

## **Supporting Information for Gray Water Regulations**

**Attachment A – Arizona Statutes**

**Attachment B – Gray Water and Rain Water Tax Credit Information**

**Attachment C – City of Tucson Gray water Ordinance**

**Attachment D – City of Tucson Water Harvesting Ordinance**

**Attachment E – Gray water and Rainwater Harvesting Resources in  
Pima County**

*Prepared for Economic and Funding Working Group by Evan Canfield Pima County 4-07-10*

## Attachment A

### Arizona Statutes

#### **R18-9-711. Type 1 Reclaimed Water General Permit for Gray Water**

- A.** A Type 1 Reclaimed Water General Permit allows private residential direct reuse of gray water for a flow of less than 400 gallons per day if all the following conditions are met:
1. Human contact with gray water and soil irrigated by graywater is avoided;
  2. Gray water originating from the residence is used and contained within the property boundary for household gardening, composting, lawn watering, or landscape irrigation;
  3. Surface application of gray water is not used for irrigation of food plants, except for citrus and nut trees;
  4. The gray water does not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities;
  5. The application of gray water is managed to minimize standing water on the surface;
  6. The gray water system is constructed so that if blockage, plugging, or backup of the system occurs, gray water can be directed into the sewage collection system or on-site wastewater treatment and disposal system, as applicable. The gray water system may include a means of filtration to reduce plugging and extend system lifetime;
  7. Any gray water storage tank is covered to restrict access and to eliminate habitat for mosquitoes or other vectors;
  8. The gray water system is sited outside of a floodway;
  9. The gray water system is operated to maintain a minimum vertical separation distance of at least five feet from the point of gray water application to the top of the seasonally high groundwater table;
  10. For residences using an on-site wastewater treatment facility for black water treatment and disposal, the use of a gray water system does not change the design, capacity, or reserve area requirements for the on-site wastewater treatment facility at the residence, and ensures that the facility can handle the combined black water and gray water flow if the gray water system fails or is not fully used;
  11. Any pressure piping used in a gray water system that may be susceptible to cross connection with a potable water system clearly indicates that the piping does not carry potable water;
  12. Gray water applied by surface irrigation does not contain water used to wash diapers or similarly soiled or infectious garments unless the gray water is disinfected before irrigation; and
  13. Surface irrigation by gray water is only by flood or drip irrigation.
- B.** Prohibitions. The following are prohibited:
1. Gray water use for purposes other than irrigation, and
  2. Spray irrigation.
- C.** Towns, cities, or counties may further limit the use of gray water described in this Section by rule or ordinance.

### **R18-9-719. Type 3 Reclaimed Water General Permit for Gray Water**

**A.** A Type 3 Reclaimed Water General Permit allows a gray water irrigation system if:

1. The general permit described in R18-9-711 does not apply,
2. The flow is not more than 3000 gallons per day, and
3. The gray water system satisfies the notification, design, and installation requirements specified in subsection (C).

**B.** A person shall file a Notice of Intent to Operate a Gray Water Irrigation System with the Department at least 90 days before the date the proposed activity will start. The Notice of Intent to Operate shall include:

1. The name, address and telephone number of the applicant;
2. The social security number of the applicant, if the applicant is an individual;
3. A legal description of the direct reuse site, including latitude and longitude coordinates;
4. The design plans for the gray water irrigation system;
5. A signature on the Notice of Intent to Operate certifying that the applicant agrees to comply with the requirements of this Article and the terms of this Reclaimed Water General Permit; and
6. The applicable permit fee specified under 18 A.A.C. 14.

**C.** The following technical requirements apply to the design and installation of a gray water irrigation system allowed under this Reclaimed Water General Permit:

1. Design of the gray water irrigation system shall meet the on-site wastewater treatment facility requirements under R18-9-A312(C), (D)(1), (D)(2), (E)(1), (G), and R18-9-302(C)(1), except the septic tank specified in R18-9-E302(C)(1) is not required if pretreatment of gray water is not necessary for the intended application;
2. Design of the dispersal trenches for the gray water irrigation system shall meet the on-site wastewater treatment facility requirements for shallow trenches specified in R18-9-E302(C)(2);
3. The depth of the gray water dispersal trenches shall be appropriate for the intended irrigation use but not more than 5 feet below the finished grade of the native soil; and
4. The void space volume of the aggregate fill in the gray water dispersal trench below the bottom of the distribution pipe shall have enough capacity to contain two days of gray water at the design flow.

**D.** The Department may review design plans and details and accept a gray water irrigation system that differs from the requirements specified in subsection (C) if the system provides equivalent performance and protection of human health and water quality.

#### **Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 758, effective January 16, 2001 (Supp. 01-1).

## **Attachment B – Gray Water and Rain Water Tax Credit Information**

# CORPORATE AND INDIVIDUAL INCOME TAX CREDIT FOR WATER CONSERVATION SYSTEMS *IMPLEMENTATION*

**NOTE: ALL APPLICATIONS MUST BE POSTMARKED AND MAILED TO THE ADDRESS SHOWN AT THE END OF THIS EXPLANATION.**

## **INDIVIDUAL INCOME TAX CREDIT**

This credit is for costs associated with installing a water conservation system in the taxpayer's residence located in Arizona.

A water conservation system is a system or series of components or mechanisms that are designed to provide for the collection of rainwater or residential graywater. A water conservation system includes a system that is capable of storing rainwater or residential graywater for future use and reusing the collected water for the same residential property.

1. To qualify for the credit, a residential graywater conservation system and its installation must comply with rules that are adopted by the Arizona Department of Environmental Quality (ADEQ) and that relate to the recovery and disposal of graywater. For detailed information please contact ADEQ:

- [www.azdeq.gov/environ/water/permits/reclaimed.html](http://www.azdeq.gov/environ/water/permits/reclaimed.html)
- Phone number: (602) 771-2300  
Toll free: (800) 234-5677

2. This credit is effective for taxable years from and after December 31, 2006. It ends before January 1, 2012. Therefore, the credit is available for tax years 2007, 2008, 2009, 2010 and 2011.

3. The credit is equal to the **lesser** of 25% of the cost of the system or \$1,000.

4. Only one credit in one tax year is allowed per residence.

5. Tax credits claimed over multiple tax years by a taxpayer for the same residence cannot exceed \$1,000.

6. If the credit exceeds the tax due on the taxpayer's tax return, it can be carried forward for five years.

7. The individual must make application to the Arizona Department of Revenue (ADOR) on the appropriate ADOR form and must obtain a Credit Certification indicating that the taxpayer is entitled to take this credit and the amount of credit to which the taxpayer is entitled. **Application can only be made after actual purchase and installation of the system. Copies of the receipt for purchase and installation of the system, with date of installation shown, must be attached to the application.**

9. If the taxpayer's purchase and installation of the system is contingent upon receiving the credit, the taxpayer can contact Georganna Meyer at (602) 716-6927 to see how much room under the credit limitation is available. Although a guarantee of credit availability cannot be provided, a fairly educated guess of credit availability can be made.

10. The Credit Certification must be attached to the taxpayer's individual income tax return at the time of filing as proof of eligibility.

11. The maximum amount of individual income tax credits the ADOR can certify in a calendar year is \$250,000.

12. Credits shall be granted on a first come, first served basis.

13. If an application is received that, if authorized, would require the ADOR to exceed \$250,000, ADOR shall grant that applicant only the remaining credit amount that would not exceed the \$250,000 limit.

14. ADOR may verify that a water conservation system has been installed in the taxpayer's residence.

### **CORPORATE INCOME TAX CREDIT**

1. The credit is for costs incurred of installing a water conservation system plumbing stub out that collects all graywater sources that end at a plumbing stub out that is separate and distinct from the regular plumbing system. These costs are for installing or including such a system in one or more houses or dwelling units located in Arizona and constructed by the taxpayer,

2. This credit is effective for taxable years from and after December 31, 2006. It ends before January 1, 2012. Therefore, the credit is available for tax years 2007, 2008, 2009, 2010 and 2011.

3. To qualify for the credit, the stub out must:

a. Comply with rules adopted by the Arizona Department of Environmental Quality and that relate to the direct reuse of reclaimed water.

b. Meet applicable local building codes.

4. The credit cannot exceed \$200 for each separate house or dwelling unit.

5. If the credit exceeds the tax due on the taxpayer's tax return, it can be carried forward for five years.

6. Co-owner of a business, including corporate partners in a partnership, may each claim only the pro rata share of the credit, based on ownership interest.

7. The corporation must make application to the Arizona Department of Revenue (ADOR) on the appropriate ADOR form and must obtain a Credit Certification indicating that the taxpayer is entitled to take this credit and the amount of credit to which the taxpayer is entitled. **Application can only be made after actual purchase and installation of the system. Copies of documentation for installation of the plumbing stub outs, with date of installation and addresses shown, must be attached to the application.**

8. If the taxpayer's installation of the stub outs is contingent upon receiving the credit, the taxpayer can contact Georganna Meyer at (602) 716-6927 to see how much room under the credit limitation is available. Although a guarantee of credit availability cannot be provided, a fairly educated guess of credit availability can be made.

9. The Credit Certification should be attached to the taxpayer's corporate income tax return at the time of filing as proof of eligibility.

10. The maximum amount of corporate income tax credits the ADOR can certify in a calendar year is \$500,000.

11. Credits shall be granted on a first come, first served basis.

12. If an application is received that, if authorized, would require the ADOR to exceed \$500,000, ADOR shall grant that applicant only the remaining credit amount that would not exceed the \$500,000 limit.

13. ADOR may verify that a water conservation system has been installed by the taxpayer.

If you have questions regarding this credit, contact Georganna Meyer at (602) 716-6927.

Mail completed applications to:

Georganna Meyer, Chief Economist  
Office of Economic Research and Analysis  
Arizona Department of Revenue  
P.O. Box 25248  
Phoenix, AZ 85002

**Attachment C – City of Tucson Gray water Ordinance**

ADOPTED BY THE  
MAYOR AND COUNCIL

September 23, 2008

ORDINANCE NO. 10579

RELATING TO BUILDINGS, ELECTRICITY, PLUMBING AND MECHANICAL CODE; CREATING THE "RESIDENTIAL GRAY WATER ORDINANCE" REQUIRING INSTALLATION OF GRAY WATER "STUB-OUTS" IN RESIDENTIAL CONSTRUCTION; REQUIRING THAT GRAY WATER SYSTEMS COMPLY WITH APPLICABLE REGULATIONS; AMENDING TUCSON CODE CHAPTER 6, ARTICLE III DIVISION I BY AMENDING SECTION 6-38 AND ADDING SECTION 2602.1.2, "GRAY WATER STUB-OUTS", AS A LOCAL AMENDMENT TO THE INTERNATIONAL RESIDENTIAL CODE; AND DECLARING AN EMERGENCY.

WHEREAS, the State of Arizona's Department of Environmental Quality instituted a general permit for homeowners whose gray water systems meet Best Management Practices; and

WHEREAS, gray water systems constructed and operated according to these Best Management Practices provide a safe method of reducing water demand; and

WHEREAS, gray water is a valuable resource as it makes "double use" of water that otherwise goes down the drain. Gray water systems divert some interior water from clothes washers, bathtubs, showers or bathroom sinks (but not from a kitchen sink, dishwasher or toilet) for use in outdoor irrigation; and

WHEREAS, gray water systems — which recycle household water to a spot where it can be used outdoors — can save a typical household 13,000 gallons of potable water per year; and

WHEREAS installation of stub-outs at the time of constructions greatly facilitates the use of gray water in residences, and

WHEREAS, a desert community should do everything possible to conserve water and promote efficient use of water resources.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. This ordinance shall be known and referred to as the "Residential Gray Water Ordinance."

SECTION 2. The Tucson Code Chapter 6, Buildings, Electricity, Plumbing and Mechanical Code, Article III, Buildings, Division I, Building Code, Section 6-38, *Residential code adopted*, International Residential Code 2006 as adopted by Ordinance 10417 with amendments, is hereby amended by adopting a new section 2602.1.2 as set forth in Attachment A to this ordinance incorporated here as if fully set forth herein.

SECTION 3. The Director of Development Services is authorized to adopt appropriate rules, regulations and Development Standards necessary to implement the provisions of this ordinance.

SECTION 4. The provisions of this ordinance may be modified or waived when it can be satisfactorily demonstrated to the Building Official that compliance with these regulations is impractical due to construction or other physical constraints and an acceptable alternative method of compliance that allows gray water usage is proposed.

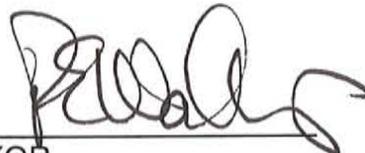
SECTION 5. The provisions of Sections 1 through 4 of this ordinance shall apply to construction built pursuant to permits issued after June 1, 2010.

SECTION 6. The various City officers and employees are authorized and directed to perform all acts necessary or desirable to give effect to this ordinance, including, but not limited to, providing an instructional pamphlet setting forth in plain language the requirements of this ordinance.

SECTION 7. If any of the provisions of this ordinance or the application thereof to any person or circumstance is invalid, the invalidity shall not affect other provisions or applications of this ordinance which may give effect without the invalid provision or circumstance, and to the end the provisions of this ordinance are severable.

SECTION 8. WHEREAS, it is necessary for the preservation of the peace, health and safety of the City of Tucson that this ordinance becomes immediately effective, an emergency is hereby declared to exist and this ordinance shall be effective immediately upon its passage and adoption.

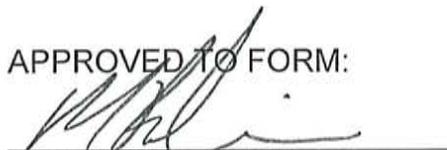
PASSED, ADOPTED AND APPROVED BY the Mayor and Council of Tucson, Arizona, September 23, 2008.

  
MAYOR

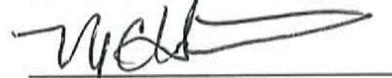
ATTEST:

  
CITY CLERK

APPROVED TO FORM:

  
CITY ATTORNEY

REVIEWED BY:

  
CITY MANAGER

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LK/kr  
9/17/2008 10:16 AM

**ATTACHMENT A** to Ordinance 10579

2602.1.2 “Gray Water Applications”

1. All new single family and duplex residential dwelling units shall include either a separate multiple pipe outlet or a diverter valve, and outside “stub-out” installation on clothes washing machine hook-ups, to allow separate discharge of gray water for direct irrigation.
2. All new single family residential dwelling units shall include a building drain or drains for lavatories, showers, and bathtubs, segregated from drains for all other plumbing fixtures, and connected a minimum of three (3) feet from the limits of the foundation, to allow for future installation of a distributed gray water system.
3. All gray water systems shall be designed and operated according to the provisions of the applicable permit authorized by ADEQ under the Arizona Administrative Code, Title 18, Chapter 9.

**Attachment D – City of Tucson Water Harvesting Ordinance**

ADOPTED BY THE  
MAYOR AND COUNCIL

October 14, 2008

ORDINANCE NO. 10597

RELATING TO BUILDINGS, ELECTRICITY, PLUMBING AND MECHANICAL CODE; AMENDING THE TUCSON CODE CHAPTER 6 BY ADDING A NEW ARTICLE VIII, RAINWATER COLLECTION AND DISTRIBUTION REQUIREMENTS, SECTIONS 6-181 THROUGH 6-188 REGULATING THE USE OF RAINWATER HARVESTING AND STORAGE SYSTEMS; REQUIRING A LANDSCAPE WATER BUDGET FOR ALL COMMERCIAL DEVELOPMENTS; PROVIDING THAT A MINIMUM 50% OF THE LANDSCAPE WATER BUDGET BE SUPPLIED BY HARVESTED RAINWATER; PROVIDING FOR EXCEPTIONS TO THE RAINWATER HARVESTING REQUIREMENT; REQUIRING AN ANNUAL RAINWATER HARVESTING REPORT; AMENDING TUCSON CODE CHAPTER 27, WATER, ARTICLE I, IN GENERAL, SECTION 27-15(A) TO INCLUDE A RAINWATER HARVESTING PROVISION AS AN ELEMENT OF WATER WASTAGE; SETTING AN EFFECTIVE DATE; AND DECLARING AN EMERGENCY.

WHEREAS the City of Tucson (the "City") has experienced substantial growth, continues to experience growth, and water resources sufficient to meet the growing needs of the community must be ensured and;

WHEREAS the City must secure additional water supplies over the long term; that such supplies will become more costly over time; and that the potential for drought in the Southwest is a real and continuing problem and;

WHEREAS the City and its citizens must acknowledge, and successfully manage and coexist with the resource limitations of the arid Sonoran Desert environment and;

WHEREAS water conservation constitutes a legitimate and critical public health, safety, welfare, economic, and sanitation concern and;

WHEREAS the City should maintain its leadership role among desert cities as an innovator in water resource management, water use efficiency, technology, policy, and regulation; and continue to create sound, sustainable policies for new developments that are cost-effective and responsible and;

WHEREAS, Tucson Water estimates that 45% of all water usage in its service area is dedicated to outdoor purposes;

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. The Tucson Code Chapter 6 is hereby amended by adding a new Article VIII Sections 6 -181 through 6-188, to read as follows:

**ARTICLE VIII. RAINWATER COLLECTION AND DISTRIBUTION REQUIREMENTS**

**Sec. 6-181. Definitions.**

**As used in this article, the following terms are defined as follows:**

*Commercial development* means any new non-residential development that is intended to be used primarily for commercial activities, and is subject to the requirements of the International Building Code.

*Rainwater* means water that has fallen as rain and contains little dissolved mineral matter, or any other form of precipitation.

**Sec. 6-182. Rainwater Harvesting Plan.**

A. All commercial development and site plans submitted after June 1, 2010 shall include a rainwater harvesting plan. The rainwater harvesting plan shall include a landscape water budget and an implementation plan.

1. The landscape water budget shall calculate the estimated volume of water required yearly for all site landscaping detailed in the development and/or landscape plan.
2. The implementation plan shall show how any combination of capture, conveyance, storage, and distribution will be utilized on-site to harvest rainwater. Implementation plans shall comply with applicable Development Standards for water harvesting applications.

3. The implementation plan shall also provide for water metering of all on-site landscape water through either:

(a) A separate water meter connected to the main water supply; or,

(b) An irrigation sub-meter.

B. The rainwater harvesting plan shall be submitted concurrently with the site plan and landscape plan.

C. The Director of the Development Services Department may authorize alternative compliance with Development Standards when conditions of topography, site soils or ratio of landscape area to total site area would make strict adherence to standard provisions unreasonable and the alternative compliance advances the spirit of this Article.

**Sec. 6-183. Construction of rainwater harvesting system; Minimum landscape budget requirements; Request for Rainwater Harvesting Plan Revision.**

A. All new commercial development built pursuant to a development plan submitted after June 1, 2010 shall include a rainwater harvesting system constructed according to an approved rainwater harvesting plan.

B. No later than three years from the date of issuance of a final certificate of occupancy, and for every year thereafter, 50% of the estimated yearly landscape water budget shall be provided by rainwater harvested on-site by a rainwater harvesting system constructed pursuant to an approved rainwater harvesting plan. The 50% landscape budget provision shall not apply in any calendar year in which the annual precipitation has fallen below the amount determined in the applicable development standards.

C. Within three years from the date of issuance of a final certificate of occupancy, the applicant, or a successor in interest, may request to revise the rainwater harvesting plan. The request shall be submitted to the Director of Development Services. The request shall be granted only if one of the following is true:

1. A mathematical or engineering error was made in the calculation of water required for on-site landscaping.

2. A variance related to landscape requirements, and which impacts the landscape water budget, is obtained subsequent to the approval of a submitted rainwater harvesting plan.

3. Additional data on site conditions or performance relevant to the subject site has been obtained, and results indicated a needed change in water budget calculations in the rainwater harvesting plan.

**Sec. 6-184. Restrictions on installation of rainwater harvesting system invalid.**

A. Any covenant, restriction or condition contained in any deed, contract, security agreement or other instrument affecting the transfer or sale of, or any interest in, real property which effectively prohibits the installation or use of a rainwater harvesting system is void and unenforceable.

B. A deed, contract, security agreement or other instrument affecting the transfer or sale of, or any interest in, real property entered into before June 1, 2010 shall not be subject to the provisions of this section.

**Sec. 6-185. Exceptions.**

A. That portion of a development which includes the following land uses shall be excepted from the 50% rainwater harvesting requirements:

1. Public parks and botanical gardens;
2. Outdoor recreation facilities, whether under public or private ownership, for public use, schools, and day care centers;
3. The playing areas of golf courses;
4. Cemeteries;
5. Natural open space;
6. Crop production.

**Sec. 6-186. Annual Report.**

A. A rainwater harvesting landscape water-use budget report shall be submitted annually by the owner or owner's agent to Tucson Water. The report shall include location and ownership information for the property, monthly rainfall totals collected from an on-site gauge or the SAHRA rain gauge closest to the site, monthly site water use data, and monthly relevant sub-meter or service meter data.

**Sec. 6-187. Violation.**

A. Failure to meet the 50% rainwater harvesting requirement for landscape irrigation shall constitute water wastage, and notwithstanding any other

provision of this section shall constitute a violation of Section 27-15 of this code.

B. The Director of Development Services or the Director of Tucson Water may require that any development not meeting the landscape budget requirements conduct and submit a landscape irrigation audit and report the results with the audit and reporting performed by a third party auditor and paid for by the property owner.

C. The imposition of civil liability shall not preclude the city from taking any other enforcement actions permitted under the code.

**Sec. 6-188. Applicability.**

The provisions of this Article shall apply to construction built pursuant to permits issued after June 1, 2010.

SECTION 2. The Tucson Code Chapter 27, Section 27-15 (a) is hereby amended by adding a new subsection (7) to read as follows:

7) Failure to meet the 50% rainwater harvesting requirement for landscape irrigation set forth in Chapter 6, Article VIII of the Tucson Code.

SECTION 3. The various City officers and employees are authorized and directed to perform all acts necessary or desirable to give effect to this ordinance, including, but not limited to, providing an instructional pamphlet setting forth in plain language the requirements of this ordinance.

SECTION 4. If any of the provisions of this ordinance or the application thereof to any person or circumstance is invalid, the invalidity shall not affect other provisions or applications of this ordinance which may give effect without

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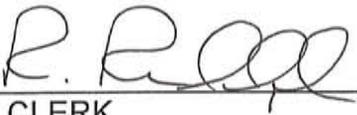
the invalid provision or circumstance, and to the end the provisions of this ordinance are severable.

SECTION 5. WHEREAS it is necessary for the preservation of the peace, health and safety of the City of Tucson that this ordinance become immediately effective, an emergency is hereby declared to exist and this ordinance shall be effective immediately upon its passage and adoption.

PASSED, ADOPTED AND APPROVED BY the Mayor and Council of Tucson, Arizona, October 14, 2008.

  
\_\_\_\_\_  
MAYOR

ATTEST:

  
\_\_\_\_\_  
CITY CLERK

APPROVED TO FORM:

  
\_\_\_\_\_  
CITY ATTORNEY

REVIEWED BY:

  
\_\_\_\_\_  
CITY MANAGER

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**Attachment E – Gray water and Rainwater Harvesting Resources in  
Pima County**

Pump and tank system

[www.justwatersaversusa.com](http://www.justwatersaversusa.com)

Their model is pretty inexpensive

800-513-6414

Shower retrofit system to pump water out of your drains outside - on an existing  
home

Richard Ravis

Mirage Pacific

743-4644

<http://www.miragepacific.com/>

# Rain Water Harvesting and Gray Water Reuse Resources



Rain Water Harvesting Rooftop Collection Estimation:  
*1 inch of rainfall on 1,000 sq.ft. roof could collect 600 gallons of water*



## WORKSHOPS:

**Check the U of A Pima County Cooperative Extension  
web site for upcoming classes**

Harvesting Rainwater for Landscape Use  
Pima County Cooperative Extension Office  
4210 N Campbell Avenue  
Call Teri at 626-5161 to register.

626-5161  
<http://cals.arizona.edu/pima/smartscape/index.html>

**Watershed Management Group, Inc.**

Free hands-on water harvesting and greywater workshops  
& Co-op Program (see below for more information).

396-3266  
<http://www.watershedmg.org/>

**Sonoran Permaculture Guild**

(Dan Dorsey) 624-8030  
(Barbara Rose) 572-7221  
<http://www.sonoranpermaculture.org/courses-and-workshops/>

## WEB SITES, BOOKS, RESOURCES:

*Rainwater Harvesting (RWH)*

- **ARCSA** [www.arcsa-usa.org / arcsa.htm](http://www.arcsa-usa.org/arcsa.htm)  
American Rainwater Catchment Systems Association
- **AZ Dept. of Revenue Tax Incentive Revised May 2008 to include RWH**  
25% of costs up to \$1,000 for residential or \$200/home builder:  
[http://www.azdor.gov/Refunds%20and%20Credits/Graywater\\_credit\\_implementation.pdf](http://www.azdor.gov/Refunds%20and%20Credits/Graywater_credit_implementation.pdf)
- **City of Tucson *Water Harvesting Guidance Manual***  
and CD-ROM available on-line to download at:  
<http://www.ci.tucson.az.us/water/harvesting.htm>  
or <http://www.dot.ci.tucson.az.us/stormwater/education/waterharvest.cfm>
- ***Harvesting Rainwater for Landscape Use*** (Tucson Water) 791-4331  
University of Arizona Pima County Cooperative Extension  
<http://www.ci.tucson.az.us/water/harvesting.htm>
- **The Nature Conservancy** 622-3861  
Rainwater Harvesting Demonstration Site Tours, Call for tour times  
1510 E. Forth Lowell Rd. 85719
- ***Rainwater Harvesting for Drylands and Beyond-Volumes 1&2*** <http://www.harvestingrainwater.com/>  
author Brad Lancaster's book is available on his web site  
and locally at Native Seed Search on 4<sup>th</sup> Avenue  
Great Web site with lots of information and resources

Major source of information from Brad Lancaster's website: <http://www.harvestingrainwater.com/>  
Brad Lancaster is the author of "Rainwater Harvesting for Drylands and Beyond"

- **Rainwater Harvesting for the Mechanically Challenged**  
Suzy Banks & Richard Heinichen

- **Watershed Management Group, Inc.**  
Tucson based non-profit that helps install rainwater harvesting systems for educational-based projects. Free hands-on water harvesting workshops, consulting, Co-op (attend workshops to learn and assist in constructing home systems including your own home after attending four workshops).

396-3266  
<http://www.watershedmg.org/>

### Greywater

- **Watershed Management Group, Inc.**  
Tucson based non-profit that helps install water harvesting systems for educational-based projects. Greywater Co-op ~ attend workshops to learn and assist in constructing home systems including your own home after attending four workshops.

396-3266  
<http://www.watershedmg.org/>

- **Graywater Guidelines, The Water Conservation Alliance of Southern Arizona (Water CASA)**

626-2678  
[www.watercasa.org](http://www.watercasa.org)

- **Create an Oasis with Greywater**, Art Ludwig.  
Santa Barbara, CA, Oasis Design web site

805-967-9956  
[Oasisdesign.net/greywater](http://Oasisdesign.net/greywater)

- **AZ Department of Environmental Quality (ADEQ) Marci Mullins**  
No permit needed for residential properties but commercial properties require a Type 3 Reclaimed Water Permit and subsurface irrigation for >400 gallons/day of greywater. <http://www.azdeq.gov/environ/water/permits/reclaimed.html>

602-771-4464

- **AZ Dept. of Revenue Tax Incentive**  
25% of costs up to \$1,000 for residential  
\$200/home builder stub-outs for Greywater

[http://www.azdor.gov/Refunds%20and%20Credits/Graywater\\_credit\\_implementation.pdf](http://www.azdor.gov/Refunds%20and%20Credits/Graywater_credit_implementation.pdf)

### WATER HARVESTING DESIGN AND CONSULTING

- **Rocky Brittain** (Commercial and Residential)
- **Barbara Rose** (Residential)
- **Lisa Lucking Hoffman** (Residential)
- **Zona Gardens - Scott Calhoun**  
Landscape Design. No irrigation gardens. Fax 520.867.8039
- **Watershed Management Group, Inc.**

621-6751  
572-7221  
861-4741  
867.8038  
[www.zonagardens.com](http://www.zonagardens.com)  
396-3266  
<http://www.watershedmg.org/>

### CISTERN SELLERS & INSTALLERS

- Boyd Equipment**  
3625 S. Country Club- Norwesco tanks and fittings for adapting tanks for rainwater and greywater storage and delivery.

792-2244

- Clean Water**  
Brent Cluff 1881 W. Prince . Sells tanks ranging from 100 gallons to 3,000 gallons

293-1561

## **CISTERN SELLERS & INSTALLERS (CONTINUED)**

- Freeway Tank Sales** 623-2573  
1412 S. Freeway (I-10 Access / 22<sup>nd</sup> St.); 35-10,000 gallon plastic and metal tanks
- Glas-Tek** 889-0181  
Chuck McCain; 5041 E. Corona Rd.; Fiberglass tanks
- Home Improvement & Maintenance, Inc.** 981-4747  
Justin Cupp; Rain water collection & Landscape consultation.
- Loomis Tank Centers** 889-1338  
2610 E. Ganley Rd.; Sells: HDPE plastic tanks 300 – 10,000 gallons, rainhead screens for cisterns, cistern gauges, and greywater infiltration chambers for subsurface irrigation
- Native Roots** 425-9795  
Omar Ore-Giron; Earthworks and Rainwater Harvesting
- New Sonoran Rainscapes** 520-624-9909  
Kent Sorensen; Harvesting rainwater in sustainable landscapes. [www.newsonoran.com](http://www.newsonoran.com)  
Installs cisterns, landscape design, & Earthworks.
- Oasis Water Harvesting** 520-234-7681  
Rick Weisberg; 4921 E. Hillcrest Dr. Hereford, AZ 85615 [www.oasisrainwaterharvesting.com](http://www.oasisrainwaterharvesting.com)  
Sells rain chains, Norwesco tanks, and custom made plastic tanks of various sizes and colors. Installs cisterns.
- Silverbell Nursery** 622-3894  
2730 N. Silverbell Rd.; Sells and installs cisterns.
- Southern Arizona Rain Gutters** 299-RAIN (299-7246)  
8987 E. Tanque Verde Rd. #309-297, Sells Bushman plastic tank systems. Installs cisterns. [www.southernarizonaraingutters.com](http://www.southernarizonaraingutters.com)
- Technicians for Sustainability** 520 740-0736  
Lisa Lucking Hoffman or Kevin Koch; Installs cisterns. [www.techniciansforsustainability.com](http://www.techniciansforsustainability.com)
- There are various **on-line tank** dealers that will deliver. <http://www.watertanks.com/>  
Make sure to consider the sun exposure if considering a plastic tank. <http://polytanks.net/>  
Here are a few dealers, search the Web to find more. <http://www.plasticmart.com>  
<http://www.tank-depot.com/>

## **MECHANIZED WATER-HARVESTING EARTHWORK CREATION/EXCAVATION**

- John Litzel of Little John Excavating** 520-730-9350
- Goodwillie Earthworks** 520-490-6956
- Water-harvesting earthwork / water-harvesting landscape creation*
- New Sonoran Rainscapes** 624-9909  
Kent Sorensen [mrmesquite868@aol.com](mailto:mrmesquite868@aol.com)  
[www.newsonoran.com](http://www.newsonoran.com)
- Wildworks Landscapes Incorporated** 743-1309  
Russ Buhrow and Dottie Motheral
- Wildscapes** 325-2444  
Scott Knight [wildscapes89@msn.com](mailto:wildscapes89@msn.com)

## WATER HARVESTING DEMONSTRATION SITES

- **The Nature Conservancy** 1510 E. Ft. Lowell Rd. 622-3861  
Offers regular rainwater harvesting tours. Passive and active harvesting systems.  
Variety of cistern types and extensive native plantings.
- **U of A Cooperative Extension Office** 4210 N. Campbell 626-5161  
Demonstration Gardens – Active and passive systems.
- **WalMart/Oro Valley Marketplace** N. Oracle & W. Tangerine Rd.  
Underground tanks that capture rooftop runoff. No earthworks/passive water harvesting.
- **Lee H Brown Family Conservation Learning Center at the Tucson Zoo** S. Randolph Way 881-4753  
Rainwater harvesting tanks & grey water reuse. LEED Platinum certified building
- **Tucson Audubon Society** Historic Y building at University and 5th Avenue. 622-2230  
Water harvesting depressions and plantings.
- **Smart Building** 1661 N. Swan  
Rainwater harvesting basins
- **Ward 1 Council Office** 940 W. Alameda 791-4040  
Active & passive rainwater harvesting examples
- **Ward 3 Council Office** 510 E. Grant 791-4711  
Active & passive rainwater harvesting examples
- **Ward 6 Council Office** 3202 E. 1<sup>st</sup> St. 791-4601  
Planted basins
- **Target** 4040 N. Oracle Rd. 293-6191  
Planted basins
- **Burns Wald-Hopkins Office** downtown - Culvert cistern in back
- **Country Club & Broadway – GreenLots NE corner** – passive system with native plants
- **UA Visitor Center** – Passive and active rainwater harvesting site
- **Originate** – Large metal cistern
- **Rincon Heights Neighborhood** Cherry Ave. just south of 6<sup>th</sup>  
Good example of streetscape and right of way water harvesting.
- **Toltecalli Academy** – 251 W. Irvington near 6<sup>th</sup>  
From parking lot can see – basins, cistern, native plants, and vegetable garden

## GREYWATER DEMONSTRATION SITE

- **Esperanza en Escalante** - 3700 S Calle Polar. Wilmot & Golf Links 520-571-8294  
Has a branched drain greywater system off laundry machine, open for public to view  
between 9am and 5pm

## GREYWATER INSTALLERS

### Technicians for Sustainability

Lisa Lucking Hoffman or Kevin Koch

520 740-0736

[www.techniciansforsustainability.com](http://www.techniciansforsustainability.com)

### Desert Sky Home Repair, LLC

PO Box 1765, Tucson, AZ 85702

520-622-0607

### Guy Cloutier

991-4930

## GREYWATER SUPPLIES

### Harrington Company 4141 E. Tennessee Ave

Hose, pipe, fittings for adapting tanks and culverts for rainwater storage and delivery.

745-8433

### Plumbing Suppliers, Inc. 2555 E. Grant Road

Flow Splitter parts

326-6433

### Irrigation & Sprinkler Supply Company Grey pipe for conveyance of greywater

2130 E. 12<sup>th</sup> St.

5120 N. La Cholla

792-4652

292-6900

### Catalina Spas and Pools 4001 N. Runway Dr.

3-way Jandy valves

888-4181

### Any pool and spa supplier

Flexible hose & 3-way Jandy valve

## INTEGRATED RAIN WATER HARVESTING & GREYWATER DESIGN

### Technicians for Sustainability

Kevin Koch or Lisa Lucking Hoffman

520 740-0736

### Brad Lancaster

<http://www.harvestingrainwater.com/>

### Barbara Rose (Residential & Community Design)

572-7221

### Art Ludwig (Large Scale Greywater Design)

### Oasis Design

Fax: 967-3229; 5 San Marcos Trout Club Santa Barbara, CA 93105-9726

805 967-9956

[www.oasisdesign.net](http://www.oasisdesign.net)

## SITE/SOIL ASSESSMENT

For Kitchen Resource Drain (KRD) and Other Alternative Homescale Wastewater Reuse Systems

### Nichols On-Site Engineering

5010 W Sweetwater Dr, Tucson, Arizona 85745

520-743-1565

## STATE TAX INCENTIVES

For Greywater and Rainwater Harvesting Systems

### AZ Dept. of Revenue Tax Incentive

- 25% of costs up to \$1,000 for residential
- \$200/home builder stub-outs for Greywater

<http://www.azdor.gov/>

[http://www.azdor.gov/Refunds%20and%20Credits/Graywater\\_credit\\_implementation.pdf](http://www.azdor.gov/Refunds%20and%20Credits/Graywater_credit_implementation.pdf)