

# Florida STORMWATER EDUCATION

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



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Spring 2007

## Turn on the TAPP!

Nancy Caire Miller, TAPP Project Coordinator

It's a well-established fact that nonpoint source pollution is the most significant source of pollution affecting water resources nationwide. Common sources of this type of pollution are fertilizers and pesticides from yards, farms and gardens, poorly maintained or failing septic tanks, animal waste and other types of urban runoff. When it rains, water that is not absorbed into the soil washes over the land surface, picking up natural or man-made pollutants and depositing them in storm drains, streams and lakes. It's essential that all of us take part in protecting our water resources.



To raise awareness of this “pointless personal pollution,” the City of Tallahassee Stormwater Management Division, funded through a grant from the U.S. Environmental Protection Agency and administered through the Florida Department of Environmental Protection, has launched the TAPP (Think About Personal Pollution) Campaign.

TAPP is a campaign to improve water quality through individual efforts—one yard and one landscape at a time.

The goal is to slow the flow of water from yards and reduce runoff that may be carrying silt, oil, fertilizer, pet wastes, septic system wastes, pesticides and other chemicals into local waterways.

TAPP focuses on the small changes in behavior that each of us can make to

reduce the amount of nonpoint source pollution running into our local waterways. These small changes include using the right types and amounts of fertilizers and pesticides, picking up after pets, inspecting and maintaining septic systems regularly, and being more conscientious with household and automotive chemicals.

Consider planting a “rain garden” to help slow stormwater runoff and allow water to naturally percolate into the ground, recharging the aquifer. By slowing the flow from our lawns, roofs and driveways, all of us working together can address stormwater runoff problems and reduce water pollution.

For information on how you can make an impact on your environment and help keep local waterways beautiful, go to the TAPP website at [www.tappwater.org](http://www.tappwater.org) or call Nancy Caire Miller or Yasmeen Barnes-Nkrumah at 850.224.TAPP.

## Harvesting Rainwater

Janet Bargar, Water Quality Extension Service Agent

Residents of Indian River County are harvesting rainwater, and the University of Florida/IFAS Indian River County Extension Service is gearing up for the rainy season by offering Rain Barrel Workshops.

Rain barrels are an old-fashioned way to collect and store water that is free of chlorine, lime, salts, and calcium, which is better for plants. In addition, harvested rainwater is a source of irrigation water during periods of

drought, reducing demand on the municipal water system, especially during the dry season months.

Workshops are hands-on where participants make a rain barrel and are introduced to stormwater runoff and nonpoint source pollution through a brief presentation. Not only do participants leave with a barrel, they are given information about controlling mosquitoes in containers and a booklet that includes

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Rain barrel art, photo by Beverly Stevens.





## Spotlight on Annalise Mannix City of Key West, Florida

*Editor's Note: Following up on the discussion of stormwater challenges in the Florida Keys in the Winter 2007 newsletter, we talk with Annalise Mannix, Stormwater Engineer in the Utilities Department for the City of Key West.*

### **What is your professional background?**

I am a Florida Registered Professional Engineer. I began my career with schooling as a graduate of the State University of New York Maritime College with a degree in Naval Architecture and a USCG license as a Third Assistant Engineer, any horsepower on steam or motor vessels. I completed my internship with the New York City Department of Environmental Protection. For the last 17 years I have held various positions in the engineering department and stormwater utility for the City of Key West, Florida.

### **What is your primary role as stormwater Engineer?**

My role is to seek funding sources for stormwater projects, ensure compliance with our MS4 permit, encourage community input and assistance, make recommendations for the annual capital plan, maintenance budgets, and run community education programs.

### **What are the major challenges to stormwater management in Key West?**

Our low elevation is our largest hindrance to stormwater management. Since most of our roads are between 2.5 and 4.2 feet National Geodetic Vertical Datum (NGVD) and high tides get as high as 2.5 feet NGVD, we have very limited area for swales, retention ponds or pipe storage capacity.

Our tides often come up out of our storm drains and into the streets, making saltwater puddles. In some areas we have used tide vales to stop this but we have had spotty results. Cleaning stormwater is not easy if you cannot dispose of it through percolation or evapotranspiration.

### **How has the City of Key West's Municipal Separate Stormwater System improved water quality?**

The City of Key West is a small city with only about 26,000 residents. We

were caught in the "other" category of Phase 2 MS4 compliance. Key West is a 1 x 3.5 mile island surrounded by pristine waters known as "Outstanding Florida Waters" requiring additional rigorous environmental standards. The City also sits inside the limits of one of the few National Marine Sanctuaries. Therefore, the EPA designated the city an MS4 location. Actually, due to the local's community spirit, environmentally friendly City Commission and the knowledge that as a small island we need our natural resources to survive, the city is well suited to step into the MS4 arena.

Our community is years ahead of the MS4 minimum expectations in many areas. We have had a dedicated Key West Clean and Green Committee for years, meeting bi-monthly to assist in community clean-ups, making brochures, educating community groups, selecting monthly award winners, making recommendations for new codes, and code enforcement actions. We also have been installing BMP's for ten years in an effort to find new ways to dispose of stormwater. On all of our outfall improvements, we install double or triple chamber sediment traps.

### **What stormwater educational programs are currently in place in Key West?**

Our Clean Key West Committee spearheaded brochures for residents, asking for help in our community activities. Two very dedicated committee members attend numerous community group meetings to ask for volunteers in city-wide cleanups and for our adopt-an-area program, and even manned booths at some of our community events. Currently, we have a booth at our children's day activities, are partnering with Girl Scouts, the Police Cadet Program, and the High School HOPE Club. The youth are working on public service announcements, brochures, posters and stormwater inlet makers. We have hundreds of commercial advertisements annually on the light

music channels, and youth are working on PSAs that will run on the popular and rock music channels that many of them listen to. We are frequent visitors to the City Manager's local TV show, "Point to Point."

### **Ideally, what are the Best Management Practices the City of Key West needs to include from a technical standpoint?**

The city has limited space for retention or detention. Due to low head pressure, velocity vortex style units do not work well. Our two best BMP's are installing gravity injection wells with triple chamber sediment traps and sediment traps on the stormwater outfalls we have. The gravity injection wells are 90-foot wells that are picking up stormwater before it gets to the out falls. The water enters a triple chamber unit that also has a stainless steel cage to catch leaves and trash. It has a baffle to catch oils. We also place oil absorbent booms in each unit just prior to the well inlet to get any remaining oils.

*For more information about the City of Key West's stormwater management, including education and informational programs, contact Annalise Mannix at: [amannix@keywestcity.com](mailto:amannix@keywestcity.com).*

### **Harvesting Rainwater**

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instructions on how to connect it to a gutter. A rain barrel decorating contest is also offered.

Since the workshops have been offered, 73 rain barrels have been made that resulted in a minimum of 4,015 gallons of rainwater being prevented from becoming stormwater runoff. Since Florida receives an average of 52 inches of rainfall, the amount of rain collected will be greater in the future. Through survey responses, the collected rainwater is used by 40% of workshop participants to water plants, conserving both groundwater and potable water supplies.

For more information, contact the Indian River County Extension Service at 772.770.5030.

Brevard County is also conducting Rain Barrel workshops. To find out more, contact Desiree Ard at 407.823.4145 or [dard@mail.ucf.edu](mailto:dard@mail.ucf.edu).

## Grants

The **J.B. Butler Science Grant** awards at least \$500 to three educators to promote water resource educational units. Science teachers in grades K–12 also receive educational materials for classroom/science centers. The deadline for this proposal is **June 1, 2007**, with awards presented by August. Visit [www.awraflorida.org](http://www.awraflorida.org).

The **Charles A. and Anne Morrow Lindbergh Foundation** provides grants of up to \$10,580 in a variety of disciplines, including conservation of natural resources (animals, plants, water, and general conservation) that further the Lindberghs' vision of a balance between the advance of technology and the preservation of the natural/human environment. Applications are due **June 14, 2007**. Visit [www.lindberghfoundation.org/grants/index.html](http://www.lindberghfoundation.org/grants/index.html).

## Upcoming Events

### The 18th Annual Florida Lake Management Society Conference: "Managing our Lakes, Reservoirs, and Rivers"

**Dates:** June 4–7, 2007

**Location:** Naples Grande Resort & Club, Naples, FL

**Website:** <http://flms.net/conference/info.htm>

### Pinellas Living Green Expo

**Dates:** June 16–17, 2007

**Location:** The Colliseum/Sunshine Center, St. Petersburg, FL

**Website:** Directions and information at [www.pinellaslivinggreenexpo.org/](http://www.pinellaslivinggreenexpo.org/)

### 10th Annual Southeast Watershed Roundtable: Sustaining Our Water Infrastructure through Watershed-Based Approaches

Presenters will showcase communities, utilities, and industries blending innovative strategies for water supply, waste-water, and watershed management, based on the EPA's Four Pillars of Sustainable Water Infrastructure: Better Management, Full Cost Pricing, Water Efficiency, and Watershed Approach.

**Dates:** August 1–3, 2007

**Location:** Chateau Elan Winery & Resort, Braselton, GA

**Website:** View conference updates at [www.southeastwaterforum.org/roundtables/default.asp](http://www.southeastwaterforum.org/roundtables/default.asp)

## At a Glance...

### Discover Nonpoint Source Pollution Online

The National Oceanic and Atmospheric Administration (NOAA) recently released an online comprehensive introduction to nonpoint source pollution and its impacts. The online Education Discovery Center offers a variety of free educational resources. The *Nonpoint Source Pollution Discovery Kit* explores the history of pollution, explains the differences between point and nonpoint source pollution, reviews types of pollutants, and discusses how scientists monitor, assess, and control nonpoint source pollution. Visit: [www.epa.gov/newsnotes](http://www.epa.gov/newsnotes) and access the January issue, page 22.

### Stormwater Manager's Resource Center

The **Stormwater Manager's Resource Center** is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues. Created and maintained by the Center for Watershed Protection, the SMRC has everything you need to know about stormwater in a single site: [www.stormwatercenter.net/](http://www.stormwatercenter.net/).

### Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows



The urban landscape of roadways, sidewalks and buildings has changed the way water moves through our environment. Some cities are using green techniques—including rooftop gardens on city buildings, more absorbent concrete, and street planters that intercept rainwater before it hits the ground. *Rooftops to Rivers* is a policy guide for decisionmakers looking to implement green strategies in their own area, including nine case studies of cities that have successfully used techniques to create a healthier urban environment. Download the free Adobe Acrobat file at [www.nrdc.org/water/pollution/rooftops/contents.asp](http://www.nrdc.org/water/pollution/rooftops/contents.asp).

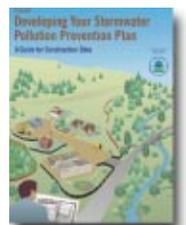
### Center for Watershed Protection Produces Wetlands & Watersheds Series

The third report in the *Wetlands & Watersheds Article Series* is "Direct and Indirect Impacts of Urbanization on

Wetland Quality." This article synthesizes more than 100 scientific studies on the direct and indirect impacts of urbanization on wetlands and the key role wetlands play in watershed quality. It's available as a free Adobe Acrobat file at [www.cwp.org/wetlands/articles.htm](http://www.cwp.org/wetlands/articles.htm).

### EPA Publishes Stormwater Protection Guide for Construction

The Environmental Protection Agency has published the interim document *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*. This document provides interim guidance to construction site operators needing NPDES permit coverage for their stormwater discharges. It also provides interim guidance to the public and the regulated community on how EPA intends to exercise its discretion in implementing the Clean Water Act and its implementing regulations. EPA expects to update this interim guidance in the future. Download the current Adobe Acrobat file for free at [www.epa.gov/npdes/pubs/sw\\_swppp\\_guide.pdf](http://www.epa.gov/npdes/pubs/sw_swppp_guide.pdf).



## Stormwater Management Academy

Managed stormwater is good water.



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You'll see an online form where you can indicate your preference for receiving this newsletter, update your address or other contact information, and even recommend the newsletter to a friend or associate.

The electronic version of the newsletter will be sent to you via email as an Adobe Acrobat® document — complete with live resource links, so you don't have to retype web addresses.

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