

Rain Water Harvesting in Northern Kentucky

KY-TN WEA Watershed Management Webinar

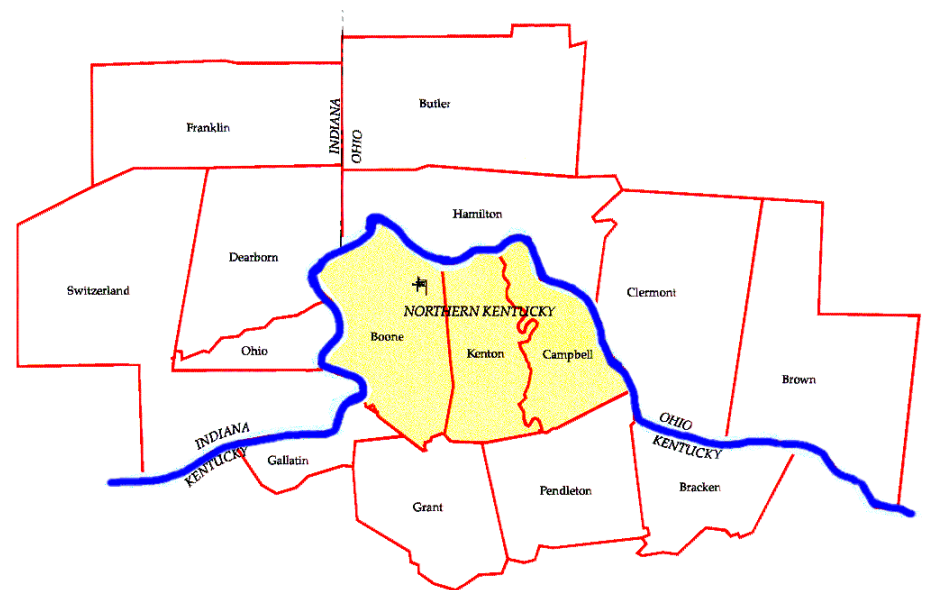
Samantha Brown, Environmental Engineer

April 24, 2013



Serving Northern Kentucky

- SD1 is a utility that serves those who live and work in the Boone, Campbell and Kenton County radius
- SD1 works to protect public health and the environment through wastewater and storm water management
 - Provide wastewater service to 33 cities
 - Provide storm water service to 30 cities



Infrastructure Management

- Sanitary Infrastructure:
 - 1,700 miles of sanitary pipes (290 miles of combined sewer)
 - 130 wastewater pumping stations
 - 8 small wastewater treatment plants
 - 3 major wastewater treatment plants
- Storm Water Infrastructure:
 - Over 400 miles of storm sewer pipe
 - 30,000 storm sewer structures
 - 15 flood pump stations



SD1's Watershed Based Consent Decree

- Signed and entered on April 18, 2007
- Requires SD1 to develop and implement Watershed Plans
 - Eliminate SSOs
 - Reduce CSOs
 - Update every five years
- First Watershed Plans submitted June 2009
 - June 2010 EPA Review: requested preferred system-wide solution regardless of affordability or ability to fully meet water quality standards by **2025**
 - Revised draft submitted March 31, 2011
 - Currently under review
- Final Plan Completion: December 31, 2025

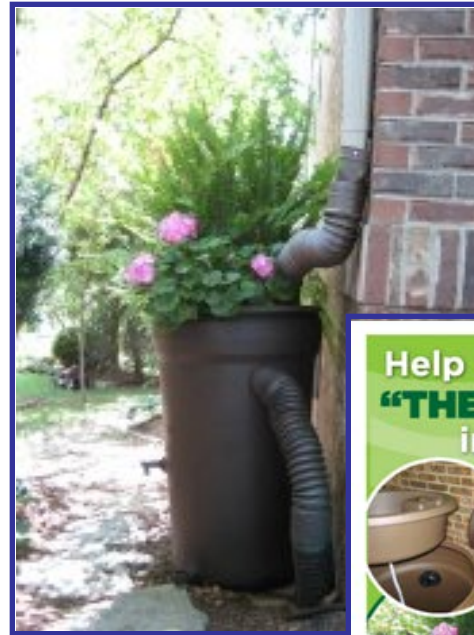


NPDES Phase II Requirements

- Phase II Municipal Separate Storm Sewer System (MS4) Permit Requirements
 - Minimum Control Measures (MCMs):
 1. Public Education & Outreach
 2. Public Involvement & Participation
 3. Illicit Discharge Detection & Elimination
 4. Control of Construction Site Runoff
 5. Post-Construction Storm Water Management
 6. Pollution Prevention and Good Housekeeping for Municipal Operations
 - Total Maximum Daily Load (TMDL) Requirements
 - MS4 Monitoring Program Development

Rain Water Harvesting

- Benefits
 - Reduce CSO volume
 - Improve water quality
 - Reduce flooding
 - Reduce erosion
- Challenges
 - Decreased consumption
 - Decreased revenues
 - Regulatory authority



Help make yours
“THE GREENEST CITY”
in Northern Kentucky

SD1 customers
can now order the
RAINTAINER

The Raintainer is a 55-gallon rain barrel that has an aesthetically pleasing appearance and includes multiple pre-drilled openings, making it possible to draw water from the barrel. The lid of the Raintainer can be used as a self-watering planter. It can also be easily removed, making cleaning the inside of the barrel simple.

The cost of the Raintainer
is \$124.88
No limit to the amount of barrels ordered per customer.

Order your Raintainer while supplies last!
With your order confirmation, you will receive details about pick up dates and times. All Raintainers will be picked up from SD1's main office at 1545 Eaton Drive, Ft. Wright.

Visit www.sd1.org/rainbarrels
for order forms and other information about the Raintainer.



GrIPP Program

- Green Infrastructure Partnership Project (GrIPP)
 - Partnerships with non-residential properties (private or city/county)
 - Combined Sewer Systems
 - Business-case evaluations



Memorial Parkway Biofiltration Swales – Ft. Thomas



MainStrasse Gateway Rain Garden - Covington

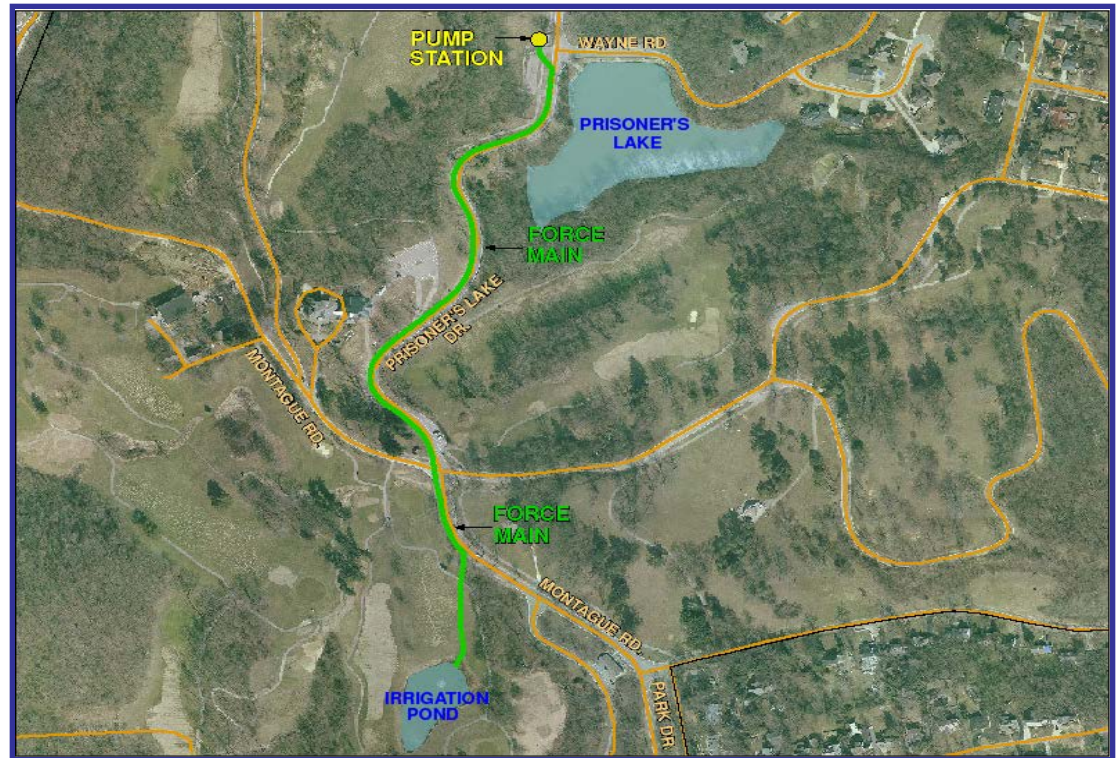
DRIP

- Disconnection – Redirection – Infiltration Program (DRIP)
 - Voluntary program for residential properties
 - Separate Sewer System: Public education and outreach
 - Combined Sewer System: Target areas for implementation
 - Components of DRIP
 - Downspout Disconnection
 - Rain Barrels
 - Rain Gardens
 - Infiltration Drains



Prisoner's Lake Water Harvesting

- Drainage Area = 57 acres
- Prisoner's Lake = 4 acres



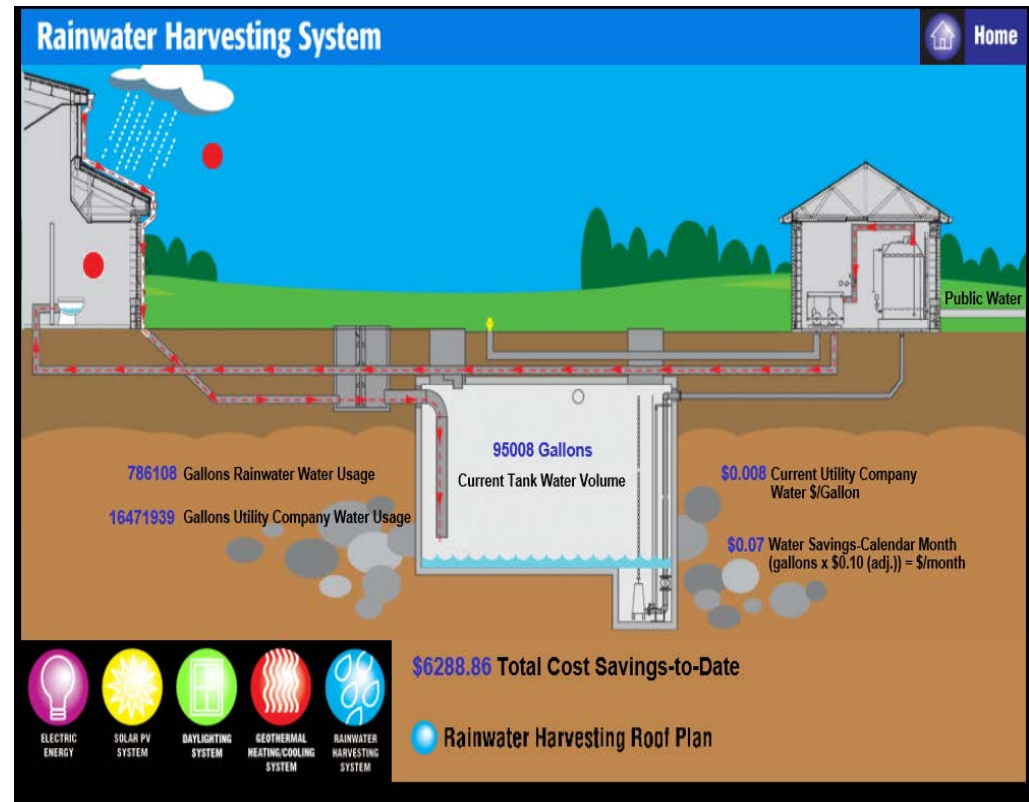


Prisoner's Lake Water Harvesting

- CSO Reductions
 - Provides additional 425,000 gallons of lake storage
 - Reduces CSO volume by 1.8 million gallons annually
- SD1 Rate-Payer Benefits
 - A typical storage facility would cost \$5/gallon, totaling to \$2.2 Million
 - Rain Water Harvesting = \$1.2 Million for Design and Construction
 - 50% Stimulus Grant
- City of Covington Irrigation Costs
 - Devou Park G.C. previously spending \$20,000/year for potable water for irrigation

Kenton County School District

- Twenhofel Middle School
 - Collect roof runoff and store it in a 115,000 gal underground tank
 - Flush toilets and irrigate football field
- Turkey Foot Middle School
 - Collect roof runoff and store it in a 20,000 gallon tank
 - Flush inner core toilets of the building



Questions?

Samantha Brown
Environmental Engineer
SD1

sbrown@sd1.org
(859) 547-1666

