

# Florida STORMWATER EDUCATION

Resources for Stormwater Education from the Stormwater Management Academy—University of Central Florida



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## UPDATE

### Florida Stormwater Education Supersite

*Ondine Wells, Pandion Systems, Inc.*

Two committees focused on stormwater education and social marketing will combine forces next year to create a Florida Stormwater Education Supersite.

The Florida Watershed Community-Based Social Marketing (CBSM) Committee has focused on the structure of a data repository and social marketing metadata collection. The Stormwater Education Task Force (SET Force) created Florida's Stormwater Education Toolkit ([www.stormwater.ucf.edu/toolkit/](http://www.stormwater.ucf.edu/toolkit/)) in 2002, an online toolkit that includes a wide range of stormwater resources from manuals and model ordinances to lesson plans and educational guides. Both committees will move forward toward creating a comprehensive website of social marketing data and education materials with a projected site launch in 2011.

The supersite will be an interactive web-based storage site that houses thousands of digital education materials as well as data and results from social marketing research. It will serve a wide range of users from the general public to research scientists and social marketers.

Users of the supersite will be able to access a project case study, download raw data, and link to the project's media and educational materials. Researchers will be able to turn to the supersite for

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### Monroe County Leads the Way:

## Converting an Abandoned Residential Septic Tank to a Cistern

*Fran Wagner*

A number of areas in the Florida Keys are being converted from individual septic systems to centralized municipal systems as funds become available. There are two options available for the resulting unused septic tanks: abandonment (destruction), or conversion to rain-collecting cisterns for nonpotable garden use.

There are a number of compelling reasons for conversion to cisterns. Of course water conservation is a

main reason. Another is abatement of stormwater run-off. Convenience of use during drought-caused water restrictions, and water cost savings are other good reasons.

The steps required for conversion are not complicated and can be done either by tradesmen or by the homeowner.

There are basically two types of individual septic systems in the Keys: Aerobic (the newer) systems and anaerobic (the older) systems. Older

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### Collecting Rainwater for Homeowners: A Unique Solution

Search the web for rain barrels and you'll find a number of attractive designs, ranging from simple painted containers to barrels or holding tanks with vegetation growing on top. With many options available, lack of space or unattractiveness are no longer barriers for use.

One solution to the aesthetic issue is an innovative use of hollow end walls. Rainwater is collected using a downspout connected to the end wall, and the water is released via a soaker hose. In the example shown above, the end wall holds about 35 gallons and most of the water released goes to a garden. Some goes onto the pavement, which then flows into the garden.

See page 3 for a general materials list for the assembly pictured.



PHOTO COURTESY STORMWATER MANAGEMENT ACADEMY

# Rain Barrels for Schools!

*Gabrielle Milch, Project Coordinator*

The UCF Stormwater Management Academy and the Seminole County Public Schools, under the coordination of Gabrielle Milch, will partner to provide rain barrels to teachers. The rain barrels can enhance an existing butterfly garden or outdoor classroom for teachers interested in facilitating rainwater harvesting and experiment stations for their students. Teachers can have one or two barrels in addition to

an education program via a Powerpoint presentation, or a visit tailored to the needs of the school or class. In addition, Gabrielle will supply the presentation to any stormwater educator who wants to work on rain barrel education programs!

Technical support will include helping teachers find a location to set up the station and facilitating an Enviroscape presentation to help students learn about stormwater pollution issues. A copy of SET Volume III: Youth Stormwater Education guides will be distributed to all participating teachers and will be offered to teachers who participate in the in-service Rainwater Harvesting and Stormwater Pollution Workshop.

In the late spring, Gabrielle will partner with the Seminole County Road Operations and Stormwater Divisions Education to offer an in-service teacher training to all Seminole County school teachers. If you are a Seminole County teacher interested in a rain barrel, contact Gabrielle at [gabbiemilch@aol.com](mailto:gabbiemilch@aol.com).



PHOTO COURTESY KATHRYN ARCHIBALD

Rain barrels at Odyssey Charter School, Palm Bay, FL.

## At a Glance...

### Rain Barrel and Cistern Resources

Southwest Florida Water Management District offers a **comprehensive guide for understanding rain barrels and cisterns** at [www.swfwmd.state.fl.us/publications/files/rain\\_barrels\\_guide.pdf](http://www.swfwmd.state.fl.us/publications/files/rain_barrels_guide.pdf). Raingardens.org offers **standard directions for constructing a one or two system rain barrel** at [www.raingardens.org/docs/rainbarrel.pdf](http://www.raingardens.org/docs/rainbarrel.pdf).

### Rooftop Rainwater Harvesting Systems In Schools

A guide outlining **installation and maintenance of a whole-school rain harvesting system**, including a student-friendly diagram. Although this project occurs in an India school, it demonstrates the simplicity of the design and maintenance for collecting rainwater for potable use. The guide includes a Maintenance Schedule, Post-Storage Treatment Procedures, and Precautions. Available online at [www.rainwaterclub.org/docs/MANUAL%20ON%20ROOFTOP%20RAINWATER%20HARVESTING%20SYSTEM%20FOR%20SCHOOLS.pdf](http://www.rainwaterclub.org/docs/MANUAL%20ON%20ROOFTOP%20RAINWATER%20HARVESTING%20SYSTEM%20FOR%20SCHOOLS.pdf).

### Rainwater Catchment Systems

The American Rainwater Catchment Systems Association (ARCSA) promotes **rainwater catchment systems** in the United States through educational opportunities and the exchange of information through a web site and workshops. The Resources section on the website contains a thorough list of additional websites and valuable publications. Members include professionals working in city, state, and federal government, academia, manufacturers and suppliers of rainwater harvesting equipment, consultants, and other interested individuals. Visit [www.arcsa.org/](http://www.arcsa.org/).

### Policies and Permitting Requirements for Non-Potable Use of Cisterns Study

This November 2007 study features **examples of cisterns nationwide for non-potable use** including where to purchase cisterns, costs, diagrams, regulations, and photos. Designed to be applied to potential cistern use for irrigation purposes only in the Tampa Bay region, it could be applied to other areas of Florida. [http://fyn.ifas.ufl.edu/materials/UPDATEDGovtPolicyofCisterns7\\_20\\_07.pdf](http://fyn.ifas.ufl.edu/materials/UPDATEDGovtPolicyofCisterns7_20_07.pdf).

### Rainwater Harvesting Website

**Harvest H2O.com** is dedicated to the advancement of sustainable water management practices for individuals, families, communities, and businesses. Working collaboratively with vendors, universities, research organizations, and individuals, HarvestH2O.com devises solutions for managing water conservation problems. Of interest is their section on **current regulations regarding rainwater harvesting** in each state. Visit [www.harvesth2o.com](http://www.harvesth2o.com).

### Coastal LID Case Studies Needed!

Are you working on an interesting stormwater management project in the coastal plain? Let's hear about it! The Center for Watershed Protection is "**Promoting Innovative Stormwater Solutions for Coastal Plain Communities**" by improving the tools available for the design, implementation, and evaluation of low impact development (LID) practices in the coastal plain. Please submit: Case studies, recent research results; and links to current events and workshops. Contact: Sadie Drescher, Watershed Planner, 410.461.8323 or [srd@cwpp.org](mailto:srd@cwpp.org).

## Converting an Abandoned Septic Tank to a Cistern

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anaerobic systems consist of a single tank with drainage field(s). The newer aerobic type consists of two or three tanks with the first tank having air pumped into it to supply oxygen to the bacteria that break down the sewage.

The instructions that follow are for the older single tank systems. The newer aerobic systems require these same steps along with others. (See web link at the end of this article for aerobic tank conversion instructions.)

A summary of the steps for anaerobic tank conversion (see diagram at right):

1. Obtain the proper variance from the Department of Health.

2. Have the septic tank pumped out and pressure cleaned.

3. Connect the roof gutter downspout(s) to fill the tank.

4. Connect an overflow pipe to the cistern tank.

5. Allow the cistern tank to fill and add chlorine bleach.

6. Mount a pump with pressure tank in a convenient location and supply power to it.

7. Connect an intake suction pipe from the cistern tank to the pump.

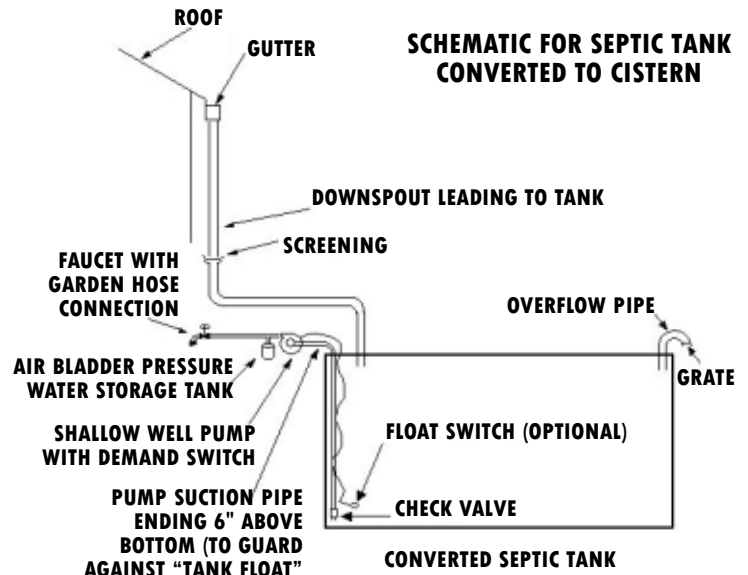
8. Connect an output pipe from the pump (pressure tank) to a garden faucet.

9. At any time several months after step 4 the Department of Health should be called to test the water. This is required to receive the DOH certificate of approval.

10. An optional float switch can be installed to prevent dry pump operation when tank is near empty.

Additional procedures are required for an aerobic septic tank since an aerobic system usually consists of two or three separate tanks.

Although conversion procedures seem tedious, they are not. They are straightforward and only have to be done once. The gratifying result is that instead of destroying a completely useful concrete tank already on location, that



tank is put to excellent use, continuing to produce benefits for the life of the tank, which should be about 100 years.

The complete article is available at [www.keysglee.com/images/pdf/Converting\\_Septic\\_Tank.pdf](http://www.keysglee.com/images/pdf/Converting_Septic_Tank.pdf) and includes detailed instructions for anaerobic septic tank conversions. Contact Fran Wagner at: [franwagner1@hotmail.com](mailto:franwagner1@hotmail.com) for additional information about conversions.

*Fran Wagner received his bachelors degree in Electrical Engineering from Rensselaer Polytechnic Institute and his masters in Digital Systems from State University of New York at Buffalo. He and his wife are both involved in environmental issues with their primary focus having been their work with the State Department of Health to approve the conversion of out-of-service septic tanks to cisterns.*

*Monroe County is currently leading other counties in Florida offering a rebate for septic tank conversions, and there are several bills that could dramatically impact rainwater harvesting in general in Florida.*

## Collecting Rainwater for Homeowners: A Unique Solution

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Below is a general materials list for the end wall rainwater collection assembly pictured.

1. Bottom section of the bottom portion of an open end wall assembly, visit: [www.armtec.com/catalogue/Culverts\\_Drainage\\_and\\_Stormwater/Hartman\\_End\\_Walls\\_FIN.pdf](http://www.armtec.com/catalogue/Culverts_Drainage_and_Stormwater/Hartman_End_Walls_FIN.pdf) for a photo and ordering information.

2. Downspout: attached to the end wall.

3. Soaker hose.

4. Drill for "weep" holes and to attach soaker pipe.

5. Mastic to fill in around soaker hose and drain pipe: common plumbers putty or the equivalent.

Many rainwater collection options are available now for homeowners, assisting stormwater educators with marketing efforts and addressing the aesthetic issue. The unique end wall rainwater collection system is one solution developed by the Stormwater Management Academy!

For more details about the end wall collection system contact Leesa Souto at: [lsouto@mail.ucf.edu](mailto:lsouto@mail.ucf.edu).



## Pocket Garden Rain Barrel

Rain barrels for homeowners are typically 55-gallon drums or containers. But what if you are one of the millions of people living in town homes, houses or condos with tiny outside green spaces?

A 55-gallon barrel may be perceived as a space hog. Using a 20-gallon plastic garbage container can be a solution for small outdoor spaces. Use directions of your choice and replace the 55-gallon container with a 20-gallon container, or visit [www.townofcary.org/\\_shared/assets/rainbarrelinstructions11204.pdf](http://www.townofcary.org/_shared/assets/rainbarrelinstructions11204.pdf) for instructions and diagrams—just replace the 55-gallon container with a 20-gallon container. Total cost is under \$40!



## Nickelodeon's Big Green Grants

Resources to schools and community-based organizations to support environmentally friendly projects that educate and inspire kids to take care of the environment, be active, live healthily, and engage in community service. Each Green Grant will provide up to \$5,000. Applications are accepted and reviewed on a rolling basis throughout the year.

If you are interested in working with a school, offering to assist with grant writing and technical support throughout the school year could be just what a school or teacher needs to get started on a stormwater pond or water monitoring project!

Read more at <http://bghevent.com/grant/index.htm>.

## Upcoming Events

### Florida Stormwater Association 2009 Winter Conference

Register by November 19, 2009 for discounted rate. Technical and policy-oriented workshops. There will be a pre-conference tour of stormwater projects in the Tampa area!

**Date:** December 2–4, 2009

**Location:** Hyatt Regency, Tampa

**Web:** [www.florida-stormwater.org/conferences/conference2009\\_winter.htm](http://www.florida-stormwater.org/conferences/conference2009_winter.htm)

**Does your organization have an upcoming stormwater-related event?**  
Send announcements to  
[elise@editype.com](mailto:elise@editype.com).

### 2nd University of Florida Water Institute and Symposium

“Sustainable Water Resources: Complex Challenges, Integrated Solutions” will focus on complex challenges and integrated solutions for sustainable watershed management. This event will bring together scientists, engineers, academics, policy makers, water managers, industry and utility representatives, lawyers, students, and the public to address complex water issues from multiple perspectives.

**Date:** February 24–26, 2010

**Location:** University of Florida, Gainesville

**Web:** [www.waterinstitute.ufl.edu/symposium2010index.asp](http://www.waterinstitute.ufl.edu/symposium2010index.asp)

### Florida Stormwater Education Supersite

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up-to-date results to formulate new research proposals. It will also afford researchers an opportunity to see their findings quickly put to practical use by educators who, for the first time, will have easy and free access to social marketing data. The data portion of the supersite will enable educators to develop and evaluate programs that foster behavior change. Program managers and outreach coordinators of stormwater education programs will be able to easily search for and access a wealth of educational materials such as radio programs, PSAs, and brochures.

The CBSM Committee will be creating a Request for Proposals within the next few months.

Contact Ondine Wells at [owells@pandionsystems.com](mailto:owells@pandionsystems.com) if you know a reliable and talented web database designer who would be interested in participating in a competitive bid for this service.

Stormwater Management Academy  
Managed stormwater is good water™



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