Build partnerships – Existing enhancement projects; involve utility

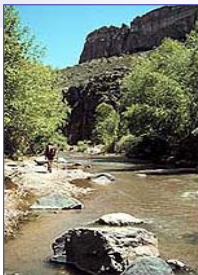
Identify funding sources

Evaluate interest

Design pilot programs

- Selection of accounting mechanism will influence participation levels
- Establish representative oversight body
- Determine program goals

While the issues that have emerged from past stakeholder outreach may be useful in identifying key elements of success for program designs, other issues may emerge during future implementation activities. Many elements of a program to pay for water for the environment are sensitive to the local situation. Thus, exploration of additional ideas and concerns with local stakeholders may be a necessary first step in implementing a Conserve to Enhance program.



Santa Cruz River, North Simpson – Effluent/Groundwater



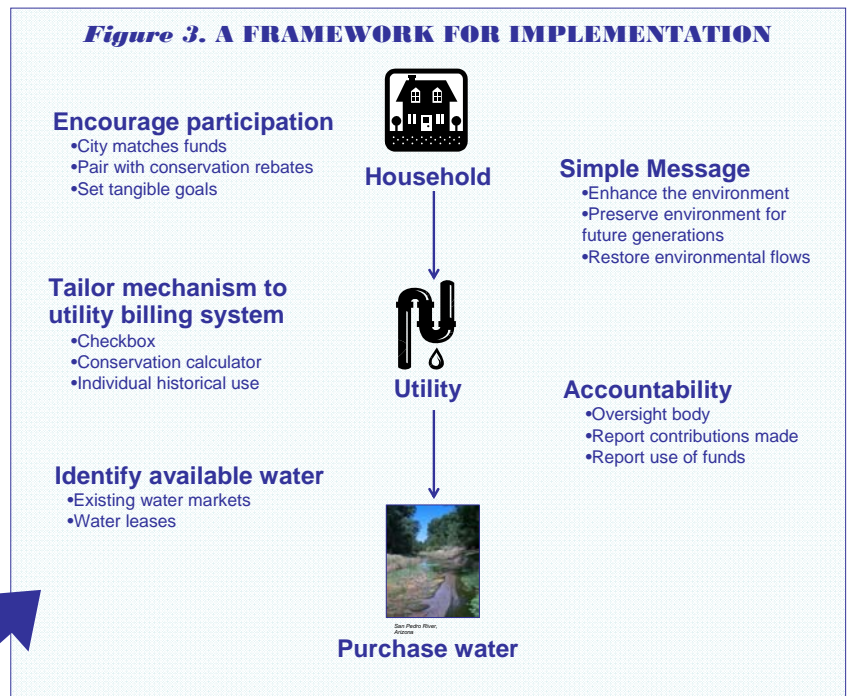
Rio Salado Phoenix – Groundwater dependent



Esperanza Ranch, Arizona – Mix of sources



Figure 3. A FRAMEWORK FOR IMPLEMENTATION



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Katz, D., 2006. Going With the Flow: Preserving and Restoring Instream Water Allocations. *The World's Water: The Biennial Report on Freshwater Resources* (P. Gleick, editor). Island Press, Washington.

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Public Survey

We are developing a public survey to evaluate interest in a program to pay for water for the environment and receive feedback on program designs from a broader audience.

Please take a moment to review the draft survey and provide your comments on the content of the survey. Please consider specifically whether you think the listed questions will allow respondents to share their support for and ideas about this type of program in a meaningful way.



Water Resources Research Center
College of Agriculture and Life Sciences






Securing Water for the Environment: Establishing Pilot Programs

October 8, 2009 – Water Smart Innovations

Dr. Sharon B. Megdal, Director
Joanna Bate

Water Resources Research Center
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1


Presentation Overview

- Conserve to Enhance – The Concept
- Alternative Mechanisms
- Establishing Pilot Programs
- Stakeholder Involvement
- Implementation Considerations


2

Background

- Environmental enhancement projects need funds to secure water supplies
(Megdal et al., 2006 "Projects to Enhance Arizona's Environment")
- Public interest in preserving and enhancing riparian areas
(Katz, 2006)
- Water conservation as a source of water for environment
(Schwarz and Megdal, 2007)



Arawajpa Canyon, Arizona




Verde River, Arizona


3

Goals: Conserve to Enhance

- Provide water to environmental enhancement projects
- Environment as a water customer
- Increase water conservation
- Connect individual conservation to environmental concerns
- Create a simple accounting mechanism
- Create a reliable funding source



Arawajpa Canyon, Arizona

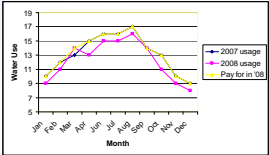


Verde River, Arizona

4

Conserve to Enhance

- Voluntary reductions in water consumption
- Water savings translate into money savings
- Savings translated into donations for water for environmental enhancement projects



Month	2007 Usage	2008 Usage	Pay for In Use
Jan	10	10	10
Feb	12	12	12
Mar	14	14	14
Apr	15	15	15
May	16	16	16
Jun	17	17	17
Jul	18	18	18
Aug	17	17	17
Sep	15	15	15
Oct	12	12	12
Nov	10	10	10
Dec	9	9	9

5

Encourage Participation

- Connect to environmental concerns
- Subsidize water conservation
- Link with existing conservation programs
- Match donations
- Set tangible goals




6

Manage Funds

- Develop fund management processes
 - Partner with existing organizations
 - Makeup of oversight body
 - Degree of discretion in decision making



Verde River, Arizona (Jeanmarie Haney, TNC)



Esperanza Ranch, Arizona

Donations Can Go Toward...

- Purchase water
 - Reclaimed water/Effluent
 - Groundwater
- Lease water
- Secure instream flows
- Acquire easements and retire pumping
- Recharge groundwater



An Alternative Mechanism

- Check-box donation programs
 - Exists in three communities
 - Does not connect donations to conservation actions
 - Demonstrates support for environmental water supply
 - May be useful for first phase of project
 - Limited billing system modifications



Lessons Learned from Checkbox Programs

- Don't go it alone!
 - Initiated through partnerships between cities/water utilities and local environmental organizations.
- Water can be hard to find!
 - Limited availability of water for lease in some basins.
- Demonstrate results!
 - On website
 - In annual report



Roles of Partners

	City	Water Utility	Non-profits	Citizens	Businesses
Manage program	X	X	X		
Advertise program	X		X		X
Make donations	X		X	X	X
Serve on Advisory Board	X	X	X	X	X

Establishing Pilot Programs

- Sharing the concept
- Evaluating interest
- Building partnerships
- Identifying funding sources
- Implementing pilot programs



Verde River, Arizona (Jeanmarie Haney, TNC)



Esperanza Ranch, Arizona

Stakeholder Involvement

- Outreach efforts have included roundtables, presentations, workshops, one-on-one meetings, and surveys with:
 - Utilities
 - City and county officials
 - Environmental groups
 - Homeowners/residents
 - Professors
 - Hydrologists
 - Water conservation professionals



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Stakeholder Feedback

When asked *how they would like to contribute* to a fund supporting water for environmental enhancement or riparian restoration, respondents (n=137) chose:

- Tax on water use (59%)
- Money saved through conservation (42%)
- Voluntary donation on utility bill (41%)

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Stakeholder Feedback

- Value of program as educational tool
- May stimulate existing water conservation programs
- Variations on original mechanism:
 - Conservation calculator linked to donation
- Concerns:
 - Costs for utility vs. costs for customer
 - Lost revenues from reduced demand
 - Increased competition for limited supplies

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Building Partnerships

- Tucson Pilot Program
 - NGOs
 - Tucson Water
 - Local Government
- Needs additional funding
 - CAP Small Grant
 - Reclamation Water Conservation Grants

Building Partnerships

- Northern Arizona
 - Local Governments
 - City of Flagstaff
 - City of Prescott
 - City of Chino Valley
 - NGOs
 - Nature Conservancy
 - Education Centers
 - Highland Center
 - Cooperative Extension

Considerations

- Utility billing systems
- Water available for purchase
- Simple messages/explanations
- Accountability
 - Tracking contributions
 - Tangible, local benefits
- Encourage partnerships and broad participation



Verde River, Arizona (Jeanmarie Haney, THCI)



Esperanza Ranch, Arizona

Questions?



Esperanza Ranch, Arizona

Joanna Bate, Research Assistant
Dr. Sharon B. Megdal, Director
Water Resources Research Center
350 N. Campbell
Tucson, AZ 85721
520-621-9591
fax 520-792-8518
web site: www.cals.arizona.edu/azwater/

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Conserve to Enhance

References:

- Megdal, Dr. Sharon B., Bate, Joanna, and Andrew Schwarz. June 2009. *Securing Water for Environmental Purposes: Establishing Pilot Programs*, Intl. Journal of Environmental, Cultural, Economic and Social Sustainability 5.*
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- Megdal, Dr. Sharon B., Lacroix, Kelly Mott, and Andrew Schwarz. 2006. *Projects to Enhance Arizona's Environment: An Examination of Their Functions, Water Requirements, and Public Benefits*. WRRRC and US Bureau of Reclamation, Tucson, AZ.*

*Available on WRRRC website: <http://cals.arizona.edu/azwater/publications.php>

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Appendix C. Conserve to Enhance Webpage on UA WRRRC Website

Search WRRC:

Search All

A review of environmental enhancement projects led to a current project that focuses on establishing programs that provide water for the environment, either through direct check box donation programs or voluntary municipal water conservation.

San Pedro River

Background

Several years ago, WRRC researchers began a study of environmental restoration projects in Arizona (funded by the U.S. Army Corps of Engineers and U.S. Bureau of Reclamation). Completed by 2006, the reports (found [here](#) and [here](#)) highlighted the importance, and in some cases the insecurity, of water for environmental enhancement projects in Arizona. A recent [report](#) updated information about some of these environmental enhancement projects and added information about a few newer projects.



Conserve to Enhance

With extensive stakeholder input, the authors developed a program concept, called Conserve to Enhance, that connects individual water use behavior with environmental concerns ([Megdal and Schwarz 2007](#); [Megdal, 2008](#); [Schwarz and Megdal, 2008](#)). Existing water conservation programs may not effectively target water users that are motivated by environmental concerns. Conserve to Enhance stipulates that individuals who are motivated to conserve water for environmental purposes can implement water conservation measures and dedicate the cost savings from their reduced water use to local restoration projects.

Verde River



A Conserve to Enhance program has the potential to expand a community's water conservation efforts as well as support environmental enhancement projects. [Megdal, Bate and Schwarz \(2009\)](#) offer recommendations for implementing this type of program. Some communities in the West offer water customers a check box donation program that generates funding to pay for local riparian enhancement efforts or purchase of instream flow rights. Check box programs do not directly connect water conservation to providing water for the environment but do provide insights about program development.

Current Project Activities

Efforts are underway to implement one or more pilot programs based on the "Conserve to Enhance" mechanism. A pilot program will provide an opportunity to establish program management details and test participation levels. ([See](#) summary of elements for pilot program)

- ◆ [Tucson Piloting Efforts](#)
- ◆ [Project Materials](#)
 - Click [here](#) to view a project brochure.
 - Click below to view conference posters:
 - ["waterforenvtposter3a"](#)
 - ["waterforenvtposter3b"](#)
 - Click [here](#) to take a survey (view [here](#) as pdf to help determine the public interest in enhancing environmental areas). Contact the project staff if you would like to use this survey in your community.

Please contact [Joanna Nadeau](#) with any comments or questions about this project.

Appendix D. Conserve to Enhance Press Coverage in 2008

“UA Idea: Tucsonans save water; funds go to restore our rivers”, Arizona Daily Star, Tony Davis

“Conservation program overly convoluted”, Arizona Daily Star, Editorial

“Conservation program merits study”, Arizona Daily Star, Editorial

Published: 07.16.2008

UA idea: Tucsonans save water; funds go to restore our rivers

By Tony Davis

ARIZONA DAILY STAR

Why conserve water when what's saved goes to serve more growth?

That question has hung over the city's water-conservation debate for years.

Even though statistics show that many Tucson-area residents have indeed cut back from their use a decade ago, people continue to write letters and speak out at meetings that they see little point in conserving if newcomers keep moving in and slurping up the savings.

Now, a University of Arizona water-research center wants to offer an alternative to ensure that saving water is helping the region's long-dry rivers and streams.

"Conserve to Enhance" is a proposed program in which people who save water could set aside the money they saved by using less water to restore long-barren rivers or streams. It's been under study for some time by the UA's Water Resources Research Center.

Three Tucson City Council members have recently indicated interest in it: Regina Romero, Rodney Glassman and Karin Uhlich. Their staffers met Tuesday to discuss it.

"If you don't connect people's conservation to actual restoration, they rightfully might perceive a disconnect — what are you conserving for?" said Mac Hudson, an aide to Romero.

"It will have to be a pilot program," he added. "It will have to go slowly. We don't know if it is a viable option, but we are willing to take the time to find out if it is viable."

There is enough interest that the council aides will meet again on the idea and will try to take it next to a City Council subcommittee, Hudson said after Tuesday's session.

However, Tucson Water officials, concerned about the Conserve to Enhance program's cost and its potential complexity, have not embraced it.

"We're not pursuing it until it becomes something that there is a lot of interest in, something that the mayor and council want us to move forward on," said Mitch Basefsky, a Tucson Water spokesman.

The UA water-research center has shopped the idea around at seminars, in a research paper and at meetings with various interest groups and Tucson Water officials. It is trying to interest other Arizona cities, such as Prescott and Flagstaff.

The program's purpose is not to slow growth but to encourage more conservation, center officials said. They envision that it would be a voluntary program, employing a checkoff or other tool on water bills for ratepayers to

BY THE NUMBERS

Tucson water conservation statistics:

- From 1997 to 2007, the total number of water meters in the Tucson Water service area rose about 20 percent to about 215,000.
- During the same period, the average per-person daily household water use dropped nearly 14 percent, to 99 gallons daily.
- In new homes throughout Pima County, discharges into the sewer system are about 70 gallons per person daily, lower than the regional average of 85 gallons, because newer homes generally have more desert landscaping, lower-flow toilets and other indoor conservation devices.
- That compares with 90 to 100 gallons per person daily in the 1970s, before water conservation efforts began.

- But total water produced by the Tucson Water system rose by nearly 10 percent in that period to 122,000 acre-feet a year due to population growth, although it has dropped over the last three years. An acre-foot is 325,851 gallons.

Sources: Tucson Water and the Pima County Wastewater Reclamation Department

DID YOU KNOW

Tucson's annual "Beat the Peak" water-saving campaign began in 1977, urging people not to water

direct the money savings to restoration.

Another driving force behind the program is the need to find water for environmental restoration projects now springing up around the state that would create or re-create river or wetland habitats along rivers, streams and lakes.

outdoor vegetation more often than every other day and never between the peak-use hours of 4 and 8 p.m.

A 2006 study by the water center's director, Sharon Megdal, found that 80 percent of 30 such projects need an outside source of water.

Here's how program supporters envision it would work:

A water utility would establish a water budget for each customer, to learn how much water a given home or business has used over a specific period.

Then, if the resident or business owner reduced water use, he or she could decide to pay the same amount as before and have the extra money diverted to a restoration project.

The most likely targets for the money would be planned programs such as Paseo de las Iglesias or Tres Rios. Those are long-discussed, multimillion-dollar city and county efforts that propose to plant thousands of mesquite and other trees along the Santa Cruz River to restore a touch of its historic ambience.

Backers of the idea don't know what kind of water would be used for these programs. But because it's long been clear that reclaimed water would be a major source used to irrigate the trees, Conserve to Enhance wouldn't necessarily affect drinkable water supplies, said Joanna Bate, a research associate at the UA research center.

The program probably would work best if it used an established restoration project, and it would simply provide money to secure a water supply, backers say. That would be simpler than starting a new project that would have to get the trees and set up a new administrative structure, backers say.

"But I don't think it's easy to say without a specific project in mind what kind of water it would be," Bate said. "The important thing is that we want to encourage conserving water, so we can reach people who might otherwise not think about conservation because the water goes to growth."

The program will work best if it's kept simple, so the public can easily grasp its purpose, backers wrote in a peer-reviewed paper in January in the American Water Works Association's journal.

To increase the public's trust in how the money is being spent, an independent board should be given the power to make spending decisions, the paper said.

It would require active participation and support from the local water utility, wrote authors Megdal, the UA center's director, and Andrew Schwartz, a former center graduate student who now is an engineer for the California Department of Water Resources.

Some questions are:

- What type of water would be used, since using drinkable supplies would divert water from people?
- Would conservation cut utility revenues?
- How would use of rivers and streams as water customers affect competition for scarce supplies?
- Is the utility's billing system adequate to handle the additional number-crunching for this program?

Tucson Water officials had other questions.

"When you boil this down to its basic premise, it's people donating money for a cause," said David Cormier, the city's new finance director, who reviewed this proposal as business services administrator for Tucson Water.

"Granted, they tie that to conservation, but does it make sense to go through a rather extensive process for an individual to say, 'I'd like to donate \$10 to this cause'?"

Setting up the program would require Tucson Water to track every customer's historical water-use patterns so the utility could calculate conservation savings, utility officials said.

"It would be an expensive, difficult process," Tucson Water spokesman Basefsky said.

But Councilman Glassman said it's an idea worth checking out.

"Anything that we can do to facilitate more water conservation in our community is something that should be explored," he said. "I'm confident that as a community, we can come up with creative and cost-effective ways to promote conservation of water."

The researchers aren't trying to say that this is a simple idea without costs, Megdal said.

"Let's try to figure out a way of doing it, of offsetting some of those costs," she said.

BY THE NUMBERS

Tucson water conservation statistics:

- From 1997 to 2007, the total number of water meters in the Tucson Water service area rose about 20 percent to about 215,000.
- During the same period, the average per-person daily household water use dropped nearly 14 percent, to 99 gallons daily.
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Sources: Tucson Water and the Pima County Wastewater Reclamation Department

DID YOU KNOW

Tucson's annual "Beat the Peak" water-saving campaign began in 1977, urging people not to water outdoor vegetation more often than every other day and never between the peak-use hours of 4 and 8 p.m.

- *Contact reporter Tony Davis at 806-7746 or tdavis@azstarnet.com.*

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Published: 07.18.2008

Conservation program overly convoluted

Our view: Well-intended 'Conserve to Enhance' is a record-keeping nightmare; there are easier ways to restore rivers

Though it is well intentioned, a University of Arizona proposal to encourage water conservation is too complicated and would be a hard sell to Tucson ratepayers.

The Star's Tony Davis reported Wednesday that the UA's Water Resources Research Center has come up with a program called "Conserve to Enhance." The idea is that water customers who join the voluntary project could divert money they save from conserving water toward the restoration of rivers and streams.

Say, for example, that a family normally pays \$50 a month for water. They begin to conserve and use enough water to merit a \$45 tab. They would still pay \$50, but \$5 would go toward waterway restoration.

This is intended to make people feel more positive about conservation and give them a visible measure of their environmentally friendly lifestyle changes.

"If you don't connect people's conservation to actual restoration, they rightfully might perceive a disconnect — what are you conserving for?" Mac Hudson, an aide to Tucson Councilwoman Regina Romero, said in Wednesday's story.

Council members Rodney Glassman and Karin Uhlich have also indicated interest in the UA proposal.

The program is touted as a way to address some citizens' concerns that their conservation efforts may be counterproductive. As Davis wrote, "Why conserve water when what is saved goes to serve more growth?"

While some Tucsonans undoubtedly think in those terms, we believe more conserve water for a simple reason — it lowers the water bill.

Tucson Water gives residents an incentive to conserve with its tiered rate structure. Households that consume greater quantities of water pay much more than families who use a little.

As for the issue of growth, unless our community's water supply evaporates overnight, the area will continue to expand.

Moreover, the availability of water is not what brings people to Tucson. They come for jobs, affordable housing, a university education, the mountains, the outdoors, the warm winters and cool evenings under an orange sunset.

You'd have to get rid of many great things before people stop coming to Tucson.

So why not establish Conserve to Enhance for residents who want to cut water usage and apply their savings toward river restoration?

For one, we are concerned that participation would be minimal. We suspect most people would rather keep their savings and apply them toward household expenses instead of contributing to an environmental program. Extra money is especially meaningful in these financially tight times.

Secondly, setting up the conservation project would be complicated.

As Davis reported, a utility would have to establish a water budget for each customer to learn how much water a household or business has used over a specific period. Tucson Water alone has about 215,000 water meters.

"It would be an expensive, difficult process," said Mitch Basefsky, a Tucson Water spokesman.

There's a simpler way.

If some members of the community want to see waterways restored, they could donate money to a project directly. It's unnecessary to require that utilities track historical water usage, calculate savings and then send money to a third party.

"When you boil this down to its basic premise, it's people donating money for a cause," David Cormier, Tucson's finance director, told Davis. "Does it make sense to go through a rather extensive process (than) for an individual to say, 'I'd like to donate \$10 to this cause.'"

Waterway preservation can be accomplished in a more direct manner that leaves utilities free to service customers and promote meaningful water conservation.

How to help

A short list of groups that restore waterways and accept donations:

- Arizona Open Land Trust, west branch of the Santa Cruz River, www.aolt.org, 577-8564.
- Arizona Riparian Council, azriparian.asu.edu.
- Audubon Arizona, San Pedro River, az.audubon.org, 1-602-468-6470.
- Friends of the Santa Cruz River, upper Santa Cruz River, www.friendsofsantacruzriver.org.
- The Nature Conservancy, San Pedro River, Verde River, Cienega Creek, www.nature.org, 622-3861.
- Rincon Institute, Rincon Creek, www.rinconinstitute.org, 647-7388.
- Sky Island Alliance, Santa Cruz watershed, www.skyislandalliance.org, 624-7080.
- Sonoran Institute, Santa Cruz River, Colorado River delta, www.sonoran.org, 290-0828.
- Tucson Audubon Society, upper and lower Santa Cruz River, www.tucsonaudubon.org, 622-5622.

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Published: 07.31.2008

Conservation project merits study

By Evan Canfield

SPECIAL TO THE ARIZONA DAILY STAR

The Star's recent editorial recommending that the mayor and City Council reject the proposed Conserve to Enhance program ("Conservation program overly convoluted," July 18) unfairly characterized the concept as too complex.

The basic idea of Conserve to Enhance is that people who conserve be allowed to commit water and money for riparian restoration. In effect, it allows a resident an opportunity to direct the water they save to the environment instead of growth.

No doubt, the Conserve to Enhance concept will have to be tailored to Tucson before it can be seriously considered. However, Conserve to Enhance and other programs that reward existing residents for water conservation deserve continued consideration.

Tucsonans recognize that potable water is a limited resource and developers have myriad ways to find water to build more houses. For example, a developer can join the Central Arizona Groundwater Replenishment District, which allows builders to pump groundwater where they are and replenish it with Central Arizona Project water elsewhere in the aquifer.

In essence, the district allows people to drink water infiltrated into the aquifer thousands of years ago with the promise that it will be replenished with water that has not been secured and is not physically available at the point of use. Convoluted indeed.

Similar creative efforts should be bestowed on the needs of the environment and residents. Keeping water in the aquifer and using water to grow trees and restore riparian habitat benefits the environment and people who live here.

Increasing temperatures come as a direct consequence of growth as asphalt and concrete emanate heat collected during the day. The average nighttime air temperature has increased 10 degrees since 1900. Trees and riparian vegetation are needed to help cool Tucson.

Tucson Water's effort to reduce reliance on the central well field has been good for residents. Recovery of the well field has reduced the subsidence problems that have played havoc on infrastructure. For this reason alone, water is needed in the aquifer. In some areas, recovering water tables may allow deep-rooted riparian species an opportunity to return. More likely, effort will be required to restore riparian habitat and grow trees. These efforts require water and money. There are already local riparian enhancement projects that do not have sufficient funding to purchase water.

Unfortunately, existing water regulations support a free-market system in which environmental needs are poorly represented. The system is less conducive to the needs of residents, which is why innovative solutions such as Conserve to Enhance should be considered by the mayor and City Council.

Some Tucson Water staff members worry that accounting for conserved water would be an onerous task. However, it need not be so complicated.

Sharon Megdal, director of the University of Arizona's Water Resources Research Center and an originator of the Conserve to Enhance concept, said the method for determining baseline water use could be simplified. For example, low-water-use customers, such as those in Tucson Water's first block rate, could be eligible for the program.

Implementing a Conserve to Enhance program could be done fairly and simply, and it needs to be considered by Tucson Water and our elected officials.

Write to Evan Canfield at hecanfield@yahoo.com.

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Appendix E. Public Survey

Survey Instrument: Establishing Pilot Programs Survey, version 6

Public Survey Results: Establishing Pilot Programs

Establishing Pilot Programs... VOLUNTARY PUBLIC SURVEY

- 1. Would you be willing to pay money to a fund that supports...**
- a. **environmental enhancement in your community?** *Environmental enhancement = projects to improve waterways, washes, and stream areas and other sensitive environmental areas.*
 - i. Yes
 - ii. No
 - b. **river restoration in your community?** *River restoration = projects to return a waterway, wash, or stream to a pre-disturbed state (see photos below of Fossil Creek before and after restoration of flows)*
 - i. Yes
 - ii. No
 - c. **securing water for the environment in your community?** *Securing water for the environment = projects to obtain water rights for environmental uses, such as providing water supplies to environmental enhancement or river restoration.*
 - i. Yes
 - ii. No
 - d. **river/wash habitat protection for endangered species?**
 - i. Yes
 - ii. No

1-1. For the one(s) you answered “yes” to, how much would you be willing to pay per month to this fund?

\$_____ per month

2. How would you like to make your contributions to this fund?

[check all that apply]

- ____ Voluntary donation – amount chosen by you
- ____ Automatic recurring withdrawal – amount chosen by you
- ____ Contribute my time (volunteer)
- ____ Tax on water use
- ____ From money you saved from your water conservation actions

3. Would you also like information about the cost savings associated with water-conserving home improvements?

- i. Yes
- ii. No

4. What is your zip code? _____

5. What specific river(s) or wash(es) would you like to see receive funds? _____



Fossil Creek Before Flow Restoration

Fossil Creek After Flow Restoration

Public Survey results – Establishing Pilot Programs...

137 respondents

Events:

In Person – UA Earth Day; Tucson Earth Day Reid Park

Online Survey – CWAG; Conserve to Enhance stakeholders email distribution

Messaging: Would you be willing to pay money to a fund that supports... (out of total asked)

- a. environmental enhancement in your community – 91.2%
- b. river restoration in your community – 86.9%
- c. securing water for environment in your community - 89.8%
- d. river habitat protection for endangered species - 88.9%
- 80.3% of people surveyed would contribute to all messages.

Contributions: Respondents said they would contribute between \$2 and \$100/month. On average, people would pay \$10/month for one of these environmental water programs.

Accounting mechanism: How would you like to make your contributions to this fund?

- a. Voluntary monthly pledge – recurring charge on bill each month – 27.7%
- b. Voluntary donation – you add to bill – 40.9%
- c. Flat-fee – predetermined amount – 17.6%
- d. Tax on water use – 59.1%
- e. Money saved through conservation – 41.9%

Info on conservation: **65.0%** - wanted information on cost savings of water conservation home improvements

Rivers: What specific rivers would you like to see receive funds?

Verde 21 + 4 upper = 25

San Pedro 23 + 1 middle = 24

Santa Cruz 22

Rillito 21

Gila 11

Salt 10

Rio de Flag 5

Pantano Wash 5

Cienega Creek – 5

Granite Creek – 4

Colorado 4

Tanque Verde – 3

Agua Fria - 3

Sabino Canyon – 2

Little Colorado – 2

Canada del Oro – 2

Davidson Wash 2

Fossil Creek - 2

Single Votes:

Cross Cut and Arizona Canal banks

Hassayampa Wash

Agua Caliente Creek

Arcadia wash

Garden Canyon Wash

Hardy Wash

High School Wash

New River

Oak Creek

Indian Bend Wash

middle San Pedro River

Mississippi River

Pima Wash

Willow Creek

All

All major river systems in AZ

any within Maricopa County or the state of Arizona
As many as possible
Everything EAST & WEST of the Continental Divide

Interior urban washes in coordination with local neighborhood groups
Local rivers in Southern Arizona
Those in worst condition
You choose! All of them

Other Comments:

- Although, I am for saving the environment and am willing to donate money, time and focus my work to save the environment.....sometimes "nut cases" run these environmental efforts and do more harm then good in getting the public to support the "cause".
- assure my money is used efficiently
- Flat out asking for money is difficult to answer without more details. How much do you need for sustainable water and habitat health? Whatever the amount would need to be done on a city wide basis not just concerned individuals. The city is taking out money for an assured water supply water (BTW none of which is going to safe Yield) in each water bill that amounts to about a million each year. How much would it take to do these things?
- has been to a workshop about cost savings of water conservation
- How will you assure that the water is not used for development?
- I believe better public education is needed
- I love this idea!
- I think effluent is a water resource that can greatly assist in waterway restoration efforts.
- I think that it is imperative to save existing river systems that are disappearing/drying up and being destroyed do to overuse or misuse of water resources, especially in Arizona. We need to find a better way to conserve the water we have and prevent the loss of it. It won't magically come back, it must be preserved somehow, for our own sake and that of wildlife in the state.
- I think this is an excellent program that could have very positive results. I also like the idea of designating which specific waterways would see improvement, however earmarking funds for specific waterways could also have the effect of spreading resources too thin. Keep up the good work.
- I wish this were a probability(random) survey so you could apply the results to the population as a whole. What you are doing is very biased.
- i'd like to mandatory rainwater harvesting and greywater irrigation for all new residential & commercial construction & significant rebates on existing construction. Look to Hawaii & Australia for examples.
- If the funds went to the city or county I am not sure I trust them enough to be certain the funds would be protected and used only for the above purposes.
- In view of the fact that all streams in our area are ephemeral it is doubtful if there are any environment benefits to gained. Also, any additional tax or financial burden would be unwise. Certainly, the above type of environmental work would involve considerable expense with questionable return in any quality of life in our area. Water is in short supply here already and committing any of it to this type of environmental projects would come at the expense of our quality of life.
- It would be important that these monies could not be razed for any other purpose.

- Make it prohibitively expensive for people to live in specific regions at current lifestyle expectation
- My answer to #3 would depend on where the water was being taken from in order to achieve #3's objectives.
- no more paper
- Not enough attention is being paid to those creeks other than the Verde
- Prevent degradation of rivers, re-allocate water supply to include environment.
- Question #6 - another option would be to have a set fee on the water bill, administered by the water utility as a set aside account for conservation.
- Question 5: I have not put an amount because it should be a sales tax percentage of the amount of water used--the more water you use the more you pay, already installed in house water cons appliances, 100% of irrigation from captured rain water
- The programs suggested in #1-4 should actually be funded by developer impact fees.
- This should be a mandatory fee included with water delivery. If everyone contributes a tiny amount, nobody will have to give too much and there will be plenty to cover the costs of projects. Also, I don't want to see this be Endangered-Species driven. Just general restoration/enhancement to support both the ecological and human communities.
- Urban amenities (paths, lighting) along waterways
- water bill is included in rent
- Water needs to be taxed at a rate that reflects its worth
- We need to support and enhance the ecology and functionality of our waterways!
- Why don't we involve the Gov Soil and Water Conservation Agencies. In question 5 - I would require more details.
- Your study is bs because it doesn't address the real root of our environmental problems and it somehow proposes the notion that throwing money at studies and research will eradicate the corruption and plutocratic manipulation of a very clearly discernable situation

Appendix F. Tucson Environmental Water Banking Program Materials

Brochure: Tucson Environmental Water Banking through Water Conservation

Program Synopsis: Tucson Environmental Water Banking through Conservation Program

Webpage: Environmental Water Banking

November Email Newsflash

Draft Pilot Structure: Pilot Structure for Tucson Environmental Water Banking through Water Conservation Program

Collaborative Local Effort

Local organizations are developing partnerships to establish the foundation for an environmental water bank driven by water conservation. The Sonoran Institute, Watershed Management Group, and Tucson Audubon Society are working with the University of Arizona Water Resources Research Center, City of Tucson, and Tucson Water to implement this innovative water conservation mechanism in Tucson.


These organizations offer a range of expertise in water conservation, riparian restoration, and public engagement, as well as decades of involvement in local water issues.




Tucson Environmental Water Banking through Water Conservation

For More Information, Please Contact:

Emily Brott
Sonoran Institute
Tucson, AZ

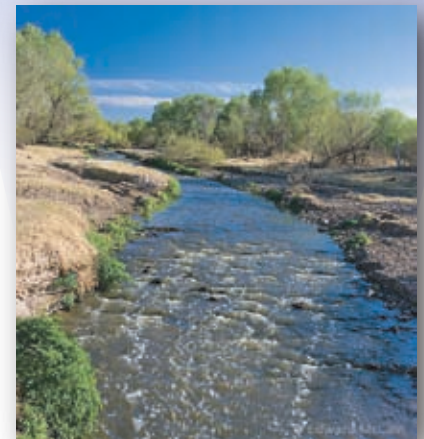
 (520) 290-0828

 ebrott@sonoraninstitute.org

Tucson Environmental Water Banking through Water Conservation



Conserve to Enhance Pilot Program



Program Goals

The Tucson Environmental Water Banking Program aims to link conservation efforts with watershed restoration efforts to ensure the long-term sustainability of our water resources. The Environmental Water Bank will create a mechanism for water to be purchased and designated to the environment to restore riparian areas and increase groundwater levels.

The program is being launched through a pilot with 30 to 50 participants to establish a voluntary Environmental Water Bank that will utilize dollars saved through water conservation to purchase water for environmental enhancement.

Program benefits will include:

- ✓ reduced urban heat island effect
- ✓ erosion control
- ✓ creation of urban greenways
- ✓ creation of wildlife habitat
- ✓ more livable communities

How It Works

Businesses, homeowners, and residents who enroll in the program will receive advice on water saving practices and technologies along with subsidies for installing water harvesting features. Participants will have access to a conservation calculator, which will track their dollars saved through water conservation and link them with a donation mechanism. Revenues generated by the program will be used to purchase water and deliver it to local environmental enhancement projects as selected by a citizen-staffed Advisory Board.

How to Get Involved

Consider joining this innovative program by participating in the pilot. To enroll, contact Emily Brott at ebrott@sonoraninstitute.org

Local water stakeholders may participate in the Advisory Board, which will meet monthly.



Santa Cruz River, in Tucson



Santa Cruz River, North Simpson Restoration Site

For More Information

Emily Brott
Sonoran Institute
Tucson, AZ



(520) 290-0828



ebrott@sonoraninstitute.org

Tucson Environmental Water Banking through Conservation Program

Watershed Management Group, Water Resources Research Center,

Sonoran Institute, Tucson Audubon Society, Tucson Water

With funding support from U.S. Bureau of Reclamation and U.S. Environmental Protection Agency

The Tucson Environmental Water Banking through Conservation Program (Tucson Environmental Water Banking Program) seeks to implement an innovative conservation mechanism known as "Conserve to Enhance," recently proposed by the University of Arizona's Water Resources Research Center (Schwarz and Megdal, 2007; Schwarz and Megdal, 2008; Megdal *et al.*, 2009). Conserve to Enhance stipulates that individuals who are motivated to conserve water for environmental purposes could implement on-site water conservation measures and dedicate the cost savings of their reduced water use to local environmental enhancement projects such as riparian restoration efforts. The Tucson Environmental Water Banking Program is a pilot program building on the Conserve to Enhance idea and will provide a direct link between water conserved at a particular home or business and on-the-ground restoration at a local site in the Santa Cruz River Basin. The long-term goal is to scale up the reach of the project to generate sufficient funds to purchase and transport water or treated effluent to riparian protection and restoration efforts in the basin.



Aim of this pilot program is to: 1) establish a voluntary environmental water bank which will connect dollars saved through water conservation at homes and businesses towards purchasing water for riparian protection and/or restoration activities, 2) utilize modern water harvesting techniques to create a new source of water to save precious potable water supplies, 3) subsidize installation of rainwater or graywater harvesting features at local homes, 4) enhance local rivers through restoration and increased water flows, 5) test community participation in this type of program, 6) establish a stakeholder Advisory Board to provide transparency and oversight, and 7) develop the mechanism to replicate this approach for other municipal water works and watersheds where the environment is currently a "non-customer" for access to water.

How the Water Bank Works - The basic Conserve to Enhance program offers water customers the option of donating the money they save through water conservation to a fund that purchases water supplies for environmental enhancement projects. Thus, as individual households make voluntary reductions in their water consumption, these reductions are measured against prior year's usage for the same month. Participants pay for the higher level of usage, and the money saved by conserving water is deposited into the fund. The fund is overseen by the Advisory Board and used to purchase water for environmental enhancement

Anticipated Results: The immediate benefits of a Conserve to Enhance program would be visible in small-scale improvements to a local wash or a portion of the Santa Cruz River. We anticipate the program will lead to a reduction of the urban heat island effect, improved erosion control, revegetation with native plants, creation of wildlife habitat, and the creation of urban greenways. Schwarz and Megdal (2007) estimate that a mature Conserve to Enhance program in Tucson could produce annual revenues ranging from \$100,000-\$1,200,000 per year. The actual amount will depend on the number of participants, the retail cost of water, the amount of

conservation realized, and the method used to calculate “conserved water.” At the mature scale, the revenues would be sufficient to purchase water from available sources and deliver it to local restoration projects as selected by the Advisory Board.

In addition to on-the-ground results, implementation of the pilot program will allow us to ground truth the level of community interest in the Conserve to Enhance concept. The University of Arizona's Water Resources Research Center has implemented stakeholder workshops in Tucson and presented the concept to regional and national audiences, citing an overall positive response (Megdal *et al.*, 2009).[1] Attendees of the workshops in Tucson included interested citizens as well as representatives from water utilities, environmental groups, city and county government, and academia. The pilot will focus on engaging and recruiting homeowners that are interested in receiving subsidies towards installing rainwater harvesting systems at their homes, either by hiring professional installers or through Watershed Management Group's Co-op Program. Watershed Management Group has already developed relationships with a sizable number of homeowners who are willing to volunteer their time to improve the Tucson basin through water harvesting installation. The Co-op Program is an ideal launchpad for our pilot because it offers volunteer labor that will help homeowners in the program defray the high upfront costs of installing their own water harvesting systems. Larger-scale water harvesting projects with commercial developments will be pursued, which have the potential for much larger water conservation returns.

What will make this program successful: Based on lessons learned from existing programs that provide water for the environment, the following characteristics are the indicators of successful programs:

- Program is voluntary, simple and easy to explain;
- Support a pre-existing, highly visible riparian restoration project[2];
- Support a project that is noncontroversial and provides benefits to the local community;
- Articulate specific results that are expected from the restoration actions;
- Identify the water quality needs for the project;
- Identify an available water source with the appropriate water quality for restoration;
- Identify a feasible water delivery mechanism;
- Include partnerships between city water authorities, private water utilities, and well-established, local environmental organizations;
- Establish an independent, stakeholder Advisory Board to oversee the fund and provide accountability and credibility;
- Enjoy strong support from city government (through promotion, matching funds, etc.);
- Implement in communities that have a strong environmental ethic and a history of successful water conservation efforts; and
- Promote restoration successes through outreach in the water bill, on websites, and through the media.

For more information, please contact:

Emily Brott (Sonoran Institute) - **email:** ebrott@sonoraninstitute.org; **phone:** (520) 290-0828 x244

Or visit the project website: <http://www.watershedmg.net/programs/envi-water-bank>

Current Status: The Bureau of Reclamation currently funds a part-time staff person at the Water Resources Research Center to implement one or more pilot programs. Sonoran Institute has secured funding from the US Environmental Protection Agency (USEPA) to provide a one-quarter time staff person to begin implementation of a one-year pilot program in Tucson; USEPA funding will also cover subsidies (\$1,000) for installation of water harvesting features at 30 Tucson residential homes.

Next Steps: With existing funds we can only implement a scaled-back pilot of the Conserve to Enhance program, which does not include the cost for outreach materials or any other subsidies beyond the 30 residential subsidies mentioned above.

Currently, the partner organizations are establishing the foundation for this program. We began developing basic program materials for promoting the program within the community. We are also in the process of recruiting candidates for the project's Advisory Board. We are working to establish an accounting mechanism to track participants' savings through a web-based automatic conservation calculator. Currently we are working with local organizations involved in environmental restoration to draft a short list of potential beneficiary sites. We anticipate finalizing the composition of the Advisory Board and commencing installation of water harvesting features in the winter of 2009-2010.

References Cited:

Megdal, Sharon B., Joanna Bate, and Andrew Schwarz. "Securing Water for Environmental Purposes: Establishing Pilot Programs." *The International Journal of Sustainability*, Submitted February 2009.

Schwarz, Andrew, and Sharon B. Megdal. *Water Conservation Banking: Municipal Water Conservation to Support Environmental Enhancement*. Tucson: Water Resources Research Center, University of Arizona, 2007.

Schwarz, Andrew, and Sharon B. Megdal. "Conserve to Enhance--Voluntary Municipal Water Conservation to Support Environmental Restoration." *Journal of the American Water Works Association*, 2008: 42-53.

[1] Some general concerns not previously mentioned include: the upfront cost to homeowners of installing water harvesting systems (this could be mitigated by the Institute's proposed subsidies); hardening of demand; and decrease in demand, which could result in across-the-board rate increases to ensure that operating costs are covered.

[2] Funds will likely be insufficient to create a new restoration project from the ground up—the funds from this program can be leveraged far better when used to support existing organizations that already have ongoing riparian restoration projects (Megdal *et al.*, 2009).



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Environmental Water Banking



The Tucson Environmental Water Banking Program links water conservation efforts with watershed restoration to ensure that water conservation will translate into benefits for the environment. Businesses and individuals can participate by tracking the amount of money saved through water conservation practices, and then donating the value of their savings to the Environmental Water Bank.

The Environmental Water Bank will be managed by a community advisory board, who will choose suitable riparian areas to receive dollars for restoration within the Tucson community. 95% of funds donated will go directly to the environment, to restore riparian vegetation, create instream flows needed for a healthy ecosystem, and increase groundwater levels.

The program is a collaboration of WMG, the Sonoran Institute, and the Water Resources Research Center. Other partners on the program are Tucson Audubon and Tucson Water along with funding from the U.S. Bureau of Reclamation and the U.S. Environmental Protection Agency.

Pilot Program

A pilot program is being launched in 2010 with an anticipated 50 participants from a diverse spectrum of Tucson's population. Starting in February of 2010, there will be two tracks for participation in the pilot:

New Water Conservation Practices: apply for a water harvesting subsidy to implement water conservation practices and track conservation gains

Existing Water Conservation Practices: those who have already implemented conservation features can track current conservation gains against historical water use

We will be offering subsidies ranging from \$500 to \$2,000 for individuals and businesses to install water harvesting features. Those who participate will go through a water audit process and receive recommendations on the best ways to reduce their water consumption. Conservation features will be installed in the first 6 months of the program, and then participants will track their water use for one year following the installation. Participants will also agree to make a monthly donation to the Environmental Water Bank based on the amount of money saved on their water bill.

Get Involved

If you would like more information on this program or if you are interested in participating in the pilot, please contact Emily Brott with the Sonoran Institute at ebrott@sonoraninstitute.org or at 520-290-0828.

Background Information

The Tucson Environmental Water Banking program is piloting the Water Resources Research Center's program concept, [Conserve to Enhance](#). Their research discovered the difficulty of securing water for riparian restoration projects and reviewed some current efforts to link individual water users to environmental enhancement.



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[Next >](#)



Latest News

[Az Star - WMG Installs Cistern at Manzo Elementary](#)
[WMG Co-op Workshop, Blog Entry - Oct 2009](#)
[Stormwater Retention Basins \(blog entry\)](#)
["No Drop Left Behind" - WMG Featured in Desert Leaf](#)
[New Events Calendar Location](#)

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[Frequent Questions](#)

Tucson Environmental Water Bank Newsflash - Nov 25

This is the first monthly newsflash for the pilot Tucson Environmental Water Banking program. It will be arranged in four paragraphs, according to the topics that smaller committees are working on. This newsflash is also for those of you who just want to be kept in the loop about how things are progressing.



Program Development

We are establishing a detailed and formal structure for the pilot program in anticipation of its official launch. Over the past month, we drafted a pilot structure document, which includes details about signing up program participants, disbursing subsidies, and program management (e.g. partner responsibilities, fund management, etc.). The Program Development Committee will review and help finalize the draft pilot structure in late November and early December.

Outreach

Watershed Management Group has developed an internal webpage to manage communications for the Environmental Water Banking program. The forum is a Google webpage, which is a free application for non-profits. The webpage application is the central collaborative forum we will use to post working documents, outreach materials, and task lists, as well as keep track of upcoming events through an online calendar. Eventually, this website will also serve as an information hub for the Advisory Board. If you signed up for the Outreach Committee, we will ask you to review and give input on the outreach section of the pilot structure document-likely in early December.

Fundraising

Securing additional funding for the Environmental Water Banking program is vital to implementation of the pilot. If you are not on the Fundraising Committee yet and want to get involved, please let us know. Watershed Management Group was the lead organization for a November \$5K grant to the Central Arizona Project; if awarded, the money will help fund development of the web-based Water Conservation Calculator. We will find out about the outcome of this grant soon. Sonoran Institute is planning to apply for a US EPA grant in December, and the Water Resources Research Center is planning to apply for a Bureau of Reclamation Water Conservation Grant in January. If you are on the Fundraising Committee, please let us know if you would like to be involved in the early stages of grant development (brainstorming ideas, etc.) or if you would prefer to review later/final drafts.

Advisory Board

Sonoran Institute and Water Resources Research Center have been meeting with riparian restoration experts to brief them on the project and discuss potential receiving sites for the Environmental Water Bank funds. Watershed Management Group is compiling a comprehensive GIS database that will help us create maps showing potential receiving sites in relation to public accessibility and other selection criteria. Once we finalize the process for forming and structuring the Advisory Board with the Program Development Committee, we will be setting up a first meeting for the Advisory Board.

DRAFT Pilot Structure for Tucson Environmental Water Banking through Water Conservation Program

Sonoran Institute, UA Water Resources Research Center, Watershed Management Group

December 21, 2009

Changes suggested by Prog Devt Team (11/25) in red and 12/4 in green

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Major Roles for the Pilot Program (underline is lead)

- Develop/Refine pilot structure, timeline, function (WRRC, WMG, SI)
- Partnership development (WRRC, WMG, SI--no lead assigned; reassess as funding changes)
- Develop and implement funding plan (SI, WRRC, WMG)
 - Grants
 - Individual donors
 - Corporate/government sponsorships
- Recruit and form Advisory Board (SI, WRRC, WMG)
 - Consult restoration specialists and other technical experts re. potential receiving sites
 - Develop maps and other decision-support tools for Advisory Board
 - Facilitate Advisory Board (SI only)
- Develop web presence and Water Conservation Calculator (WMG, WRRC, TW)
 - Ensure ability to track actual water savings
 - Ensure ability to receive donations (both via mailed checks and web)
 - Ensure ability to track actual donations against suggested donations
 - Ensure site is user-friendly
 - Ensure site delivers water use and donation data to manageable databases
- Promote the program (WMG, WRRC, SI; with help from TW)
 - Develop the program application
 - Recruit pilot participants
 - Review applications and select participants
 - Develop and implement media plan
 - Develop Tucson Water bill insert
 - Work with City of Tucson to modify open-space check-box (**Mac Hudson**)
 - **Could include conservation calculator**
- Administer the program (WMG, SI, TW in prep for later)
 - Manage sign-ups and create participant database
 - Respond to participant needs
 - Collect donations and process thank you letters including tax deductibility info
 - Manage bank account
 - Keep detailed accounting records
- Disburse funds to receiving restoration site (Advisory Board, WMG cutting check, SI facilitating)
 - **Who is going to do the water deal? Deal with permitting?**
- Evaluate the program (WRRC, WMG, SI)
 - Track and analyse data from Water Conservation Calculator
 - Write reports and peer-reviewed journal articles re. results and lessons learned

Program Participants – Who Do We Want to Participate?

This is a subsidy for people who are willing to participate in a pilot program

- Commercial
 - Target businesses that would be good to participate (**get help from TW**)

- Residential
- Criteria
 - Tucson Water Customer
 - Participate for one year
 - Must track monthly water savings
 - Must make monthly donation
 - Must evaluate program once finished
 - Geography – people from all parts of town – which will also make a range of income levels
 - If we don't get a good range, then we will do focused recruiting
 - **One from each Ward**

Outreach Goals

- Goal: Participation in Environmental Water Bank represents a diverse Tucson population including social, economic, and geographic location.
 - Subgoal: 47 households and 2 commercial properties that represent a diverse Tucson population participate in subsidy pilot
 - Subgoal: Perform additional outreach to increase awareness and participation in the Environmental Water Bank

Subsidy Description and Disbursement

- Subsidy Amount
 - One amount for low-income: \$1000 for 5 people = \$5000
 - Low Income chart for who is eligible provided on application
 - One amount for everyone else \$500 for 42 people = \$21,000
 - Commercial: \$2,000 for two sites = \$4,000
 - Total of \$30,000
- Interested parties must submit application to qualify
 - Application would include name, address, contact info, income status, commitment (option to call to sign up?)
 - Deadline: ??
 - Participants will be chosen by review committee made up of WMG, SI, and WRRC representatives + 2 people from advisory board?
 - Selection criteria need to be developed
 - **Geographical spread (one from each Ward?)**
 - **Random selection within geographical spread**
- Those chosen will have two options for using the subsidy:
 - Work through WMG's Co-op
 - Participant volunteers their labor to help build water harvesting systems and in turn earns the ability to host a workshop at their own home with a volunteer crew.
 - Subsidy is then applied to costs of hosting workshop (materials, workshop leader's time, and admin fee).
 - Work with approved water harvesting contractor

- WMG will meet with interested vendors to explain program, and vendor will need to submit paperwork to be approved by WMG. Vendors will be well established and support mission of program.
 - Approved vendors could include those who design and install water harvesting systems and gutters
- Subsidy can only be used for construction of water harvesting system
 - Materials (gutters, cistern parts, greywater parts, landscape materials including rocks, gravel, compost, mulch, and plants)
- Subsidy will be disbursed through process approved by EPA (TBD)
 - Disbursement schedule
 - Low income participants receive half of subsidy at time of installation, half after year of water use tracking
 - Rest of participants receive subsidy at end of a year of participating in water use tracking
 - Pay vendor

Process for Participants

1. Participant submits application to participate to WMG.
2. When application is accepted or rejected for receiving subsidy, participant is notified and is added to participant database.
3. Participant selects Accounting Option - hard copy or electronic.
4. Tucson Water **zanjeros** do water audit for each of our subsidy pilot participants. **(Zanjeros are now under customer service, MWS might be back-up) - IG**
5. Based on water audit, participant selects conservation measure to implement at their home; NOTE: due to funding restrictions, subsidy can only cover rainwater or greywater harvesting (Tucson Water offers additional rebates for high-efficiency toilet installations and irrigation system upgrades at commercial properties).
6. Participant enters historical water use data on program website using information from Tucson Water records (accessible online or on hard copy of bill).
7. Participant installs rainwater harvesting at their home and other water efficiency measures recommended in their audit.
8. Participant enters water usage **and info about use of conservation technologies** on program website each month for one year.
9. Participant makes donation to Environmental Water Bank.
 - a. Based on how much they save on their bill each month - recommended
 - b. Required to make a donation every month, amount chosen by participant

Accounting and Donation Options

1. Hard copy worksheet measuring historic and current use.
 - a. Donate monthly by writing checks – provided with 12 donation slips.
2. Online conservation calculator measuring historic and current use.
 - a. Donate monthly either by writing checks (provided with electronic copy of donation slips), by paying on website through paypal, or by recurring credit card donation.

Future Options:

3. Checkbox option – through Water Bill
4. Calculator with payment option at the end (writing check or recurring credit card donation every month) – not tracking conservation

Advisory Board – Structure and Procedures

- Composition – expertise and representation of an organization are the criteria
 - 4 members from city or county government
 - 4 members from NGOs or the University
 - 1-2 members from local water utility
 - 2 members from business/development community
 - 2 members from community activism
 - Media?
 - Advisory board members' geography should match scope of pilot program and change when scope of program changes.
- Purpose: Promote program/assist with outreach? Cover specific geographic area? Help make program be effective? Help start other programs in region? Oversee all environmental water banking in the region?
- Structure
 - Board finalizes bylaws (prepped by staff)
 - Board elects chair and vice chair
 - Minimum requirements for members (e.g. attend X out of X meetings)
- Process for selecting board members, incl. criteria needed
 - Board selection committee – subsection of those currently involved'
 - Consider skills needed
- Process for removing members – managed by chair and vice chair
- Decision process detail needed, including background info required (criteria, info base)
 - Advisory board should approve criteria and set priorities for restoration sites based on the approved criteria
 - Does Adv board select short list or select receiving project before participants are recruited?
 - In first year
 - In later years

Administration Plan – Managing the Water Bank Money

- Staff tasks
 - Technical assistance, accounting of funds, monthly checkin in/enforcement on participants, collection of funds, depositing in the bank, donation receipts
 - Supplemental payment for staff member needed from other funds
- Overhead Fee – determine what percentage of overhead will go to administration costs
 - 50 participants, \$5 donation x 12 months = \$3,000
 - 10-20% overhead?
 - “Not more than __% goes to overhead”
 - Determine what we need to keep the program running now and in future
- Collection of Funds

- Monthly, linked to timing of water bill (See Accounting and Donation Options)
 - Designated to WMG in memo “Environmental Water Bank”
 - Check or credit card
- Tax-Deductible & receipts
 - Receive tax-deductible receipt at the end of the year
- Reporting
 - Amount of water saved
 - Amount of wastewater and energy cost saved
 - Tracking contributions
 - Reporting to advisory board – quarterly report of funds collected and annual report on use of funds
 - Reporting to participants – annual report on the use of funds

12/21/09 – version 1a- incorporating comments from Prog Devt Team Mtgs

Appendix G. Example Outreach Materials from Existing Checkbox Donation Programs

Blue Water Program flyer/sign-up sheet (Bend, OR)
Santa Fe River Fund flyer/sign-up sheet (Santa Fe, NM)
Albuquerque Living River Fund bill insert (Albuquerque, NM)



GIVE TO THE FLOW

PHOTO OF MIDDLE DESCHUTES AT LOW FLOW

What is Blue Water? Blue Water is an innovative partnership between Avion Water Company and the Deschutes River Conservancy (DRC), a local non-profit working to restore streamflows and improve water quality in the Deschutes Basin. Blue Water gives Avion Water customers an opportunity to make direct contributions to the DRC.

What is the problem? The Deschutes River suffers water quality problems resulting from drastic seasonal fluctuations in streamflow. Fluctuations in flows create temperature, sedimentation and other problems. Combined, these can adversely affect fish, wildlife habitat, recreation and scenic values of the river.

Where does my money go? Every dollar you donate through the Blue Water program goes directly to the DRC to support streamflow restoration programs. The mission of the DRC is to: restore streamflow and improve water quality in the Deschutes Basin. This mission is accomplished by working collaboratively with many partners. Blue Water contributions protected over 52.6 million gallons instream in 2007. The program is expected to protect more than 375 million gallons instream in 2008. For more information on DRC programs visit www.deschutesriver.org.

What does my money do? Money raised by the Blue Water program is used to improve instream flows in the Deschutes River for the benefit of fish, water quality and wildlife habitat. Just \$1.00 can put 46,550 gallons of water back in the River!

How do I sign up? Sign up by filling in the enrollment form below and returning to Avion Water with your bill payment. If you pay your bill online you can enroll by sending the completed enrollment form to Avion Water in the envelope provided. You can opt out of the program at any time by calling Avion Water.

MONTHLY CONTRIBUTION LEVELS

RIVER OTTER \$6.40

BLUE HERON \$4.80

RAINBOW TROUT \$3.20

SPOTTED FROG \$1.60



ENROLLMENT FORM

YES! I would like to 'GIVE TO THE FLOW' through the Blue Water program and help put water back into the Deschutes River. I agree to sign up for the selected level and pay the extra charge on my monthly water bill. Please return the completed form with your Avion Water bill.

NAME _____

AVION WATER ACCOUNT NUMBER _____

STREET ADDRESS _____

CITY, STATE, ZIP _____

DAYTIME PHONE/E-MAIL _____

You can discontinue at any time by contacting Avion Water. Information not sold or shared.

BLUEWATER LEVELS

PLEASE CHOOSE ONE OF THESE OPTIONS

- River Otter \$6.40
- Blue Heron \$4.80
- Rainbow Trout \$3.20
- Spotted Frog \$1.60

Thank you for your contribution to the Deschutes River! 100 percent of your donation goes to the Deschutes River Conservancy, a local 501(c)3 non-profit.



ON-LINE PAY CUSTOMERS CAN ENROLL BY SENDING THIS COMPLETED FORM DIRECTLY TO AVION WATER COMPANY, 60813 PARRELL RD, BEND, OR 97702

Join Us!

Together we can reach our goal of a living Santa Fe River.

Take action today to revive and protect our river.

Affirm our city's connection to its lifeline and heritage—the Santa Fe River.



New Mexico Department of Game and Fish



www.santafenm.gov

The Santa Fe River Fund



Forest Guardians



New Mexico Department of Game and Fish

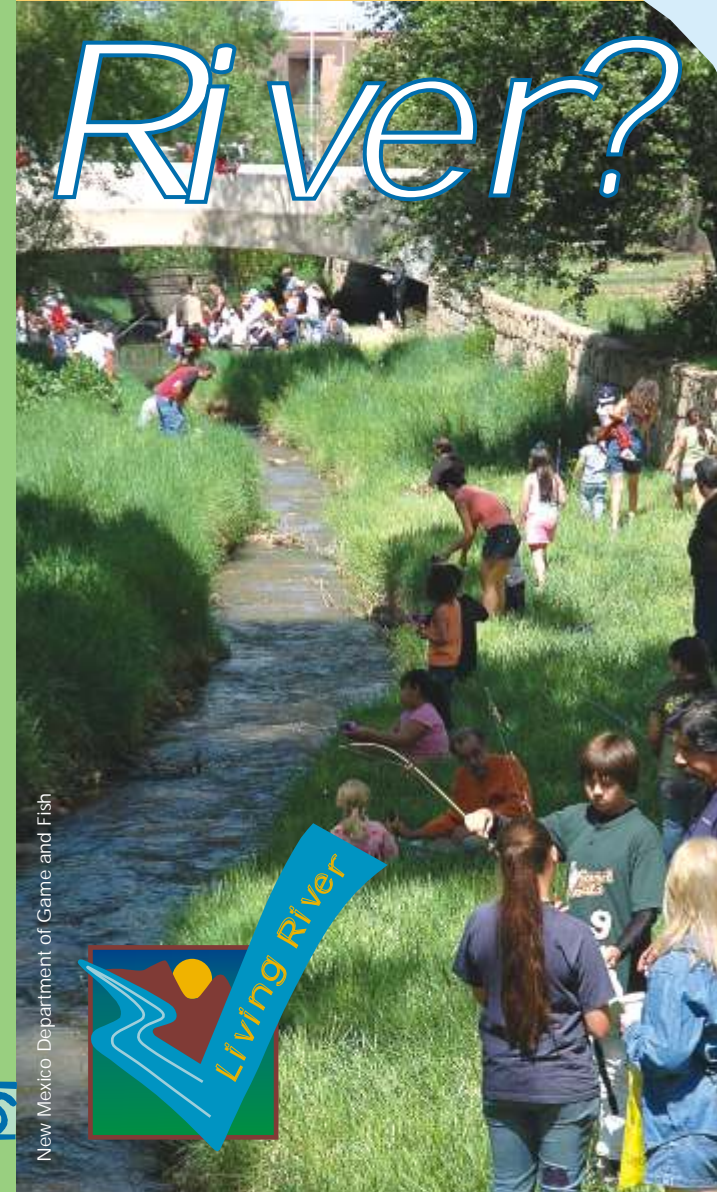
Investing in a Living River



Forest Guardians

WHAT CAN YOU DO TO SAVE OUR

River?



New Mexico Department of Game and Fish



What is the Santa Fe River Fund?

The Santa Fe River Fund is a dedicated City of Santa Fe Fund which will be used to buy water rights for the Santa Fe River. Community members (including city and county residents), businesses and even visitors to Santa Fe can now donate money, on a one-time basis or monthly, to purchase or lease water rights for the Santa Fe River. All tax-deductible donations to the River Fund will be matched by the city of Santa Fe dollar for dollar.



Resource Technology Inc.

What is a Living River?

A living river is a river that carries a minimum flow below which further withdrawals would be significantly harmful to the water resources and the ecology of the area*. A healthy river will connect our community, from Upper Canyon Road to beyond La Cieneguilla. It will be a place for our families to gather and be an indicator not only of the state of our watershed but also the health of our community.

*Professor Clifford N. Dahm, University of New Mexico, Presentation entitled *Reviving Our Most Endangered River: How Science Can Help* at Genoveva Community Center in Santa Fe, NM, May 24, 2007.

What is the Community Doing to Restore a Living Santa Fe River?

A Savings Account: The implementation of the Santa Fe River Fund creates a savings account with which we can one day invest in water rights dedicated exclusively to our river. This is just one of the tools being utilized to restore our connection to the watershed which gave birth to the City of Santa Fe.

Water in the Bank(s): The Mayor has proposed that 1,000 acre-feet of water (an acre-foot equals one acre of land covered with one foot of water and = 326,700 gallons or 43,560 cubic feet) be dedicated to the Santa Fe River by the spring of 2008 through adoption of the city's Long Range Water Supply Plan. This means that we will have enough water to keep riparian vegetation alive in stretches of the river during the summer months. While there are still many challenges to work through as we strive for sustainable water policies in Santa Fe, this 1,000 acre-feet will be the first designation of water to a river anywhere in the state.

Watershed Investments: In the river and drainages (arroyos) the city is also exploring and implementing erosion control strategies, removal of invasive species along the river, as well as innovative technologies such as rooftop harvesting and porous pavements watershed-wide.



Santa Fe County

How can I invest in the Santa Fe River Fund?

- You can give a *one-time donation* in one of two ways. 1. Send a check to the City of Santa Fe, Accounts Receivable, PO Box 909, Santa Fe, NM 87504, on your check indicate "Santa Fe River Fund". 2. Hand a check made out as described above to a cashier at the Water Division located at 801 W. Santa Mateo Road or to a cashier at City Hall at 200 Lincoln Avenue. You can give a one-time donation as often as you like.
- You can sign up to have a *monthly donation* added to your water bill, if you are a City water utility customer, by filling out the application below and returning it to City of Santa Fe, Utility Billing, 801 W. San Mateo Rd., Santa Fe, NM 87505. As a local, this method will solidify your commitment to a *living Santa Fe River* in a more sustainable way.
- *For more information:* before you sign up for a monthly donation, please go to the city's website at www.santafenm.gov, or call 955-6551. All donations to the fund are tax-deductible.

Monthly Donation Application

Name _____

Phone No. _____

Address _____

City _____

State _____ Zip _____

Account No. _____

Monthly Donation Amount: _____

\$50 \$25 \$15 \$10 \$5 \$1

Signature _____ Date _____

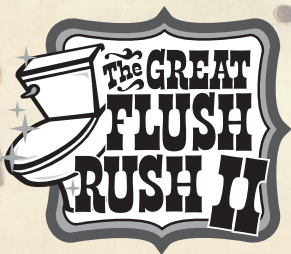
Support the

Living River Fund

The Water Authority is committed to protecting and preserving wildlife, including the endangered Silvery Minnow. In an effort to protect this endangered species, the Water Authority has donated tens of thousands of acre-feet of San Juan-Chama water to keep the river wet for wildlife.

Starting this month, you can make a voluntary \$1 contribution to the Living River Fund when you pay your water bill. The Fund, a joint effort of the Water Authority and non-profit conservation groups, helps protect the endangered Silvery Minnow by leasing water from farmers so the water stays in the Rio Grande.

To donate to the Living River Fund, please select the check-box option that appears on your bill. Be sure to properly adjust your "total due" amount to include the additional \$1 donation.



**Don't wait
to replace that
old toilet!
Rebates go down
in 2009!**

Act NOW to SAVE Water and \$\$\$!

You can still get a
\$125-per-toilet rebate*
when you replace old-fashioned, water guzzling
toilets with low-flow (1.6 gallon-per-flush) models.

**For more information on rebates &
how to select the right low-flow toilet:**

**505-768-3655, TTY 1-800-659-8331
or visit www.abcwua.org/waterconservation**

*Rebate program available only to customers of the
Albuquerque Bernalillo County Water Utility Authority

Appendix H. Example FAQ about Environmental Water Fund

Figure. Flyer for Hypothetical Environmental Water Fund

Environmental Water Fund

A Voluntary Environmental Program

What is the Environmental Water Fund? This innovative and completely voluntary program allows individual households to contribute to a supply of water for the environment.

How does it work? Customers of Desertville City Water can sign up to have a small fee added to their monthly water bill. All of money from that fee will be used to buy reclaimed water (effluent, that is not suitable for human consumption) for environmental restoration. Not for golf; not for growth.

How will the water be used? The reclaimed water purchased by the Environmental Water Fund will be used to irrigate re-vegetation areas in Cactus Canyon Wash at Riverview Park. The habitat along the Wash is being restored; your money will add a vital supply of water to the restoration efforts.

How much does it cost? \$3.00 per month (just a dime a day).

How will I know it is really going to the environment? Come see for yourself! Riverview Park is open to the public and contains 3 miles of trails. Watch as the re-vegetation efforts transform Cactus Canyon Wash into a vibrant ecological community that provides habitat for numerous animals.

Can everyone participate? Yes! Everyone can help improve Desertville's environment. The more customers that participate, the more water we can buy.

How much water will this program buy? If just 5% of our customers enrolled, it would buy 600 acre-feet per year (about the same amount as 1,200 homes or 1.2 golf courses).

Where can I get more information? Just visit our website: DesertvilleEnvironmentalWater.com, or call (555) 555-5555 to get more information about the Environmental Water Fund and conservation strategies you can use at your home.