

*Greene County
Stormwater Management
Annual Report
August 2008*

Serving the unincorporated areas of Bath
Township, Beavercreek Township,
Sugar creek Township and Xenia Township

Submitted by
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Introduction

Greene County is required to submit a storm water management plan (STWMP) report in accordance with 40 CFR Part 122.32 and Ohio Law. The document outlines the program in Greene County, including Bath, Beavercreek, Sugarcreek, and Xenia Townships to develop, implement and enforce a storm water management program. The program is designed to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate requirements of the Clean Water Act (CWA) in accordance with the Ohio EPA Phase 2 Program.

The plan addresses the six minimum control measures as required by state regulations.

Legal Authority

Greene County and the four townships have no authority other than that specifically noted by the State of Ohio to control the quality of storm water discharge. The County does have the authority to address industrial and individual discharge to the sanitary sewer system. The County continues to address the question of its legal authority and fiscal resources to implement its storm water management plan.

Greene County Board of County Commissioners

The Board of Greene County Commissioners is the general administrative body for County government

The Board of County Commissioners does not currently have direct involvement in stormwater management activities; however, the Board of County Commissioners bears the ultimate legal responsibility for ensuring the County's compliance with Phase 2 requirements. As such, the stormwater management program implemented by the County was approved by the Board of County Commissioners.

Bath, Beavercreek, Sugarcreek and Xenia Townships

Bath, Beavercreek, Sugarcreek and Xenia Townships have chosen to participate with the County in their Phase 2 compliance efforts. Pursuant to this endeavor, several township departments are relevant to stormwater management in the County. These include the Board of Trustees and the Road Department in each jurisdiction.

Permit Coverage Area

The Storm Water Management plan traverses the unincorporated areas of Bath, Beavercreek, Sugarcreek, and Xenia Townships. See Table A.1 for mileage and population figures. The urbanized mileage figures were obtained from the Miami Valley Regional Planning Commission website.

Table A.1 Miles and population

Township	Total population	Urbanized mileage
Bath	8877	2.3 sq. miles
Beavercreek	3063	1.4 sq. miles
Sugarcreek	6629	1.9 sq. miles
Xenia	6117	3.5 sq. miles

Reporting requirements

A report for Greene County is submitted annually during the first term of the permit cycle. The report includes the status of compliance with the permit conditions, an assessment of the appropriateness of the BMPs (Best Management Practices) and progress toward achieving the measurable goals for each of the six minimum control measures. The report contains a summary of the activities undertaken during the reporting cycle and any changes to BMP's or measurable goals and relevant data (monitoring) obtained during the reporting period.

B. Storm Water Management Plan

1.0 Public Education and Outreach on Storm Water Impact

The following are the components of the Public Education Program. The Public Education Program is a combined effort from a number of governmental agencies that already have established environmental outreach programs. These programs are supplemented with generic and specific storm water messages that target various groups. Table 1.1 at the end of this section summarizes the Public Education and Outreach Program.

1.1 Department of Sanitary Engineering

The Greene County Sanitary Engineering Department (GCSED) participated in various community events affording public environmental education and participation opportunities.

1.1.1 Literature Distribution

GCSED has also developed and distributes educational materials in the form of brochures, newsletters, and other literature. Brochures have been developed on the topics of safe drinking water, storm water, water-efficient lawn care, recycling and other information related to the sewer and water services offered by Sanitary Engineering. These are distributed at the Sanitary Engineering and Environmental Services offices and at various events in the County. The Greene County Ohio State University Extension Office has several brochures that address stormwater topics that were distributed at various events.

Newsletters published by the Sanitary Engineering Department include "Pipelines" and the "Consumer Confidence" report, a public newsletter with a distribution of over 20,000 sewer and water customers serviced by the County; "Connections", an internal publication received by approximately 130 County employees. In addition, Greene County's Solid Waste Management District through GCSED's Environmental Services Division operates many programs in support of this issue as described in section 2.0.2.

1.1.2 Website Links

GCSED maintains a website that provides information on the Department, the water and sewer systems, and environmental and solid waste programs offered by the Department. Information has been added to the site on protecting our surface and groundwater, water-efficient lawn care, and general information for residents and contractors. In addition, links have been provided to other websites, such as the Ohio State University and Ohio NEMO. Ohio NEMO, a non-point source pollution education program sponsored by the Ohio State University, has an educational PowerPoint presentation that covers stormwater and non-point source pollution. Links include the Ohio EPA and Miami Valley Regional Planning and Coordinating Commission web sites.

1.1.3 Distribution of Information to the Media

GCSED also conducted public education and outreach efforts involving the local news media, including newspaper articles about GCSED activities, provided information to local columnists and public access cable television programs showcasing GCSED information such as date, time and nature of special events as well as other GCSED programs.

1.1.4 Public Education and Participation

GCSED hosted a number of informational public participation meetings including but not limited to the Water/Wastewater Advisory Committee. Greene County's Sanitary Engineering Department initiated this group to address regulatory issues, plant and distribution expansions and rehabilitation and other countywide issues related to water and wastewater. The group, which includes representatives from all jurisdictions served by the County Sanitary Engineering Department, meets quarterly.

The County is also working with a group formed to evaluate the progress of the Little Miami River TMDL plan. The group represents various agencies and jurisdictions with an interest in the Little Miami River watershed, and meets quarterly.

1.1.5 Training

Greene County's Sanitary Engineering Department attends training programs on stormwater and provides additional training for the four townships.

1.2 Greene County Solid Waste Management District

Greene County's Sanitary Engineering Department's Environmental Services Division oversees implementation of Greene County's Solid Waste Management Plan. Greene County formed a single county Solid Waste Management District in 1988. The District updated their Solid Waste Management Plan in 2008. The following programs are used to support the Storm Water Phase 2 efforts:

1.2.1 Residential Recycling and Yard Waste Drop-off

The Environmental Services Division (ESD) operates a residential recycling and yard waste drop-off at 2145 Greene Way Boulevard, Xenia, Ohio. The facility accepts the following recyclables: aluminum and metal cans, glass containers, 1 & 2 plastic, newspaper, corrugated cardboard, paper, magazines and phone books. In addition, the residents can drop-off leaves, grass and brush materials, along with auto batteries and cell phones. This year the facility also held a monthly drop-off for electronics, appliances, and scrap metal. In addition, ESD operates three additional residential yard waste drop-off satellite sites, Bath Township, Beavercreek Township, and Sugarcreek Township. The Sugarcreek site was moved this year and did not open until mid-summer. These sites are open two evenings during the week. These programs support the Stormwater 2 initiative by providing citizens an outlet for disposal of their solid waste and organic matters, such that they do not impede or pollute the storm water outfalls.

1.2.2 Household Hazardous Waste Collection

In 2007-2008, the GCSWMD through ESD offered a monthly drop-off event to remove unsafe items from the environment. Residents can drop-off Household Hazardous Waste, scrap metal, appliances, and electronics, removing harmful material from the environment so it can be disposed of in a safe manner.

1.2.3 Road Litter Collection

For approximately 23 years, the County has conducted a roadside litter collection program. Approximately 500 road miles are serviced annually. Each of the Greene County's 22 governmental jurisdictions are provided 20 road miles of ditch line to ditch line cleanings annually. Jurisdictions are provided the opportunity to designate the 20 road miles to be serviced. If a jurisdiction has less than 20 miles, multiple cleanings are completed. The County Engineer also contracts for County roadway cleanings. The program also features litter awareness signs that are placed along roadways throughout the County. Since this program's initiation rogue dumps have become almost non-existent in the County.

1.2.4 Adopt-A-Spot Program

The Greene County Adopt-A-Spot Program offers an opportunity for volunteer groups to enhance the environment by adopting sections of roadways, bike paths, and parks. Volunteer groups adopt these areas for an initial two-year period and conduct quarterly cleanings. Groups are requested to notify ESD in advance of a cleaning. After an adopted area is cleaned, groups can either request that the County collect the litter bags or they may elect to properly dispose of the bags themselves. Adopted areas are marked with signs that identify both the group's name and advertise the area as part of the program. Volunteer groups servicing roadways are furnished with traffic safety vests. All groups are offered free trash bags.

1.2.5 Education and Awareness

Greene County uses a combination of methods to raise the public's awareness about solid waste management, water and other resource conservation, recycling, and litter prevention, all of which benefit the stormwater program. This involves a number of public activities, publications and intergovernmental cooperation. Information on water protection, recycling activities, and conservation tips is included in a quarterly newsletter sent to 24,000 sewer and water customers of the Sanitary Engineering Department. The County regularly updates and distributes a "Where to Recycle" brochure as well as other informational flyers and brochures throughout the year. Information is also disseminated by phone and through press releases. Cable Access channels and local radio programs are used to provide information about recycling activities. The County's website is used to provide education and awareness of the Department's programs, activities and suggestions for storm water best management practices.

1.3 Greene County Combined Health District

The Greene County Combined Health District (GCCHD) public education and outreach efforts include several measures, including brochures and a website.

1.4 Greene Soil and Water Conservation District

The Greene Soil and Water Conservation District (GSWCD) sponsors school programs including poster contests that involve about 75 percent of the fifth grade students in the County. GSWCD also sponsors an annual outdoor environmental contest (Envirothon) involving four local high schools. This national contest is similar to an outdoor environmental Olympics and includes events in the areas of forestry, aquatics, wildlife, and soils.

GSWCD routinely talks with farmers and landowners regarding soil erosion issues. They also produce brochures showcasing conservation educational materials available from the District ("Educational Offerings") and describing key issues (e.g., soils, sewer systems, water supply, etc.) for consideration by prospective homeowners in the County ("Before You Buy or Build").

1.6 Sugarcreek Township

Sugarcreek Township provides periodic newsletters to residents for the purpose of public information and outreach.

1.7 Other Public Education Efforts

A variety of agencies and private organizations provided education and outreach efforts in Greene County. These include: Miami Valley Regional Planning, Greene County Regional Planning and Coordinating Commission, Miami Conservancy District, Little Miami River Partnership, Little Miami River, Inc, Beavercreek Wetlands, local schools, local universities; and Little Miami River 319 grants.

Table 1.1 Control Measure I - Public Education and Outreach

Best Management Practice	Authority	Measure	Completed	Agency
1.1 Greene County Department of Sanitary Engineering (GCSED)				
1.1.1 Literature Distribution	GCSED	1500 Brochures Distributed via mail and at various events	6/19/08	GCSED
1.1.2 Website Links	GCSED	24,400 visits GCSED 19,982 visits Environmental Services	7/1/08	GCSED
1.1.3 Distribution of Information to Media	GCSED	6 news articles	6/19/08	GCSED
1.1.4 Public Education and Awareness	GCSED	33 presentations, including tours and water festivals, 26 meetings, reaching 10,002 people, with some overlap for repeating meetings.	7/1/08	GCSED
1.1.5 Training	GCSED	Attended 2 training sessions, held 1 training session	7/1/08	GCSED
1.2 Greene County Solid Waste Management District				
1.2.1 Residential Recycling and Yard Waste Drop-off	GCSWMD	Collected 20,496.72 tons of material	6/19/08	GCSED, Environmental Services Division
1.2.2 Household Hazardous Waste Collection	GCSWMD	Collected 10.23 tons of hazardous material	6/19/08	GCSED, Environmental Services Division

Best Management Practice	Authority	Measure	Completed	Agency
1.2.3 Road Litter Collection	GCSWMD	Cleaned 352.53 miles of roads	6/19/08	GCSED, Environmental Services Division
1.2.4 Adopt-A-Spot	GCSWMD	Adopted 59 spots	6/19/08	GCSED, Environmental Services Division

Best Management Practice	Authority	Measure	Completion	Agency
1.3 Greene County Combined Health District				
1.3.1 Brochures + information	GCCHD	450 brochures	6/19/08	GCCHD
1.3.2 Web site	GCCHD	504 hits on website and requests for information	6/19/08	GCCHD
1.4 Greene County Soil and Water Conservation District				
1.4.1 Newsletter	GCSWCD	6 issues, 1600 copies	6/19/08	GCSWCD
1.4.2 Displays	GCSWCD	6 displays	6/19/08	GCSWCD
1.4.3 Tree sale	GCSWCD	Annually	6/19/08	GCSWCD
1.4.4 Pond clinic	GCSWCD	Annually	6/19/08	GCSWCD
1.4.5 Conservation Program	GCSWCD	2 presentations	6/19/08	GCSWCD
1.4.6 Envirothon	GCSWCD	Annually	6/19/08	GCSWCD
1.4.7 Classroom presentations	GCSWCD	175 presentations to 3,882 students	6/19/08	GCSWCD
1.5 Xenia Township				
1.5.3 Brochures	Xenia Township	20 brochures distributed	6/19/08	Xenia Township
1.6 Bath Township				
1.6.2 Web site	Bath Township	Unknown hits	6/19/08	Bath Township

2.0 Public Involvement/ Participation

The following are the components of the Public Involvement and Participation efforts. The efforts are a combined effort from a number of governmental agencies that already have established ways of involving the public in decision-making.

2.1 Public Notice

Greene County complied with State and local public notice requirements regarding activities within the Stormwater Management Plan.

2.2 Public Participation

All of the Public Education and Outreach efforts listed in Control Measure I meet the Public Involvement Participation requirements, particularly the meetings of the Water-Wastewater Advisory Board, Little Miami River Basin Council, and TMDL group.

Table 2.1 Control Measure 2 Public Involvement Participation

Best Management Practice	Authority	Measure	Completion	Agency
Public Notice	Participating agency	Notices issued	8/19/04	Participating agency
Public participation	GCSED	4 Water/Waste-water Advisory Committee meetings, 2 TMDL meetings, 1 Beavercreek City Council meeting, 5 Landscaper meetings, 1 Home Builder's Association meeting	7/1/08	Various participating agencies and jurisdictions

3.0 Illicit Discharge Detection and Elimination

The following is a description of the actions that were taken to control illicit discharges to MS4s. The effort will be a combined effort by a number of governmental agencies that already have established programs as described below. In addition, mapping activities will be conducted. The County will determine an appropriate strategy for mapping stormwater outfalls and updating the County's GIS system to reflect outfall locations. This may be done in-house or through a subcontract

Table 3.1 Summarizes the Action Plan for Control Measure 3.

3.1 Storm Sewer Maps

Under the Stormwater Phase 2 Rule, the County and each of the participating townships must develop a storm sewer system map that shows the location of all outfalls and the names and locations of all "Waters of the United States" that receive discharges from those outfalls. Construction drawings are available for subdivisions that have gone through parallel reviews by the Greene County Regional Planning and Coordinating Commission (GCRPCC) and the Greene County Soil and Water Conservation District (GCSWCD), with most drawings in hard copy form. Over the last several years, the County has begun receiving drawings in electronic format. The County plans to eventually enter the utility information, including stormwater drainage outfalls, contained on the construction drawings into the County's GIS system. Representatives from participating townships indicated that the stormwater collection systems in the townships predominantly consist of drainage swales and ditches, with the exceptions of Xenia Township and Sugarcreek Township, which have some curb and gutter drainage. The Greene County Engineer has agreed to undertake the mapping for the Townships and the County. The first draft of the mapping has been completed and is being corrected.

Bath and Beavercreek Township residential developments typically do not have curb and gutter stormwater collection systems, with developments generally conforming to the Estate Style with open roadway ditches, driveway culverts, and swales. Bath Township does not currently have any detention basins. Xenia Township has mostly open ditches and swales, with a small amount of curb and gutter. Sugarcreek Township has several large residential and commercial developments that are designed with curb and gutter stormwater collection systems.

3.2 On-site Sewage Disposal Systems

There are no known residential septic systems that empty into streams within the drainage area, so no list and no map was developed.

The Greene County Combined Health District (GCCHD) is responsible for review and approval of all plans for new or modified septic systems, or the repair of existing systems built in Greene County. In the event that owners, neighbors, or septic haulers report malfunctioning or failing systems, the GCCHD inspects the system. GCCHD is often required to inspect septic systems at change of property ownership. If the systems are determined to be working improperly, GCCHD enforces necessary maintenance or repair. GCCHD maintains an electronic database of inspected systems.

3.3 Regulations and Resolutions

The County and townships do not have an existing regulation or resolution that prevents illicit discharges. The County forwards illicit discharge complaints to the Ohio EPA. The participating townships report illicit discharge incidents to the local fire and police departments. HAZMAT response teams respond to major spills. In the event that a spill or release results in an adverse impact such as a fish kill or death of other wildlife, the Ohio Department of Natural Resources (ODNR) Division of Wildlife may impose fines to the entity (ies) responsible for the release. The authority for controlling illicit discharges rests with the State of Ohio.

3.4 Existing Program Responsibilities and Capabilities

Even though the County and townships do not have specific programs targeted at the control of illicit discharges, certain County agencies and township departments conduct activities that, directly or indirectly, help to control illicit discharges and other pollutant sources. This section summarizes the responsibilities of these existing agencies and the role they play in controlling illicit discharges.

3.4.1 Screening and Surveillance

While no formal illicit discharge detection program exists for either the County or participating townships, township and County road crews inspect the roadway ditches and storm sewer system and contact local owners or the Ohio EPA when illicit discharges are identified. Illicit discharges identified by County residents are usually reported directly to the local fire department. Depending on the nature of the call, the fire department might dispatch a HAZMAT response team whose incident commander evaluates the level of hazard posed by the identified spill or release (sometimes using tools such as chemical test strips to help characterize the chemical properties of the release) and informs the appropriate agencies as necessary (e.g., Ohio EPA, the Greene County Combined Health District - GCCHD, etc.). In all cases where a release to storm sewers or "Waters of the State" is either observed or suspected, the Ohio EPA is contacted. The GCCHD is contacted in the event that the spill or release is suspected to present a potential human health hazard or has occurred in areas of greater potential for human exposures.

3.4.2 Sewer Inspection, Maintenance and Repair

The Greene County Sanitary Engineering Department has completed a Capacity, Management, Operation, and Maintenance (CMOM) Program pursuant to the Ohio EPA requirements that addresses these concerns. This program includes a detailed inspection and maintenance program for all of the sewer system, in addition to inspection and maintenance of pump station operations, safety considerations, and operator training. In addition, the County is not aware of any interconnections (overflows) from the sanitary to the storm system or receiving streams.

3.4.3 Industrial Pretreatment

The County Sanitary Engineering Department has an industrial pretreatment program. In addition, major industries have spill prevention plans on file with the County. County staff conducts periodic inspections of industries subject to the pretreatment requirements, but no formal inspection program is in place.

3.4.4 Waste Collection and Recycling

The County runs a household hazardous waste collection program as described in section 1.1.2. In 2008, it was held monthly.

Table 3.1 Control Measure3 - Illicit discharges

Best Management Practice	Authority	Measure	Completion	Agency
3.1 Determine an appropriate strategy for mapping stormwater outfalls and updating the County's GIS system	Participating agencies	Update map	2008	Greene County Engineer
3.2 Onsite sewage disposal systems	GCCHD	282 existing systems and 100 new systems evaluated	6/19/08	GCCHD
3.3 Illicit discharge legislation	State of Ohio			State of Ohio

4.0 Construction Site Stormwater Runoff Control

The authority to develop construction site storm water runoff control legislation is as follows:

The County's existing regulations and the participating townships' resolutions for development and construction activities fall into three principal categories:

- **Planning, Zoning and Subdivision Regulations:** Programs and regulations that establish goals and guidelines to guide the orderly development of land within the County and participating townships.
- **Development Project Reviews and Approvals:** Administrative activities, regulations and policies that evaluate specific development proposals and ensure that they conform to County and township planning, zoning and design standards.
- **Construction Project Oversight.** Permits and inspections of construction sites to ensure that County standards are met and infrastructure conveyed to the County.

These sections define existing resolutions, regulations, policies, guidance, and administrative processes that address and/or can be modified to address stormwater management requirements.

4.1 Model Resolution

A model resolution for construction site stormwater runoff control has been developed by several area agencies. The various jurisdictions within Greene County will consider the model for adoption.

Table 4.1 Control Measure 4 - Construction site stormwater runoff control

Best Management Practice	Authority	Measure	Due Date	Who will implement?
County will assess new model resolution being developed for runoff control	Local jurisdictions	Model completed	2008	Local jurisdictions

5.0 Post Construction Stormwater Runoff Control in New Development and Redevelopment

Neither Greene County nor any of the Townships has the authority to develop ordinances or regulations concerning post construction stormwater runoff controls.

In 2005, The Greene County Regional Planning and Coordinating Commission did compile a list of major subdivision with Bath, Beavercreek, Sugarcreek and Xenia Townships' urbanized areas, that have some type of easements for detention/retention facilities, drainage swales, creeks and/or streams.

6.0 Pollution Prevention and Good Housekeeping

The purpose of this control is to address potential water quality issues associated with maintenance operations such as fleet management, materials storage or operations such as landfill management or wastewater treatment. The requirements of this control include developing programs to address operation and management issues focused on pollution prevention and ongoing training and assessment programs.

The County and townships are involved in and conduct various operation and maintenance activities at County and township facilities, properties, infrastructure systems (streets, sanitary sewers, and storm sewers), and drainage system components (open channels, culverts, and bridges). Each jurisdiction will supplement their program with ongoing training, available through the Ohio EPA or other reputable agency. In 2008, training opportunities were provided by the Miami Conservancy District and Ohio EPA.

Table 6.1 Control Measure 6 - Pollution Prevention and Good Housekeeping

Best Management Practice	Authority	Measure	Completed	Agency
Bath Township				
6.7 Catch basin/culvert cleaning	Bath Township	35 inspected and cleaned, 6 repaired,	6/19/08	Bath Township
6.8.Ditch & swale maintenance	Bath Township	All ditches inspected, 2 cleaned	6/19/08	Bath Township
6.9 Streets swept	Bath Township	30.32 miles of streets swept	6/19/08	Bath Township
6.11.1 Training	Bath Township	One session in May	6/19/08	Bath Township
Beavercreek Township				
6.7 Catch basin/culvert maintenance	Beavercreek Township	91 catch basins inspected,6 cleaned, 4 repaired 50 culverts inspected, 10 culverts cleaned, 4 replaced	6/19/08	Beavercreek Township
6.8. Ditch and swale maintenance	Beavercreek Township	All ditches inspected, 4 cleaned, 5 repaired	6/19/08	Beavercreek Township
6.9 Streets swept	Beavercreek Township	6.5 miles of streets swept	6/19/08	Beavercreek Township
6.11.1 Training	Beavercreek Township	2 employees trained on catch basin maintenance	6/19/08	Beavercreek Township
Sugarcreek Township				
6.7 Catch basin cleaning	Sugarcreek Township	192 ditches, culverts and catch basins inspected, 16 cleaned, 6 repaired	6/19/08	Sugarcreek Township
6.8 Ditch and swale maintenance	Sugarcreek Township	See 6.7	6/19/08	Sugarcreek Township
6.9 Streets swept	Sugarcreek Township	48.41 miles of streets swept	6/19/08	Sugarcreek Township
6.10.3 Culvert Maintenance	Sugarcreek Township	See 6.7	6/19/08	Sugarcreek Township
6.11.1 Training	Sugarcreek Township	No formal training	6/19/08	Sugarcreek Township
Xenia Township				
6.7 Catch basin cleaning	Xenia Township	20 inspected and cleaned	6/19/08	Xenia Township

6.8.2 Ditch and swale maintenance	Xenia Township	3 ditches inspected and cleaned	6/19/08	Xenia Township
6.9 Streets swept	Xenia Township	11.84 miles swept	6/19/08	Xenia Township
6.10.3 Culvert Maintenance	Xenia Township	65 culverts inspected	6/19/08	Xenia Township
6.11.1 Training	Xenia Township	None	6/19/08	Xenia Township

Table 6.1 Control Measure 6 Pollution prevention/good housekeeping

Best Management Practice	Authority	Measure	Completed	Agency
Greene County				
6.6.5 Street sweeping	Greene County	None	6/19/08	Sugarcreek Township
6.8.1 Ditch and swale maintenance	Greene County	None	6/19/08	Greene County Engineer
6.10.5 Culvert maintenance	Greene County	6 catch basins/culverts cleaned	6/19/08	Greene County Engineer
6.11.1 Storm sewer maintenance	Greene County	None	6/19/08	Greene County Engineer