

# Conserve to Enhance: An Innovative Mechanism for Environmental Benefits



The University of Arizona Water Resources Research Center

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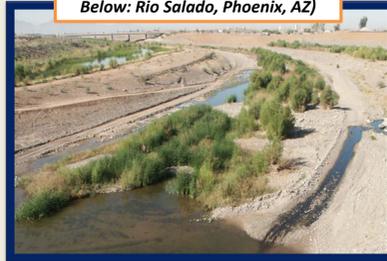
## The Environment as a Water-Using Sector

Arizona's riparian ecosystems have been susceptible to degradation because state water laws do not consider environmental water needs. This lack of legal authority has led to water being diverted away from desert waterways through surface water and groundwater withdrawals (Megdal et al. 2011).

To help bring the environment to the table as a water using sector, the University of Arizona Water Resources Research Center (WRRC) has developed the Conserve to Enhance (C2E) program. C2E is an innovative water conservation mechanism that addresses ecological water needs by raising funds through individual donations for river and riparian enhancement projects. The C2E Program invites community members to implement water conservation methods, track their monthly water savings through a Water Conservation Calculator, and then donate those savings to a C2E fund. Tucson is home to the first C2E Pilot Program, which began January 2011 with 60 participants. The goal is to determine if a program like C2E would be successful at a larger, city-wide scale and if such a program is applicable for other water-scarce communities in the Southwest.



Dewatered Arizona streams. (Above: Atterbury Wash, Tucson, AZ Below: Rio Salado, Phoenix, AZ)



## Tucson: Home to the First C2E Pilot

In January 2011, the sixty participants in the Tucson pilot began a two year enrollment and were asked to:

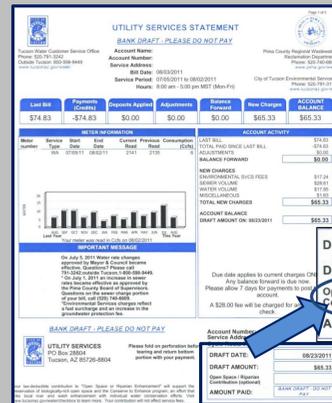
- 1) Implement water conservation methods
- 2) Track the money they save on their water bills
- 3) Donate some or all of those savings to a fund for local riparian enhancement

With support from U.S. Environmental Protection Agency (EPA), the Sonoran Institute (SI) offered 45 pilot participants rainwater harvesting subsidies to achieve water conservation, ranging from \$500-\$1,000. Rainwater harvesting features are being installed through the Co-op program of Watershed Management Group (WMG), a Tucson-based environmental organization.

## Expanding the Reach

The Tucson Mayor and Council authorized an expansion of the existing Tucson Water checkbox program to accept donations for riparian enhancement through water bills. Although the checkbox donation is not connected to a customer's water savings, the expansion created a way for all utility water customers to contribute to the C2E fund (see below).

Images of a Tucson Water Billing Statement With Checkbox Highlighted (left) and C2E Bill Insert (right)



## Accounting for Savings

Current Tucson Water billing structures do not allow participant water savings to be tracked on the bill. Because of this, the C2E core team (WRRC, SI and WMG) oversees implementation of the pilot.

- 1) Tucson Water releases current and historic household water use data to be entered into the C2E Water Conservation Calculator.
- 2) Participants are sent Calculator outputs quarterly that include:
  - ❖ Amount and associated value of water conserved (current monthly water use is compared to average historic use)
  - ❖ Suggested donation based on water savings
  - ❖ A short survey about their C2E experience

## References

Megdal, S.B.; J. Nadeau; T. Tom. (2011). "The Forgotten Sector: Arizona Water Law and the Environment." *Arizona Journal of Environmental Law and Policy*. 1(2): 243-293.

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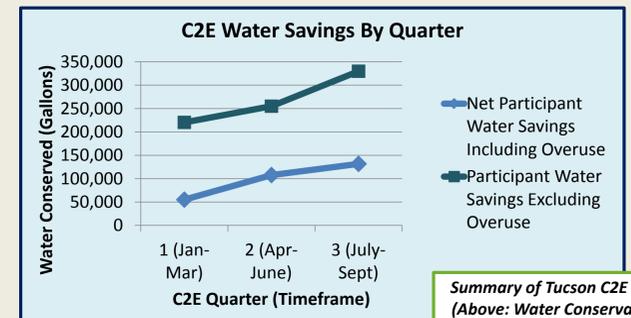
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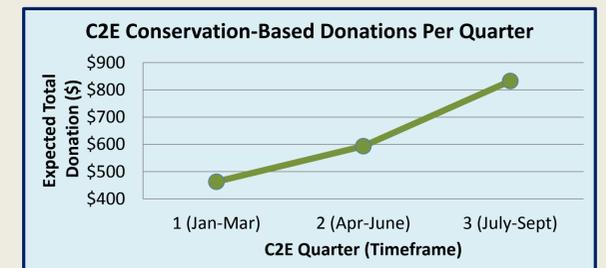
## Small Actions Add Up to Big Savings

The Tucson Pilot has completed three of its eight quarters. During January to September 2011 :

- ❖ Participants conserved over **805,000** gallons of water (equivalent to **1,076** ccf)
- ❖ In the first two quarters, actual donations totaled **\$332.99**
  - Donated by 17 of the 58 pilot participants
  - Average contribution = **\$3.26/household/month**
- ❖ These numbers are rising each quarter (see figures below)



Summary of Tucson C2E Pilot Results. (Above: Water Conservation. Below: Expected Donation Total/Quarter)



Initial pilot outcomes indicate that scaling up C2E to the entire Tucson Water service area could create a sustainable private funding pool for local enhancement projects. Comparable programs have demonstrated five percent participation rates from utility customers (Schwarz et al, 2007), which would translate to 12,500 participant households producing an estimated \$489,000 annually.

## Conservation and Enhancement: A Tool You Can Use

While every community has different water conservation goals and constraints, C2E is a solid foundation communities can build on for more sustainable water management. As pilots across the southwest are developed, we can evaluate if a scaled-up version of C2E is widely applicable and realistic for areas outside Tucson.

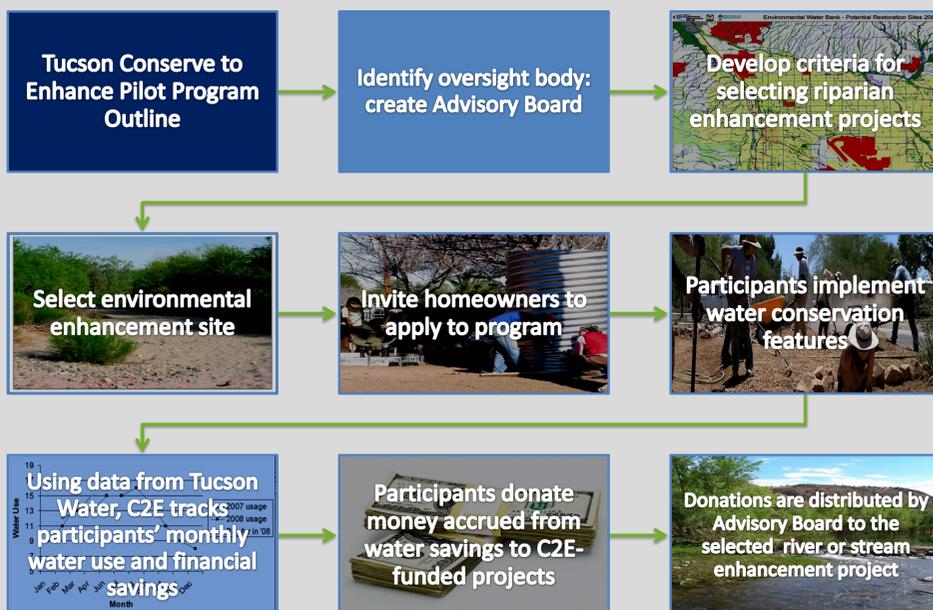
**A C2E program development toolkit is being developed to guide water scarce communities through implementing and evaluating a C2E conservation program of their own.**

With this initiative combined with other efforts, we can call attention to Arizona's forgotten sector and secure water to meet environmental needs.

Information about Conserve to Enhance is publicly available on the Water Resources Research Center's Website at <http://cals.arizona.edu/azwater>.

## Linking Urban Water Use with Ecological Needs

Conserve to Enhance (C2E) is a mechanism for linking individual water conservation with local riparian enhancement (Schwarz and Megdal 2008). Development of the first C2E pilot program began in January 2010 in Tucson—the program was outlined as follows:



In other communities, C2E pilot programs may be developed in a different sequence and with different emphasis, depending on local factors.

The Tucson C2E pilot program implementation was made possible through the following funding partners, program development partners, or advisory committee members: **City of Tucson, Lewis and Roca, Pima Association of Governments, Pima County, Southern Arizona Green Chamber of Commerce, Tucson Audubon Society, and...**

