

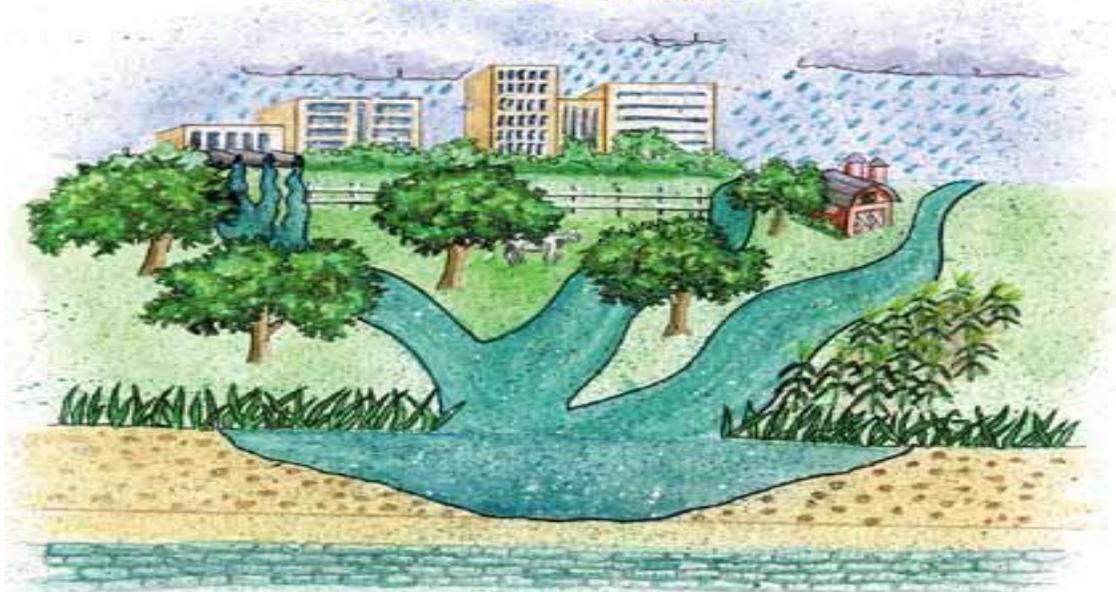
# STORMWATER MANAGEMENT PLAN

## CAPE GIRARDEAU COUNTY, MISSOURI



ADOPTED APRIL, 29, 2013  
CAPE GIRARDEAU COUNTY COMMISSION

### Stormwater Runoff



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## INTRODUCTION

Representatives of the Missouri Department of Natural Resources (MDNR) both from the State office in Jefferson City and the Poplar Bluff district office met with County officials on January 9th, 2013. At this meeting, MDNR advised the County that the 2010 Census count documented an increase in the population in the City of Cape Girardeau and Jackson area that resulted in the Census Bureau forming an "urbanized area" in Cape Girardeau County around the Cape/ Jackson area.

An "urbanized area" is defined as:

*A densely settled core of census tracts and/or census blocks that have population of at least 50,000, along with adjacent territory containing non-residential urban land uses (1,000 residents per square mile), as well as territory with low population density included to link outlying densely settled territory with the densely settled core. It is a calculation used by the Bureau of the Census to determine the geographic boundaries of the most heavily developed and dense urban areas.*

The Census Bureau determines the boundaries of the urbanized area without input from the local governments and without any appeal process. The urbanized area here includes parts of Cape Girardeau County around the City of Cape Girardeau and the City of Jackson but not all of what has been annexed into those cities. Densely populated areas in the County included in the urbanized area are parts of Cape Rock Village Subdivision, Hillcrest Manor Subdivision, Route W Mobile Home Court and East Cape in Alexander County, Illinois are included in the urbanized area along with the less densely populated census blocks that link them to the more populated cities. Please see Attachment A for the map of the 2010 Census- Urbanized Area Reference Map: Cape Girardeau, MO-IL.

Urbanized Areas fall under regulations under the Clean Water Act developed by the Environmental Protection Agency (EPA) and enforced by MDNR. As a result, Cape Girardeau County is required to obtain a Municipal Separate Storm Sewer System (MS4) permit. To do this, the County must prepare and submit a Stormwater Management Plan that The plan must include six minimum control measures being:

1. Public Education
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post Construction Runoff Control
6. Pollution Prevention/Good Housekeeping

The SWMP must be approved and submitted by May 14, 2013 but the requirements of the plan can be developed and implemented over a five year period. There are no State or Federal funds provided to the County for the implementation for this program at this time. The County must work to the "maximum extent practicable" to meet these new requirements of the MS4 permit.

## **Stormwater Management in Cape Girardeau County**

Stormwater management is not a new topic in Cape Girardeau County. The City of Cape Girardeau adopted stormwater management regulations in 1989 with several updates through the years. The City of Jackson adopted stormwater management regulations in October of 2001 also with updates through the years. Both cities require plan submittal, plan review, inspections and fees to help cover the cost of the program. They also have mechanisms to fine or charge the responsible party for not coming into compliance.

In 1998, the County partnered with the City of Jackson, the Soil and Water Conservation District, the Missouri Department of Conservation, the University Outreach and Extension Office and the Natural Resource Conservation Service to prepare the "Hubble Creek Watershed Improvement Plan - A Framework for Community Growth and Watershed Stabilization". The 23 page plan estimated at \$4 million was never fully implemented.

In June of 1999, the County Commission initiated a joint meeting of the County, the City of Cape and the City of Jackson to work toward hosting a meeting for builders, developers, and local, state and federal officials to discuss issues related to construction site erosion control. The Developer Forum was held September 23, 1999 at the Osage Community Centre to review issues and get developer input. One of the goals of the Commission was to partner with the cities to come up with joint stormwater regulations that would have similar requirements in the County and in the cities.

It was around this time that Cape Girardeau County became eligible for stormwater grant funding through MDNR. The County was granted \$79,647 for the Hubble Creek Project in 2000 and other subsequent grants.

It was also around this time that a Stormwater Advisory Committee was established in the County. It included members from the County, the City of Cape and Jackson, the Soil and Water Conservation District, the Missouri Department of Conservation, and the Natural Resource Conservation Service and landowners. Records indicate this advisory committee stayed active off and on through 2006. A draft Cape Girardeau County Erosion and Sediment Control Ordinance was prepared. It was presented to the County Commission in October of 2003.

On July 24, 2006, the Commission had discussed the proposed Erosion and Sediment Control Ordinance and agreed on a few revisions. The records indicate the final draft was presented to the Commission on September 7, 2006 with more discussion on September 14th. On January 2010, Stan Murray, Stormwater Coordinator, appeared before the Commission to present proposed Stormwater Management Regulations.

During 2010, there were joint meetings between the Cape Girardeau and Jackson Planning and Zoning Commissions. They formed a Jackson/Cape Girardeau Joint Subdivision Advisory Committee that requested the County Commission adopt County subdivision regulations and county stormwater regulations. They presented their recommendations to the Commission December 27, 2010.

A limited search of the Missouri State Statutes show that House Bill 267 of 2003 contained provisions to allow counties, including Cape Girardeau County to adopt stormwater management regulations in RSMO 49.650. It further added section 67.907 that allowed counties subject to EPA rules to adopt stormwater regulations.

## **COUNTY INFORMATION**

Cape Girardeau County is a first class county located in Southeast Missouri with a 2010 population of 75,764 people. It was officially organized on October 1, 1812 and is named after Ensign Sieur Jean Baptiste de Giradot, a French official. The "cape" in the county's name is named after a promontory rock overlooking the Mississippi River.

The County covers approximately 368,500 acres or 576 sq. miles. It has a wide diversity in environmental features with rolling hills in the west-central part of County, southern lowlands in the south part, river hills along the eastern section near the Mississippi River and a smaller area of rugged western hills along the west part of the county near the Whitewater River into Bollinger County.

Major rivers and streams include the Mississippi River that defines the eastern border of the County and Apple Creek which defines the majority of the County's northern boundary. The Whitewater and Little Whitewater Rivers on the west side of the County and the Caster River Diversion Channel in the southern part of the County. Waterways in the southern part of the County below the Diversion Channel have been significantly influenced by manmade alterations in one of the largest drainage projects in the world being the Little River Drainage District that covers the boot heel of Southeast Missouri and part of Northwest Arkansas.

Rainfall averages 45 inches per year. Floodprone areas of the County have been identified and mapped. The County adopted revised Federal Emergency Management Agency Flood Insurance Rate Maps dated September 29, 2011. The County has a floodplain management program to restrict new development in flood hazard areas.

Major watersheds in the urbanized area include Hubble Creek, Goose Creek, Williams Creek and Ramsey Branch which flow into the Diversion Channel then ultimately into the Mississippi River as well as Cape La Croix Creek and Juden Creek which flow directly into the Mississippi River.

The County has one Impaired Waters 303(d) being the Little Whitewater River on the west side of the County but it is not in the urbanized area. There are no Wild and Scenic Riverways or Outstanding Water Resource Waters in the County.

The following species have been classified as endangered in parts of Missouri including Cape Girardeau County:

Fat Pocketbook Mollusks  
Pallid Sturgeon  
Interior Least Tern  
Peregrine Falcon

American Burying Beetles  
Swamp Rabbits  
Gray Bats  
Indiana Bats

## DEFINITIONS

**Best Management Practices:** A type of management, habit, action, practice, type of construction or other ways of doing things that accomplishes the best result - given the circumstances (size, budget, other factors) a county must work under. Each county must look at its own particular situation and determine what BMP's work best to implement the six minimum control measures.

**BMP:** An abbreviation term for "Best Management Practices".

**Minimum Control Measures:** One of the six categories that at a "minimum" must be addressed in the stormwater management plan. The six categories include Public Information, Public Participation, Illicit Discharges, Construction Site Runoff, Post Construction Runoff and Pollution Prevention/Good House Keeping. Each of these categories is a Minimum Control Measure.

**Maximum Extent Practicable:** 1. Doing your best to the maximum extent that is practical - given the County's abilities, resources and needs. 2. Refers to the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by CWA 402(p). A discussion of how it applies to regulated small MS4s is found at 40 CFR 122.34

**Municipal Separate Storm Sewer System:** A stormwater sewer (drainage) system that is "separate" from the regular domestic sewage system. The stormwater sewer system discharges directly to a stream without treatment of the rainwater.

**MS4:** A abbreviated term for the phrase "Municipal Separate Storm Sewer System. (One "M" and four "S's".)

**Stormwater:** The rain water that flows off parking lots, yard, and other properties into roadside ditches, storm drains and streams during a rainstorm.

**SWMP:** A abbreviated term for the Stormwater Management Plan.

## 1. PUBLIC EDUCATION

**Action 1.1:** Establish a stormwater section on the County's website that addresses the six minimum control measures:

1. Public Education
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post Construction Runoff Control
6. Pollution Prevention/Good Housekeeping

**Measureable goal:** Establish by the end of year 1, review and update annually. Track the number of stormwater permits annually that are initiated by the developer/landowner compared to the number of permits initiated by staff before or after activity is started.

**Responsible party:** Floodplain and Stormwater Manager, Information Technology Department

**Action 1.2:** Reestablish the Cape Girardeau County Stormwater Advisory for the purpose of determining the best options to promote the public education and outreach. Refer to sections 4.2.1.1.1-6 of the MS4 permit application attached. The committee may include employees of the County Highway Department, County Parks Department, land owners in the urban area, local developers and contractors, agriculture and conservation agencies and persons with interest and/or expertise in stormwater management and water quality.

**Measureable goal:** The Stormwater Advisory Committee will be established and begin meeting within 6 months.

**Responsible party:** The County Commission will establish the committee and appoint members to it. Activities related to the committee would be coordinated through the Floodplain and Stormwater Manager.

## 2. Public Involvement and Participation.

**Action 2.1:** Reestablish the Cape Girardeau County Stormwater Advisory for the purpose of determining the best options to promote the public involvement and participation. Refer to sections 4.2.2.1.1-5 of the MS4 permit application attached. The committee may include employees of the County Highway Department, County Parks Department, land owners in the urban area, local developers and contractors, agriculture and conservation agencies and persons with interest and/or expertise in stormwater management and water quality.

**Measureable goal:** The Stormwater Advisory Committee will be established and begin meeting within 6 months.

**Responsible party:** The County Commission will establish the committee and appoint members to it. Activities related to the committee would be coordinated through the Floodplain and Stormwater Manager.

**Action 2.2:** The County Commission will host a public meeting annually to review the status of the Stormwater Management Plan and related ordinances and guidelines.

**Measureable goal:** The County Commission will host a public meeting annually.

**Responsible party:** The County Commission coordinated by the Floodplain and Stormwater Manager.

**Action 2.3:** The County will support volunteer groups that clean up local streams.

**Measureable goal:** If requested, the County will support at least one (1) stream cleanup per year with preference of streams in the urban area by disposing of the refuse collected.

**Responsible party:** Coordinated through Floodplain and Stormwater Manager

**Action 2.4:** The County will continue to support the Juvenile Department's "Operation Pay Back" program as it relates to stream water quality monitoring, low water bridge litter clean up, stream bank willow staking, stenciling stormwater inlets and the clean up local streams.

**Measureable goal:** The juvenile will report annually of the actions taken as time, funding and juvenile programs are implemented.

**Responsible party:** Coordinated through the Director of the Juvenile Office, the Missouri Department of Conservation and the Floodplain and Stormwater Manager

**Action 2.5:** The County will coordinate with local agencies, groups and communities to promote special events that relate to stormwater issues.

**Measureable goal:** The County will support and coordinate at least one (1) event per year starting in year 2.

**Responsible party:** Floodplain and Stormwater Manager

**Action 2.6:** The County will conduct a waste tire disposal day through a cooperative agreement with other agencies. Citizens will be able to drop off waste tires for free or for a small fee.

**Measureable goal:** The County will conduct the drop off day in year 1 and evaluate the need for another day each year thereafter.

**Responsible party:** County Public Works and the Floodplain and Stormwater Manager with assistance from the County Highway Department, MDNR Solid Waste Division, the Southeast Missouri Solid Waste District and the incorporated communities within the County.

**Action 2.7:** The County will cooperate with the City of Jackson to help create a Hubble Creek Stream Team.

**Measureable goal:** Meet with the Jackson in year 1. Pursue establishing a Hubble Creek Stream Team by year 2. Review annually.

**Responsible party:** Floodplain and Stormwater Manager and the Jackson Floodplain and Stormwater Manager

### 3. Illicit Discharge Detection and Elimination (IDDE)

**Action 3.1:** Reestablish the Cape Girardeau County Stormwater Advisory Committee for the purpose of determining the best options to detect and eliminate illicit discharges. Refer to sections 4.2.3.1.1-6 of the MS4 permit application attached. The committee may include employees of the County Highway Department, County Parks Department, land owners in the urban area, local developers and contractors, agriculture and conservation agencies and persons with interest and/or expertise in stormwater management and water quality.

**Measureable goal:** The Stormwater Advisory Committee will be established and begin meeting within 6 months.

**Responsible party:** The County Commission will establish the committee and appoint members to it. Activities related to the committee would be coordinated through the Floodplain and Stormwater Manager.

**Action 3.2:** The County will implement a program to inventory and inspect stormwater outlets in the urbanized areas for illicit discharge. The program would include:

1. Storm sewer map and inventory
2. Inspection methods, screening and procedures
3. Employee training
4. Remediation guidelines and procedures for violations
5. Track complaint calls and County responses
6. Establish procedures for the County to recoup remediation costs from a non responsive party.
7. Establish enforcement procedures that result in compliance.

**Measureable goal:** Development of the program by the end of year 4. 100% of items mapped and 90% of violations resolved without fines or litigation with a future goal of 100% by the end of year 5.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee . The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

**Action 3.3:** The County will visually inspect stormwater outlets and outfalls for both wet weather and dry weather discharges.

**Measureable goal:** 20% of outlets and outfalls per year

**Responsible party:** Floodplain and Stormwater Manager

**Action 3.4:** The County will establish a phone number that citizens can call in to report illegal discharges.

**Measureable goal:** Establish on the County website in 6 months. Track the number of calls and document the County response.

**Responsible party:** Floodplain and Stormwater Manager and Emergency Management Director

**Action 3.5:** The County Floodplain and Stormwater Manager will coordinate with the Cape County Health Department on water quality and IDDE issues related to on-site and other sewer systems.

**Measureable goal:** Meet at least annually to review compliance of regulations and successful resolution of 100% issues identified

**Responsible party:** Floodplain and Stormwater Manager and the County Health Department

**Action 3.6:** Coordinate with MDNR Solid Waste Division, local communities and the Southeast Missouri Solid Waste District to hold a County wide household hazardous waste drop off day

**Measureable goal:** One drop off day every four years starting in year 4. Document event or the reasons why the events was not needed or could not be accomplished.

**Responsible party:** Floodplain and Stormwater Manager and the County Public Works Department in cooperation with the MDNR Solid Waste Division and the Southeast Missouri Solid Waste District.

#### **4. Construction Site Stormwater Runoff Control**

**Action 4.1:** Reestablish the Cape Girardeau County Stormwater Advisory Committee for the purpose of determining the best options to develop, implement and enforce a program to reduce pollutants in stormwater runoff. Refer to sections 4.2.4.1.1-7 of the MS4 permit application attached. The committee may include employees of the County Highway Department, County Parks Department, land owners in the urban area, local developers and contractors, agriculture and conservation agencies and persons with interest and/or expertise in stormwater management and water quality.

**Measureable goal:** The Stormwater Advisory Committee will be established and begin meeting within 6 months.

**Responsible party:** The County Commission will establish the committee and appoint members to it. Activities related to the committee would be coordinated through the Floodplain and Stormwater Manager.

**Action 4.2:** Create and adopt an erosion control ordinance, guidelines, administrative procedures, enforcement actions, fees and a budget. Refer to Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas at <http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm>.

**Measureable goal:** Ordinance, guidelines, procedures, enforcement actions and fees by the end of year 4 with updated County website.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee. The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

**Action 4.3:** Require submittal of erosion control plans and a County permit for all construction sites of one (1) acre or more located in the urbanized area .

**Measureable goal:** Implement by the end of year 4. Document actions.

**Responsible party:** Floodplain and Stormwater Manager. The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

**Action 4.4:** Implement site inspections, enforcement and remediation of all construction sites of one (1) acre or more.

**Measureable goal:** Implement by the end of year 4. Document actions.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee. The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

## 5. Post Construction Site Runoff Control

**Action 5.1:** Reestablish the Cape Girardeau County Stormwater Advisory for the purpose of determining the best options to develop, implement and enforce a program to address the quality of long-term stormwater runoff. Refer to sections 4.2.5.1.1-7 of the MS4 permit application attached. The committee may include employees of the County Highway Department, County Parks Department, land owners in the urban area, local developers and contractors, agriculture and conservation agencies and persons with interest and/or expertise in stormwater management and water quality.

**Measureable goal:** The Stormwater Advisory Committee will be established and begin meeting within 6 months.

**Responsible party:** The County Commission will establish the committee and appoint members to it. Activities related to the committee would be coordinated through the Floodplain and Stormwater Manager.

**Action 5.2:** Create and adopt stormwater management and water quality regulation, guidelines, procedures, enforcement actions, fees and budget. Refer to MDNR's "Missouri Guide to Green Infrastructure".

**Measureable goal:** Regulations, guidelines, procedures, enforcement actions and fees by the end of year 4 with updated County website.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee. The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

**Action 5.3:** Require submittal of stormwater management control plans and a County permit for all construction sites of one (1) acre or more located in the urbanized area .

**Measureable goal:** Implement by the end of year 4.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee . The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

**Action 5.4:** Implement site inspections, enforcement and remediation of all construction sites of one (1) acre or more.

**Measureable goal:** Implement by the end of year 4. Track and document compliance.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee. The County Commission will need to take action on the proposed ordinance and the budget to implement the program.

## 6. Pollution Prevention/Good Housekeeping

**Action 6.1:** Have a training session with all County Highway Department employees to discuss the proper handling of solid waste, recyclables, pesticides, herbicides, motor oil, antifreeze and other hazardous materials. Refer to sections 4.2.6.1.1-8 of the MS4 permit application attached.

**Measureable goal:** Provide one (1) training session per year. Document training and attendees.

**Responsible party:** Floodplain and Stormwater Manager and County Highway Department Administrator

**Action 6.2:** Evaluate County owned Parks and Highway Department facilities for BMP's to protect water quality including fuel storage, salt storage, fleet shops, fleet parking areas, material storage areas and incorporate as appropriate.

**Measureable goal:** Evaluation to be completed by the end of year one (1) with recommendations to be incorporated in the updates to this plan. Review annually.

**Responsible party:** Floodplain and Stormwater Manager and the County Parks Superintendent

**Action 6.3:** Evaluate BMP's for erosion control for County Highway Department road and bridge projects both project completed by County employees and those completed under contract

**Measureable goal:** Implement by the end of year 1. Document training and attendees.

**Responsible party:** Floodplain and Stormwater Manager and County Highway Superintendent

**Action 6.4:** Ensure that new culvert, bridge, stream bank or other flood management projects of the County, Cape Special Road District, private subdivisions, and others comply with the County's floodplain management regulations.

**Measureable goal:** Currently required under the County's floodplain management regulations. Track and document compliance.

**Responsible party:** Floodplain and Stormwater Manager and the County Highway Department Administrator

## 7. Additional Considerations

**Action 7.1:** Reestablish the Cape Girardeau County Stormwater Advisory for the purpose of determining the best options to protect downstream properties from increased flooding, head cutting, stream bank erosion and damage to public and private property. The committee may include employees of the County Highway Department, County Parks Department, land owners in the urban area, local developers and contractors, agriculture and conservation agencies and persons with interest and/or expertise in stormwater management and water quality.

**Measureable goal:** The Stormwater Advisory Committee will be established and begin meeting within 6 months.

**Responsible party:** The County Commission will establish the committee and appoint members to it. Activities related to the committee would be coordinated through the Floodplain and Stormwater Manager.

**Action 7.2:** Create and adopt a protective ordinance, guidelines, administrative procedures, enforcement actions, fees and a budget. Refer to MDNR's "Missouri Guide to Green Infrastructure" and the Cape Girardeau County Floodplain Management Ordinance adopted April 21, 2011.

**Measureable goal:** Ordinance, guidelines, procedures, enforcement actions and fees by the end of year 4 with updated County website.

**Responsible party:** Floodplain and Stormwater Manager and the Stormwater Advisory Committee. The County Commission will need to take action on the proposed ordinance and the budget to implement the program.