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Water Resources
Research Center



THE UNIVERSITY
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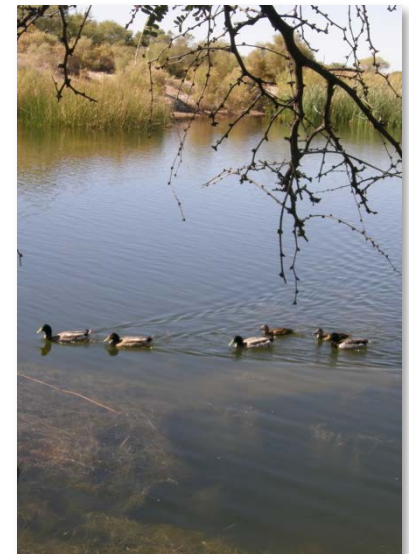
Conserving Water for the Environment in Tucson, Arizona: A Pilot Program



*San Pedro River, Arizona. Photo
Credit: The Nature Conservancy*

Water Smart Innovations
2011 Annual Conference
Las Vegas, NV
October 6, 2011

Candice Rupprecht
Emily Brott
Aaron Lien
Dr. Sharon B. Megdal
Joanna B. Nadeau



*Salt River, Arizona. Photo Credit:
Brittany Choate*

WRRC Mission

The University of Arizona Water Resources Research Center (WRRC) promotes understanding of critical state and regional water management and policy issues through applied research, community outreach and public education.

The WRRC is committed to:

- assisting communities in water management and policy;
- educating teachers, students and the public about water; and
- encouraging scientific research on state and regional water issues.

Website: www.cals.arizona.edu/azwater

2012 WRRC Annual Conference



Water Resources
Research Center



**WATER RESOURCES
RESEARCH CENTER**

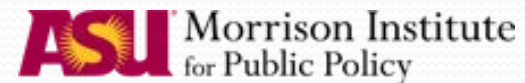
2012 Conference

Tuesday, January 24, 2012

The University of Arizona
Student Union Memorial Center Ballroom

Urbanization, Uncertainty and Water: Planning for Arizona's Second Hundred Years

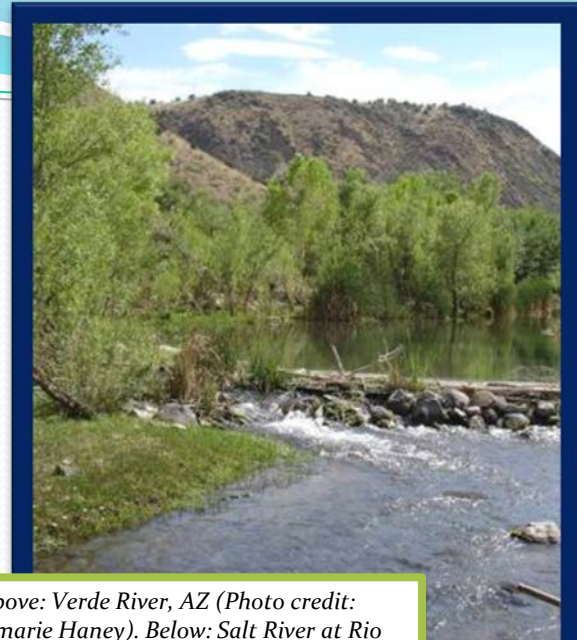
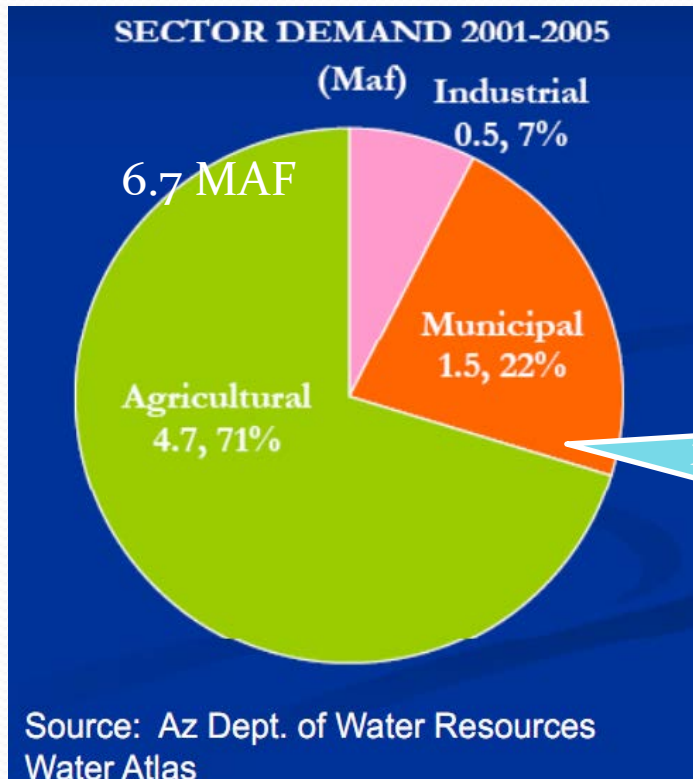
Presented in collaboration with



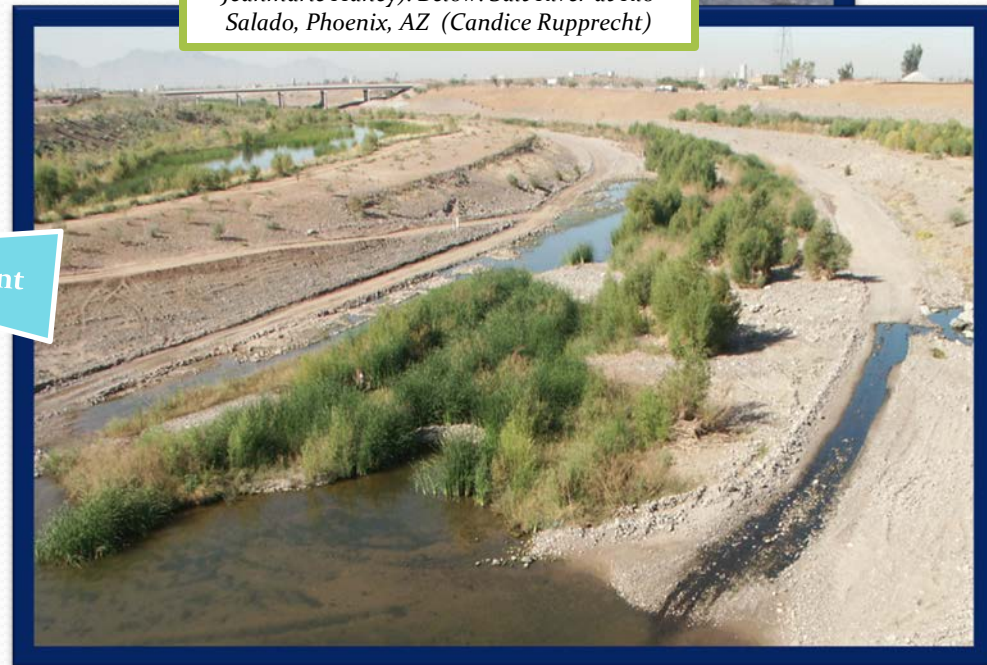
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The Forgotten Sector



Above: Verde River, AZ (Photo credit: Jeanmarie Haney). Below: Salt River at Rio Salado, Phoenix, AZ (Candice Rupprecht)



Goals of Conserve to Enhance

- ◆ Provide water to environmental enhancement projects
 - ◆ Environment is the “forgotten sector”
- ◆ Link individual water conservation to environmental benefits
- ◆ Raise awareness about water conservation and environmental water needs
- ◆ Create a simple accounting mechanism and reliable funding source
- ◆ Create new excitement for water conservation!

Conserve to Enhance (C2E): An Innovative Mechanism

How C2E Works

1. Water is conserved (at homes & businesses)
2. \$ saved from water savings
3. \$ donated to a C2E fund
4. \$ used to implement environmental enhancement projects

**Program
development by the
U.S. Bureau of
Reclamation**

business issues

BY ANDREW SCHWARZ AND SHARON B. MEGDAL

Conserve to Enhance— voluntary municipal water conservation to support environmental restoration

Journal of the
American Water
Works Association
January 2008



Public views of the value of water in its natural setting are changing significantly (Katz, 2006). The conception that water flowing in

Three Keys of C2E: Lessons from Tucson

1. Local Partners
2. Accounting Mechanism
3. Enhancement Opportunities



Skylinescenes.com

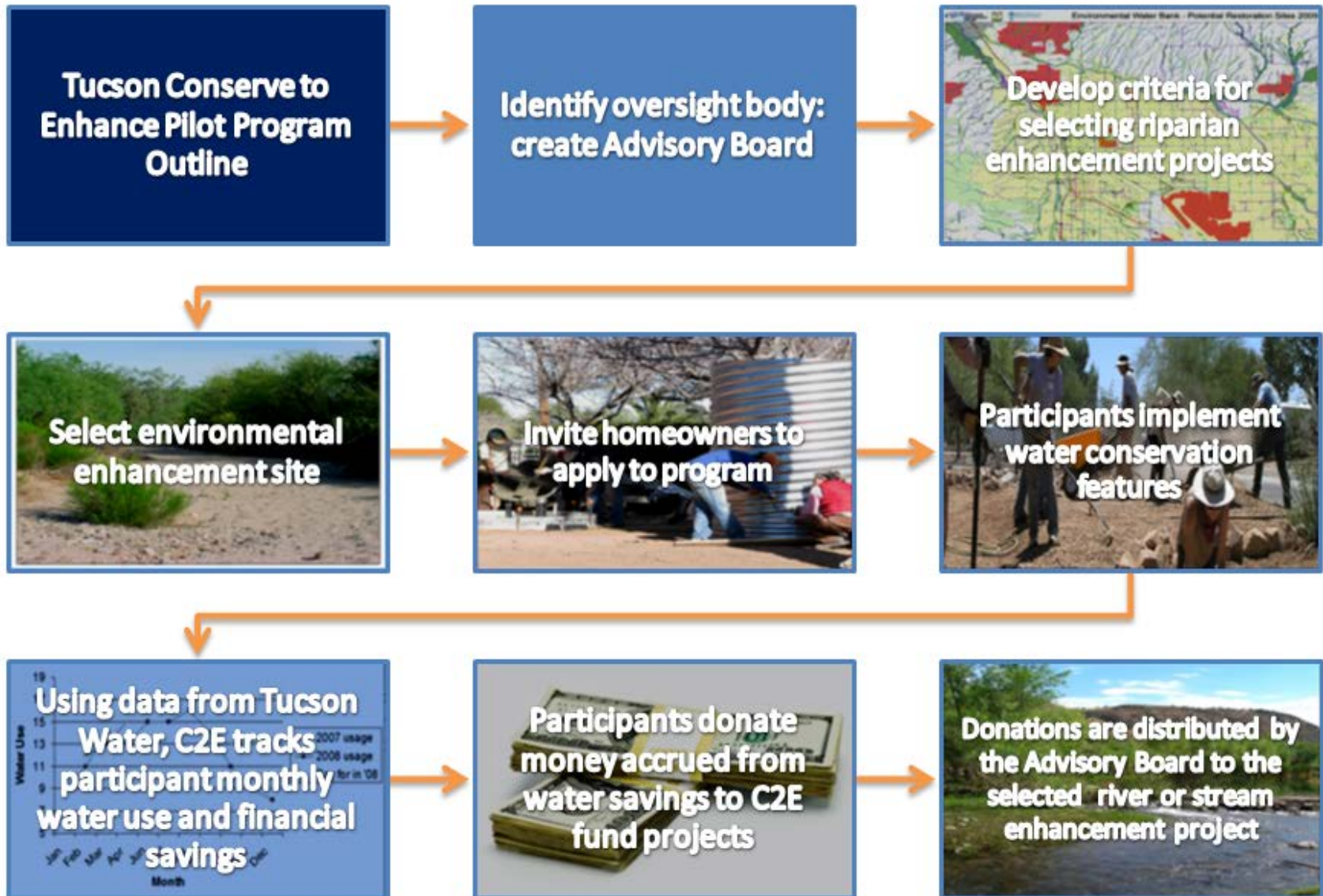


Atturbury Wash, Tucson, AZ (Candice Rupprecht)

Tucson Pilot Program Partners



C2E Tucson Development

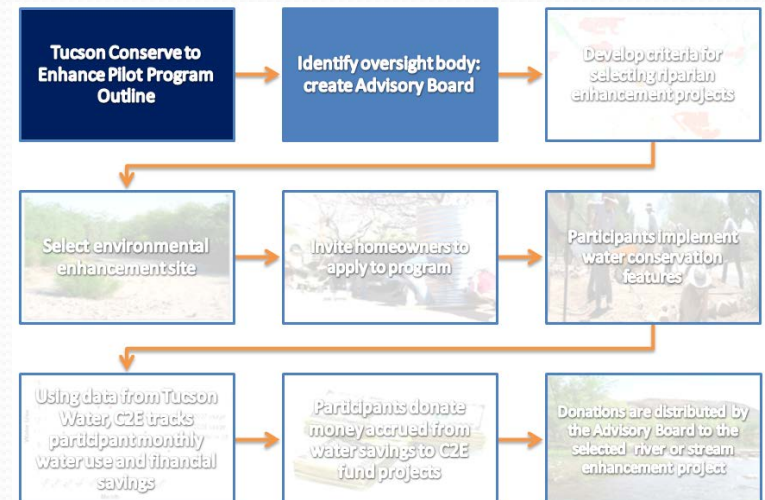


Tucson Pilot Program

**Tucson Conserve to
Enhance Pilot Program
Outline**

**Identify oversight body:
create Advisory Board**

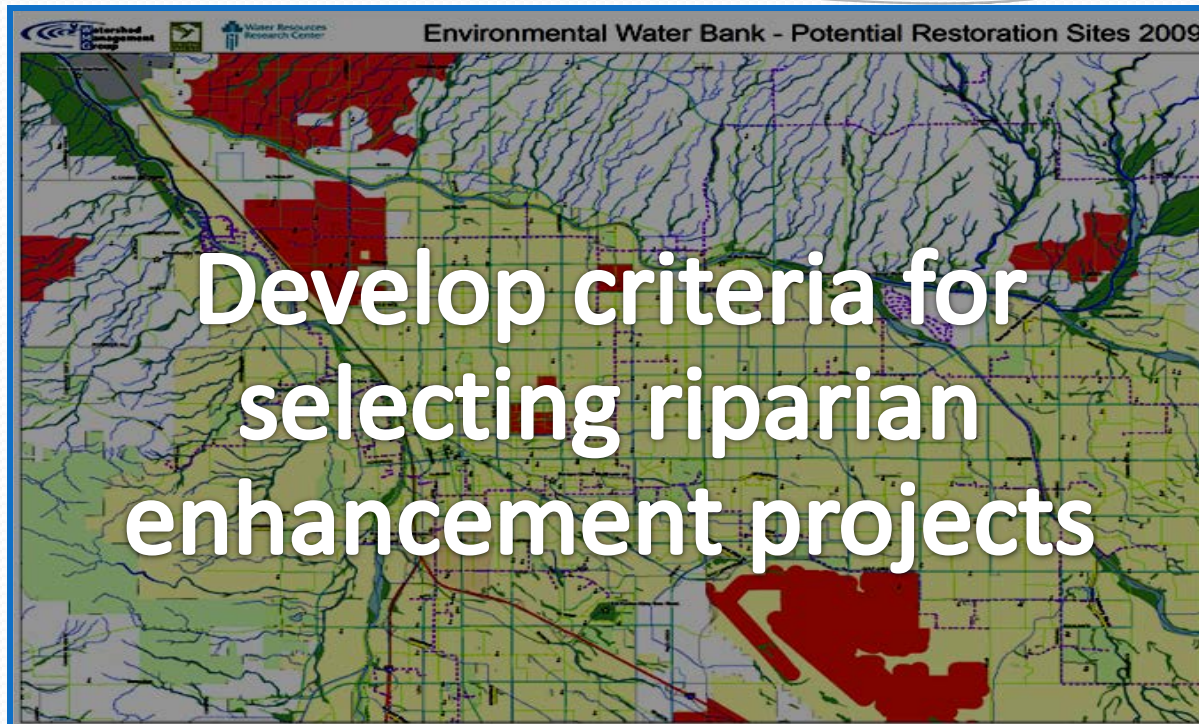
14 active board members from
agencies, NGOs, businesses,
university and utility sectors



Advisory Board Member Orgs.

- ◆ Sonoran Institute
- ◆ Watershed Management Group
- ◆ University of Arizona WRRC
- ◆ City of Tucson
 - ◆ Attorney's Office
 - ◆ Office of Conservation & Sustainable Development
 - ◆ Ward One Office
- ◆ Pima Association of Governments
- ◆ Pima County
 - ◆ Regional Wastewater Reclamation
 - ◆ Office of Conservation Science and Environmental Policy
- ◆ Southern AZ Green Chamber
- ◆ Tucson Audubon Society
- ◆ Tucson – Southern Arizona Black Chamber of Commerce
- ◆ Tucson Water
- ◆ University of Arizona Facilities Management

Core Team Orgs. In Bold



Watershed Management Group, Sonoran Institute, Water Resources Research Center

Identified 15 active restoration projects and received applications from 3 sites to use C2E funds

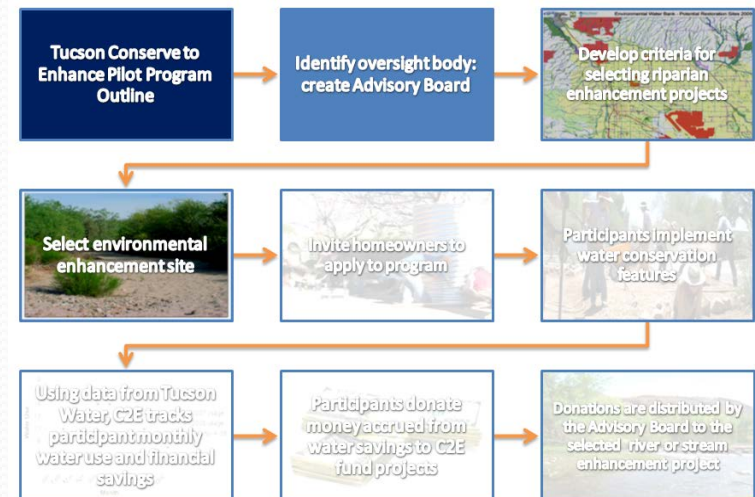


Select environmental enhancement site

Atturbury Wash, Tucson, AZ (Candice Rupprecht)

Atturbury Wash in SE Tucson selected as 2011 C2E recipient.

Funds will support watering of newly established native vegetation in partnership with Tucson Audubon.



Homeowners apply to the program and implement conservation projects

Watershed Management Group

60 pilot participants selected from throughout Tucson

45 participants receiving subsidies (\$500 - \$1000) for rainwater harvesting installations

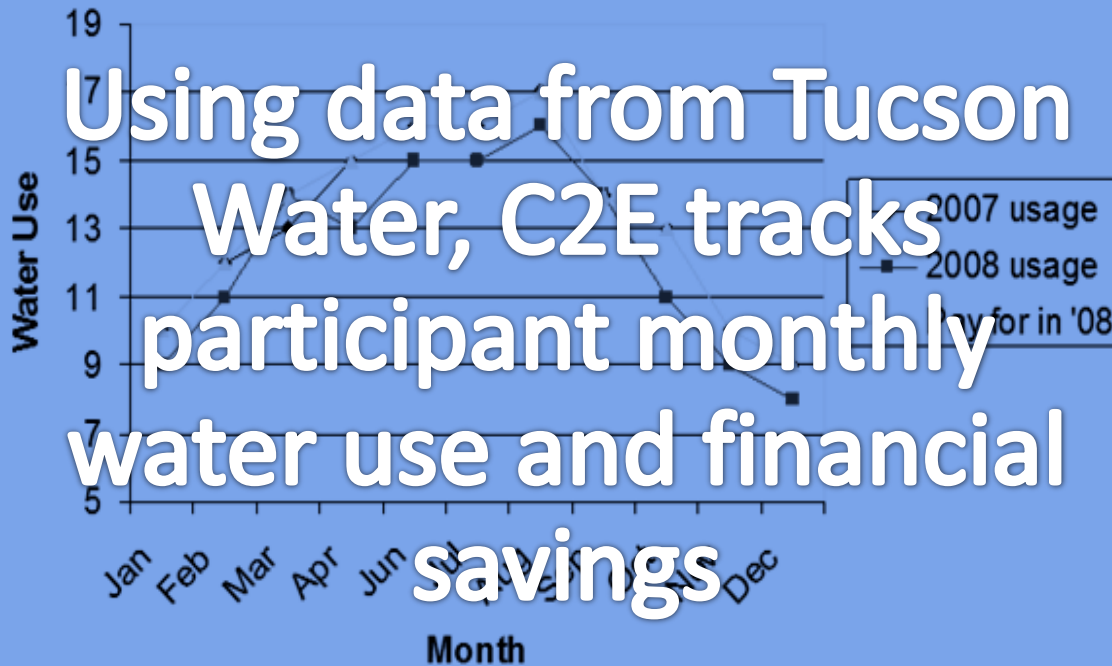


Active Participant Engagement

- ◆ Participant MOU
- ◆ Tucson Water Zanjero Water Audits
- ◆ Rainwater harvesting subsidies
- ◆ WMG Co-op workshops for training & implementing
- ◆ Field trips to recipient sites
- ◆ Historic Conservation Calculator
- ◆ Quarterly Surveys



Using data from Tucson
Water, C2E tracks
participant monthly
water use and financial
savings



447,055 gallons of water conserved
(1.34 acre feet)

Value of water saved: \$348

(Jan – June 2011)



Accounting Mechanism

- ◆ Tucson Water provides historic (2008-2010) data and currently monthly water use data in Excel
- ◆ Core Team calculates water savings, value of water saved and estimated quarterly contribution
- ◆ Each quarter participants receive a revised Conservation Calculator, a survey and a donation request

	Historical/ Baseline Use (Ccf)	Current Use (Ccf)	Water Saved (Ccf)	Water Saved (gallons)	\$ value of water saved	Conservat ion-based Quarterly Contributi on
Month						
Jan-11	7	3	4	2,743	\$5.65	
Feb-11	6	3	3	2,244	\$4.62	
Mar-11	6	4	2	1,496	\$3.08	\$13.35

Participants donate money accrued from water savings to C2E fund projects

Microsoft PowerPoint ClipArt

Actual donations: \$333 from 17 people
Estimated average quarterly donation:
\$9.79 per participant
~\$3 per person, per month



Donations are distributed by the Advisory Board to the selected environmental enhancement project

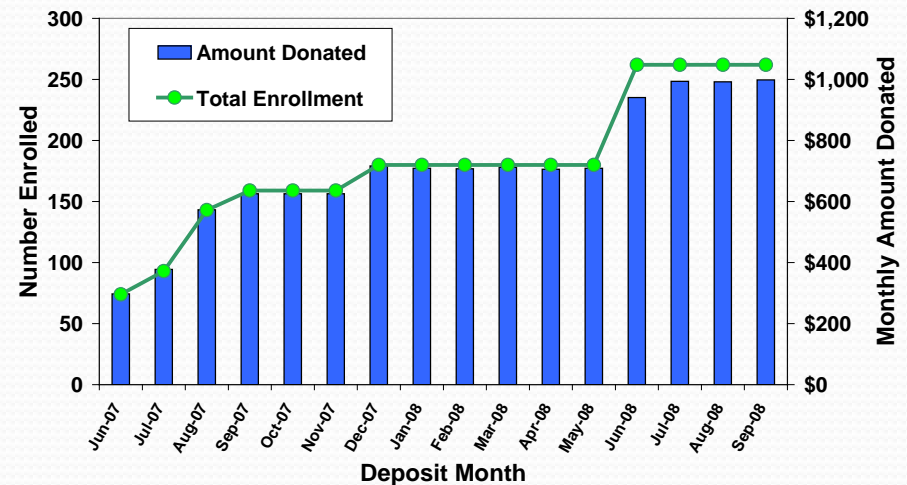
Photo Credit: Candice Rupprecht

Depending on funds raised, donations will likely support supplemental water for new native vegetation



An Alternate Donation Mechanism

◆ Checkbox Donation Programs



Link Your Water Savings to Enhancing Local Washes

Did you know your water savings can benefit local rivers, streams, and washes? Thanks to a new program – Tucson Conserve to Enhance (C2E) – Tucson Water customers can donate money saved on their bill to support enhancement of riparian areas in the utility's service district.

Your water bill's "Open Space" checkbox will soon be the "Open Space and Riparian" checkbox. Donations made through the checkbox this year will support the Atterbury Wash restoration project.

In January, a pilot program was launched with 60 participants installing water harvesting and other water conservation practices at their homes while tracking their water savings through an online conservation calculator. These participants are making quarterly donations based on the money saved on their monthly water bills.

You can also donate to C2E without tracking water savings. Simply contribute any amount through the checkbox on your water bill.

For full details on how the checkbox works, including how donations benefit open space and riparian enhancement, visit tucsonaz.gov/water/checkbox.

C2E is managed by the Sonoran Institute, the UA Water Resources Research Center, and Watershed Management Group. For more information, visit watershedmg.org/c2e.

For more information, materials in accessible formats, foreign language interpreters, and/or materials in a language other than English, please contact Tucson Water at (520) 791-4331 or (520) 791-2639 for TDD.



Your Water CONNECTION

Public participation is essential to assisting Tucson Water in navigating the future and in making our community water sustainable. Residential customers living in neighborhoods inside and outside the City limits, business owners, and representatives from trade groups, professional organizations, and non profits help to shape Tucson Water's future.



L-R: CWAC members
Christopher Brooks, Amy
McCoy, and Bruce Billings.

"Participation" comes in many forms: attending a town hall, sitting on an advisory group, filling out an online comment form, speaking with a customer care representative or taking time to answer a

marketing survey. Citizen involvement has helped, and continues to help, Tucson Water staff to develop:

- pilot conservation programs and rebates
- capital improvement projects
- financial plans
- water rate and fee structures
- outreach and marketing materials
- long range plans
- levels of acceptability for tap water quality such as taste, odor and appearance

In this *Water Connection*, you'll find out about the important role the Citizens' Water Advisory Committee (CWAC) plays in shaping the community's water resources. Established in 1977 to advise Mayor and Council on key water issues, CWAC's members are a dynamic force, representing participation and service at its finest.

— Andy Quigley, INTERIM DIRECTOR, TUCSON WATER





UTILITY SERVICES STATEMENT

BANK DRAFT - PLEASE DO NOT PAY

Tucson Water Customer Service Office
Phone: 520-791-3242
Outside Tucson: 800-598-9449
www.tucsonaz.gov/water

Account Name:

Account Number:

Service Address:

Bill Date: 08/03/2011

Service Period: 07/05/2011 to 08/02/2011

Hours: 8:00 am - 5:00 pm

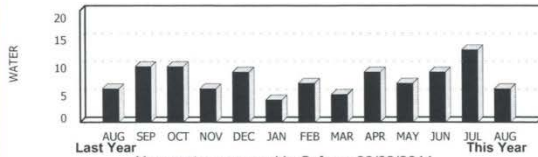
Pima County Regional Wastewater
Reclamation Department
Phone: 520-740-6609
www.pima.gov/wrm

City of Tucson Environmental Services:
Phone: 520-791-3171

Last Bill	Payments (Credits)	Deposits Applied	Adjustments
\$74.83	-\$74.83	\$0.00	\$0.00

METER INFORMATION

Meter number	Service Type	Start Date	End Date	Current Read	Previous Read	Consumption (Ccf)
	WA	07/05/11	08/02/11	2141	2135	6



Your meter was read in Ccfs on 08/02/2011

IMPORTANT MESSAGE

On July 5, 2011 Water rate changes approved by Mayor & Council became effective. Questions? Please call 791-3242; outside Tucson, 1-800-598-9449.

* On July 1, 2011 an increase in sewer rates became effective as approved by the Pima County Board of Supervisors. Questions on the sewer charge portion of your bill, call (520) 740-6609.

*Environmental Services charges reflect a fuel surcharge and an increase in the groundwater protection fee.

DRAFT DATE:

08/23/2011

DRAFT AMOUNT:

\$65.33

Open Space / Riparian Contribution (optional)

AMOUNT PAID:

BANK DRAFT - DO NOT PAY

Due date applies to current charges ONLY.
Any balance forward is due now.
Please allow 7 days for payments to post to your account.

A \$28.00 fee will be charged for any returned check.

BANK DRAFT - PLEASE DO NOT PAY



UTILITY SERVICES
PO Box 28804
Tucson, AZ 85726-8804

Please fold on perforation before
tearing and return bottom
portion with your payment.

Account Number:
Service Address:
Cycle-Route #: 04-52

DRAFT DATE:

08/23/2011

DRAFT AMOUNT:

\$65.33

Open Space / Riparian Contribution (optional)

AMOUNT PAID:

BANK DRAFT - DO NOT PAY

Your tax-deductible contribution to "Open Space or Riparian Enhancement" will support the preservation of biologically-rich open space and the Conserve to Enhance program, an effort that links local river and wash enhancement with individual water conservation efforts. Visit www.tucsonaz.gov/water/checkbox to learn more. Your contribution will not affect service fees.

The Big Questions

- ◆ Is water being conserved?
 - ◆ YES, nearly 500,000 gallons in 6 months
- ◆ Are people actually donating funds?
 - ◆ YES, in progress (\$333 from 17 participant donors)
- ◆ Does the environment improve?
 - ◆ Project selected, implementation will be monitored
- ◆ Do people feel more connected to these environments?
 - ◆ Waiting for survey results!

C2E: A Transferable Model for Innovation



- ◆ We offer:
 - ◆ Assistance Tailoring New C2E Programs to Meet Community Needs and Priorities
 - ◆ C2E Program Guidance on Key Elements
 - ◆ Partnership Development Support
 - ◆ Active Stakeholder Engagement

C2E: Where we are headed

- ◆ Undertaking a community identification process
 - ◆ Development of pilots in additional communities
- ◆ C2E Toolkit
- ◆ Potential for corporate partnerships/other matching



*Christopher Creek, Salt River Watershed, AZ
(Candice Rupprecht)*

Questions?

<http://www.cals.arizona.edu/azwater/conserv2enhance>

Panel Session
Water Efficiency: Environment or Growth?
Friday at 9am

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