# Saline County, Arkansas

# Stormwater Management Plan

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# Saline County
# Stormwater Management Plan

## INTRODUCTION

This document represents Saline County's Stormwater Management Plan (SWMP). It is a requirement of Arkansas Department of Environmental Quality (ADEQ) that a regulated small Municipal Separate Storm Sewer System (MS4) permittee develop, implement and enforce a SWMP designed to reduce the discharge of pollutants from the small MS4 to the maximum extent practicable (MEP), to protect water quality and to satisfy the appropriate water quality requirements and the Clean Water Act (CWA).

## REGULATORY BACKGROUND

The National Pollutant Discharge Elimination System (NPDES) permit program is a requirement of the federal Clean Water Act, which is intended to protect and restore water for "fishable, swimmable" uses. The federal Environmental Protection Agency (EPA) has delegated permit authority to state environmental agencies and these agencies can set permit conditions in accordance with and in addition to the minimum federal requirements. In Arkansas the NPDES delegated permit authority is ADEQ.

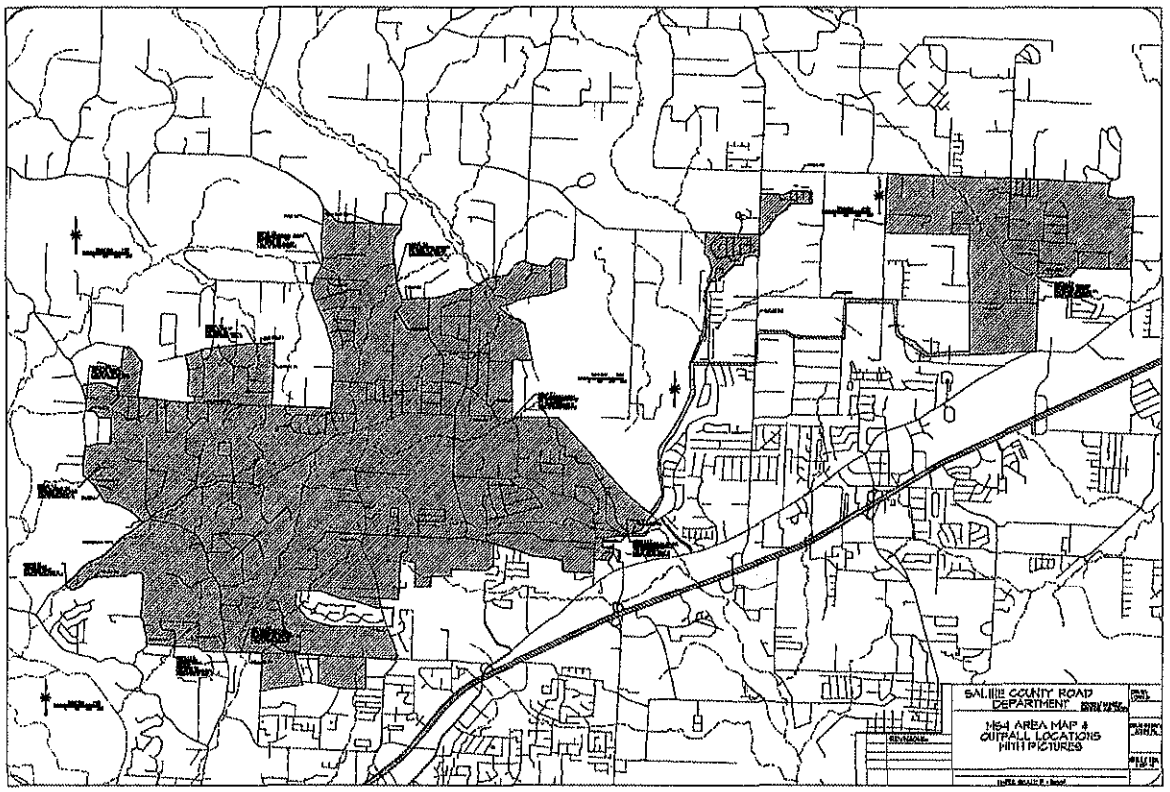
Saline County was designated as a regulated small Phase II MS4 in 2008 due to its population growth, and therefore must comply in accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Act 472 pf 1949, as amended, Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. 1251 et seq.). The Saline County SWMP has been written to include all requirements set forth and in accordance with NPDES Permit No.: ARR 040000 – **Authorization to Discharge under the National Pollutant Discharge Elimination System and the Arkansas Water and Air Pollution Control Act**.

The permit allows county government and municipalities to discharge stormwater runoff from drainage systems into the state's water bodies (e.g., streams, rivers, lakes, wetlands) as long as county government or municipalities implement programs to protect water quality by reducing discharge of "non-point source" pollutants to the "maximum extent practicable" (MEP) through application of permit-specified "best management practices" (BMPs). The BMPs specified in the permit are collectively referred to as the Stormwater Management Program and grouped under the following program components called minimum control measures (MCM):

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Runoff Control
- Post Construction Runoff Control
- Pollution Prevention and God Housekeeping

The latest MS4 permit issued by ADEQ became effective August 1, 2014 and will expire on July 31, 2019. The permit requires the county to report annually by June 1 of each year on progress in SWMP implementation for the previous year.

## SALINE COUNTY REGULATED AREA




## SWMP IMPLEMENTATION RESPONSIBILITIES

The County's engineering department will be coordinating the overall administration of efforts to comply with permit requirements. Each MCM in this manual will list responsible persons or departments for tasks associated with the MCM.

## SWMP REQUIREMENTS

NPDES Permit No.: ARR040000 Part 3 states: The permittee shall develop, implement and enforce a SWMP designed to reduce the discharge of pollutants from small MS4 to the maximum extent practicable, to protect water quality and to satisfy the appropriate water quality requirements and the Clean Water Act. Permittees may use contracts, interagency agreements or inter-jurisdictional agreements with other permittees to implement the SWMP. The SWMP should include management practices; control techniques and system design and engineering methods; shall be modified to include provisions as ADEQ determines appropriate after its review of the program for the control of such pollutants. The SWMP shall include the following information for each of the six (6) minimum controls measures:

- The best management practices that the MS4 or another entity will or already does implement for each of the stormwater minimum control measures.

- The measurable goals for each of the BMPs, those the MS4 believes to have the authority to implement including, as appropriate, the months and years in which the MS4 will undertake required actions, including interim milestones and the frequency of the action. At a minimum, measurable goals shall be implemented to satisfy the general permit's performance standards;

- The person or persons, including position title or titles, or just the position title and contact information responsible for implementing or coordinating the BMPs for the SWMP. The SWMP shall include a Table of Organization, including a primary point of contact, which identifies how implementation across multiple positions, agencies and departments will occur, and;

- The permittee shall provide a rationale for how and why the permittee selected each of the BMPs and measurable goals for the SWMP.

# PUBLIC EDUCATION AND OUTREACH
# Minimum Control Measure 1

## Permit Requirements

The permittee shall implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. In the case of non-traditional MS4s (e.g., AHTD, universities, hospitals, prisons, military bases, and other government complexes), the permittee is only required to provide educational materials and outreach to the MS4 employees, on-site contractors, and individuals using the MS4' s facilities.

## Rationale / Decision Process

An informed and knowledgeable community is crucial to the success of a stormwater management program since it helps to ensure greater support for the program and greater compliance. In order to complete Public Education and Outreach requirements Saline County will provide an education and outreach program for the area served by the MS4. The outreach program shall be designed to achieve measurable improvements in the County's understanding of stormwater impacts on the environment.

## Target Audience, Pollution Sources and General Subject Areas

Education and outreach efforts shall be prioritized to target the following audiences, pollution sources and subject areas:

General public

- General impacts of stormwater impacts on surface waters
- Impacts from impervious surfaces
- Source control BMPs and environmental stewardship actions and opportunities to include: pet waste, vehicle maintenance, landscaping and buffers

General public and businesses including home-based and mobile businesses

- BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials
- Impacts of illicit discharges and how to report them

Homeowners, landscapers and property managers

- Yard care techniques protective of water quality
- BMPs for use and storage of pesticides and fertilizers
- BMPs for carpet cleaning and auto repair and maintenance

Engineers, contractors, developers, review staff and land use planners

- Technical standards for stormwater site and erosion control plans
- Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.

## Outreach Strategy

Saline County will implement BMPs to perform public education and outreach activities on stormwater impacts. Specifically, the County will implement the following BMPs:

- BMP 1(A): Utility Bill Inserts
- BMP 1(B): Stormwater Website
- BMP 1(C): Encourage Proper Disposal of Household Hazardous Wastes
- BMP 1(D): Address Illegal Dumping and Littering
- BMP 1(E): Gardening and Lawn Care Activities

## Education and Outreach BMP Objective

Reduce pollutants from residential and industrial runoff through increased public awareness of the impacts of pollution stormwater runoff.

### BMP 1(A): Utility Bill Inserts

Printed materials are a common way to inform the public about stormwater pollution. For greatest effectiveness, the County will determine who the targeted audience is, how the audience of these materials will receive its information, and the knowledge base of the audience.

The County will use inserts since they can easily be distributed to a large population. The County will use materials available from the EPA, State or other public agencies, as appropriate, and also develop its own materials as necessary. Inserts can be created using simple materials and graphics or made more elaborate. Inserts can also be created for all age levels in any language or for specific audiences.

A one-page flyer will be produced to carry the basic message. Utility inserts offer an inexpensive, convenient way to convey the message to a large audience. These brochures will be appropriate for the public and can be effective if engaging, concise and memorable. They will contain brief, important messages, provide overview for the problems and solutions, or implore simple actions. The text in the brochures will be brief, the print fairly large and the design attractive.

### Measurable Goals

1. Develop a list of subjects addressing:
   - Citizen reporting under the illicit discharge and construction programs
   - Water quality impacts of stormwater runoff and impervious surfaces to local water bodies
   - Steps the public can take to reduce stormwater pollution including source control BMPs
   - Public involvement programs
   - Environmentally friendly landscaping and pest management techniques
2. Design and print utility bill inserts for selected topics
3. Track number of materials created and distributed

**Timeline for Completion**
The County will create and distribute a one (1) page utility bill insert regarding general stormwater quality awareness and information on the stormwater management program by the end of 2015. The county will develop and mail one (1) additional utility bill insert on various topics each year throughout the term of the permit.

**BMP 1(B): Stormwater Website**
Websites serve as a useful tool for disseminating stormwater related information to a broad audience. Since the internet is used regularly by citizens, agency personnel, environmental group leaders, and the business community, it can be a valuable tool in conveying a stormwater pollution related messages. To target a specific audience, the County will create an automated e-mail address list (list server) which becomes an inexpensive way to disseminate information to interested parties. This list can be used to inform parties of updates on meetings, policy discussions and other matters.

Information to be considered for incorporation on the website will be information pertaining to the County's stormwater program such as brochures or displays and pertinent addresses and contact phone numbers. Also to be considered will be information on NPDES permits, maps of the storm drainage system, glossary of standard stormwater terms, recommended best management practices, volunteer opportunities, water quality data and a link to the County's Stormwater Management Plan. The website may also have links to state and national programs such as EPA and ADEQ websites.

**Measurable Goal**
1. Develop a stormwater website
2. Incorporate a login counter to determine the number of website hits per year

**Timeline for Completion**
The stormwater website will be developed and linked to the County's website in 2015 and updated as needed in the following years.

**BMP 1(C): Encourage Proper Disposal of Household Hazardous Wastes**
Bad habits can lead to water pollution because citizens don't know that certain chemicals are dangerous to the environment. Once they are informed, most will adjust their behavior to help protect water quality. The County will use articles in the utility bill insert or on the County website discussing hazardous waste handling to make the residents aware of the potential impacts of hazardous household materials on water quality and inform residents of ways to properly store, handle, and dispose of the chemicals. Such household hazardous wastes include automotive chemicals, hazardous cleaning supplies, and carwash soap. The County will also provide information about less-toxic alternatives to household hazardous wastes. The information regarding hazardous waste storage, handling and disposal will be equally applicable to the commercial and industrial community.

**Measurable Goals**

1. Research or develop local and regional opportunities for the public to properly dispose of household hazardous waste. Create a Household Hazardous Waste Drop Off Day to be held annually.
2. Develop an inventory of proper disposal events and opportunities based on research.
3. Develop a stormwater brochure detailing hazardous materials disposal procedures and distribute.

**Timeline for Completion**

Household hazardous waste awareness will be included on the stormwater website in 2015. A Household hazardous waste drop off event will be implemented in 2016 then be held each year after.

**BMP 1(D): Addressing Illegal Dumping and Littering**

Trash and floating debris in waterways have become significant pollutants, especially in areas where a large volume of trash is generated in a concentrated area. Trash in waterbodies contributes to visual pollution and detracts from the aesthetic qualities of the landscape. It also poses a threat to wildlife and human health. In addition, less litter from individuals can save the County money for maintenance of structural-runoff controls.

The EPA indicates that there are two (2) main methods of trash control: source control and structural control.

Source control includes community education, improved infrastructure, waste reduction and cleanup campaigns. Community education will be incorporated into County stormwater brochures and/or utility inserts. Citizen awareness is key to a successful trash management program. Citizens will be informed about the environmental consequences of littering. Waste reduction programs such as encouraging the use of recycled products and products that contain limited amounts of packaging may be addressed in the stormwater brochure. The County will plan for cleanup campaigns such as street sweeping, receptacle servicing and using litter abatement crews along roadsides.

Structural control involves structures that physically filter wastes and trash at points of infiltration. Physical methods of filtering include trash racks, mesh nets, bar screens and trash booms, all of which prevent trash from floating downstream. The County will encourage utilization of these controls in new commercial building applications.

The County will provide pamphlets and educational material on its website regarding illicit discharges and illicit connections. A hotline to report these items will be listed on the materials as well.

**Measurable Goals**

1. Litter ordinance created and enforced
2. Distribute illegal dumping, littering, and illicit discharge public education material, and track number distributed and target audience
3. Include illicit discharge information and educational materials on County's website

**Timeline for Completion**

Litter ordinance has been created. Illicit discharge information and education will be included on County's stormwater website in 2015. A utility mail-out regarding illicit discharges will be created and distributed by the end of this permit term July 31, 2019.

**BMP 1(E): Gardening and Lawn Care Activities**

Lawn and garden activities can result in contamination of stormwater through pesticide, soil, and fertilizer runoff. Proper landscape management, however, can effectively reduce water use and contaminant runoff, and enhance the aesthetics of a property. Environmentally friendly landscape management can protect the environment through careful planning and design, routine soil analysis, appropriate plant selection, use of practical turf areas, water use efficiency, use of mulches, and appropriate maintenance.

Property owners and municipalities should be discouraged from using fertilizers, or if they are used, from over-applying them. The County can recommend less-toxic alternatives to commercial fertilizers, such as composted organic material. The County can also recommend practices to reduce the amount of fertilizer entering runoff. For example, slow-release organic fertilizers are less likely to enter stormwater. Application techniques such as tilling fertilizers into moist soil to move the chemicals directly into the root zone reduce the likelihood that the chemicals will be mobilized in stormwater. Timing is also a concern where warm season grasses should be fertilized in the summer in frequent and small doses while cool season grasses should be fertilized in the fall. In addition, pesticides should only be used when necessary.

**Measurable Goals**

Develop a list of subjects to be included in public education material based on local gardening and lawn care practices.

1. Distribute gardening and lawn care public education material
2. Track number distributed and targeted audience

**Timeline for Completion**

The County will begin their gardening and lawn care strategy in the spring of 2017 and will continue each year throughout the permit term.

**Measuring Success**
The annual reporting shall identify each mechanism used including each stormwater theme, audience targeted and estimate of how many people were reached by each mechanism. Accurate reporting data shall be collected through educational outreach logs that record the date, mechanism, theme, and number of people reached for each educational event. When media outlets such as television, radio, newspapers, etc. are used, reporting data shall be based on the average listening / viewing audience reported by the media source.

**Responsibility for Education and Outreach**
John Wofford - Engineer
Saline County Road Department - Planning Board Code Enforcement Agency
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jawofford@sbcglobal.net

# PUBLIC INVOLVEMENT AND PARTICIPATION
# Minimum Control Measure 2

## Permit Requirements

The permittee shall at a minimum, comply with State and local public notice requirements when implementing a public involvement/participation program. In the case of non-traditional MS4s (e.g. AHTD, universities, hospitals, prisons, military bases, and other government complexes) the MS4 is required to involve employees, on-site contractors, and individuals using the MS4 facilities.

## Rationale / Decision Process

Public involvement/participation activities can be effective tools used to gain much needed public support for stormwater management program implementation. To satisfy this minimum control measure the County will create opportunities for the public to participate in the decision making processes involving the development, implementation and update of the entire SWMP. The County shall develop and implement a process for consideration of public comments on their SWMP. The County will also post each year's stormwater report to ADEQ on the County website.

## Outreach Strategy

Saline County will implement BMPs to implement a public involvement and participation program. These include notifying the public of stormwater related opportunities and encouragement of public participation. Specifically, the County will implement the following BMPs as discussed herein.

- BMP 2(A): Post Public Involvement Opportunities on Website
- BMP 2(B): Stormwater Management Program Meetings
- BMP 2(C:) Coordination with Adopt-a-Stream Program
- BMP 2(E): Volunteer Monitoring
- BMP 2(F): Community Hotline

## Public Involvement and Participation BMP Objective

Provide opportunity for public involvement and participation in the stormwater management program.

### BMP 2(A): Post Public Involvement Opportunities

The county will post public involvement activities and public meetings on its website. In addition, the County will post its annual reports on the website.

### Measurable Goal

1. Document the number of postings on website and number of visitors to each posting

**Timeline for Completion**
The County will determine an initial posting schedule and post in 2015.

**BMP 2(B): Stormwater Management Program Meetings**
The County shall hold at least one public meeting during 2015 to promote public involvement and participation in the County's stormwater management program. The County will ensure that all meetings are well advertised, follow the applicable County public notice requirements and make a concerted effort to solicit input from various sectors. Advertisement methods will include print media, and posting notices in public places, etc.

**Measurable Goals**
1. Hold at least one public meeting during 2015 to accept and consider comments from the public
2. Publish one (1) public notice to invite the public to the meeting at least 30 days prior to holding the meeting

**Timeline for Completion**
The County will advertise and hold at least one (1) public meeting in 2015.

**BMP 2(C): Coordinate an Adopt a Stream Program**
The County shall identify target groups to be included in the Adopt-a-Stream program. Once the groups are identified they will be listed and contacted for interest in the program. Such groups may include local Boy and Girl Scout troops, school groups, fundraising groups, neighborhood, environmental and civic organizations.

**Measurable Goals**
1. Identify target groups for the Adopt-a-Stream Foundation program
2. Contact groups to participate in the program and assist in setting up training

**Timeline for Completion**
The County will coordinate the program in the third permit year (2016) and will continue to facilitate the program for each year thereafter.

**BMP 2(D): Community Hotline**
Since regulators and authorities cannot monitor all waterbodies at once, the County will rely on the public to keep them informed of water polluters. An accessible phone number provides a means for concerned citizens and agencies to contact the appropriate authority when they see water quality problems. The County will provide a direct phone number or upon completion of their stormwater website, provide an electronic form linked directly to the County. A typical call may report a leaking automobile, concrete wash-out dumped on the street, paint in a creek, or organic debris (including pet waste) in a drainage system or waterway.

It is important to first establish a contact for these concerns. Therefore, the name and phone number for this contact will be advertised and distributed to the public. The phone number will be available on all distributed materials such as the utility insert and the County's website. The County may provide an electronic form on its website which will include spaces for information about the person making the complaint and the alleged violation. If worried about privacy, the citizen can submit a complaint by telephone.

**Measurable Goals**

1. Identify phone number and contact person to receive reports and respond to stormwater quality issues from the community
2. Distribute phone number to community
3. Document number of inspections provided and response to public calls

**Timeline for Completion**

The County will implement and advertise a community hotline upon completion of the stormwater website.

**Measuring Success**

The annual report shall identify each public involvement/participation activity conducted, including a brief description of the activity and including an estimate of how many people participated. Accurate reporting data shall be collected through activity logs that record the date, mechanism, activity, and number of people reached for each educational event. When media outlets such as television, radio, newspapers, etc. are used, reporting data shall be based on the average listening / viewing audience reported by the media source.

**Responsibility for Public Involvement and Participation**

John Wofford - Engineer
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Phone: 501.303.5690 or 501.326.1644
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jawofford@sbcglobal.net

# ILLICIT DISCHARGE DETECTION & ELIMINATION
# Minimum Control Measure 3

## Permit Requirements

The permittee shall develop, implement and enforce a program to detect and eliminate illicit discharges, as defined in Part 6 of this permit, into the small MS4 (for illicit discharges to the MS4 via an adjacent, outside of the MS4's jurisdiction, interconnected MS4, the MS4 are only required to inform the neighboring MS4 and ADEQ in the annual report submission, of their existence);

New permittees shall develop a storm sewer system map, showing the location of all outfalls and the names and location of all surface waters of the State that receive discharges from those outfalls. Within five (5) years of when the coverage under this general permit was granted, the storm sewer system map shall also include the entire MS4 system, including catch basins, pipes, ditches and public and private stormwater facilities. MS4s with urbanized area increases resulting from the 2010 census must update their storm sewer maps by the expiration of this permit;

The permittee shall to the extent allowable under State or local law, effectively prohibit, through ordinance or other regulatory mechanism, illicit discharges into the storm sewer system and implement appropriate enforcement procedures and actions;

The permittee shall develop and implement a plan to detect and eliminate non-stormwater discharges, including illegal dumping, to the system.

The permittee shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste;

The permittee shall address the following categories of non-stormwater discharges or flows (i.e., illicit discharges) only if the MS4 identifies them as significant contributors of pollutants to the small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash water, and discharges or flows from emergency firefighting activities (by definition, not an illicit discharge).

The permittee may also develop a list of other similar occasional incidental non-stormwater discharges (e.g., non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-stormwater discharges must not be reasonably expected (based on information available to the permittees) to be significant sources of pollutants to the MS4, because of either the nature of the discharges or conditions the MS4 have established for allowing these discharges to the MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive

water bodies, BMPs on the wash water, etc.). The MS4 must document in the SWMP any local controls or conditions placed on the discharges. The MS4 must include a provision prohibiting any individual non-stormwater discharge that is determined to be contributing significant amounts of pollutants to the MS4.

## Rationale / Decision Process

Discharges from populated areas often include wastes and wastewater from non-stormwater sources. Illicit discharges enter the system through either direct connections, such as wastewater piping mistakenly or deliberately connected to the storm drains, or indirect connection, such as infiltration from cracked sanitary sewers, spills collected by drain outlets, or materials dumped into storm drains. To satisfy this minimum control measure, the County will develop, implement and enforce an illicit discharge detection and elimination program. The County will fully implement an ongoing illicit discharge detection and elimination program no later than three years from the effective date of this permit.

## Illicit Discharge Detection & Elimination (IDDE) Strategy

Saline County will implement Best Management Practices (BMPs) to detect and eliminate illicit connections during this permit cycle. This Plan further refines the County's program. The County will specifically address the following BMPs.

- BMP 3(A): Adopt an Ordinance Giving Legal Authority for IDDE
- BMP 3(B): Maintain Stormwater Inventory (Base Map)
- BMP 3(C): Conduct Outfall Screening
- BMP 3(D): Identify Stormwater Hotspots
- BMP 3(E): Elimination of Septic/Gray Water Discharges
- BMP 3(F): Sanitary Sewer Leak Elimination

## IDDE Objective

Establish and carry out procedures to identify and remove illicit discharges, and encourage public education and involvement in eliminating illicit discharges.

### BMP 3(A): Adopt an Ordinance Giving Legal Authority for IDDE

Stormwater Quality Ordinance ##### adopted on August 18, 2015 Articles V through VII give the County legal authority to take necessary enforcement action to eliminate illicit discharges into the County's MS4 system. The ordinance also gives authority to enforce litter violations, sanitary sewer overflows, illicit connections or any other violation deemed harmful to health, safety or the environment. The ordinance will be maintained and revised should situations occur that fall outside of enforcement capability granted by the ordinance.

### Measurable Goals

1. Create and adopt an ordinance to address illicit discharges and give the authority necessary to eliminate these discharges
2. Review ordinance and revise as needed

**Timeline for Completion**
Stormwater Quality Ordinance number ###### adopted on August 18, 2015 and will be reviewed and revised as needed.

**BMP 3(B): Maintain a Stormwater Inventory: Base Map**
A base map depicting the existing storm sewer system will be created and maintained by the County to aid in eliminating illicit discharges. The map will show, at a minimum, the location of all outfalls and the names and locations of all waterbodies that receive a discharge from those outfalls, tributary conveyance systems, and associated tributary drainage areas.

The County will utilize the map to target outfalls with dry weather flows and other suspicious discharges. These outfalls will receive more in-depth inspection and monitoring. Additionally, the base map will be used to coordinate management activities to remove illicit connections and track storm drain system maintenance.

**Measurable Goals**
1. Create a base map of storm water drainage and outfall locations for the entire County including pictures of each outfall
2. Update the map as needed should new drainage features or structures be discovered

**Timeline for Completion**
A stormwater base map was created in January of 2015. Map includes all water bodies and outfall locations and includes pictures of each outfall. Map will be reviewed and revised as needed.

**BMP 3(C): Conduct Outfall Screening**
**BMP 3(D): Identify Stormwater Hot Spots**
**BMP 3(E): Elimination of Septic / Gray Water Discharges**
**BMP 3(F): Sanitary Sewer Leak Elimination**

Storm drain outfalls will be monitored to identify those areas where discharges that exceed water quality standards are occurring. To satisfy the permit requirements, all outfalls identified on the stormwater system base map must be inspected during dry weather at least once during the permit term. Monitoring includes both visual inspection and chemical analysis to aid in identifying potential discharge sources.

Dry weather visual inspection for the presence of non-stormwater discharges will be conducted at the major outfalls. Field notes, recorded on the field inspection form, and photographs will be taken during the inspection and will be maintained for reference. re

The following factors will be considered and documented during each outfall inspection:

**Odor** – Most strong odors are likely associated with high responses on the toxicity screening test. Typical obvious odors include: gasoline, oil, sanitary wastewater, industrial chemicals, and decomposing organic wastes.

**Color** – Color is an important indicator of inappropriate industrial sources. Industrial dry-weather discharges may be of any color, but dark colors, such as brown, gray, or black, are most common.

**Turbidity** – Turbidity is often affected by the degree of gross contamination. Dry-weather industrial flows with moderate turbidity can be cloudy, while highly turbid flows can be opaque. High turbidity is often a characteristic of undiluted dry-weather industrial discharges.

**Floatable matter** – A contaminated flow may contain floating solids or liquids directly related to industrial or sanitary wastewater pollution. Floatables of industrial origin may include animal fats, spoiled food, oils, solvents, sawdust, foams, packing materials, or fuel.

**Deposits and stains** – This refers to any type of coating near the outfall and is usually of a dark color. Deposits and stains often will contain fragments of floatable substances. These situations are illustrated by the grayish-black deposits that contain fragments of animal flesh and hair, which often are produced by leather tanneries, or the white crystalline powder that commonly coats outfalls due to nitrogenous fertilizer wastes.

**Vegetation** – Vegetation surrounding an outfall may show the effects of industrial pollutants. Decaying organic materials coming from various food product wastes would cause an increase in plant life, while the discharge of chemical dyes and inorganic pigments from textile mills could noticeably decrease vegetation. It is important not to confuse the adverse effects of high stormwater flows on vegetation with highly toxic dry- weather intermittent flows.

If non-stormwater discharges are identified at an outfall, the source of the discharge will be investigated through several means including identification of potential sources within the basin, chemical analysis of the non-stormwater discharge to identify potential source, review of citizen complaints of dumping, odors, unusual activity, and review of sanitary sewer maps to identify possible cross connections. The list of potential non-stormwater discharge sites within the basin will be matched to the type of discharge identified. Often the source of the non-stormwater discharge will not be able to be readily identified. The presence of commercial or industrial activities, the surrounding land uses and the authority to investigate illicit connections given by County ordinances will affect the methods used to identify illicit connections.

**Measuring Success**
Measuring success of the Illicit Discharge Detection and Elimination Program MCM is accomplished primarily through the number of illicit discharges detected versus the number eliminated. Annual reporting to ADEQ will include: the number of dry weather outfalls screened, number of dry weather flows identified, number of illicit discharges eliminated, schedules for elimination of illicit connections that have been identified, but not yet eliminated, and a summary of any storm sewer system mapping updates.

**Timeline for Completion**
Dry weather screening and IDDE will be performed on all known outfalls over the 2014-2019 permit term.

**Responsibility for IDDE**
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# CONSTRUCTION SITE RUNOFF CONTROL
# Minimum Control Measure 4

## Permit Requirements

The permittee shall develop, implement and enforce a program to reduce pollutants in any stormwater runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction in pollutants in stormwater discharges from construction activity disturbing less than one acre shall be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. If ADEQ waives requirements for stormwater discharges associated with small construction from a specific site(s), the permittee is not required to enforce the program to reduce pollutant discharges from such site(s). The program shall include the development, implementation of, at a minimum:

> An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law. The ordinance or other regulatory mechanism shall be at least as stringent and not conflicting with the criteria set forth in the current, at the time of issuance or the permit, ADEQ NPDES General Stormwater Permit for Construction Activities applicable for the permit are. This would include the statewide NPDES General Stormwater Permit for Construction Activities. If initial coverage was under a previous version of this permit the ordinance or other regulatory mechanism, if needed, shall be revised within two (2) years of coverage under this general permit was granted; and
>
> Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemical, litter and sanitary waste at the construction site that may cause adverse impacts to water quality; and
>
> Procedures for site plan review which incorporate consideration of potential water quality impacts; and
>
> Procedures for receipt and consideration of information submitted by the public; and
>
> Procedures for site inspections and enforcement of control measures.

## Rationale / Decision Process

Polluted stormwater runoff from construction and developed sites often flows to populated areas and ultimately is discharged into local rivers and streams. The Phase II Final Rule requires an operator of a regulated small County to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to their County from construction activities that result in a land disturbance of greater than or equal to one acre or contain less than one acre and are part of a larger common plan of the development or sale.

## Construction Site Runoff Control Strategy

Saline County will implement Best Management Practices (BMPs) to address site run-off control from new development, redevelopment and construction sites. These include the development, implementation and enforcement of a program to reduce site runoff and site inspections to enforce County ordinances related to site run-off. Specifically, the County is planning to implement the following BMPs.

- BMP 4(A): Develop and Update Legal Authority/Ordinances
- BMP 4(B): Conduct Construction Inspections
- BMP 4(C): Plan Reviews for New and Redevelopment
- BMP 4(D): Conduct Post-Developed Inspections
- BMP 4(E): Provide Training for Personnel

## Construction Site Runoff Control Objective

Continue and upgrade the set of development requirements for construction sites per the County's adopted ordinance, including planning, installation, inspection, maintenance and enforcement of development practices.

### BMP 4(A): Develop and Update Legal Authority/Ordinances

Saline County has created an ordinance which includes planning, installation, inspection, maintenance and enforcement guidelines for construction activity. The County will ensure that the erosion and sediment control ordinance(s) include all sufficient stormwater pollution prevention elements to prevent pollution resulting from erosion and sediment runoff during the construction phase, and an adequate enforcement plan to ensure compliance with the ordinance.

The county ordinance requires the submittal of a Construction Stormwater Pollution Prevention Plan (SWPPP), which will cover the following elements:

1. The marking of clearing limits
2. Establishment of construction access
3. Control of flow rates
4. Installation of sediment controls
5. Stabilization of soils
6. Protection of slopes
7. Protection of drain inlets
8. Stabilization of channels and outlets
9. Control of pollutants
10. Control of de-watering
11. Maintenance of BMPs
12. Management of the Project

Saline County's ordinance currently describes different levels of enforcement available to inspectors, such as verbal warnings, Notice of Violation and stop work orders.

**Measurable Goal**

1. Adopt and implement an ordinance including planning, installation, inspection, maintenance and enforcement of construction activity.

**Timeline for Completion**

The stormwater quality ordinance has been written and reviewed for completeness. The ordinance will be adopted and implemented on July 21, 2015.

**BMP 4(B): Conduct Construction Inspections**

Inspections are necessary to ensure that erosion and sediment controls are properly installed and maintained, and that the site plan reflects changes made onsite (e.g. different types of controls used and changed location of controls). Frequent and consistent inspections are the key to ensuring proper installation and maintenance of erosion and sediment controls. The frequency for inspection of construction sites will be at least once every thirty (30) days. More frequent inspections may be required during wet weather months.

**Measurable Goals**

1. Develop inspection form
2. Develop inspection procedures and checklist
3. Maintain reports of inspection activities
4. Maintain records of enforcement actions and results

**Timeline for Completion**

Construction site stormwater inspections will begin after adoption of the stormwater quality ordinance, which is expected to be July 21, 2015.

**BMP 4(C): Review Site Plans**

The County Engineer will review construction SWPPPs prior to construction to ensure that required stormwater controls, erosion and sediment controls, and post-construction controls are in compliance with County codes.

At a minimum, the County will review all SWPPPs for sites disturbing at least one (1) acre (or if less than one acre but part of a planned development) to verify the following factors:

- Erosion and sediment controls are consistent with County codes and control requirements; and
- The construction operator is aware of his/her responsibility for the implementation and maintenance of erosion and sediment controls, and of penalties for failing to do so; and
- Post-construction controls are consistent with the County codes which are clearly described in the plan and sized appropriately; and
- The construction operator and landowner are aware of their responsibility for the implementation and maintenance of post-construction controls, and of penalties for failing to do so.

To aid in the review process, the County will create developer review checklist(s) to make certain that all concerns are addressed during reviews. A pre-construction site plan meeting with the construction operator may be required to ensure that all parties are comfortable with plan and compliance requirements.

**Measurable Goals**

1. Trained reviewers
2. Developed and implemented checklist(s) for reviewers
3. Recorded number of plans reviewed

**Timeline for Completion**

The SWPPP review process will begin following adoption of the Stormwater Quality Ordinance on approximately July 21, 2015.

**BMP 4(D): Conduct Post-Developed Inspections**

Similar to construction inspections, post-development inspections are necessary to ensure that stormwater controls are properly installed and maintained. Inspections will be conducted to ensure facilities were built as designed. A maintenance plan will be verified as part of this process as well.

**Measurable Goals**

1. Trained inspectors
2. Standard inspection forms
3. Documented frequency of inspection(s) for compliance with installed BMPs
4. Annual inventory of inspection activities
5. Review of ordinance for site inspection requirements
6. Documented, standardized record keeping of enforcement actions

**Timeline for Completion**

Post Construction Inspection Process will begin upon adoption of the Stormwater Quality Ordinance on approximately July 21, 2015.

**BMP 4(E): Provide Training for Personnel**

One of the most important factors determining whether or not erosion and sediment controls will be properly installed and maintained on a construction site is the knowledge and experience of the inspector. A construction site inspection program is also critical in ensuring that the sediment and erosion control plans for the construction site are properly implemented and that best management practices are properly installed and maintained. County staff from the Engineering Department will be assigned to stormwater inspections and SWPPP reviews, and will be trained first by attending the City of Hot Springs Stormwater Certification Course. Staff will continue training on various relevant stormwater topics by attending conferences and other educational opportunities, as available.

**Measurable Goals**

1. List of personnel to be trained
2. Number of training days for personnel

**Measuring Success**
In general, the success of the Construction Site Stormwater Runoff Control MCM is measured by the ratio of actively permitted projects compared to complaints and non-compliance issues investigated or cited. Annual reporting to ADEQ will include: The number of applicable sites in the MS4's jurisdiction, number of pre-construction site plan reviews performed, number and frequency of site inspections, number of violation letters issued, number of enforcement actions taken and number of complaints received and number followed up on. It is the County's intention to minimize the number of non-compliance issues through education, training, inspections, and enforcement.

**Timeline for completion**
Construction site runoff control will be implemented after approval of the Stormwater Quality Ordinance approximately July 21, 2015. Inspector training to be implemented by October 2015.

**Responsibility for Construction Site Runoff Control**
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# POST CONSTRUCTION RUNOFF CONROL
# Minimum Control Measure 5

## Permit Requirements

The permittee shall use an ordinance or other regulatory mechanism to address post-construction runoff from new development or redevelopment projects to the extent allowable under State or local law. The ordinance or other regulatory mechanism shall be at least as stringent as the criteria set forth in the current, at time of issuance of the permit, ADEQ NPDES General Stormwater Permit for Construction Activities applicable for a permitted area. This would include statewide NPDES General Stormwater Permit for Construction Activities. Of Specific note is that a goal of at least 80% removal of total suspended solids from these flows which exceed predevelopment levels should be used in designing and installing stormwater management controls. If initial coverage was under a previous version of this permit then the ordinance of other regulatory mechanism, if needed, shall be revised within two (2) years of when coverage under the general permit was granted.

The post-construction SWMP shall include pre-construction site plan review of one-hundred percent (100%) of projects from construction activities that result in land disturbance of greater than or equal to one (1) acre to ensure required controls are designed per requirements. These applicable sites shall be inspected to ensure that controls are installed per requirements. The program shall also ensure long-term operation and maintenance plans are developed and agreements in place for all applicable sites.

## Rationale / Decision Process

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

There are generally two (2) forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff flows over areas altered by development it picks up harmful sediment and chemicals such as oil, grease, pesticides, heavy metals, and nutrients (e.g. nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters such as lakes, ponds and streams. Once deposited, these pollutants can enter the food chain through small aquatic life eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs when the quantity of water delivered to the water body is increased during storms. Increases in impervious surfaces such as asphalt and concrete interrupt the natural cycle of gradual percolation of water through vegetation and soil and instead water is collected from impervious surfaces and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include stream bank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

The EPA recommends two (2) techniques to mitigate the effects of post-construction runoff: Non-Structural and Structural BMPs.

## Non-Structural BMPs

**Planning and Procedures:** Runoff issues can be addressed effectively and efficiently with sound planning procedures. Master plans, comprehensive plans, and zoning ordinances can promote improved water quality by guiding the growth of a community away from sensitive areas and by restricting certain types of growth to areas than can support it without compromising water quality.

**Site-Based Local Controls:** These controls can include buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.

**Low Impact Development (LID):** The County encourages and supports environmentally sustainable building design, construction and planning for low impact development. The County's building and planning codes allow for consideration of any developmental designs which utilize new or existing technologies for energy efficiency, water quality and conservation, air quality, land reuse, etc. Through the 2014-2019 permit term the County will continue to evaluate and establish new initiatives and incentives to promote low impact development. Proposed examples include:

- Fast tracking LID or LEED projects through the permit and plan review process
- Reducing building and stormwater permit costs for LID or LEED projects
- Variances on code standards i.e. relax curb and gutter requirements to encourage use of bio swales

## Structural BMPs

**Water Quality Practices:** All new construction projects, regardless of size, are required to submit a post construction stormwater quality plan with the SWPPP permit submittal. Although exact specifications for this requirement have not yet been determined, the County reviews each proposed plan to ensure that the quality device is sufficient to remove floatable debris down to approximately the size of a cigarette butt. The County will continue to work with local engineering firms and County officials to determine exact specifications for water quality devices. Some examples of previously approved and installed water quality devices include:

- Curb inlet filtration baskets
- Detention pond outfall trash screens
- Faircloth skimmers
- Junction box weir walls
- Vegetated bio-swales, rain gardens & vegetated detention ponds
- "Snout" sediment & trash separator
- Vegetated buffer strips for sheet flows

**Water Quality Device Maintenance Practices:** A post construction water quality and/or detention pond maintenance agreement is required with the water quality and SWPPP submittal (attachment B, appendix D). This agreement outlines the required maintenance and frequency for the specific device or pond and project owner signature. The County maintains a permanent easement to water quality devices and/or detention ponds and reserves the right to perform maintenance as necessary if the owner fails to maintain the device in working condition.

**Infiltration Practices:** Saline County encourages the use of infiltration devices in all new construction and building and planning codes that are designed to allow these devices upon approval of the County. Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, result in reduced storm water quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.

**Vegetative Practices:** Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, enhance pollutant removal, maintain/improve natural site hydrology, promote healthier habitats, and increase aesthetic appeal. Examples include grassy swales, filter strips, artificial wetlands and rain gardens.

**Enforcement:** The County's code and stormwater ordinance prohibits the discharge of any debris or chemicals into the storm sewer system and gives the County the authority to correct and eliminate illicit discharges through enforcement fines and citations. Restaurants, car washes, automobile repair shops, etc. are monitored to ensure adequate precautions and acceptable methods are utilized for oil disposal, dumpster locations and maintenance and wash water discharge just to name a few.

## Post Construction Runoff Control Strategy

BMP 5(A): Maintain a stormwater quality ordinance which includes post-construction runoff control

BMP 5(B): Maintain a stormwater quality ordinance which includes requirements for long term operation of maintenance of water quality BMPs

## Post Construction Runoff Control Objective

Saline County's post-construction runoff program's objective is to reduce pollutants in post-construction runoff from new development and redevelopment projects that result in any land disturbance. The County's program consists of the following items in support of this objective:

- Continuation of the development and implementation strategies, which include a combination of structural and/or non-structural best management practices (BMPs)
- Maintenance of the ordinance requiring the implementation of post-construction runoff controls
- Assurance of adequate long-term operation and maintenance of controls
- Determination of the appropriate best management practices (BMPs) and measurable goals for this minimum control measure

**BMP 5(A): Maintain a Stormwater Quality Ordinance which Includes Post-Construction Runoff Control**

Siltation and the contribution of other pollutants from construction sites can cause physical, chemical and biological harm to our nation's waters. A stormwater maintenance ordinance must address both construction and post-construction runoff control in order to comply with NPDES Phase II Final Rule. This mechanism provides the County with the tool to manage and enforce its stormwater management program.

**Measurable Goals**

1. Write, adopt and implement a stormwater quality ordinance including post construction runoff control
2. Review ordinance annually and revise based on lessons learned or permit changes

**BMP 5(B): Maintain a Stormwater Quality Ordinance which Includes Requirements for Long term Operation of Maintenance of Water Quality BMPs**

In order to ensure that long-term operation and maintenance of controls are met the County has developed a storm water drainage manual, a stormwater ordinance and the means to enforce both. A long term maintenance agreement will be required to be acknowledged and signed by the owner / operator of the facility. Inspections will be performed annually by the County.

**Measurable Goals**

1. Create a long term post construction maintenance agreement
2. Schedule annual inspections of post-construction BMPs
3. Keep records of all inspections and enforcement actions

**Measuring Success**

Success of the Post-Construction Stormwater Management in New Development and Redevelopment MCM will be measured and achieved by the county's requirement for 100% of all new construction projects requiring a permit to install and maintain a water quality device as deemed appropriate by the County's administrative authority. Annual reporting to ADEQ will include: the number of applicable sites requiring post-construction controls, number of pre-construction site plan reviews performed, number of inspections preformed to ensure as-built per requirements, compliance rates with MS4 requirements and number of long-term operation and maintenance (O&M) plans developed and agreements in place.

**Timeline for Completion**

Post Construction Runoff Control will be implemented after approval of the Stormwater Quality Ordinance approximately July 21, 2015

**Responsibility for Post Construction Runoff Control**

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# POLLUTION PREVENTION AND GOOD HOUSKEEPING FOR COUNTY OPERATIONS
# Minimum Control Measure 6

## Permit Requirements

The permittee shall develop and implement an operation and maintenance program that includes a training component, and has the ultimate goal of preventing or reducing pollutant runoff from municipal operation.

Using training materials that are available from EPA, ADEQ, other organizations or developed in-house, the program shall include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbance, and stormwater system maintenance.

The permittee shall include a list of industrial facilities owned or operated by the MS4 that are subject to ADEQ's Industrial Stormwater General Permit or individual NPDES permits for discharges of stormwater associated with industrial activity that ultimately discharge to the MS4. Include the ADEQ permit number or a copy of the NOC for each.

## Rationale / Decision Process

Saline County recognizes that pollution prevention/good housekeeping for county operations are a key element of its stormwater management program. This measure will require the County to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that:

- Collects on streets, parking lots, open spaces, storage areas and vehicle maintenance areas and is discharged into local waterways
- Results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems

This measure is meant primarily to improve or protect receiving water quality by altering County or facility operations. It also can result in a cost savings for the County, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

The County recognizes the benefits of pollution prevention practices and has developed a strategy consisting of the following:

- Continue to develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from county operations into the storm sewer system; and
- Continue employee training on how to incorporate pollution prevention/good housekeeping techniques into county operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance; and
- Continue to analyze and determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

## Good Housekeeping for County Operations Strategy

Saline County plans to implement the following BMPs to address pollution prevention.

BMP 5(A): Provide Employee Training
BMP 5(B): Develop Stormwater Pollution Prevention Plan (SWPPP) for County Facilities and Implement Maintenance Standards

## Good Housekeeping for County Operations Objective

Promote pollution prevention and good housekeeping measures for County operations.

### BMP 6(A): Employee Training

At a minimum, the County will ensure that employees in stormwater and maintenance related positions are trained on the requirements of the stormwater good housekeeping/pollution prevention program by the end of the permit term. The training program will incorporate the following measures.

- Crews trained in proper maintenance activities, including record keeping, disposal and inspections.
- Only properly trained individuals will be allowed to handle hazardous materials/wastes.
- County employees from all departments will be trained to recognize and report illegal dumping.
- County employees will be trained and will educate businesses, contractors, and the general public in proper and consistent methods for disposal.
- County staff will be trained regarding non-stormwater discharges (illicit connections).

A general, brief, 1-hour training session will be held for the employees. Longer, specific training will be given for program specific areas such as vehicle washing and illicit discharge inspections.

The County will also ensure that employees have access to public education materials produced as part of this permit so that they may implement best management practices in their day-to-day actions as well.

### Measurable Goal

1. Develop employee training and track number of training hours for staff.

**BMP 6(B): Develop Stormwater Pollution Prevention Plan (SWPP) and Implement Maintenance Standards**

During the first Phase II NPDES permit cycle, Saline County will concentrate on developing, implementing and monitoring the success of a stormwater pollution prevention plan/good housekeeping program for County facilities and activities. The program will include the following:

- Adoption of maintenance standards
- Training in the proper methods of facility maintenance to minimize stormwater pollution,
- Training in the proper methods for disposal of solid and liquid wastes from maintenance activities,
- Development and implementation of a maintenance schedule to include inspection of 95% of all sites, and
- Evaluation of the effectiveness of the program.

A plan that discusses good housekeeping procedures is essential to ensure that all County activities and programs impacting stormwater are implemented efficiently and effectively. The Good Housekeeping/Stormwater Pollution Prevention Plan is intended to reduce the amount of pollutants carried by stormwater runoff into the storm drainage system. Comprised of a description of procedures and associated schedules, the Good Housekeeping/Stormwater Pollution Prevention Plan will serve as a tool for all County employees that are directly involved in stormwater management or administer programs that impact stormwater. The plan will contain the following:

- Description of activities and programs that have the potential to impact stormwater quality and procedures to follow to minimize the risk of pollution. These activities include the application of fertilizers/pesticides/herbicides, sediment and erosion control, landscape maintenance and vegetation disposal, trash management, and building exterior cleaning and maintenance
- List of responsible departments and personnel for each activity
- Schedule of activities, including maintenance, inspections and reporting which will comply with the NPDES Phase II permit requirements

To gain an understanding of existing County operations, the County will assemble and review existing materials from various departments who perform these activities. In reviewing information on existing programs, specific attention will be paid to the frequency of activities; types of substances used; materials storage, handling and disposal practices; type and frequency of employee training; record keeping practices; and inspection procedures and frequencies. If the documentation does not exist, brief interviews with the staff from the various departments may be conducted. If no program exists for certain activities, then the County will determine which department would be best suited to take on the activity.

The final Good Housekeeping/Stormwater Pollution Prevention Plan will serve as a reference manual for all County employees. To fully implement the program, training for County staff should be conducted on the information contained within the Plan.

**Measurable Goals**

1. Develop a Stormwater Pollution Prevention Plan (SWPPP)
2. Adopt County Operation and Maintenance Standards
3. Measures in the SWPPP are implemented

**Measuring Success**

Success of the Pollution Prevention / Good Housekeeping for County Operations MCM will be measured by the acceptance and compliance with stormwater regulations by County employees and their facilities. Biennial municipal building inspections will ensure that adequate training and maintenance of BMPs are in place. Annual reporting to ADEQ will include a summary of employee training programs implemented with the number of employees that attended and a summary of activities and procedures implemented for the operation and maintenance program.

**Timeline for Completion**

Saline County will develop a facility SWPPP and implement good housekeeping measures by October of 2015.

**Responsibility for Post Construction Runoff Control**

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# GLOSSARY

As used in the Stormwater Management Ordinance, the following words and phrases shall have the following meanings:

Best Management Practices (BMPs) - Erosion and sediment control and water quality management practices that are the most effective and practicable means of controlling, preventing, and minimizing degradation of surface water, including avoidance of impacts, construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, engineered systems, programs and other management practices published by state or designated area-wide planning agencies.

Bio-retention – (1) An engineered process to manage stormwater runoff, using the chemical, biological and physical properties afforded by a natural, terrestrial-based community of plants, microbes and soil. Bioretention provides two important functions: water quantity (flood) controls; and improves water quality through removal of pollutants and nutrients associated with runoff. (2) A method used for flow detention by utilizing infiltration. This method is normally used in small areas.

County – Saline County

County Engineer – The civil engineer responsible for directing the county engineering department in the execution of its duties.

County Engineering Department - The department responsible for all stormwater management activities and implementation of the provisions of this ordinance.

Commercial Development – means any development that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, multi-apartment buildings, car wash facilities, mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

Common Plan of Development - A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.

Constructed Wetlands – an artificial wetland system designed to mitigate the impacts of urban runoff.

Construction Activity - For this permit, construction activity includes construction activity as defined in 40 C.F.R. part 122.26(b)(14)(x) and small construction activity as defined in 40 C.F.R. part 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated storm water runoff, leading to soil erosion and

movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating. Construction activity includes the disturbance of less than one acre of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more.

Construction Site Erosion Control - Preventing or reducing soil erosion and sedimentation from land disturbing activity.

Contractor Certification Program – a voluntary program in which the city will provide periodic seminars and training to educate contractors and other professionals on the proper procedures for installation and maintenance of erosion and sediment control measures and related matters. Refer to the City of Hot Springs Best Management Practices manual for additional information.

Debris – Any material including floating woody materials and other trash, suspended sediment, or bed load, moved by a flowing stream.

Detention - The temporary detaining or storage of floodwater in reservoirs, on parking lots, on rooftops and other areas under predetermined and controlled conditions and accompanied by controlled release of the stored water.

Develop land - To change the runoff characteristics of a parcel of land in conjunction with residential, commercial, industrial, or institutional construction or alteration.

Developer – Any person or entity proposing building or land improvements.

Development – Any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity. Or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.
Development - Should generally mean any of the following actions undertaken by a public or private individual or entity:

(a) The division of a lot, tract or parcel of land into two (2) or more lots, plots, sites, tracts, parcels or other divisions by plat or deed, or

(b) Any land change, including, without limitation, clearing, tree removal, grubbing, stripping, dredging, grading, excavating, transporting and filling of land.

Disturbed Area – means an area that is altered as a result of clearing, grading, and/or excavation.

Drainage Area – All land area that contributes runoff to the same discharge point.

Drainage Basin – All land area contributing to a given discharge point in terms of drainage.

Drainage Easement - Authorization by a property owner for use by another party or parties for all or any portion of his/her land for a drainage and adjoining utility purposes. Easements shall be dedicated to the city when required or approved by the Administrative Authority.
Drainage Pipe – Drainage conduit, which carries storm water flows in either a closed storm water sewer system or culverts. RCP, CMP & HDPE are some common drainage pipes used throughout the state.

Duplex – Two housing units that share a common wall.

Easement - Shall mean a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

Elevation or Elevations – All required elevations shall be based on mean sea level datum.

Emergency Flood Insurance Program or emergency program - Means the program as implemented on an emergency basis in accordance with the NFIP. It is intended as a program to provide a first layer amount of insurance on all insurable structures before the effective date of the initial FIRM.

Engineer – A person who is a registered professional engineer in the State of Arkansas.

Engineer of Record - A registered professional engineer in Arkansas. This engineer shall supervise the design and construction of the development project and shall be acceptable to the City Engineer.

Erosion – the wearing away of land surfaces by the action of wind or water.

Erosion Prevention - Measures employed to prevent erosion including but not limited to: soil stabilization practices, limited grading, mulch, temporary or permanent cover and construction phasing.

Excavation - Any act by which organic matter, earth, sand, gravel, rock or any other similar material is cut into, dug, quarried, uncovered, removed, displaced, relocated or bulldozed and shall include the resulting conditions.

Existing Development – Buildings and other structures and impervious areas existing prior to ordinance adoption.

Existing Structure – Means for the purposes of determining rates, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date.

Fill - Any act by which earth, sand, gravel, rock or any other material is deposited, placed, replaced, pushed, dumped, pulled, transported, or moved to a new location and shall include the resulting conditions.

Final Stabilization - means that either:

(a) All soil disturbing activities at the site have been completed and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 80% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed;

(b) For individual lots in residential construction by either: (a) The homebuilder completing final stabilization as specified above, or (b) the homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or

(c) For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land) final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters and drainage systems, and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria in (a) or (b) above.

General Contractor - The party who signs the construction contract with the owner to construct the project described in the final plans and specifications. Where the construction project involves more than one contractor, the general contractor will be the party responsible for managing the project on behalf of the owner. In some cases, the owner may be the general contractor. In these cases, the owner may contract an individual as the operator who would become the Co-Permittee.

Good Housekeeping Practice – a common practice related to the storage, use, or cleanup of materials performed in a manner that minimizes the discharge of pollutants. Examples include cleaning up spills and leaks and storing materials in a manner that will contain any leaks and spills.

Grading - Shall mean excavating, filling (including hydraulic fill), or stockpiling of earth material, or any combination thereof, including the land in its excavated or filled condition.

Household Hazardous Waste - A product that is discarded from a home or a similar source that is either ignitable, corrosive, reactive, or toxic (e.g. used motor oil, oil-based paint, auto batteries, gasoline, pesticides, etc.).

Illegal Discharge - Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in this Ordinance.

Illegal/Illicit Connections - An illicit connection is defined as either of the following:

(a) Any drain or conveyance, whether on the surface of subsurface, which allows illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-storm water discharge including, sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or,

(b) Any drain or conveyance connected from and commercial or industrial land use to the storm drain system which has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

Impervious – a hard surface (such as a parking lot), which prevents or retards the entry of water into the soil, thus causing water to run off the surface in greater quantities and at an increased flow rate. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.
Infiltration – means the downward entry of water into the surface of the soil or the flow of a fluid through pores or small openings, commonly used in hydrology to denote the flow of water into soil material.

Legal Authority – defined as the ability to impose and enforce statues, ordinances, and regulations to require control of pollutant sources and regulate the discharge of pollutants to the storm drain system, and to enter into interagency agreements, contracts, and memorandums of understanding.

Litter - Waste that is improperly disposed of on the street, sidewalk, lakes and other bodies of water, and in the general environment.

Municipal Separate Storm Sewer System (MS4) – conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a state, city, town, borough, county, parish, district, association or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control or drainage district, similar entity, and Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the Clean Water Act that discharges to water of the United States.

Natural Waterways - Shall mean waterways that are part of the natural topography. They usually maintain a continuous or seasonal flow during the year and are characterized as being irregular in cross-section with a meandering course. Construction channels such as drainage ditches shall not be considered natural waterways.

New Structure – Structures for which the start of construction commences on or after the effective date of these regulations.

Non-Storm Water Discharge - Any discharge to the storm drain system that is not composed entirely of storm water.

Non-structural BMP – a best management practice that does not require construction of a facility to control urban runoff.

Notice of Intent (NOI) - Application form for obtaining coverage under a General Storm Water Permit for construction activities that disturbs one or more acres or for industrial activities.

Notice of Termination – A notice to terminate coverage under this permit after construction is complete, the site has undergone final stabilization, and maintenance agreements for all permanent facilities have been established, in accordance with all applicable conditions of this permit.

NPDES – National Pollutant Discharge Elimination System initiated in 1972 by the amendments to the Federal Water Pollution Control Act (the Clean Water Act or CWA) to address the discharge of pollutants to navigable waters from point sources unless the discharge is authorized by an NPDES permit. The Water Quality Act of 1987 added section 402(p) to the CWA establishing phased and tiered requirements for stormwater discharge under the NPDES program.

Owner - The person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the construction activity.

Permittee – A person, partnership or corporation to whom a permit is granted.

Permittee - A person or persons, firm, or governmental agency or other institution that signs the application submitted to AEDQ and is responsible for compliance with the terms and conditions of this permit.

Person Responsible for the Land Distributing Activity - The person who has or represents having financial or operation control over the land disturbing activity; and/or the landowner or person in possession or control of the land who directly or indirectly allowed the land disturbing activity or has benefited from it or who has failed to comply with any provision of this ordinance.

Point Source – pollution arising from a well-defined origin, such as a discharge from an industrial plant.

Pollutant – any introduced gas, liquid, or solid that makes a resource unfit for a specific purpose. A substance that pollutes air, water or land. They are defined in Section (502) of the federal Clean Water Act (33 U.S.C. ' 1362(6)). Specifically, pollutants that are carried by runoff from rainstorms or other watering activities. Examples of pollutants include but are not limited to the following:

(a) Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);

(b) Metals such as cadmium, lead, zinc, copper, silver, nickel, and chromium; and non-metals such as phosphorus and arsenic;

(c) Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease);

(d) Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora, or fauna;

(e) Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);

(f) Substances having characteristics such as pH less than 6 or greater than 9, unusual coloration or turbidity, excessive levels of fecal coliform, fecal streptococcus, or enterococcus.

Post-Development - Refers to the extent and distribution of land cover types anticipated to occur under conditions of full development of the submitted plan. This term is used to match pre- and post-development stormwater peak flows as required by the ordinance.

Pre-Developed Conditions - Those land use conditions that existed prior to the initiation of the land disturbing activity in terms of topography, vegetation, or land use and rate, volume, or direction of stormwater runoff.

Pre-Development - Refers to the extent and distribution of land cover types present before the initiation of land development activity, assuming that all land uses prior to land disturbing activity and in "good" condition as described in the Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds" (commonly known as TR-55). This term is used to match pre- and post-development stormwater peak flows as required by the ordinance. In a situation where cumulative impervious surface created after the adoption of this ordinance exceeds the 20,000 sq. ft. threshold, the pre-development conditions shall be those prior to any land disturbance.

Raingarden - (1) Shallow depressions designed to collect rain on the site – typically runoff from impervious surfaces such as roofs – and allow plants, bacteria and soils to clean the water as it seeps into the ground. (2) A strategically located low area planted with native vegetation that intercepts runoff. Other terms include mini-wetland, stormwater garden, water quality garden, stormwater marsh, backyard wetland or bioretention pond.

Receiving Water – rivers, lakes, oceans, or other bodies that receive runoff.

Redevelopment – land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, the entire project must be mitigated. Where Redevelopment results in an alteration to less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post development storm water quality control requirements, only the alteration must be mitigated, and not the entire development. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Existing single family structures are exempt from the redevelopment requirements.

Registered Landscape Architect - A landscape architect properly registered and licensed to conduct work within the State of Arkansas.
Registered Land Surveyor - A land surveyor properly registered and licensed to conduct work within the State of Arkansas.

Registered Professional Engineer - Shall mean a professional engineer properly registered and licensed to conduct work within the State of Arkansas.

Regulatory Floodway – The floodplain area that is reserved in an open manner by Federal, State of local requirements, i.e., unconfined or unobstructed either horizontally or vertically, to provide for the discharge of the base flood so that the cumulative increase in water surface elevation is no more than a designated amount (not to exceed 1 foot as established by the Federal Emergency Management Agency (FEMA) for administering the National Flood Insurance Program).

Retention Structure - A permanent structure whose primary purpose is to permanently store a give volume of stormwater runoff. Release of the given volume is by infiltration and/or evaporation.

Riparian Buffer - A natural or vegetated area adjacent to streams and perennial water bodies through which stormwater flows in a diffuse manner, so that runoff does not become channelized and which provides for the infiltration of runoff and filtering of pollutants. The riparian buffer is measured landward (horizontaldistance) from the stream bank on both sides of the stream or from the normal pool elevation of a perennial water body.

Riverine – means relating to, formed by, or resembling a river (including tributaries), stream, book, etc.

Runoff – the portion of rainfall or irrigation water and other watering activities also known as dry-weather flows that flow across the ground surface and eventually to receiving waters. Runoff can pick up pollutants from the air or the land and carry them to receiving waters.

Sediment – Fragmentary material that originates from weathering of rocks and is transported by, suspended in, or deposited by water.

Sediment - Solid earth material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity or ice, and has come to rest on the earth's surface at a different site.

Sediment Control - Methods employed to prevent sediment from leaving the site. Sediment control practices include silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

Stormwater – Water which originates from atmospheric moisture (rainfall or snowmelt) and falls onto land, water, or other surfaces.Stormwater Management Plan - The set of drawings and other documents that comprise all of the information and specifications for the drainage systems, structures, concepts and techniques that will be used to control stormwater as required by this Ordinance and the Stormwater Management Manual. Also included are the supporting engineering calculations and results of any computer analysis.

Stormwater Management Manual - The set of drainage policies, analysis methods, design charts, stormwater runoff methods, and design standards used by the County as the official design guidelines for drainage improvements consistent with this Ordinance. Any modifications will be made by the Administrative Authority consistent with the stated policies and intent of the Ordinance.

Stormwater Pollution Prevention Plan (SWPPP) – A plan designed to eliminate or reduce at the source the use, generation, or release of silts, toxic pollutants, hazardous substances, and hazardous wastes from entering storm waters.

Stormwater Runoff - Water that results from precipitation which is not absorbed by the soil, evaporated into the atmosphere or entrapped by ground surface depressions and vegetation, which flows over the ground surface.

Stream – A body of running water.

Triple Fee – Refers as to this ordinance as three (3) times the original cost of a permit which may be imposed on construction sites that have started land disturbance activities without approval or permits from the Administrative Authority.

Urban Forestry – (1) The management of trees for their contribution to the physiological, sociological, and economic well-being of urban society. Urban forestry deals with woodlands, groups of trees, and individual trees, where people live - it is multifaceted, for urban areas it includes a great variety of habitats (streets, parks, derelict corners, etc) where trees bestow a great variety of benefits and problems. (2) The art, science and technology of managing trees, forests, and natural systems in and around urban areas for the health and well being of communities.

Waters of the State - All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.