

### Recertification Notice of Intent (NOI)

#### Regulated Small Municipal Separate Storm Sewer Systems (MS4's) General Permit ARR040000

You must complete, certify, and sign this Recertification Notice of Intent (NOI) form and return it along with the updated Stormwater Management Program (SWMP) to the Department in order to continue permit coverage under the General Permit ARR040000. You must submit this form **no later than July 1, 2019**. Please keep a copy of this form for your records once completed and signed.

Permittee Name	Permit Tracking Number	AFIN
City of Hot Springs	ARR040015	88-00857

If any changes or additions need to be made to the information shown below, please update the new information in the corrections section below and/or attach documentation.

	Current Information in ADEQ's database	Corrections/Additions, If Needed
Small MS4 Physical Address	133 Convention Blvd	
County	Garland	
Urbanized/Core Areas	Hot Springs	
Receiving Stream	Gulpha Creek, Hot Springs Creek, Molly Creek, Stokes Creek, Lake Hamilton	
Ultimate Receiving Stream	Ouachita River	
Contact Person & Title	Danny T Carder, Stormwater Manager	
Telephone Number	(501) 321-6773	
Cognizant Official & Title	Danny T Carder, Stormwater Manager	
Responsible Official & Title	Bill Burrough, <del>Interim</del> City Manager	<i>CITY MANAGER</i>

Are the mailing and invoice addresses the same?

☒ Yes or No\* \*If "No," please provide invoice address:

Additional Comments:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

I certify that I have read and will comply with all the requirements of the Regulated Small Municipal Separate Storm Sewer Systems (MS4's) General Permit ARR040000.

Responsible Official Name: *Bill Burrough*  
Responsible Official Title: *CITY MANAGER*  
Responsible Official Signature: *Bill Burrough*  
Date: *12-7-18*

Return the NOI form to the address below or send it electronically to: [water.permit.application@adeq.state.ar.us](mailto:water.permit.application@adeq.state.ar.us) or via ePortal at the following web address: <https://eportal.adeq.state.ar.us/>

NPDES Permits Section, Office of Water Quality  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

**Stormwater  
BMP's Manual  
2019-2024**



**STORMWATER  
DIVISION**

**PO Box 700, Hot Springs, AR 71902**



# **City of Hot Springs**

## **Storm Water Management Program**

### **Best Managements Practices Manual**

#### **INTRODUCTION**

##### **Program Overview**

A Stormwater Management Program (SWMP) is a comprehensive program to manage the quality of storm water from the Municipal Separate Storm Sewer System (MS4s). Polluted stormwater runoff is often transported to MS4s and ultimately discharged into local rivers and streams without treatment. EPA's Storm Water Phase II Rule establishes an MS4 SWMP that is intended to improve the Nation's waterways by reducing the quantity of pollutants that storm water picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

The EPA Storm Water Phase II Final Rule was signed by EPA Administrator Carol Browner on October 29, 1999 and it was published in the Federal Register on December 8, 1999.

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act and the Clean Water Act, regulated small MS4s (MS4's) located within the State of Arkansas are authorized to discharge to all receiving waters of the United States. The City of Hot Springs is located within an urbanized area as determined by the 2000 Decennial Census and is designated a small MS4 (MS4). The city of Hot Springs is designated an city of a small MS4, which means the city is subject to regulation under the NPDES program and must meet the program requirements as described in the following paragraph.

## **What are the program requirements for the City?**

Cities of regulated small MS4s are required to:

- Apply for National Pollutant Discharge Elimination System (NPDES) permit coverage. In Arkansas, the NPDES program is scheduled to shift to the control of the Arkansas Department of Environmental Quality. The City of Hot Springs applied for its permit and ADEQ issued Hot Springs a regulated small MS4 general permit – ARR040015 effective May 28, 2004.
- Submit a completed Notice of Intent (NOI) to ADEQ no later than April 30, 2004.
- Develop a SWMP, which includes the six minimum control measures.
- Implement the SWMP using appropriate storm water management controls, or "best management practices" (BMPs).
- Develop measurable goals for the program.
- Periodically evaluate effectiveness of the program.

The ultimate objective of this program is to protect water quality. Hot Springs recognizes the need and responsibility to implement a program that achieves the requirements mandated by NPDES Phase II Final Rule. However, due to limited assets and funding the city may at times not be able to fully meet all the annual goals set forth in this program due to unforeseen issues and budget restraints from other departments of the city. The Hot Springs Board of Directors passed Resolution No. 5515 dated April 19, 2004, which approved the notice of intent submitted to ADEQ. Subsequently ADEQ issued the city of Hot Springs a regulated small MS4(MS4) general permit ARR040015 effective May 28, 2004. Both documents are appended to this SWMP.

## **What are the six minimum control measures?**

The EPA Final Rule outlines a small MS4 SWMP comprising six required program elements that, when implemented in concert, are expected to result in significant reductions of pollutants discharged into receiving waterbodies. These six elements, termed "minimum control measures," are:

1. **Public Education and Outreach**  
Distributing educational materials and performing outreach to inform citizens about the impacts polluted storm water runoff discharges can have on water quality.
2. **Public Participation/Involvement**  
Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a storm water management panel.
3. **Illicit Discharge Detection and Elimination**  
Developing and implementing a plan to detect and eliminate illicit

discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).

**4. Construction Site Runoff Control**

Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb 1 or more acres of land (controls could include for example, silt fences and temporary stormwater detention ponds).

**5. Post-Construction Runoff Control**

Developing, implementing, and enforcing a program to address discharges of post-construction storm water runoff from new development and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (e.g., wetlands) or the use of structural BMPs such as grassed swales or porous pavement.

**6. Pollution Prevention/Good Housekeeping**

Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

**What are Best Management Practices (BMP's)?**

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.

The EPA has composed a National Menu of Best Management Practices (BMP's) for Stormwater Phase II. The menu is intended to provide guidance to regulated small MS4s as to the types of practices they could use to develop and implement their SWMPs. The menu is intended as guidance only. The menu of BMP's is based on Phase II's six minimum control measures.

**How often is the program evaluated?**

The city shall annually review the SWMP in conjunction with preparation of the annual report. The city may change the SWMP during the life of the permit according to the procedures detailed in Arkansas General Permit No. ARR040000.

**Additional Sources of Information:**

- Stormwater Phase II Compliance Assistance Guide (EPA)
- Small Construction Activities (EPA)

**Key points of contact:****Environmental Protection Agency-Region 6**

Fountain Place, 12<sup>th</sup> Floor, Suite 1200

1445 Ross Avenue

Dallas, Texas 75202-2733

1-800-887-6063

1-214-665-2200 (office)

1-214-665-7113 (fax)

**U.S. Army Corps of Engineers-Little Rock District**

Regulatory Branch

700 W. Capitol, P.O. Box 867

Little Rock, Arkansas 72203

1-501-324-5295 (office)

1-501-324-6013 (fax)

**U.S. Natural Resources Conservation Service**

NBA Building, 4000 McCain Boulevard

North Little Rock, Arkansas 72116

1-501-758-2544 (office)

1-501-758-7052 (fax)

**Arkansas Department of Environmental Quality**

8001 National Drive

Little Rock, Arkansas 72209

1-501-682-0744 (office)

**Arkansas Soil and Water Conservation Commission**

101 East Capitol, Suite 350

Little Rock, Arkansas 72201

1-501-682-1611 (office)

1-501-682-3991 (fax)

**Arkansas Department of Emergency Management**

P.O. Box 758

Conway, Arkansas 72033-0758

Incident reporting hotline: 1-800-322-4012

1-501-730-9750 (office)

1-501-730-9754 (fax)

**City of Hot Springs**

Attn: Denny McPhate, CFM, Public Works Director

P.O. Box 700

Hot Springs National Park, Arkansas 71902

1-501-321-6866 (office)

1-501-321-6868 (fax)

Attn: Danny Carder, Stormwater Manager

P.O. Box 700

Hot Springs National Park, Arkansas 71902

1-501-321-6773 (office)

1-501-321-6868 (fax)



# City of Hot Springs

## 1.0 MCM: Public Education

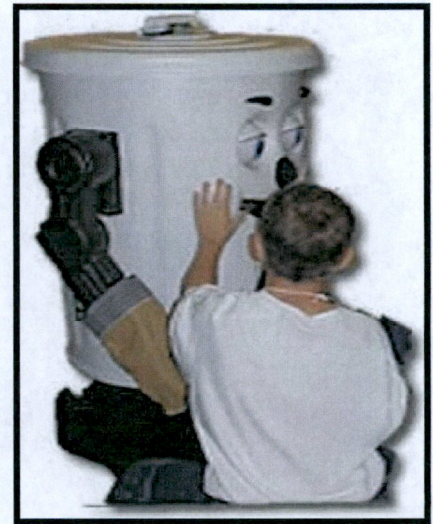
### 1.1 BMP: Implement a public education program to distribute educational materials.

#### 1.1.a MG: Develop pamphlets, booklets and stuffers addressing pollution and preventions.

##### Description

Printed materials are a common way to inform the public about storm water pollution. The city will incorporate a creative approach to media and message selection. The following questions should be considered in the creation of printed materials:

- Who is the audience? (i.e., general public, developers, homeowners?)
- How does the audience get its information? (i.e., newspaper, television, trade magazines, utility bills?)
- What knowledge base does the audience have?
- Does the audience need to be convinced about the importance of storm water pollution control?



These questions will guide the city in choosing the appropriate media and designing a message with the appropriate tone and level of information.

The following issues should be considered during the design of the layout of its displays and pamphlets:

- Restraint in design, consistency in artwork and graphic types, and quality materials are important factors because the audience should be invited into the materials with appealing, user-friendly layouts.
- Type of message to be presented (i.e. illicit discharges, pet waste control, recycling, green space, water conservation)
- The text should be kept to a minimum but still be informative and interesting for readers.
- Using various formats and an active voice can make the text more engaging.
- Graphics photos, logos, or other artwork are great for breaking up long blocks of text, allowing readers a visual break.
- Images of lakes, streams, rivers, wetlands, and other stormwater features are "naturals" for enhancing any printed material. The emotional appeal they elicit can be tremendous.



Think through the purpose of the piece and its intended audience before creating a pamphlet or booklet. It might be intended to solicit interest in a specific stormwater event or activity, or to promote stormwater education and positive behaviors. The purpose will significantly define the appearance and content.

### **Applicability**

Pamphlets, booklets, and flyers can be easily exhibited and distributed to a large population. They can be produced using both simple materials and graphics, as well as using more elaborate techniques. Furthermore, they can be made for various age levels and for specific audiences.

### **Implementation**

**Pamphlets and Booklets.** The city will consider utilizing utilize pamphlets, booklets, and brochures, which are an effective way to present and explain a stormwater message. Unlike many other communication means, pamphlets and booklets can be distributed in many places without requiring someone to staff them. Racks of pamphlets can be set up at libraries, schools, offices, and fairs. Racks can also be placed at visitor centers, hotels and other tourist's destinations. They can be passed out at meetings and used in a direct mail campaign.

**Flyers.** The city will also consider creating a flyer to carry the basic message in addition to a booklet or pamphlet. A short, to-the-point flyer is essential as the primary education tool for programs with a small budget. Typically, flyers list the basic do's and don'ts of water pollution and list the top 10 actions the public should take against stormwater pollution. The flyer should contain the basic "bare bones" list of information the public needs to know. The flyer will be designed for easy adoption to for newspapers and newsletters (black-and-white and reproducible by copy machine), a major venue for communicating with the public. The flyer may be designed as a self-mailer; as funds become available, it may be expanded into a poster, calendar, or booklet.

**Utility Stuffers.** The city will also print phrases on utility bill post cards. The city will utilize messages on utility bills that go out to city and county citizens. They offer a relatively inexpensive and convenient way to convey the message to a large audience. However, instead of being targeted at a specific audience, utility bills must be appropriate for the users of utilities. These utility bill messages can be extremely effective if they are engaging, concise, and memorable. They are often used to impart brief, important messages, provide overviews of the problems and solutions, or implore simple actions. Special care will be taken to ensure that the message is simple, concisely written, and tells the reader why this issue is important to them.

**Signs and Billboards.** The city will consider utilizing signs, billboards or other methods of roadside advertising to convey information about its stormwater drainage program. Striking graphics and brief but strong messages about storm water pollution can make a real impact when on billboards along busy roadsides. These messages may be watershed-specific to remind citizens of the specific resource they are protecting. Additionally, signs



with stormwater pollution information can be posted on bridges, along roadsides, and at parks. Signs intended for pedestrians can contain more information, but text should still be kept at a minimum to hold the audience's interest. Bus stop benches are another means to convey a short effective message at a minimal cost.



# City of Hot Springs

## 1.0 MCM: Public Education

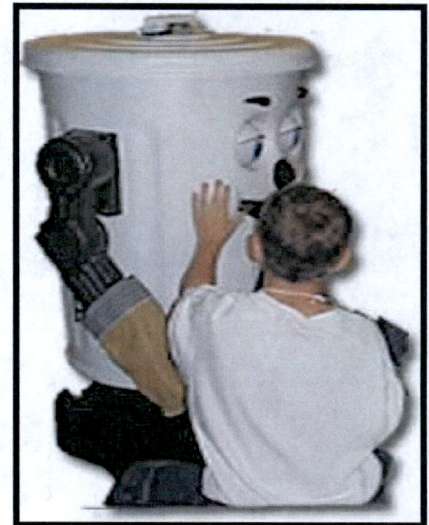
**1.2 BMP: Conduct outreach activities about impact of stormwater discharges on water bodies and steps to take to reduce pollutants in stormwater.**

**1.2.a Measurable Goal: Create and air radio and television PSAs about stormwater quality and awareness**

### Description

PSAs are a common way to inform the public about storm water pollution. The city will incorporate a creative approach to media and message selection. The following questions should be considered in the creation of PSAs:

- Who is the audience? (i.e., general public, developers, homeowners?)
- How does the audience get its information? (i.e., newspaper, television, trade magazines, utility bills?)
- What knowledge base does the audience have?
- Does the audience need to be convinced about the importance of storm water pollution control?



These questions will guide the city in choosing the appropriate media and designing a message with the appropriate tone and level of information.

The following issues should be considered during the creation of these PSAs

- Type of message to be presented (i.e. illicit discharges, pet waste control, recycling, green space, water conservation)
- Length of time for the ad
- Demographics of the airing station
- Images of lakes, streams, rivers, wetlands, and other storm water features are "naturals" for enhancing any printed material. The emotional appeal they elicit can be tremendous.

Think through the purpose of the piece and its intended audience before creating a PSA. It might be intended to solicit interest in a specific storm water event or activity, or to promote stormwater education and positive behaviors. The purpose will significantly define the appearance and content.



### **Applicability**

PSAs can easily be distributed to a large population. Furthermore, they can be made for various age levels and for specific audiences.

### **Implementation**

The city will write a PSA script for various water quality topics then record the PSA in the Stormwater recording studio. Radio ads can be formatted as MP3s and sent via email to various radio stations. The recorded PSA can also be edited into video showing water features such as local creeks, treatment facilities, water pollution etc.



# City of Hot Springs

## 2.0 MCM: Public Participation and Outreach

**2.1 BMP: Comply with state and local public notice requirements when implementing a public involvement/participation program.**

**2.1.a MG: Notify the public of meetings/activities regarding MS4s NPDES activities through media outlets.**

### Description

The city recognizes that the media can be strong allies to a stormwater pollution prevention campaign in educating the public about stormwater issues. Through the media, a program can educate targeted or mass audiences about problems and solutions, inform the citizens of upcoming meetings, build support for remediation and retrofit projects, or generate awareness and interest in stormwater management. Best of all, packaging a storm water message as a news story is virtually free! Surveys repeatedly show high interest among the public in environmental issues, and water quality, particularly as it relates to drinking water and recreation. Reporters are always looking for informative articles, features, or columns to fill their pages or broadcasts. As with many public education activities, the city recognizes it is important to do some preliminary work to refine its message and target its audience to ensure that the most effective message is delivered.



### Applicability

Delivering educational, informational, promotional, or motivational messages through the news media is similar to distributing them through other channels. The city intends to periodically repeat and link its message to something the audience values in order to get the best results. Coverage of watershed issues from several different angles can help to accomplish this. News is the lifeblood of the media, so the message must be packaged to attract coverage. The city intends on orienting the message to the workings of the media, and the needs of reporters will help keep the message focused and effective.

### Implementation

The following are some of the ways the city will consider to communicate stormwater news and educational materials:



**Newspapers and Magazines.** Newspapers are powerful vehicles for delivering educational information, policy analyses, public notices, and other messages. Many displays at watershed seminars proudly post newspaper articles on the projects being presented in recognition of the importance and impact of newspaper coverage. Published news articles are almost always longer and more analytical than television stories, and they can be read by several people at their own leisure without the "hit or miss" nature of broadcasts. Graphics such as photos, charts, and tables can provide added perspective to published stories and can deliver complex information on trends or other data in an easily understood format. Public access to newspapers is usually excellent; no specialized equipment is needed. In addition, the vast need for new articles to fill pages of a daily newspaper means reporters may be particularly interested in covering stormwater issues.

Newspapers can be accessed in several ways. Depending on the message or event, the appropriate format might be a news release, news advisory, query letter, letter to the editor, or (for urgent, timely information) a news conference.

**Magazines.** Magazines, like newspapers, allow for greater length and analysis than television and provide the additional benefit of targeting specific audiences (e.g., landscapers, automobile mechanics, farmers, or recreationists). It is also important to follow the news on a regular basis. If a magazine will be covering an article on storm water in an upcoming issue, an ad in that issue would be even more appropriate. The city's intent is to use only local magazines in order to reach the correct audience.

**Radio.** In spite of the popularity of video, radio remains a strong media contender due to its affordable production costs and creative possibilities. Further, commuters who drive to work spend much time in their vehicles. Radio is everywhere and nearly everyone hears it at some time or some place every day. Of course, those same universal qualities are what dilute its impact as well, since radio can become background noise. The message must be repeated often to reach listeners at various times. To saturate whole markets, the message should be distributed to many stations.

Local radio stations often have feature programs, but they do not cover news in depth. Public stations may devote more time to news or educational programs, but might not reach the target audience. To make sure the targeted audience is reached through radio, the message will be matched to the type of format of the station. Radio has format varieties ranging from musical selections of metal and rock to country and jazz, as well as talk formats. Although the extremely short nature of spot news coverage on radio does not lend itself well to deep analysis and lengthy information delivery, radio can play a valuable role in reinforcing other outreach efforts conducted among specific audiences.

When preparing for a radio spot, it is important to get right to the central point of the project, because airtime is short. To minimize production costs, scripts will be prepared and sent in for live radio. The ad's release may be tied to a special day or event (such as Earth Day), and updating it with different angles later will improve its effectiveness.

**Television.** Television is the primary source of news for the majority of the population, and local reporters are generally interested in covering environmental stories that pertain



to their area. Television news stories tend to focus on people and therefore must be engaging and compelling. Issues will attract television coverage if they

- Involve local people or issues
- Focus on unique or unusual attributes
- Affect many people throughout a region
- Involve controversy or strong emotions

**News Conferences.** To heighten awareness of some breaking information or an event that is too important for a news release, a news conference might be appropriate. A media advisory will be sent to all news outlets in the area and followed up with a phone call to confirm attendance and answer any questions. Typically a news conference begins with distribution of a news release that contains the reason for the conference, informative quotes from people involved in the issue, and contact information. A moderator then makes a few welcoming/introductory remarks and introduces other speakers or makes a statement (which is often read). Remarks by all speakers should be carefully prepared. The floor is then opened for questions, which can usually be anticipated and prepared for beforehand. After the conference, a news release is sent to media members who did not attend.

When preparing for a planned event (such as river cleanup or storm drain stenciling), a news advisory may be sent to local stations. Every advisory should include a description of the event, when and where it will take place, who will participate, and a phone number for someone who can be contacted for more information. The press advisory can be sent 1 or 2 weeks before the event occurs and should include the name of the organization, a contact name, and the reason for calling. If media does not show up at the event, a follow-up news release will be sent immediately afterward so the event will be covered.

**Public Service Announcements.** Public Service Announcements (PSAs) can be a very successful outreach approach if they are well broadcast. Newspapers will list PSAs for events or activities that are either free of charge or sponsored by nonprofit organizations. Radio stations will run PSAs that they think are of interest to their audiences. Information on an activity such as a watershed festival, storm drain stenciling, or river cleanup, or pollution hotline numbers, would make good PSAs. Although radio PSAs are free, they sometimes air late at night or very early in the morning (which might make it difficult to reach the target audience). Television PSAs can be highly effective if aired on selected stations at appropriate times for the audience.

**Internet Message.** Increasingly, the Internet is becoming a powerful means of communication. It provides worldwide access to hundreds of thousands of sites containing millions of documents, chat rooms for special interest groups, and incredible database/mapping features. Because the World Wide Web is used regularly and extensively by environmental group leaders, and the business community, it can be a valuable tool in conveying a stormwater pollution message. However, average citizens still get the great bulk of their environmental messages from more traditional venues. Additionally, a Web-based message is geared toward a specific audience that is "connected" and perhaps already attuned to the cause and its objectives.



The city may create a web site, which would post storm water information. Information could be placed on the page of the department that handles storm water and linked from any other relevant department's page. The city may develop an automated e-mail address list (list server), which is a very inexpensive means of disseminating information to interested parties. The city's stormwater program may find it useful to establish an e-mail list server to keep participants updated on meetings, policy discussions, and other matters. Implementing this communication link is simple and allows citizens to keep informed of developments at their leisure. E-mail is the preferred communication medium among many citizens, business people, and agency officials, because it can be accessed at convenient times and provides a written record of the communication.

There are opportunities to reach particular audiences (e.g., recreational fisherman, automobile mechanics, farmers) via the Internet through interest group Web sites. However, along with citizens of the watershed involved, national audiences may also be reached through these Web sites. The Internet will likely become more important to local watershed outreach efforts in the future.

**Neighborhood Association Newsletters.** Many neighborhood and homeowner associations regularly publish newsletters. Adding information about stormwater, especially how individuals can help, would target specific areas and would increase a sense of acting locally. Oftentimes, such associations are looking for new topics and speakers for club events. The city's SWMP may utilize this tool to spread its message.



# City of Hot Springs

## 2.0 MCM: Public Participation

**2.2 BMP: Develop a SWMP that allows the public opportunities to participate.**

**2.2.a MG: Establish a means to receive input from the public to assist with the continued development of SWMP and BMP manual.**

### Description

Public involvement and public participation naturally require the inclusion of citizens. Citizens are individuals or groups in the community that are most affected by a municipality's stormwater program. They have a vested interest in local waterbodies and stormwater activities. The most effective means of input occurs thru advisory committees, which combine both general and technical citizen input and assistance into a specific city service or function.



### Applicability

Each panel member has a vested interest in solving stormwater management problems. Therefore, panel members should be informed of water quality issues in their community and solicited to contribute their ideas and concerns. One way to do this is through citizen meetings, where panel members can hear what others have to say and can contribute their own ideas. The resulting ideas can be considered for inclusion in the city's SWMP and BMP manual.

### Implementation

The city will establish a Stormwater Advisory Committee made up of citizens, which will include citizens, local school groups, community leaders, local and state government representatives, and business owners in the watershed. They will primarily focus on the continued development, review and refinement of the city's SWMP and Best Management Practices manual.

The first step for the city is to determine the panel members. Panel members will need to be identified by whether they live or work in the watershed or by their activities. Involving panel members in the storm water advisory committee program can be an important first step in forming a watershed organization.



Once the members have been identified, an appropriate meeting place must be chosen. Then the word must be put out to the panel members. Someone will need to be the designated leader of the meeting so that it will be organized.

Since the panel will be diverse and at all levels of education and scientific knowledge, some of the best ways to disseminate information at committee meetings is through graphics like photographs and charts. Stormwater management uses a lot of technical terms, such as "*watershed*," "*runoff*," and "*nonpoint source pollution*." A glossary of commonly used terms might be displayed on a flip chart or as an overhead, or it could be provided on a handout given to participants before the meeting starts. A glossary is appended to this manual.

### **Effectiveness**

The effectiveness of a citizen meeting is a function of its overall organization. It is more likely that assignments will be accomplished if meetings are conducted in an orderly manner. Sometimes the issues might be controversial or might negatively affect some of the participants. These matters should be handled as professionally as possible so that no one leaves a meeting feeling disregarded. It should be made clear that not all issues will be solved and maybe not everyone will be satisfied, but together the citizens can come up with the best compromise.

To be effective, panel committee meetings must be attended. Finding an appropriate location for the meetings, such as a local school auditorium or a public library, is vital. The location must be easily accessible, able to accommodate the applicable number of participants, and equipped with the appropriate resources, such as audio and video capabilities and tables and chairs.

Most important is the time the meetings are held. If the panel members work during the day, it could be difficult for them to make a mid-morning or early-afternoon meeting. Typical commutes must also be considered. If the meetings are to be held in a suburban community and most people in that community work in the city and travel a considerable distance each way, adequate commuting time must be allowed. If the meeting is held during dinner hours, it would be appropriate to serve refreshments. The better the timing and location, the easier it is for people to attend.

One of the greatest benefits of a stormwater advisor panel committee is the accumulation of ideas from people of all backgrounds and all interests. Some participants will be more knowledgeable than others, and they can share their expertise with the other panel members. In some cases, panel members might belong to other groups with overlapping concerns. In such cases, resources can be pulled together to achieve corresponding goals.



# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.1 BMP: Develop, implement and enforce a program to detect and eliminate illicit discharges and notify ADEQ of them.**

**3.1.a MG: Inform ADEQ of illicit discharges after ordinance is adopted.**

### Description

Illicit connections are defined as illegal and/or improper connections to storm drainage systems and receiving waters. A discharge of industrial wastewater to a storm sewer is "illicit" because it would ordinarily require a permit under the Clean Water Act. Many building owners or cities are not aware that improper connections exist in their facilities. Identifying and removing illicit connections is a measure for reducing stormwater pollution. In extreme cases of illicit dumping, legal action is often necessary.

### Applicability

Identifying illicit and improper connections are necessary for all sewer systems, especially in areas where pollutants with unknown sources have been detected in receiving waters. The level and types of industrial activities and the surrounding land uses and ordinances will affect the methods the city will use to identify illicit connections. The city will monitor these activities and upon validation of violations must act in accordance with its ordinances and ADEQ ordinances. Otherwise violations will continue to occur and the waterways of the city will be damaged.

### Implementation

The city will monitor commercial and industrial activities within its city limits in order to safeguard the public, protect property, and prevent damage to the environment. Contacting ADEQ is a means to insure compliance of its SWMP through guidance and penalties. As part of the city's SWMP, the city will implement procedures for immediately notifying the Arkansas Department of Environmental Quality of violations as the city discovers them.

### Effectiveness

**Reporting Program.** An effective reporting program can be an effective method to reduce the quantity of industrial or commercial pollutants that enter the storm drain system. For example, an illicit discharge detection and reporting program, which uses volunteer monitoring and community hotlines to identify suspicious discharges can protect our waterways. When discharges are detected, the city can consult maps of the surrounding areas and target those areas for additional monitoring to narrow the search

for the illicit connection. Upon identification of the illicit discharge the city can report to ADEQ. Through a cooperative effort, illicit connections can be detected and removed.

# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.1 BMP: Develop, implement and enforce a program to detect and eliminate illicit discharges and notify ADEQ of them.**

**3.1.b / 3.1.c MG: Develop and implement an ordinance that prohibits illicit discharges.**

### Description

Illicit connections are defined as illegal and/or improper connections to storm drainage systems and receiving waters. A discharge of industrial wastewater to a storm sewer is "illicit" because it would ordinarily require a permit under the Clean Water Act. Many building owners or cities are not aware that improper connections exist in their facilities. Identifying and removing illicit connections is a measure for reducing stormwater pollution. In extreme cases of illicit dumping, legal action is often necessary.

### Applicability

Identifying illicit and improper connections are necessary for all sewer systems, especially in areas where pollutants with unknown sources have been detected in receiving waters. The level and types of industrial activities and the surrounding land uses and ordinances will affect the methods the city will use to identify illicit connections.

### Implementation

The city currently has codes that prohibit illicit discharges to any natural outlet. Title 9, Section 9-3-31, b and c of the Hot Springs Code defines an illicit discharge as discharge to any natural outlet any sewage or other polluted waters. It further explains the requirements for connections to public sewer in order to prevent illicit discharges. In addition to its current ordinances, the city will consider implementing additional ordinances and programs to further curtail illicit discharges in accordance with EPA Final Rule. Additionally, the city will develop programs to educate citizens on ways to stop the illicit discharges. Some practices the city may use to discover and prevent illicit connections are:

- Instituting building and plumbing codes to prevent connections of potentially hazardous pollutants to storm drains.
- Organizing structures to be inspected by building age, with older buildings identified as priorities. Buildings whose use or processes have the potential to affect water quality also should be given priority.
- Mapping each area to be surveyed and indicating the route of the sewer system and the locations of storm drains on the map. This enables planners to estimate

the likely locations of illicit connections. A Geographic Information System (GIS) is an appropriate tool for identifying illicit discharges. The location of illicit discharges can be maintained by a geo-coded addresses.

- Survey individual buildings to discover where connections to storm drains exist.
- Inspect sewer lines with television equipment to visually identify all physical connections.
- Compare the results of the field tests and the video inspection with the known connections on the map. Suspicious areas should be further investigated.
- Institute mandatory inspections for new developments or remodeling to identify illicit connections to the storm sewer system.
- As part of the city's illicit discharge detection program, the city will implement procedures for immediately notifying the Arkansas Department of Environmental Quality of illicit discharges as the city discovers them.
- Remove and test sediment from the catch basins or equivalent structures.
- Inspect connections in question to determine whether they should be connected to the storm drain system, sanitary sewer or other disposal method. Use methods of identification such as dye testing, visual inspection, smoke testing, or flow monitoring, as described below.
  - *Dye Testing.* Flushing fluorometric dye into suspicious downspouts can be useful to identify illicit connections. Once the dye has been introduced into the storm system via the connection in question, the water in the collection system is monitored to determine whether an illicit connection is present.
  - *Visual Inspection.* Remotely guiding television cameras through sewer lines is another way to identify physical connections.
  - *Smoke Testing.* Smoke testing is another method used to discover illicit connections. Zinc chloride smoke is injected into the sewer line and emerges via vents on connected buildings or through cracks or leaks in the sewer line. Monitoring and recording where the smoke emerges, crews can identify all connections, legal and illegal, to the sewer system. Mechanisms on drains should prevent the smoke from entering buildings; however, in some instances, this will occur. It is important to notify the public that the smoke is non-toxic, though it should be avoided as it can cause irritation of the nose and throat for some people.
  - *Flow Monitoring.* Monitoring increases in storm sewer flows during dry periods can also lead investigators to sources of illicit connections or infiltration due to improper connections.
  - *Infrared, Aerial, and Thermal Photography.* Researchers are experimenting with the use of aerial, infrared, and thermal photography to locate dischargers by studying the temperature of the stream water in areas where algae might be concentrated and in soils. It also examines land surface moisture and vegetative growth. This technique assumes that a failing OSDS, for example, would have more moisture in the surface soil,

the area would be warmer, and the vegetation would grow faster than in the surrounding area (Johnson and Tuomari, no date).

### **Effectiveness**

An illicit discharge detection program can be an effective method to reduce the quantity of industrial or commercial pollutants that enter the storm drain system. For example, the Department of Environmental Protection in Montgomery City, Maryland, has an illicit discharge detection and elimination program called "Pipe Detectives," which uses volunteer monitoring and community hotlines to identify suspicious discharges (MCDEP, 1997). When discharges are reported, DEP consults maps of the surrounding areas and targets those areas for additional monitoring to narrow the search for the illicit connection. In one instance, a "milky white" discharge was reported in an area with many small businesses and large apartment buildings. Businesses were sent informational letters advising them of the illegal discharge and requesting their assistance in identifying it by allowing DEP to survey the properties. Through this cooperative effort, three illicit connections were detected and removed, including a sink that was used to wash paintbrushes (the source of the milky white discharge).

# **City of Hot Springs**

## **3.0 MCM: Illicit Discharges Detection and Elimination**

**3.2 BMP: Prohibit through ordinance non-stormwater discharges into the storm sewer system and implement enforcement procedures.**

**3.2.a MG: Develop a list of non-stormwater discharges prohibited from the storm sewer system.**

### **Description**

A non-stormwater discharge is a discharge into the waterways that would not normally be declared illicit by definition but due to its contents causes pollution to waterways. For example a charitable carwash at a local church to raise money discharges soapy water directly into a waterway, which in turn causes pollution to the waterway. This measurable goal is intended to safeguard the public, protect property, and prevent damage to the environment.

### **Applicability**

Non-storm water discharges disposed directly into storm drains can lead to water quality deterioration, which if undetected contaminates the natural environment.

### **Implementation**

The city will identify various categories of non-stormwater discharges or flows if they are significant contributors of pollutants to waterbodies in the small MS4. The following are potential significant contributors:

- Chemical laden water from commercial car washing
- Excess fertilizer and pesticide laden water from landscape activities
- Illicit discharges from industrial activity

# **City of Hot Springs**

## **3.0 MCM: Illicit Discharges Detection and Elimination**

**3.2 BMP: Prohibit through ordinance non-stormwater discharges into the storm sewer system and implement enforcement procedures.**

**3.2.b / 3.2.c MG: Create and implement an ordinance that prohibits non-stormwater discharges.**

### **Description**

A non-stormwater discharge is a discharge into the waterways that would not normally be declared illicit by definition but due to its contents causes pollution to waterways. For example a charitable carwash at a local church to raise money discharges soapy water directly into a waterway, which in turn causes pollution to the waterway. This measurable goal is intended to safeguard the public, protect property, and prevent damage to the environment.

### **Applicability**

Non-stormwater discharges disposed of directly into storm drains can lead to water quality impairment, which if untreated contaminates the natural environment.

### **Implementation**

The city currently has codes that prohibit illicit discharges to any natural outlet. Title 9, Section 9-3-31, b and c of the Hot Springs Code defines an illicit discharge as discharge to any natural outlet any sewage or other polluted waters. It further explains the requirements for connections to public sewer in order to prevent illicit discharges. In addition to its current ordinances, the city will implement additional ordinances and programs to further curtail illicit discharges such as non-stormwater discharges. The city will develop programs to educate citizens on ways to reduce non-stormwater discharges from entering our waterways. Hot Springs's non-stormwater discharge ordinance will address various categories of non-storm water discharges or flows if identified as significant contributors of pollutants to waterbodies in the small MS4.

# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.2 BMP: Prohibit through ordinance non-stormwater discharges into the storm sewer system and implement enforcement procedures.**

**3.2.d MG: Inform ADEQ of illicit discharges after ordinance is adopted.**

### Description

Illicit connections are defined as illegal and/or improper connections to storm drainage systems and receiving waters. A discharge of industrial wastewater to a storm sewer is "illicit" because it would ordinarily require a permit under the Clean Water Act. Many building owners or cities are not aware that improper connections exist in their facilities. Identifying and removing illicit connections is a measure for reducing stormwater pollution. In extreme cases of illicit dumping, legal action is often necessary. The city of Hot Springs will monitor commercial and industrial activities within its city limits in order to safeguard the public, protect property, and prevent damage to the environment. Contacting ADEQ is a means to insure compliance of its SWMP through guidance and penalties.

### Applicability

Identifying illicit and improper connections are necessary for all sewer systems, especially in areas where pollutants with unknown sources have been detected in receiving waters. The level and types of industrial activities and the surrounding land uses and ordinances will affect the methods the city will use to identify illicit connections. The city will monitor these activities and upon validation of violations must act in accordance with its ordinances and ADEQ ordinances. Otherwise violations will continue to occur and the waterways of the city will be damaged.

### Implementation

As part of the city's SWMP, the city will implement procedures for immediately notifying the Arkansas Department of Environmental Quality of violations as the city discovers them.

### Effectiveness

An effective reporting program can be an effective method to reduce the quantity of industrial or commercial pollutants that enter the storm drain system. For example, an illicit discharge detection and reporting program, which uses volunteer monitoring and community hotlines to identify suspicious discharges can protect our waterways. When discharges are detected, the city can consult maps of the surrounding areas and target those areas for additional monitoring to narrow the search for the illicit connection.



Upon identification of the illicit discharge the city can report to ADEQ. Through a cooperative effort, illicit connections can be detected and removed.



# City of Hot Springs

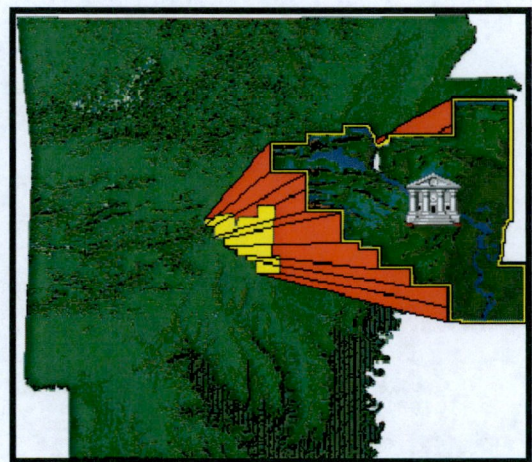
## 3.0 MCM: Illicit Discharge Detection and Elimination

**3.3 BMP: Develop a storm sewer system map, which shows locations of all outfalls with names and locations of all waters of the U.S. that receive discharge from this outfall.**

**3.3.a MG: Develop a storm sewer map, which will be updated as determined necessary.**

### Description

A stormwater watershed map is a means to improve the water quality of all water bodies in the City of Hot Springs. The map will be broken down into major and sub-watersheds and will include all drainage structures and bodies of water within the city. The map will continually be improved and updated as new information is acquired. This tool will help detect and eliminate illicit discharges within the city. Illicit discharges enter the system through either direct connections or indirect connections. The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving water bodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.



### Applicability

The plan to detect and address illicit discharges is the central component of the city's illicit discharge detection and elimination program. The map is a key element in the success of this minimum control measure. The plan will consist of the locating problem areas, find the source of the illicit discharge, removing/correcting the illicit connection and documenting actions. The city master map is a tool that the city will use to record information, identify trend areas and improve the water quality of the water bodies of the city.

### Implementation

The storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It will help determine the extent of discharged dry weather flows, the possible sources of the dry weather flows,



and the particular waterbodies these flows may be affecting. The city will collect existing information on outfall locations and conduct field surveys to verify locations. This will require walking streambanks and shorelines for visual observation. The city will update the map on an annual basis.

**Major Watersheds.** The overall stormwater map will initially be broken down into major watersheds. All bodies of water within this major watershed will be identified. It will serve as a tracking, scheduling and record keeping mechanism.

**Sub Watersheds.** The major watersheds will be broken down into sub watersheds. The sub watershed map will depict in better detail the stormwater system. It will serve as a tracking, scheduling and record keeping mechanism.

**Major Storm Drainage Structures.** All stormwater drainage structures will be surveyed and added to the master storm sewer map. This tool will aid the city in tracking maintenance activities needed on the drainage structures of the city. This will also help the city identify, analyze and design improvements for drainage issues effecting areas of the city.

### **Benefits**

The city will be able to utilize the master storm sewer map in numerous applications. The development, research and field work required to develop the map will help city personnel become very familiar with the watersheds of the city. This will result in a better understanding of the different watershed and help the city improve the water quality of the water bodies of the city. Some actions will immediately improve the quality of the water bodies as city personnel discover pollutants during field work. The master storm sewer map will track the activities of volunteers involved in adopt a stream programs, stream cleanups and monitoring programs, which will result in cleaner bodies of water.



# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.4 BMP: Develop a plan to detect and address non-stormwater discharges, including illegal dumping.**

**3.4.a MG: Develop and implement an ordinance that prohibits illegal dumping.**

### Description

Illegal dumping is disposal of waste in an unpermitted area, such as a back area of a yard, a stream bank, or some other off-road area. Illegal dumping can also be the pouring of liquid wastes or disposing of trash down storm drains. It is often called open dumping, fly dumping, and midnight dumping because materials are often dumped in open areas, from vehicles along roadsides, and late at night. Illegally dumped wastes are primarily non-hazardous materials that are dumped to avoid expending the time and effort required for proper disposal. Illegal dumping can lead to reduced water quality and other environmental degradation.

### Applicability

Illegally dumping of wastes down storm drains and creating illegal dumps can impair water quality. Runoff from dumpsites containing chemicals can contaminate wells and surface water used as sources of drinking water. Substances disposed of directly into storm drains can also lead to water quality impairment. In systems that flow directly to water bodies, those illegally disposed-of substances are introduced as untreated contaminants to the natural environment. These regulations are intended to safeguard the public, protect property, and prevent damage to the environment.

### Implementation

The city currently has codes that prohibit illegal disposal of wastes. Title 4, Section 4-7-3 of the Hot Springs Code prohibits improper disposal of trash and debris into city streets, and Title 9, Section 9-1-2, e (11) of the Hot Springs Code defines an Illegal Dumpsite. In addition to its current ordinances, the city will consider implementing additional ordinances and programs to further curtail the illegal dumping of trash and used materials in accordance with EPA Final Rule. Additionally, the city will develop programs to educate citizens on ways to stop the illegal dumping of trash and used materials. For example citizens will be taught about current practices of illegal dumpers like:

- Illegal dumping often occurs late at night and before dawn.
- There is often no company name on the construction vehicles or equipment.
- A construction activity occurs on a site with no company advertising sign.



- There is no construction entrance adjacent to the roadway (an area of large stone and gravel placed to keep mud off streets).

### **Effectiveness**

The city recognizes that illegal dumping regulations must be strengthened and enforced. Reliance on public reporting is an important factor in the effectiveness of anti-illegal dumping programs. The city may develop citizen reporting hotlines or web site forms. Program administrators will ensure that these reports are followed up and that the reporter receives a notice of the results. Otherwise, the incentive for reporting could be lost. By providing a toll-free telephone number and a web site reporting form for reporting illegal dumping, citizens are encouraged to report anyone seen dumping anything onto street surfaces or into the storm drains in the city.



# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.5 BMP: Educate and inform public, employees and businesses about the hazards associated with illicit discharges.**

**3.5.a MG: Use public education program to educate and inform public, employees and businesses about hazards associated with illicit discharges.**

### Description

Public education programs are established to teach the public, employees and businesses about storm water management, potential sources of contaminants, BMPs and the hazards associated with illicit discharges. Public education programs should instill all personnel with a thorough understanding of BMPs, safety hazards, practices for preventing discharges, and methods for identifying and eliminating illicit discharges.



Illicit connections are defined as "illegal and/or improper connections to storm drainage systems and receiving waters" (CWP, 1998). A discharge of industrial wastewater to a storm sewer is "illicit" because it would ordinarily require a permit under the Clean Water Act. Many building owners or cities are not aware that improper connections exist in their facilities. Identifying and removing illicit connections is a measure for reducing storm water pollution. In extreme cases of illicit dumping legal action may be necessary.

### Applicability

The city currently has training programs. Usually these programs address such areas as health and safety training and fire protection. Training on stormwater management, BMPs and the hazards associated with illicit discharges will be incorporated into the city's training programs.

The public, employees and businesses can be taught through 1) posters, employee meetings, courses, and bulletin boards about stormwater management, potential contaminant sources, and prevention of contamination in surface water runoff, and 2) field training programs that show areas of potential stormwater contamination and associated pollutants, followed by a discussion of site-specific BMPs by trained personnel and methods for identifying and eliminating illicit discharges. Identifying illicit and improper connections are necessary for all sewer systems, especially in areas where pollutants with unknown sources have been detected in receiving waters. The level and types of industrial activities and the surrounding land



uses and ordinances will affect the methods the city will use to identify illicit connections.

### **Advantages and Disadvantages**

The public education program on the hazards associated with illicit discharges can be a low-cost and easily implementable stormwater management BMP. The program can be standardized and repeated as necessary, both to train all students involved and to keep the objectives fresh in the minds of everyone. A training program is also flexible and can be adapted as the city's stormwater management needs change over time.

Obstacles to a public education training program that sometimes need to be overcome include:

- Lack of commitment from targeted audience
- Lack of motivation
- Lack of incentive to become involved in the training program

### **Key Program Components**

The city will consider the following specific design criteria during the implementation of their public education program:

- Ensuring strong commitment and periodic input from the public, businesses and employees.
- Communicating frequently to ensure adequate understanding of SWPPP goals and objectives.
- Utilizing experience from past illicit discharges to prevent future discharges.
- Making the public, business and employees aware of BMP monitoring and spill reporting procedures.
- Developing operating manuals and standard procedures.
- Implementing spill response drills.

### **Implementation**

The city's public education program will be an on-going process. Meetings about SWPPPs will be held annually, possibly in conjunction with other training programs. Worksheets will be utilized to plan and track training. Program performance depends on participation and on senior city management's commitment to reducing illicit discharges. Senior city management will provide the necessary support to ensure the effectiveness of the program.



# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.5 BMP: Educate and inform public, employees and businesses about the hazards associated with illicit discharges.**

**3.5.b MG: Develop a program to reduce the number of failing septic systems.**

### Description

Only a portion of the population in the city rely on septic systems for sanitary sewer disposal. Septic systems provide a means of treating household waste in those areas that do not have access to public sewers or where sewerage is not feasible. Currently, it is estimated that 25 percent of the population of the United States rely on onsite wastewater systems to treat and dispose of their household waste. Of that number, about 95 percent of the disposal systems are septic tank systems. The goal of this fact sheet is to prevent new septic systems from failing and to detect and correct existing systems that have been failing.



A failing septic system is considered to be one that discharges effluent with pollutant concentrations exceeding established water quality standards. Failure rates for septic systems typically range between 1 and 5 percent each year but can be much higher in some regions and during wet seasons.

Failure of on-site disposal systems can be due to a number of causes, including unsuitable soil conditions, improper design and installation, or inadequate maintenance practices. Improperly functioning septic systems are recognized as a significant contributor of pollutants (especially nitrogen) and microbiological pathogens; these systems discharge more than one trillion gallons of waste each year to subsurface and surface waters (NSFC, 1995). Identifying and eliminating failing septic systems will help control contamination of ground and surface water supplies from untreated wastewater discharges.

Any failed septic system within the city limits is required to be connected to the city's sanitary sewer system.

### Applicability

Conventional septic systems are used throughout the United States and are the wastewater treatment method mostly commonly selected for those areas without public



sewer systems and treatment plants. In areas without sewer systems, there are a number of factors that the city can examine to determine if conventional septic systems are the right treatment choice. The first is the size of the lot where the system is installed.

Conventional septic systems have a relatively large lot size requirement to allow for even effluent distributed across the drainfield. A second factor is the soil type within a region, which influences the ability of the soil to purify effluent and allow the effluent to percolate. Other conditions that can affect septic system applicability include separation distance from the water table and bedrock, topography, flooding frequency, density of development, and distance to streams or shorelines.

### **Siting and Design Considerations**

The best way to prevent septic system failure is to ensure that a new system is sited and sized properly and to employ appropriate treatment technology. Septic systems should be located to ensure a horizontal distance from surface waters and vertical separation from ground water. Setback requirements are determined by each state or region regarding the vertical and horizontal distances that soil absorption fields must be located from building foundations, property boundaries, water supply wells, and other surface waters. The distances between septic system components and man-made and natural water supplies will vary according to local site factors, such as soil percolation rate, grain size, and depth to water table. The most effective siting distances for efficient on-site wastewater disposal are determined by doing individual site assessments prior to installation.

The proper sizing of a system is necessary to avoid hydraulic overloading. Overloading a system can cause the system to back up or can force waste through the septic tank before proper treatment. Overloading can result in anaerobic conditions in the drainfield and might not give solids time to settle out before being pushed through the system.

In some cases, modifications to septic systems may be necessary in order to ensure proper treatment of wastewater discharges. The size of the septic drainfield must be enlarged in cases where soil permeability is low or steep slopes are present, or where increases in daily sewage flow are expected. Limiting factors such as inadequate lot size, limited separation distances, and the presence of problem pollutants such as nitrogen may require the use of alternative on-site disposal systems, such as mound or recirculating sand filters. Selecting the right system to handle site-specific problems often decreases the likelihood of septic failure. Systems can be designed to control pollutants such as nitrogen and phosphorus (denitrification systems or aquaculture system) or as retrofits for conventional systems that were inadequately sited or sized (alternating bed system, mound system, pressure distribution [low-pressure pipe] system, sand filter system, or constructed wetlands).

Proper siting and post construction inspection will work to prevent new systems from failing, but planning for existing systems is needed as well. A septic system management program of scheduled pump outs and regular maintenance is the best way to reduce the possibility of failure for currently operating systems. A number of agencies have taken on the responsibility for managing septic systems.

Some of the most common indicators of failing septic systems are odors and visual observances like surface pooling and patches of very green grass, particularly in the off-season or in an isolated pocket. Simple field tests can also provide insight into the location of illicit discharge.

Two field screening techniques that have been used with success at identifying possible locations of failing septic systems are the brightener test and color infrared (CIR) aerial photography. The first involves the use of specific phosphorus-based elements found in many laundry products, often called brighteners, as an indicator of the presence of failing on-site wastewater systems. The second technique uses color infrared (CIR) aerial photography to characterize the performance of septic systems. This method has been found to be a quick and cost-effective method for assessing the potential impacts of failing systems and uses variations in vegetative growth or stress patterns over septic system field lines to identify those systems that may potentially be malfunctioning. Then a more detailed on-site visual and physical inspection will confirm whether the system has truly failed and the extent of the repairs needed. These inspections may be carried out by city, health department representatives or other authorized personnel.

### **Maintenance Considerations**

Periodic maintenance of on-site systems is necessary to ensure their proper functioning. Since many homeowners do not employ these routine maintenance practices, the city may establish programs to track and enforce maintenance requirements.

### **Implementation**

**Septic systems.** The city currently has codes that prohibit illicit discharges to any natural outlet. Title 9, Section 9-3-31, b and c of the Hot Springs Code defines an illicit discharge as discharge to any natural outlet any sewage or other polluted waters. It further explains the requirements for connections to public sewer in order to prevent illicit discharges, which is aimed directly at reducing the number of failing septic systems. In addition to its current ordinances, the city will consider implementing additional programs to further reduce the number of failing septic systems. Additionally, the city will develop programs to educate citizens on ways to identify failing systems and corrective actions upon finding failing systems.

# **City of Hot Springs**

## **3.0 MCM: Illicit Discharges Detection and Elimination**

**3.6 BMP: Develop a plan to detect and eliminate illicit discharges in industrial and business connections.**

**3.6.a MG: Educate industries and businesses about illicit discharges and the means to eliminate them.**

### **Description**

Illicit connection detection and elimination programs attempt to prevent contamination of ground and surface water supplies by regulation, inspection, and removal of these connections. Any industrial discharge not composed entirely of storm water that is conveyed to the storm drainage system or a water body is considered to be an illicit discharge. These discharges may contain a variety of pollutants that can affect both public safety and the aquatic environment.

Many of these discharges are a result of connections to the storm drain that are unknown to the business owner and may not be evident in architectural plans. The large amount of storm and sanitary sewer pipes in a community creates a complex and often confusing system of utilities, so it is not unusual for improper connections to occur.

The city's plan will include networking with other governmental agencies in order to monitor potential pollutant sources.

### **Applicability**

In a time of reduced budgets for all agencies it is important to develop a network in order to increase one's staff through indirect means. It is imperative to reduce duplication of effort at all levels. This is a key element of the city's plan in order to identify and eliminate illicit connections.

Illicit industrial connections can arise in a number of ways, including cross connections with sanitary sewers and floor drains improperly attached to storm drainage pipes. These connections may be accidental or planned, and may occur in new developments as well as in existing developments. For new businesses, preventative practices such as thorough inspection and verification during the entire construction phase can avoid the need for more extensive detection techniques and disconnection. For existing industries, improper connections are located by using field screening procedures, source testing protocols, and visual inspection.

## Design Considerations

Discharges from industry and business may come from a variety of sources including process wastewater, wash waters, and sanitary wastewater. The city may use some of the following methods for identifying improper industrial discharges to the storm drain system:

- *Field Testing of Dry Weather Discharges.* Storm drain outfalls are monitored to identify those areas where discharges are occurring that exceed water quality standards. This monitoring includes both visual inspection and chemical analysis to aid in identifying potential discharge sources.
- *Visual Inspection.* A physical examination of piping connections or analysis by closed circuit camera is used to identify possible illicit connection sites.
- *Piping Schematic Review.* Architectural plans and plumbing details are examined for potential sites where improper connections may have occurred.
- *Smoke Testing.* Smoke testing is used to locate connections by injecting a non-toxic vapor (smoke) into the system and following its path of travel.
- *Dye Testing.* Colored dye is added to the drain water in suspect piping. Dyed water appearing in the storm drain system indicates an illegal connection, possibly between the sanitary sewer system and the storm drain.

Facilities that receive NPDES storm water permits are usually required to include documentation that the stormwater collection system has been tested or evaluated for the presence of non-storm water discharges. To ensure that only stormwater is being discharged into the storm drain system from an industry, the city may wish to institute a program that includes the following:

- Locating of industrial discharges to the municipal storm sewer system or local waters using storm drain monitoring, visual observation, and pipeline schematics.
- Locating and evaluating the on-site industrial storm sewer system using field screening techniques, dye tests, smoke tests, and closed circuit television.
- Developing plans to eliminate improper connections and exploring alternative disposal options for discharges that cannot be sent to the storm sewer system, such as using the sanitary sewer system or collecting and disposing of discharges off-site at an approved disposal facility.
- Documenting the testing and eliminating of industrial/business illicit connections, including recording the location of the connection, the date of testing, and the method used to remove the connection.
- Establishing a citizen complaint hotline to report incidences of illicit discharges.

A program for the field screening of dry weather flows at storm drain outfalls can aid in identifying possible locations of industrial illicit connections. These field screening programs monitor for certain chemical and visual tracers that indicate potential sources of non-ground water illegal discharges. The use of these tracers provides a method for prioritizing sections of the storm drain system that require more intensive analysis to accurately pinpoint the specific sources contributing contaminated discharges.



## **Implementation**

The city will develop an illicit discharge detection education program for businesses and industries. The program will center around the identification and elimination of illegal or inappropriate connections of industrial and business wastewater sources to the storm drain system and the proper procedures for reporting them.

## **Limitations**

There are a number of factors affecting the ability of detection and elimination programs to remove illicit industry and business connections to the storm drainage system. The first is cost. Illegal connection location techniques are often labor intensive and can require a large commitment of staff to carry out detection tests. If a community hotline is used, staff will be necessary to record complaints.

Another limitation to industrial illicit connection control is the issue of access to private property for inspection purposes. An ordinance that ensures "right of entry" is vital in locating potential sources of illegal industrial discharges.

Despite the difficulty identifying these connections due to budget and staff restraints, the city understands that these connections are illegal and should be identified and reported. The city may be able to offset costs by encouraging the reporting of illicit discharges by public and municipal employees, thereby saving expense on inspectors and directing resources more efficiently.

## **Effectiveness**

Industrial stormwater discharges due to improper connections to the storm sewer system can have considerable impacts on stormwater and receiving waters. These discharges may contain heavy metals, oil and grease, nutrients, or raw sewage that pose serious environmental risks. Bacteria from the presence of untreated human waste may contaminate drinking water supplies and lead to outbreaks of disease. Toxic pollutants and heavy metals can destroy habitat and affect aquatic organisms, impacting economic and public health. The detection and correction of illicit discharges can result in significant reductions of these contaminants, improving water quality and meeting effluent requirements.



# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.6 BMP: Develop a plan to detect and eliminate illicit discharges in industrial and business connections.**

**3.6.b MG: Educate city agencies about illicit discharges and the procedures for reporting illicit discharges.**

### Description

City education programs are established to teach the employees about stormwater management, potential sources of contaminants, BMPs and the hazards associated with illicit discharges. City education programs should instill all personnel with a thorough understanding of BMPs, practices for preventing discharges, and methods for identifying and eliminating illicit discharges.



Illicit connections are defined as "illegal and/or improper connections to storm drainage systems and receiving waters" (CWP, 1998). A discharge of industrial wastewater to a storm sewer is "illicit" because it would ordinarily require a permit under the Clean Water Act. Many building owners or cities are not aware that improper connections exist in their facilities. Identifying and removing illicit connections is a measure for reducing stormwater pollution. In extreme cases of illicit dumping legal action may be necessary.

### Applicability

The city currently has training programs. Usually these programs address such areas as health and safety training and fire protection. Training on illicit discharges and the hazards associated with them will be incorporated into the city's training programs.

Employees can be taught through 1) posters, employee meetings, courses, and bulletin boards about stormwater management, potential contaminant sources, and prevention of contamination in surface water runoff, and 2) field training programs that show areas of potential stormwater contamination and associated pollutants. Identifying illicit and improper connections are necessary for all sewer systems, especially in areas where pollutants with unknown sources have been detected in receiving waters. The level and types of industrial activities and the surrounding land uses and ordinances will affect the methods the city will use to identify illicit connections.



## **Advantages and Disadvantages**

An education program on the hazards associated with illicit discharges can be a low-cost and easily implementable stormwater management BMP. The program can be standardized and repeated as necessary, both to train all students involved and to keep the objectives fresh in the minds of everyone. A training program is also flexible and can be adapted as the city's stormwater management needs change over time.

Obstacles to an education training program that sometimes need to be overcome include:

- Lack of commitment from targeted audience
- Lack of motivation
- Lack of incentive to become involved in the training program

## **Key Program Components**

The city will consider the following specific design criteria during the implementation of their public education program:

- Ensuring strong commitment and periodic input employees.
- Communicating frequently to ensure adequate understanding of SWPPP goals and objectives.
- Utilizing experience from past illicit discharges to prevent future discharges.
- Making the public, business and employees aware of BMP monitoring and spill reporting procedures.
- Developing operating manuals and standard procedures.
- Implementing spill response drills.

## **Implementation**

The city's public education program will be an on-going process. Meetings about SWPPPs will be held annually, possibly in conjunction with other training programs. Worksheets will be utilized to plan and track training. Program performance depends on participation and on senior city management's commitment to reducing illicit discharges. Senior city management will provide the necessary support to ensure the effectiveness of the program.



# City of Hot Springs

## 3.0 MCM: Illicit Discharge and Detection

**3.6 BMP: Develop a plan to detect and eliminate illicit discharges in industrial and business connections.**

**3.6.c MG: Develop a point of contact for the public to report illicit discharges.**

### Description

The city sometimes rely on the public to keep them informed of water polluters because it cannot monitor all waterbodies at all times. Community hotlines provide a means for concerned citizens and agencies to contact the appropriate authority when they see water quality problems. A typical call might report illicit discharges from industries, concrete wash-out dumped on the street, paint in a creek, or organic debris (including pet waste) in a drainage system or waterway.



### Applicability

Generally, an investigation team promptly responds to a hotline call and, in most cases, visits the problem site. If a responsible party can be identified, the team informs the party of the problem, offers alternatives for future disposal, and instructs the party to resolve the problem. If the issue is not resolved by the responsible party (or the party cannot be identified), the proper authority takes action to remediate the situation and prevent future violations.

### Implementation

The city will establish a point of contact for the receipt and consideration of information submitted by the public in relation to stormwater quality issues. This will be a key element in the prevention of erosion and sediment from entering the city's waterways. A hotline will be established that will allow citizens to contact the city and report violations to the city's SWMP (SWMP). It is the city's intent to follow up on every report that is submitted by the public.

The city's hotline may consist of both a telephone and an e-mail hotline. After a short period of time the city may decide to use just one avenue for the hotline.



The city will maintain the hotline and respond to incoming complaints. The city will establish a telephone number (preferably toll-free and to be used solely to report pollution complaints) and/or Internet site to receive notification.

All distributed materials will include the pollution hotline number and other contact information. The city hotline will be advertised on public education materials concerned with water quality, such as flyers, door hangers, and brochures. The hotline may also be publicized on "permanent" materials such as bumper stickers and refrigerator magnets.

The city may develop an on-line "Surface Water Quality Complaint Form" to allow concerned citizens to file e-mail reports of pollutant discharges to the city's creeks, lakes, and storm system. The form will include spaces for information about the person making the complaint and the alleged violation. If worried about privacy, a reporter can submit the complaint by telephone. It is the policy of the city to keep the identification of those registering complaints confidential.

The city's investigative team will respond to water quality-related complaints within the city as well as areas that impact the city. When the team responds to a complaint, they will make every attempt to determine the responsible party and inform them of the environmental impact of their actions. The responsible party will be required to stop the action that is polluting the surface water, may be cited and held responsible for mitigation. Staff members will provide information on cleanup, alternative disposal options, erosion control, and other best management practices as applicable.

The hotline will not only help the city respond to flooding, spills, and dumping incidents, but will also provide a rough indicator of the success of public education efforts. Callers can also receive free educational materials through the hotline number.

### **Effectiveness**

A stormwater hotline is effective when its number is easily remembered (i.e., has a catchy name) or is easily accessible. Most important, however, is the responsiveness of the hotline. If a citizen reports an illegal dumping but no action is taken by the appropriate authority, that citizen could lose faith in the hotline and might not call back with future information. The city's intent is to ensure all reports are investigated promptly and thoroughly in order to support the efforts of the citizens. The city's hotline number will hopefully be easy to remember.

### **Benefits**

The hotline will serve as a link between the citizens and the city's government. It will be an avenue for citizens to feel more involved in their community. It will also be a great way to catch illegal polluters or to stop accidental spills that might otherwise go unnoticed.

# **City of Hot Springs**

## **3.0 MCM: Illicit Discharges Detection and Elimination**

**3.7 BMP: Identify non-stormwater discharges, which are significant contributors of pollutants.**

**3.7.a MG: Develop a list of non-stormwater discharges that are significant contributors of pollutants.**

### **Description**

A non-stormwater discharge is a discharge into the waterways that would not normally be declared illicit by definition but due to its contents causes pollution to our waterways. For example a charitable carwash at a local church to raise money discharges soapy water directly into a waterway, which in turn causes pollution to the waterway. This measurable goal is intended to safeguard the public, protect property, and prevent damage to the environment.

### **Applicability**

Non-stormwater discharges disposed directly into storm drains can lead to water quality deterioration, which if undetected contaminates the natural environment.

### **Implementation**

Hot Springs will identify various categories of non-stormwater discharges or flows if they are significant contributors of pollutants to waterbodies in the small MS4. The following are potential significant contributors:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water
- Springs
- Water from crawl space pumps
- Lawn watering
- Individual residential car washing
- Dechlorinated swimming pool discharges
- Street wash water

# City of Hot Springs

## 3.0 MCM: Illicit Discharges Detection and Elimination

**3.8 BMP: Develop a list of incidental non-stormwater discharges like charity car washes not already addressed as illicit discharges.**

**3.8.a MG: Develop local controls and conditions for incidental non-stormwater discharges.**

### Description

A non-stormwater discharge is a discharge into the waterways that would not normally be declared illicit by definition but due to its contents causes pollution to waterways. For example a charitable carwash at a local church to raise money discharges soapy water directly into a waterway, which in turn causes pollution to the waterway. This measurable goal is intended to safeguard the public, protect property, and prevent damage to the environment.

### Applicability

Non-stormwater discharges disposed directly into storm drains can lead to water quality deterioration, which if undetected contaminates the natural environment.

### Implementation

Hot Springs will develop controls and conditions for incidental non-stormwater discharges. The city will identify various categories of non-storm water discharges or flows as significant contributors of pollutants to waterbodies in the small MS4. The following are significant contributors:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water
- Springs
- Water from crawl space pumps
- Lawn watering
- Individual residential car washing
- Dechlorinated swimming pool discharges

# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.1 BMP: Develop and implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 from construction activities.**

**4.1.a MG: Create a stormwater maintenance ordinance.**

**4.1.b MG: Adopt a stormwater maintenance ordinance, which requires erosion and sediment controls with penalties.**

### **Description**

The city recognizes that erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. The city currently has a site plan submittal and review process, which incorporates erosion and sediment control plans requirements. This will continue to be a component of the stormwater maintenance ordinance. The city will require a copy of ADEQ permits for construction activities in support of ADEQ's NPDES Phase II program, along with other submitted documents.

### **Applicability**

Stormwater management (SWM) ordinances promote the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. The city's SWM ordinance will consist of a permit application and review, an erosion and sediment control plan submittal requirement, construction site inspection requirement, and public information submittal process. The city's stormwater management program will support ADEQ's stormwater permitting requirements by requiring copies of ADEQ permits during the submittal process.

### **Implementation**

The city will create and implement a stormwater maintenance ordinance which requires erosion and sediment controls with penalties for construction activities. These regulations are intended to safeguard the public, protect property, and prevent damage to the environment.

The city currently provides guidance in the proper installation and maintenance procedures for best management practices in order to reduce erosion and prevent sedimentation from entering the city's waterways. The city currently requires submittal of an erosion and sedimentation control plan with every development per ordinance. The requirements for the ESC Plan is explained in detail in the city's drainage ordinance. The overall desired effect is a reduction of erosion and sedimentation entering the city's waterways.



# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.1 BMP: Develop and implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 from construction activities.**

**4.1.c / 4.1.d MG: Develop and implement a site plan submittal and review process.**

### **Description**

The city recognizes that erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. The city currently has a site plan submittal and review process, which will be expanded to incorporate the required aspects per NPDES Phase II.

### **Applicability**

A site plan submittal process promotes the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land.

### **Implementation**

The city currently has a site plan submittal and review process, which incorporates erosion and sediment control plans requirements. The site plan review will consist of two aspects. The first aspect is the initial submittal and review of the plans. The city will review plans to ensure an effective erosion prevention plan that includes maintenance of the ESC plan. The second aspect is the review of the site during construction. The city staff will make field visits of construction sites, which will allow a better idea of how controls are being implemented and whether another approach should be taken.

# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.1 BMP: Develop and implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 from construction activities.**

**4.1.e MG: Incorporate erosion and sediment control requirements with the site plan submittal process.**

### **Description**

The city recognizes that erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. Site plans must incorporate erosions and sediment control measures in order to safeguard the public, protect property, and prevent damage to the environment.

### **Applicability**

Stormwater management (SWM) ordinances promote the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. The city's SWM ordinance will consist of a permit application and review, an erosion and sediment control plan submittal requirement, construction site inspection requirement, and public information submittal process. The city's stormwater management program will support ADEQ's stormwater permitting requirements by requiring copies of ADEQ permits during the submittal process.

### **Implementation**

The city currently has a site plan submittal and review process, which incorporates erosion and sediment control plans requirements. The city currently provides guidance in the proper installation and maintenance procedures for best management practices in order to reduce erosion and prevent sedimentation from entering the city's waterways.

The city currently requires the development and submittal of an erosion and sedimentation control plan with every development within the city limits that disturb 1 acre or more of land. The overall desired effect desired is a reduction of erosion and sedimentation entering the city's waterways, which is the result of an effective erosion and sediment control plan. Ten elements that should be incorporated into an effective plan are:

- Minimize needless clearing and grading
- Protect waterways and stabilize drainage ways
- Phase construction to limit soil exposure
- Stabilize exposed soils immediately
- Protect steep slopes and cuts

- Install perimeter controls to filter sediments
- Employ advanced sediment settling controls
- Certify contractors on ESC plan implementation
- Adjust ESC plan at construction site
- Assess ESC practices after storms.

# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.1 BMP: Develop and implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 from construction activities.**

**4.1.f MG: Include requirements for submittal of required ADEQ permits for sites 1 acre and larger during submittal process.**

### **Description**

Responsible parties who disturb 1 acre or more are required to make application for NPDES permits through ADEQ for small, medium and large sites prior to earth moving activities. The city recognizes that erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation.

### **Applicability**

A site plan submittal process promotes the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. The city will support ADEQ and its NPDES permitting process in order insure the quality of its waterways.

### **Implementation**

The city currently has a site plan submittal and review process, which incorporates erosion and sediment control plans requirements. This process will require the additional submittal of approved NPDES permits from ADEQ. The site plan review will consist of two aspects. The first aspect is the initial submittal and review of the plans. The city will review plans to ensure an effective erosion prevention plan that includes maintenance of the ESC plan. The second aspect is the review of the site during construction. The city staff will make field visits of construction sites, which will allow a better idea of how controls are being implemented and whether another approach should be taken.

# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.1 BMP: Develop and implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 from construction activities.**

**4.1.g MG: Develop procedures for receipt and consideration of information submitted from the public.**

### **Description**

The city relies on the public to keep them informed of water polluters because it cannot monitor all waterbodies at all times. Community hotlines provide a means for concerned citizens and agencies to contact the appropriate authority when they see water quality problems. A typical call might report illicit discharges from industries, concrete wash-out dumped on the street, paint in a creek, or organic debris (including pet waste) in a drainage system or waterway. A properly structured process for receiving and documenting calls from the public is imperative for effective follow up.

### **Applicability**

Generally, an investigation team promptly responds to a hotline call and, in most cases, visits the problem site. If a responsible party can be identified, the team informs the party of the problem, offers alternatives for future disposal, and instructs the party to resolve the problem. If the issue is not resolved by the responsible party (or the party cannot be identified), proper authority will take action to remediate the situation and prevent future violations.

### **Implementation**

The city will develop procedures for the receipt and consideration of information submitted by the public in relation to stormwater quality issues. This will be a key element in the prevention of erosion and sediment from entering the city's waterways. A hotline will be established that will allow citizens to contact the city and report violations to the city's SWMP (SWMP). It is the city's intent to follow up on every report that is submitted by the public.

The city's hotline may consist of both a telephone and an e-mail hotline. After a short period of time the city may decide to use just one avenue for the hotline.

The city will maintain the hotline and respond to incoming complaints. The city will establish a telephone number (preferably toll-free and to be used solely to report pollution complaints) and/or Internet site to receive notification.

All distributed materials will include the pollution hotline number and other contact information. The city hotline will be advertised on public education materials concerned



with water quality, such as flyers, door hangers, and brochures. The hotline may also be publicized on "permanent" materials such as bumper stickers and refrigerator magnets.

The city may develop an on-line "Surface Water Quality Complaint Form" to allow concerned citizens to file e-mail reports of pollutant discharges to the city's creeks, lakes, and storm system. The form will include spaces for information about the person making the complaint and the alleged violation. If worried about privacy, a reporter can submit the complaint by telephone. It is the policy of the city to keep the identification of those registering complaints confidential.

The city's investigative team will respond to water quality-related complaints within the city as well as areas that impact the city. When the team responds to a complaint, they will make every attempt to determine the responsible party and inform them of the environmental impact of their actions. The responsible party will be required to stop the action that is polluting the surface water, may be cited and held responsible for mitigation. Staff members will provide information on cleanup, alternative disposal options, erosion control, and other best management practices as applicable.

The hotline will not only help the city respond to flooding, spills, and dumping incidents, but will also provide a rough indicator of the success of public education efforts. Callers can also receive free educational materials through the hotline number.

### **Effectiveness**

A stormwater hotline is effective when its number is easily remembered (i.e., has a catchy name) or is easily accessible. Most important, however, is the responsiveness of the hotline. If a citizen reports an illegal dumping but no action is taken by the appropriate authority, that citizen could lose faith in the hotline and might not call back with future information. The city's intent is to ensure all reports are investigated promptly and thoroughly in order to support the efforts of the citizens. The city's hotline number will hopefully be easy to remember. The hotline will serve as a link between the citizens and the city's government. It will be an avenue for citizens to feel more involved in their community. It will also be a great way to catch illegal polluters or to stop accidental spills that might otherwise go unnoticed.

# City of Hot Springs

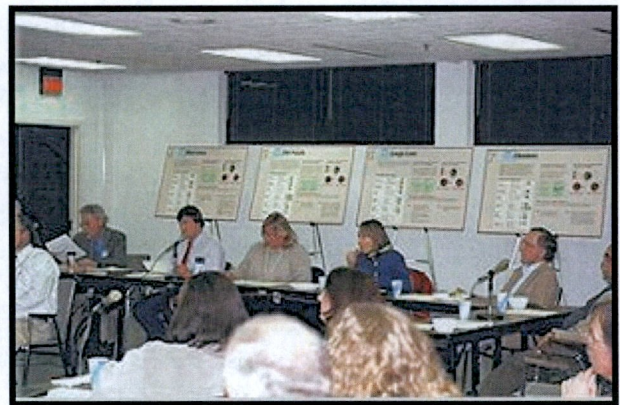
## 4.0 MCM: Construction Runoff Control

**4.2 BMP: Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than 1 acre if part of a larger common plan of development or sale.**

### 4.2.a MG: Develop a construction site inspection program

#### Description

Erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. A contractor oriented program that reduces pollutants from entering stormwater from construction activities is an important component of the SWMP. This program is intended to safeguard the public, protect property, and prevent damage to the environment.



It is necessary to establish requirements for contractors to construct and maintain erosion and sediment control measures at the construction activity. The program should focus on developing a construction site inspector program, to assure that BMP's are properly installed and maintained.

To maintain effective construction and post-construction best management practices (BMPs), regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into two groups—expected routine maintenance and non-routine (repair) maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to prevent potential nuisance situations (odors, mosquitoes, weeds, etc.), reduce the need for repair maintenance, and reduce the chance of polluting stormwater runoff by finding and correcting problems before the next rain.

#### Applicability

The city will be responsible for implementing an inspection and maintenance program to assure that erosion and sedimentation BMP's are properly constructed and maintained. All stormwater BMPs should be inspected for continued effectiveness and structural integrity on a regular basis. Generally, all BMPs should be checked after each storm event in addition to these regularly scheduled inspections. Scheduled inspections will vary among BMPs. Structural BMPs such as storm drain drop inlet protection may require more frequent inspection to ensure proper operation. During each inspection, the



inspector should document whether the BMP is performing correctly, any damage to the BMP since the last inspection, and what should be done to repair the BMP if damage has occurred.

## **Implementation**

The site plan review will consist of two aspects. The first aspect is the initial submittal and review of the ESC plans. The city will review ESC plans to ensure an effective erosion prevention plan that includes continual maintenance. The second aspect is the review of the site during construction. Existing staff should spend as much time as necessary in the field at the construction sites. This allows them a better idea of how controls are being implemented and whether another approach should be taken.

The city may set requirements for private inspectors, such as certification, documentation requirements and other qualifications. To prevent bias on the part of private inspectors, the city may conduct spot checks of construction sites.

Following are 10 key elements that reviewers should look for in an effective plan:

- Minimize needless clearing and grading.
- Protect waterways and stabilize drainage ways.
- Phase construction to limit soil exposure.
- Stabilize exposed soils immediately.
- Protect steep slopes and cuts.
- Install perimeter controls to filter sediments.
- Employ advanced sediment settling controls.
- Certify contractors on ESC plan implementation.
- Adjust ESC plan at construction site.
- Assess ESC practices after storms.

## **Benefits**

The effectiveness of BMP inspection will be a function of the familiarity of the inspector with each particular BMP's location, design specifications, maintenance procedures, and performance expectations. Documentation will be kept regarding the dates of inspection, findings, and maintenance and repairs that result from the findings of an inspector. Such records are necessary to maintain an efficient inspection and maintenance schedule and to provide evidence of ongoing inspection and maintenance. All of this results in cleaner water ways for the city.



# City of Hot Springs

## 4.0 MCM: Construction Runoff Control

**4.2 BMP: Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than 1 acre if part of a larger common plan of development or sale.**

**4.2.b MG: Contact ADEQ upon validation of reported infractions.**

### Description

Erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. A contractor oriented program that reduces pollutants from entering stormwater from construction activities is an important component of the SWMP. The city will monitor construction activities within its city limits in order to safeguard the public, protect property, and prevent damage to the environment. Contacting ADEQ is a means to insure compliance of its SWMP through guidance and penalties.

### Applicability

While construction costs continue to skyrocket, contractors are looking for ways to trim costs in order to be cost competitive. Unfortunately erosion and sedimentation control is a task that would likely be minimized or avoided entirely if not for it being required. Requirements should address planning, construction, maintenance, inspection and documentation of the ESC program. The requirements should also address consequences for non-compliance. The city will monitor these activities and upon validation of violations must act in accordance with its ordinances and ADEQ ordinances. Otherwise violations will continue to occur and the waterways of the city will be damaged.

### Implementation

As part of the city's SWMP, the city will implement procedures for immediately notifying the Arkansas Department of Environmental Quality of violations as the city discovers them.

### Effectiveness

Contractors are the individuals ultimately responsible for the proper installation and maintenance of ESC practices on construction sites. An effective reporting program can be an effective method to reduce the quantity of construction pollutants that enter the waterways. For example, a construction runoff reporting program, which uses volunteer monitoring and community hotlines to identify suspicious discharges can protect our waterways. When discharges are detected, the city can research construction permits for the surrounding areas and target those areas for additional monitoring to narrow the



search for pollutants. Upon identification of infractions the city can report to ADEQ. Through a cooperative effort, pollutants can be detected and removed

# City of Hot Springs

## 4.0 MCM: Construction Runoff Control

**4.2 BMP: Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than 1 acre if part of a larger common plan of development or sale.**

**4.2.c MG: Establish requirements for contractors to construct and maintain erosion and sediment control measures at the construction activity.**

### Description

Erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. An effective program is intended to safeguard the public, protect property, and prevent damage to the environment.

It is necessary to establish requirements for contractors to construct and maintain erosion and sediment ESC control measures at the construction activity.

Erosion and sedimentation controls must be properly planned, constructed and maintained in order to be effective. Requirements should be established to allow engineers, contractors and others to be knowledgeable of and be able to implement the program. Requirements such as inspections, documentation and consequences for non-compliance are integral requirement components for a successful program.

To maintain the effectiveness of construction and post-construction best management practices (BMPs), regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into two groups—expected routine maintenance and non-routine (repair) maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to prevent potential nuisance situations (odors, mosquitoes, weeds, etc.), reduce the need for repair maintenance, and reduce the chance of polluting stormwater runoff by finding and correcting problems before the next rain.

### Applicability

While construction costs continue to skyrocket, contractors are looking for ways to trim costs in order to be cost competitive. Unfortunately erosion and sedimentation control is a task that would likely be minimized or avoided entirely if not for it being required. Requirements should address planning, construction, maintenance, inspection and documentation of the ESC program. The requirements should also address consequences for non-compliance.



## **Implementation**

The city will implement a program that established requirements for contractors to construct and maintain erosion and sediment control measures at the construction activity. The requirements will apply to construction activities that are equal to or greater than one acre; and to construction activities where the disturbance is less than one acre if it is part of a larger common plan of development or sale.

## **Benefits**

By establishing requirements, contractors will know what it is expected of them, and will provide the city with documentation that is necessary to implement and enforce the program.

# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.2 BMP: Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than 1 acre if part of a larger common plan of development or sale.**

**4.2.d MG: Develop a contractor certification program.**

### **Description**

The city recognizes that erosion and sedimentation from construction sites can lead to reduced water quality and other environmental degradation. A contractor certification program will help reduce pollutants from entering stormwater from construction activities. This component of the program is intended to safeguard the public, protect property, and prevent damage to the environment.

The city will establish requirements for a contractor certification program

To maintain the effectiveness of construction and post-construction best management practices (BMPs), regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into two groups—expected routine maintenance and non-routine (repair) maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to prevent potential nuisance situations (odors, mosquitoes, weeds, etc.), reduce the need for repair maintenance, and reduce the chance of polluting stormwater runoff by finding and correcting problems before the next rain.

### **Applicability**

Contractor certification programs are applicable because the city requires an erosion and sediment control plan for construction sites. Training and certification will help to ensure that the plans are properly implemented and that best management practices are properly installed and maintained.

### **Implementation**

Contractor certification will be accomplished through city sponsored training courses combined with mandatory pre-construction meetings in order to transfer information to contractors. Information that should be covered in training courses and meetings includes the importance of ESC for water quality protection, developing and implementing ESC plans; the importance of proper installation, regular inspection, and diligent maintenance of ESC practices, recordkeeping for inspections and maintenance activities. In addition,



new technology may alter BMP's. Training courses will provide an opportunity to discuss changes in regulations as well as technological advances.

### **Benefits**

Contractors are the individuals ultimately responsible for the proper installation and maintenance of ESC practices on construction sites. A contractor certification program will help to improve compliance with ESC programs and foster better relationships between contractors and regulators.

# City of Hot Springs

## 4.0 MCM: Construction Runoff Control

**4.2 BMP: Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than 1 acre if part of a larger common plan of development or sale.**

**4.2.e MG: Conduct education seminars for contractors on waste associated with their profession that cause adverse impacts to water quality.**

### Description

Education seminars teach contractors about storm water management, potential sources of contaminants, BMPs and waste associated with their profession.

### Applicability

The city currently has training programs. The knowledge acquired from these existing programs can be applied to the development and execution of training programs for contractors. Training on storm water management, BMPs and the hazards associated with waste from construction sites.



Contractors perform maintenance on their vehicles at the project site as well as in their maintenance facilities. Both of these are considered maintenance facilities. Maintenance facilities are considered to be storm water "hot spots" where significant loads of hydrocarbons, trace metals, and other pollutants can be produced that can affect the quality of storm water runoff. Some of the waste types generated at automobile maintenance facilities and at homes of residents performing their own car maintenance include the following:

- Solvents (paints and paint thinners)
- Antifreeze
- Brake fluid and brake lining
- Batteries
- Motor oils
- Fuels (gasoline, diesel, kerosene)
- Lubricating grease.

A single quart of motor oil can pollute 250,000 gallons of drinking water (DNREC, 1994). For this reason, maintenance facilities' discharges to storm and sanitary sewer systems are highly regulated. Fluid spills and improper disposal of materials result in



pollutants, heavy metals, and toxic materials entering ground and surface water supplies, creating public health and environmental risks. Alteration of practices involving the cleanup and storage of automotive fluids and cleaning of vehicle parts can help reduce the influence of automotive maintenance practices on stormwater runoff and local water supplies.

Contractors can be taught through 1) posters, employee meetings, courses, and bulletin boards about stormwater management, potential contaminant sources, and prevention of contamination in surface water runoff, and 2) field training programs that show areas of potential stormwater contamination and associated pollutants, followed by a discussion of site-specific BMPs by trained personnel and methods for identifying and eliminating illicit discharges.

### **Advantages and Disadvantages**

The education program on the hazards associated with waste associated with a contractor's profession can be a low-cost and easily implementable stormwater management BMP. The program can be standardized and repeated as necessary, both to train all students involved and to keep the objectives fresh in the minds of everyone. A training program is also flexible and can be adapted as the city's stormwater management needs change over time.

Obstacles to a public education training program that sometimes need to be overcome include:

- Lack of commitment from targeted audience
- Lack of motivation
- Lack of incentive to become involved in the training program

### **Key Program Components**

The city will consider the following specific design criteria during the implementation of their public education program:

- Ensuring strong commitment and periodic input from the public, contractors, businesses and employees.
- Communicating frequently to ensure adequate understanding of SWPPP goals and objectives.
- Utilizing experience from past illicit discharges to prevent future discharges.
- Making the public, contractors, business and employees aware of BMP monitoring and spill reporting procedures.
- Developing operating manuals and standard procedures.
- Implementing spill response drills.



## **Implementation**

The city's contractor education program will be an on-going process. Meetings about SWPPPs will be held annually, possibly in conjunction with other training programs. Worksheets will be utilized to plan and track training. Program performance depends on participation and on senior city management's commitment to reducing illicit discharges. Senior city management will provide the necessary support to ensure the effectiveness of the program.

## **Benefits**

The effectiveness of BMP inspection will be a function of the familiarity of the inspector with each particular BMP's location, design specifications, maintenance procedures, and performance expectations. Documentation will be kept regarding the dates of inspection, findings, and maintenance and repairs that result from the findings of an inspector. Such records will be helpful in maintaining an efficient inspection and maintenance schedule and providing evidence of ongoing inspection and maintenance. All of this results in cleaner water ways.



# **City of Hot Springs**

## **4.0 MCM: Construction Runoff Control**

**4.2 BMP: Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than 1 acre if part of a larger common plan of development or sale.**

**4.2.f MG: Develop procedures for receipt and consideration of information submitted from the public.**

### **Description**

The city relies on the public to keep them informed of water polluters because it cannot monitor all waterbodies at all times. Community hotlines provide a means for concerned citizens and agencies to contact the appropriate authority when they see water quality problems. A typical call might report illicit discharges from industries, concrete wash-out dumped on the street, paint in a creek, or organic debris (including pet waste) in a drainage system or waterway. A properly structured process for receiving and documenting calls from the public is imperative for effective follow up.

### **Applicability**

Generally, an investigation team promptly responds to a hotline call and, in most cases, visits the problem site. If a responsible party can be identified, the team informs the party of the problem, offers alternatives for future disposal, and instructs the party to resolve the problem. If the issue is not resolved by the responsible party (or the party cannot be identified), the proper authority will take action to remediate the situation and prevent future violations.

### **Implementation**

The city will develop procedures for the receipt and consideration of information submitted by the public in relation to storm water quality issues. This will be a key element in the prevention of erosion and sediment from entering the city's waterways. A hotline will be established that will allow citizens to contact the city and report violations to the city's SWMP. It is the city's intent to follow up on every report that is submitted by the public.

The city's hotline may consist of both a telephone and an e-mail hotline. After a short period of time the city may decide to use just one avenue for the hotline.

The city will maintain the hotline and respond to incoming complaints. The city will establish a telephone number (preferably toll-free and to be used solely to report pollution complaints) and/or Internet site to receive notification.

All distributed materials will include the pollution hotline number and other contact information. The city hotline will be advertised on public education materials concerned with water quality, such as flyers, door hangers, and brochures. The hotline may also be publicized on "permanent" materials such as bumper stickers and refrigerator magnets.

The city may develop an on-line "Surface Water Quality Complaint Form" to allow concerned citizens to file e-mail reports of pollutant discharges to the city's creeks, lakes, and storm system. The form will include spaces for information about the person making the complaint and the alleged violation. If worried about privacy, a reporter can submit the complaint by telephone. It is the policy of the city to keep the identification of those registering complaints confidential.

The city's investigative team will respond to water quality-related complaints within the city as well as areas that impact the city. When the team responds to a complaint, they will make every attempt to determine the responsible party and inform them of the environmental impact of their actions. The responsible party will be required to stop the action that is polluting the surface water, may be cited and held responsible for mitigation. Staff members will provide information on cleanup, alternative disposal options, erosion control, and other best management practices as applicable.

The hotline will not only help the city respond to flooding, spills, and dumping incidents, but will also provide a rough indicator of the success of public education efforts. Callers can also receive free educational materials through the hotline number.

### **Effectiveness**

A stormwater hotline is effective when its number is easily remembered (i.e., has a catchy name) or is easily accessible. Most important, however, is the responsiveness of the hotline. If a citizen reports an illegal dumping but no action is taken by the appropriate authority, that citizen could lose faith in the hotline and might not call back with future information. The city's intent is to ensure all reports are investigated promptly and thoroughly in order to support the efforts of the citizens. The city's hotline number will hopefully be easy to remember. The hotline will serve as a link between the citizens and the city's government. It will be an avenue for citizens to feel more involved in their community. It will also be a great way to catch illegal polluters or to stop accidental spills that might otherwise go unnoticed.



# City of Hot Springs

## 5.0 MCM: Post-Construction Runoff Control

**5.1 BMP: Develop and adopt a stormwater maintenance ordinance, which includes post-construction runoff control.**

**5.1.a MG: Develop strategies, which include a combination of structural and/or non-structural BMPs.**

### Description

A plan of action detailing the planning and execution of the city's stormwater program requires combining both structural and non-structural BMPs to ensure success. Strategies The best set of non-structural ordinances supported with weak structural BMPs causes the city's stormwater program fails. Additionally if the city has effective training combined with strong structural BMPs without non-structural ordinances the program fails. Non-structural BMPs are ordinances and policies that support the city's NPDES stormwater program. Structural BMPs are the erosion and silt control measures on the project site that protect the waterways from pollutants.

### Applicability

The failure of structural stormwater BMPs can lead to downstream flooding, causing property damage, injury, and even death. The city will be responsible for implementing BMP inspection and maintenance programs to ensure the effectiveness of ESC measures. All stormwater BMPs should be inspected for continued effectiveness and structural integrity on a regular basis. Generally, all BMPs should be checked after each storm event in addition to these regularly scheduled inspections. Scheduled inspections will vary among BMPs. Structural BMPs such as storm drain drop inlet protection may require more frequent inspection to ensure proper operation.

In addition to maintaining the effectiveness of stormwater BMPs and to reduce the incidence of pests, proper inspection and maintenance is essential to avoid the health threats inherent in BMP neglect. It is important that routine maintenance, nonroutine repair of stormwater BMPs and long term operation/maintenance of BMPs be done according to schedule or as soon as a problem is discovered. Because many BMPs are rendered ineffective for runoff control if not installed and maintained properly, it is essential that maintenance schedules are maintained and repairs are made promptly.

Along the same lines ordinances must be maintained and updated when necessary in order to ensure the effectiveness of the stormwater program.

## **Implementation**

The city will develop a strategy that combines the strengths of both non-structural and structural BMPs through ordinances, training, and design. The city has developed a SWMP and a BMP manual, which provides the basis for a sound strategy. The city will combine that with necessary changes due to periodic reviews that identify weaknesses in the current plan.



# City of Hot Springs

## 5.0 MCM: Post-Construction Runoff Control

**5.1 BMP: Develop and adopt a stormwater maintenance ordinance, which includes post-construction runoff control.**

**5.1.b MG: Create a stormwater maintenance ordinance, which includes post-construction runoff control measures.**

**5.1.c MG: Create a stormwater maintenance ordinance, which includes a requirement for long term operation and maintenance of BMPs.**

### Description

To maintain the effectiveness of construction and post-construction stormwater control best management practices (BMPs), regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into three groups—expected routine maintenance, non-routine (repair) maintenance and long term operation/maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to prevent potential nuisance situations (odors, mosquitoes, weeds, etc.), reduce the need for repair maintenance, and reduce the chance of polluting stormwater runoff by finding and correcting problems before the next rain.



In addition to maintaining the effectiveness of stormwater BMPs and to reduce the incidence of pests, proper inspection and maintenance is essential to avoid the health threats inherent in BMP neglect. The failure of structural stormwater BMPs can lead to downstream flooding, causing property damage, injury, and even death.

### Applicability

The city, per Stormwater Phase II rule, will be responsible for implementing BMP inspection and maintenance programs and having penalties in place to deter infractions. All stormwater BMPs should be inspected for continued effectiveness and structural integrity on a regular basis. Generally, all BMPs should be checked after each storm event in addition to these regularly scheduled inspections. Scheduled inspections will



vary among BMPs. Structural BMPs such as storm drain drop inlet protection may require more frequent inspection to ensure proper operation. During each inspection, the inspector should document whether the BMP is performing correctly, any damage to the BMP since the last inspection, and what should be done to repair the BMP if damage has occurred.

### **Siting and Design Considerations**

In the case of vegetative or other infiltration BMPs, inspection of stormwater management practices following a storm event will occur after the expected drawdown period for a given BMP. This allows the inspector to see whether detention and infiltration devices are draining correctly.

Inspection checklists will be developed for use by BMP inspectors. Checklists will include each BMP's minimum performance expectations, design criteria, structural specifications, date of implementation, and expected life span. In addition, the maintenance requirements for each BMP will be listed on the inspection checklist. This will aid the inspector in determining whether a BMP's maintenance schedule is adequate or needs revision. Also, this checklist will help the inspector determine renovation or repair needs.

### **Maintenance Considerations**

It is important that routine maintenance, nonroutine repair of stormwater BMPs and long term operation/maintenance of BMPs be done according to schedule or as soon as a problem is discovered. Because many BMPs are rendered ineffective for runoff control if not installed and maintained properly, it is essential that maintenance schedules are maintained and repairs are made promptly. In fact, some cases of BMP neglect can have detrimental effects on the landscape and increase the potential for erosion. However, "routine" maintenance, such as mowing grasses, should be flexible enough to accommodate the fluctuations in need based on relative weather conditions.

### **Implementation**

The city currently has codes that prohibit illegal disposal of wastes. Title 4, Section 4-7-3 of the Hot Springs Code prohibits improper disposal of trash and debris into city streets. The city also has codes that prohibit illicit discharges to any natural outlet. In addition to its current ordinances, the city will implement a stormwater ordinance that addresses a number of issues related to the maintenance of storm water control measures and long term operation and maintenance of BMPs .

### **Effectiveness**

The effectiveness of post construction runoff control measures, long term operation and maintenance of BMPs and BMP inspection will be a function of the familiarity of the inspector with each particular BMP's location, design specifications, maintenance procedures, and performance expectations. Documentation will be kept regarding the



dates of inspection, findings, and maintenance and repairs that result from the findings of an inspector. Such records will be helpful in maintaining an efficient inspection and maintenance schedule and providing evidence of ongoing inspection and maintenance. Because maintenance work for stormwater BMPs is usually not technically complicated (mowing, removal of sediment, etc.), workers can be drawn from a large labor pool. As structural BMPs increase in their sophistication, however, more specialized maintenance training might be needed to sustain BMP effectiveness.



# City of Hot Springs

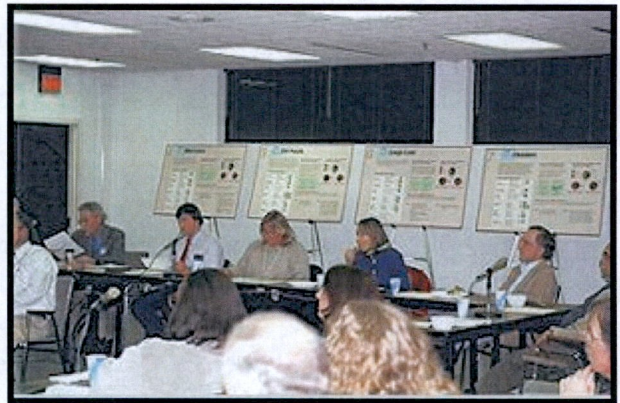
## 5.0 MCM: Post-Construction Runoff Control

**5.2 BMP: Develop, implement and enforce a program to address stormwater runoff from new sites and redevelopment projects.**

**5.2.a MG: Implement a program to address stormwater runoff from new sites/redevelopment projects that disturb 1 acre or more, including projects less than 1 acre, which are part of a larger common plan.**

### Description

The city recognizes that post-construction runoff from construction sites can lead to reduced water quality and other environmental degradation. Construction sites come in various sizes ranging from  $\frac{1}{2}$  an acre to 100's of acres. Some may take 6 months to construct while others may be a multi-year phased process. A program to address all these variations requires hard work and determination on both the city and its citizens. This program is intended to safeguard the public, protect property, and prevent damage to the environment.



The city should not only require contractors to construct and maintain erosion and sediment control measures during construction, but after construction as well. Post-construction runoff controls should be implemented and maintained until soils have been stabilized. The city's program should focus on developing post-construction runoff control requirements and its enforcement.

To maintain the effectiveness of construction and post-construction best management practices (BMPs), regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into two groups—expected routine maintenance and non-routine (repair) maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to prevent potential nuisance situations (odors, mosquitoes, weeds, etc.), reduce the need for repair maintenance, and reduce the chance of polluting stormwater runoff by finding and correcting problems before the next rain.

### Applicability

Upon completion of construction, it is common to find that soils have not yet become fully stabilized. A continuing effort is necessary to assure that soils are stabilized before removing erosion and sedimentation control BMPs. Construction and post construction



runoff control is a necessary component of the overall program. The city will be responsible for implementing an inspection and maintenance program, which addresses stormwater runoff from new sites/redevelopment projects that disturb 1 acre or more, including projects less than 1 acre, which are part of a larger common plan. All storm water BMPs should be inspected for continued effectiveness and structural integrity on a regular basis for the life of the project. Generally, all BMPs should be checked after each storm event in addition to these regularly scheduled inspections. Scheduled inspections will vary among BMPs. Structural BMPs such as storm drain drop inlet protection may require more frequent inspection to ensure proper operation. During each inspection, the inspector should document whether the BMP is performing correctly, any damage to the BMP since the last inspection, and what should be done to repair the BMP if damage has occurred.

### **Implementation**

The city will implement a new construction and post-construction runoff program. This program will define the requirements related to construction, maintenance, inspections, documentation and other characteristics that are necessary to implement the program. A critical element of the program will be to determine the appropriate time to allow complete removal of post-construction runoff controls by the contractor. Inspection checklists will be developed for use by BMP inspectors. Checklists will include each BMP's minimum performance expectations, design criteria, structural specifications, date of implementation, and expected life span. In addition, the maintenance requirements for each BMP will be listed on the inspection checklist. This will aid the inspector in determining whether a BMP's maintenance schedule is adequate or needs revision. Also, this checklist will help the inspector determine renovation or repair needs.

### **Benefits**

The effectiveness of BMP inspection will be a function of the familiarity of the inspector with each particular BMP's location, design specifications, maintenance procedures, and performance expectations. Documentation will be kept regarding the dates of inspection, findings, and maintenance and repairs that result from the findings of an inspector. Such records will be helpful in maintaining an efficient inspection and maintenance schedule and providing evidence of ongoing inspection and maintenance. All of this results in cleaner water ways.



# City of Hot Springs

## 6.0 MCM: Pollution Prevention/Good Housekeeping

**6.1 BMP: Develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations.**

**6.1.a MG: Develop training classes for MS4 employees to prevent and reduce pollution runoff from MS4 operations.**

**6.1.b MG: Use available training materials in the development of employee stormwater education programs, for example prevent or reduce pollution from open space maintenance, fleet/building maintenance, new construction, land disturbances and stormwater systems.**

### Description

Automotive maintenance facilities are considered to be stormwater "hot spots" where significant loads of hydrocarbons, trace metals, and other pollutants can be produced that can affect the quality of stormwater runoff. Some of the waste types generated at automobile maintenance facilities and at homes of residents performing their own car maintenance include the following:

- Solvents (paints and paint thinners)
- Antifreeze
- Brake fluid and brake lining
- Batteries
- Motor oils
- Fuels (gasoline, diesel, kerosene)
- Lubricating grease.



Estimates show that each year over 180 million gallons of used oil is disposed of improperly (Alameda CCWP, 1992) and that a single quart of motor oil can pollute 250,000 gallons of drinking water (DNREC, 1994). For this reason, automotive maintenance facilities' discharges to storm and sanitary sewer systems are highly regulated. Fluid spills and improper disposal of materials result in pollutants, heavy metals, and toxic materials entering ground and surface water supplies, creating public health and environmental risks. Alteration of practices involving the cleanup and storage of automotive fluids and cleaning of vehicle parts can help reduce the influence of automotive maintenance practices on stormwater runoff and local water supplies. In-house employee training programs are established to teach employees about stormwater management, potential sources of contaminants, prevention/reduction of



pollution runoff and Best Management Practices (BMPs). Employee training programs should instill all personnel with a thorough understanding of their Stormwater Pollution Prevention Plan (SWPPP), including BMPs, processes and materials they are working with, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents.

EPA, ADEQ and various cities and counties conduct employee training on stormwater education. Contacting them to determine their class schedule can not only save the city money but it can add variety to its training program.

### **Applicability**

The city performs maintenance activities on its fleet of vehicles and equipment, which falls in the automotive repair category. The automotive repair industry is the leader in number of generators and amount of total waste produced for small quantity generators of hazardous waste in the United States (USEPA, 1985). Common activities at maintenance shops that generate this waste include the cleaning of parts, changing of vehicle fluids, and replacement and repair of equipment. These activities are also performed by residents at home in their driveway in the course of normal vehicle care. Since the use of automobiles is not limited by geographic or climatic conditions, maintenance facilities are present nationwide and the concerns involving waste created during vehicle repair are similar across the country. In ultra-urban areas, the impacts of automotive maintenance practices are more pronounced due to the greater concentrations of vehicles and higher levels of impervious surface.

The city currently has an employee training program, which address such areas as health training, safety training and fire protection. Training on stormwater management, preventing pollution and reducing pollution will be incorporated into these programs.

Employees can be taught through 1) posters, employee meetings, courses, and bulletin boards about stormwater management, potential contaminant sources, and prevention of contamination in surface water runoff, 2) field training programs that show areas of potential stormwater contamination and associated pollutants, followed by a discussion of site-specific BMPs by trained personnel and 3) other agencies about stormwater management at various levels of government.

The city believes that the most effective way to minimize the impacts of automotive maintenance generated waste is by preventing its production. Pollution prevention programs seeking to reduce liquid discharges to sewer and storm drains from automotive maintenance should stress techniques that allow facilities to run a dry shop. Among the suggestions for creating a dry operation are the following:

- Spills should be cleaned up immediately, and water should not be used for clean up whenever possible.
- Floor drains that are connected to the sanitary sewer should be sealed off.
- A solvent service might be hired to supply parts and cleaning materials, and to collect the spent solvent.



Those facilities that are not able to eliminate discharges to the sanitary sewer system may be required to treat their wastewater prior to release from the site. There are several methods for preventing untreated wastewater from entering stormwater runoff. Structural treatment devices are used to pretreat wastes before they are discharged for treatment at sewage treatment plants. These devices prevent oils and grease from entering the sewer system, often by separating the oil and solids from the water through settling or filtration.

Other methods are also available to help prevent or reduce the discharge of pollutants from vehicle maintenance. Table 1 lists some of the common suggestions found regarding practices that can reduce vehicle maintenance and repair impacts. Many of these practices apply both to business owners and to residents who maintain their own vehicles. Additionally, these practices also apply to maintaining vehicle fleets, including school buses, public works, fire, police, parks, and other types of municipal fleets. This list is not comprehensive, and many other suggestions for reducing impacts are available to those responsible for managing storm water runoff from maintenance facilities.

Table 1. Recommendations for reducing the storm water impacts of automotive maintenance

<b>Pollution Prevention Method</b>	<b>Suggested Activities</b>
Waste Reduction	<ul style="list-style-type: none"> <li>• The number of solvents used should be kept to a minimum to make recycling easier and to reduce hazardous waste management cost.</li> <li>• Do all liquid cleaning at a centralized station to ensure that solvents and residues stay in one area.</li> <li>• Locate drip pans and draining boards to direct solvents back into solvent sink or holding tank for reuse.</li> </ul>
Using Safer Alternatives	<ul style="list-style-type: none"> <li>• Use non-hazardous cleaners when possible.</li> <li>• Replace chlorinated organic solvents with nonchlorinated ones like kerosene or mineral spirits.</li> <li>• Recycled products such as engines, oil, transmission fluid, antifreeze, and hydraulic fluid can be purchased to support the market of recycled products.</li> </ul>
Spill Clean Up	<ul style="list-style-type: none"> <li>• Use as little water as possible to clean spills leaks, and drips.</li> <li>• Rags should be used to clean small spills, dry absorbent material for larger spills, and a mop for general cleanup. Mop water can be disposed of via the sink or toilet to the sanitary sewer.</li> </ul>
Good Housekeeping	<ul style="list-style-type: none"> <li>• Employee training and public outreach are necessary to reinforce proper disposal practices.</li> <li>• Conduct maintenance work such as fluid changes indoors.</li> </ul>



	<ul style="list-style-type: none"> <li>• Update facility schematics to accurately reflect all plumbing connections.</li> <li>• Parked vehicles should be monitored closely for leaks and pans placed under any leaks to collect the fluids for proper disposal or recycling.</li> <li>• Promptly transfer used fluids to recycling drums or hazardous waste containers.</li> <li>• Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.</li> <li>• Obtain and use drain mats to cover drains in the event of a spill.</li> <li>• Store cracked batteries in leakproof secondary containers.</li> </ul>
Parts Cleaning	<ul style="list-style-type: none"> <li>• Use detergent-based or water-based cleaning systems instead of organic solvent degreasers.</li> <li>• Steam cleaning and pressure washing may be used instead of solvent parts cleaning. The wastewater generated from steam cleaning can be discharged to the on-site oil/water separator.</li> </ul>

## Implementation

The city will develop a training program to reduce and prevent pollution runoff from MS4 operations, which involves targeted outreach and training for businesses and city fleets (public works, school buses, fire, police, and parks) involved in automobile maintenance about practices that control pollutants and reduce stormwater impacts.

The city's employee training program will be an on-going process. Meetings about SWPPPs will be held annually, possible in conjunction with other training programs. Worksheets will be utilized to plan and track employee training programs. Program performance depends on employees' participation and on senior management's commitment to reducing point and non-point sources of pollution. Senior management will provide the necessary support to ensure the effectiveness of the program.

## Maintenance Considerations

For facilities responsible for pretreating their wastewater prior to discharging, the proper functioning of structural BMPs is an important maintenance consideration. Routine cleanout of oil and grease is required for the devices to maintain their effectiveness, usually at least once a month. During periods of heavy rainfall, cleanout is required more often to ensure that pollutants are not washed through the trap. Sediment removal is also required on a regular basis to keep the device working efficiently.

## Advantages and Disadvantages



Advantages of an employee training program are that the program can be a low-cost and easily implementable stormwater management BMP. The program can be standardized and repeated as necessary, both to train new employees and to keep the objectives fresh in the minds of more senior employees. A training program is also flexible and can be adapted as the city's stormwater management needs change over time. It is imperative to stay on budget and reduce costs. The city will identify existing programs that can be used entirely or tailored a little to meet the needs of the city's SWMP, which is an advantage.

Obstacles to an employee training program that may sometimes have to be overcome include:

- Lack of commitment from senior management.
- Lack of employee motivation.
- Lack of incentive to become involved in BMP implementation.

### **Key Program Components**

The city will consider the following specific design criteria during the implementation of their employee training program:

- Ensuring strong commitment and periodic input from senior management.
- Communicating frequently to ensure adequate understanding of SWPPP goals and objectives.
- Utilizing experience from past spills to prevent future spills.
- Making employees aware of BMP monitoring and spill reporting procedures.
- Developing operating manuals and standard procedures.
- Implementing spill response drills.

### **Effectiveness**

The city believes that automotive maintenance BMPs reduce pollutants from entering the waterways although the effectiveness of automotive maintenance best management practices at removing pollutants is difficult to quantify. However, there are studies that demonstrate the effect pollution prevention practices can have in reducing impacts from automotive fluids. A 1994 study of auto recycling facilities demonstrates the effect that using best management practices can have on reducing storm water toxicity and pollutant loads. Through the use of structural and nonstructural BMPs, the study facility was able to reduce concentrations of lead, oil, and grease to levels approaching USEPA benchmarks.



# City of Hot Springs

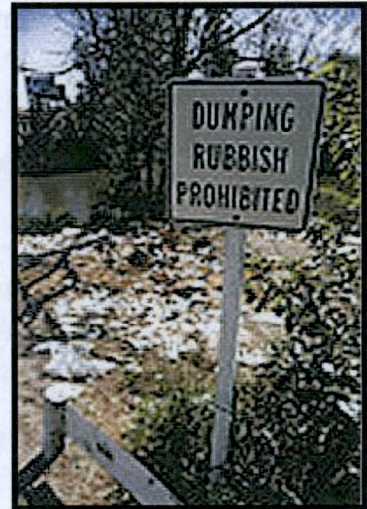
## 6.0 MCM: Pollution Prevention/Good Housekeeping

**6.1 BMP: Develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations.**

**6.1.c / 6.1.d MG: Develop and implement a program to control and reduce illegal dumping.**

### Description

Illegal dumping control as a management practice involves using public education to familiarize the city residents and businesses with how illegal dumping can affect storm water. By locating and correcting illegal dumping practices through education and enforcement measures, the many risks to public safety and water quality associated with illegal disposal actions can be prevented. For stormwater managers, illegal dumping control is important to preventing contaminated runoff from entering wells and surface water, as well as averting flooding due to blockages of drainage channels for runoff.



Several types of illegal dumping can occur. The first is the illegal dumping also known as open dumping, fly dumping or midnight dumping of litter that occurs at abandoned industrial, commercial, or residential buildings, vacant lots, and poorly lit areas such as rural roads and railway lines. This dumping primarily happens to avoid disposal fees or the time and effort required for proper disposal at landfills or recycling facilities. A second type of illegal dumping involves disposal of water that has been exposed to industrial activities and then released to the storm drainage system, introducing pollutants into stormwater runoff.

### Applicability

Illegal dumping can occur in any part of the city, in both urban and rural settings. The effects of illegal dumping may be more pronounced in areas with heavier rainfall, due to the greater volume of runoff. In more urbanized areas, illegal dumping may occur due to inaccessibility of recycling or solid waste disposal centers, which are often located on the suburban-rural fringe.

### Design Considerations

Illegal dumping control programs focus on community involvement and targeted enforcement to eliminate or reduce illegal dumping practices. The key to successfully using this BMP is increasing public awareness of the problem and its implications. The



city's illegal dumping control programs use a combination of public education, citizen participation, site maintenance, and authorized enforcement measures to address illegal waste disposal. Some of the issues that will be examined include the following:

- The locations of persistent illegal dumping activity.
- Types of waste dumped and the profile of dumpers.
- Possible driving forces behind illegal dumping, such as excessive user fees, restrictive curbside trash pickup, or ineffective recycling programs.
- Previous education and cleanup efforts.
- Current control programs and local laws or ordinances addressing the problem.
- Sources of funding and additional resources that may be required.

Effective illegal dumping control programs use practices that educate and involve the community, local industries, and elected officials in an effort to eliminate the illegal discarding of wastes. An EPA toolkit for preventing illegal dumping focuses on four programmatic areas (USEPA 1998):

### **Implementation**

The city currently has codes that prohibit illegal disposal of wastes. Title 4, Section 4-7-3 of the Hot Springs Code prohibits improper disposal of trash and debris into city streets, and Title 9, Section 9-1-2, e (11) of the Hot Springs Code defines an Illegal Dumpsite. In addition to its current ordinances, the city will consider implementing additional ordinances and programs to further curtail the illegal dumping of trash and used materials in accordance with EPA Final Rule. Additionally, the city will develop programs to educate citizens on ways to stop the illegal dumping of trash and used materials. For example, citizens will be taught about current practices of illegal dumpers like:

- Illegal dumping often occurs late at night and before dawn.
- There is often no company name on the construction vehicles or equipment.
- A construction activity occurs on a site with no company advertising sign.
- There is no construction entrance adjacent to the roadway (an area of large stone and gravel placed to keep mud off streets).

#### **1. Cleanup efforts**

Cleanup projects will require a coordinated planning effort to ensure that adequate resources and funding are available. Once a site has been cleaned, signs, lighting, or barriers may be required to discourage future dumping. Signs will indicate the fines and penalties for illegal dumping, and the hotline phone number for reporting incidents. Landscaping and beautification efforts might also discourage future dumping, as well as providing open space and increasing property values.

#### **2. Community Outreach and Involvement**

This will likely be the most important tool in ensuring that this best management practice is effective. The organization of special cleanup events where communities are provided



with the resources to properly dispose of illegally dumped materials increases the understanding among residents of illegal dumping impacts and supplies opportunities to correctly dispose of materials which may otherwise be illegally dumped. Integration of illegal dumping prevention into community policing programs or use of programs such as Crimestoppers may also be an effective way to increase enforcement opportunities without the additional cost of hiring new staff. Producing simple messages relating the cost of illegal dumping on local taxes, and directions to proper disposal sites will aid in eliminating the problem. Having a hotline where citizens can report illegal activities and educating the public on the connection between the storm drain and water quality will decrease disposal of waste into storm drain inlets.

### **3. Targeted Enforcement**

This tool involves the use of ordinances to regulate waste management and eliminate illegal dumping through methods such as fines, cost recovery penalties for cleanup, and permit requirements for waste management activities. These fines and penalties can be used to help fund the prevention program or to provide rewards to citizens who report illegal dumping activities. Other recommendations for this tool include training of staff from all municipal departments in recognizing and reporting illegal dumping incidents, and dedicating staff who have the authority to conduct surveillance and inspections and write citations for those caught illegally dumping.

### **4. Tracking and Evaluation**

This tool measures the impact of prevention efforts and determines if goals are being met. Using mapping techniques and computer databases will allow the city officials to identify areas where dumping most often occurs, record patterns of dumping occurrence (time of day, day of week, etc.), and calculate the number of citations issued to the responsible parties. This allows for better allocation of resources and more specific targeting of outreach and education efforts for offenders.

### **Limitations**

Illegal dumping is often spurred by cost and convenience considerations, and a number of factors encourage this practice. The cost of fees for dumping at a proper waste disposal facility are often more than the fine for an illegal dumping offense, thereby discouraging people from complying with the law. The absence of routine or affordable pickup service for trash and recyclables in some communities also encourages illegal dumping. A lack of understanding regarding applicable laws or the inadequacy of existing laws may also contribute to the problem.

The city will coordinate with state and federal agencies to help enforce illegal dumping control measures when resources such as funding and staff for enforcement activities are scarce.

Illegal dumping of household and commercial waste has a variety of impacts on water quality. Hazardous chemicals generated from household, commercial, and industrial



sources can contaminate ground and surface water supplies, affecting drinking water and public health as well as aquatic habitat. Reduced drainage of runoff due to blockage of streams, culverts and drainage basins can result in flooding and channel modification. Open burning associated with some illegal sites can cause forest fires that create severe erosion and cause sediment loading in streams. Economically, property values decrease as a result of illegal dumping and affect the local tax base and the ability to maintain pollution prevention programs.



# City of Hot Springs

## 6.0 MCM: Pollution Prevention/Good Housekeeping

**6.1 BMP: Develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations.**

**6.1.e MG: Implement a used oil recycling program.**

### Description

Used motor oil is a hazardous waste because it contains heavy metals picked up from the engine during use. Fortunately, it is recyclable because it becomes dirty from use, rather than actually wearing out. However, as motor oil is toxic to humans, wildlife, and plants, it should be disposed of at a local recycling or disposal facility. Before disposal, used motor oil should be stored in a plastic or metal container with a secure lid, rather than dumped in a landfill or down the drain. Containers that previously stored household chemicals, such as bleach, gasoline, paint, or solvents should not be used. Used motor oil should also never be mixed with other substances such as antifreeze, pesticides, or paint stripper.



Used motor oil is recycled in a number of different ways. It can be reprocessed into fuel for heating and cooling homes. Reprocessing is the most common method of recycling used oil in the United States. Approximately 750 million gallons of used oil are reprocessed every year and marketed to asphalt plants, steel mills, boilers, pulp and paper mills, cement/lime kilns, and a number of other places. Motor oil can also be burned in furnaces for heat or in power plants to generate electricity for homes, businesses, or schools. It can also be blended for marine fuels, mixed with asphalts for paving, or be used in industrial burners. Used motor oil can also be used in specially designed municipal garages, space heaters, and automotive bays. Finally, used motor oil can be re-refined into lubricating oils that meet the same standards as virgin/new oil. All of these methods of recycling help to conserve valuable non-renewable energy resources.

### Applicability

The city's fleet vehicles require periodic maintenance with oil changes being a major part of the preventative maintenance program. Therefore, it is important that the city participate in the oil recycling program.



## **Implementation**

The city will encourage the expansion of the existing oil recycling program. The city will continue to recycle oil from its fleet. Additionally, it will encourage its citizens to contact local service stations, the city offices, or local environmental or health departments, if they are unsure where and how to safely dispose of their oil. Oil recycling programs can be implemented easily throughout the city. Two types of programs currently in use at other locations are drop-off locations and curbside collection. Drop-off locations may include service stations, recycling centers, auto parts retail stores, quick lubes, and landfills. These locations are effective because they are familiar, convenient, permanent, and well located. Additionally, sites that are permanent allow for effective publicity for recycling programs. Curbside collection programs allow consumers to put their oil out on the curb for collection, as they already do with their other recycling and trash. While this program is more convenient for the user, it requires a hauler to come and collect the oil.

## **Benefits**

Recycling used motor oil is beneficial to the environment, the public health, and the economy. If oil is improperly disposed of in landfills, ditches, or waterways or dumped on the ground or down storm sewers, it can migrate into surface and pollute ground water. It takes only one gallon of oil to contaminate one million gallons of drinking water (USEPA, 2000). This same oil can also seriously harm aquatic plants and animals. Submerged vegetation is especially affected by oil because the oil blocks sunlight from entering the water and hinders photosynthesis. As motor oil causes 40 percent of the pollution in America's waterways (Mississippi DEQ), water pollution could dramatically decrease if that same oil was recycled.

It is also beneficial to recycle motor oil because one gallon of re-refined oil produces 2.5 quarts of lubricating oil, while 42 gallons of crude oil are necessary to produce this same amount. It also takes three times as much energy used to refine crude oil to lubricating oil than it does to re-refine used motor oil. If the 180 million gallons of recoverable motor oil that are thrown away each year were recycled, this would produce enough energy to power 360,000 homes annually. Finally, if the 1.3 billion gallons of oil wasted each year by the United States were re-refined, it would save 1.3 million barrels of oil a day (Mississippi DEQ).

Recycling used motor oil is also beneficial in protecting public health. As oil circulates through a car's engine, it collects rust, dirt, metal particles, and a variety of contaminants. Engine heat can also break down oil additives, producing acids and a number of other substances. Exhaust gases and antifreeze can also leak into oil when the engine is in use. When any of these substances mix with oil, the toxicity of oil is greatly increased. Then, if oil is disposed of improperly and enters the water or air, public health can be seriously threatened.

Recycling used motor oil is also beneficial to the economy. Oil is a valuable resource that can be re-refined and reused in combustion engines. As oil is a non-renewable resource, it



will become increasingly more difficult to find new reserves in the future. Therefore, recycling will provide time to develop alternative fuels and lessen dependence on foreign oil suppliers.



## GLOSSARY

Pages 87-95

**Aluminum** - aluminum is a lightweight, silver-white, metallic element that makes up approximately 7 percent of the Earth's crust. Aluminum is mined in the form of bauxite ore where it exists primarily in combination with oxygen as aluminum. Aluminum is used in a variety of ways, but perhaps most familiarly in the manufacture of soft drink cans.

**Aquatic Life** – any indigenous species of plants or animals living in water.

**Aquifer** – an underground geological formation or group of formations containing usable amounts of groundwater that can supply wells and springs; an underground bed or stratum of sand, gravel, or rock that stores or conveys water below the surface of the soil.

**Bacteria** – single-celled microorganisms that lack chlorophyll. Some bacteria are capable of causing human, animal or plant diseases; others are essential in pollution control because they break down organic matter in the air and in the water.

**Best Management Practice (BMP)** – means any program, technology, process, siting criteria, operational methods or measures, engineered systems, or practice or combination of practices determined to be the best known or most practicable means of preventing, controlling, or reducing pollution to a level compatible with water quality goals.

**Clean Water Act (CWA)** – federal Water Pollution Control Act enacted in 1972 and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to waters of the United States unless the discharge is in accordance with an NPDES permit. The 1987 amendment requires that municipalities regulate industrial and construction stormwater discharges and those stemming from development.

**Close the Loop** - a term used to describe the last, and most important, step in the recycling process. It refers to the point when a consumer buys a recycled product after it has been put into a recycling program and reprocessed into a new item.

**Coliforms** – any of a number of organisms common to the intestinal tract of animals, the presence in water of which is an indicator of pollution and of potentially dangerous bacterial contamination.

**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.

**Compost** - composting is Nature's way of recycling. Composting refers to a solid waste management technique that uses natural processes to convert organic materials to humus through the action of microorganisms. Compost is a mixture that consists largely of decayed organic matter and is used for fertilizing and conditioning land.

**Conservation** - conservation is the wise use of natural resources (nutrients, minerals, water, plants, animals, etc.). Planned action or non-action to preserve or protect living and non-living resources.

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

**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.

**Control** – means to minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

**Designated Uses** – those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act. Uses can include cold water fisheries, public water supply, agriculture, etc.

**Development** – means 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.

**Discharge** – the volume of water that passes through a given cross section of a channel or sewage outfall during a unit of time.

**Discharging Directly** – means outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

**Dissolved Oxygen (DO)** – the amount of free (not chemically combined) oxygen in water; the concentration of oxygen held in solution in water, which is vital to fish and other aquatic organisms and for the prevention of odors. It is usually measured in mg/L or expressed as a percentage of the saturation value for a given water temperature and atmospheric pressure. In general, oxygen levels decline as pollution increases.



**Dissolved Solids** – the total amount of dissolved material, organic and inorganic, contained in water or wastes; excessive dissolved solids make water unpalatable for drinking and unsuitable for industrial uses.

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

**Effluent** – a discharge of pollutants (usually in liquid form) into the environment, partially or completely treated or in its natural state; generally used in regard to discharges into waters; liquid flowing out of a system, such as discharge of stormwater from an urban outfall, liquid waste from a factory, or water leaving a sewage treatment plant.

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

**Filtration** – in stormwater treatment, a common process that removes particulate matter by separating water from solid material, usually by passing it through sand.

**Fossil Fuels** - fossil fuels are the remains of plant and animal life that are used to provide energy by combustion; coal, oil, natural gas.

**Glass** - glass is a hard, brittle, generally transparent or translucent material typically formed from the rapid cooling of liquefied minerals. Most commercial glass is made from a molten mixture of soda ash, sand, and lime.

**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.

**HDPE** – type of high density polyethylene plastic that is commonly used in milk and water jugs.

**Hazardous Material** – a material that is easily ignitable under ordinary temperature and pressure; readily supplies oxygen or reactive gas to a fire; is corrosive (highly acidic or caustic); is explosive or generates toxic gas; is acutely toxic to animals if it comes into contact with skin or is inhaled, eaten or drunk; or contains toxic chemicals that can be dissolved in an acidic environment, such as a landfill.

**Heavy Metals** – metals with high molecular weights that are of concern because they are generally toxic to animal life and health if naturally occurring concentrations are exceeded. Examples include arsenic, chromium, lead, and mercury.

**Hillside** – means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is twenty-five percent or greater and where grading contemplates cut or fill slopes.

**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.).

**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.

**Industrial/Commercial Facility** – a facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services.

**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 statutes, 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.

**Maximum Extent Practicable (MEP)** – standard for implementation of stormwater management programs to reduce pollutants in stormwater. MEP refers to stormwater management programs taken as a whole. It is the maximum extent possible taking into account equitable consideration and competing facts, including but not limited to: the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

**MS4 (Municipal Separate Stormwater Sewer System)** – 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.



**Municipal Solid Waste** - garbage or refuse that is generated by households, commercial establishments, industrial offices or lunchrooms and sludges not regulated as a residual or hazardous waste. This does not include source-separated recyclables.

**New Development** – means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

**Non-point Source Pollution** – water pollution caused by rainfall moving over and through ground which carries pollutants.

**Non-Renewable Resource** - a resource that is NOT capable of being naturally restored or replenished; a resource that is exhausted because it has not been replaced (e.g. copper) or because it is used faster than it can be replaced (e.g. oil, coal [what we call fossil fuels]). Their use as material and energy sources leads to depletion of the Earth's reserves and are characterized as such as they do not renew in human relevant periods (They are not being replenished or formed at any significant rate on a human time scale).

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

**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. This manual serves to assist in meeting the requirements of the NPDES Permit.

**City** – a state, city, town or other public entity that discharges to the waters of the United States. The city of Hot Springs is the city of the small MS4 per NPDES phase II regulations, as permitted by the Arkansas Department of Environmental Quality, and is the entity responsible for implementation and enforcement of its Stormwater Management Program.

**Organic** - a term that refers to molecules made up of two or more atoms of carbon, generally pertains to compounds formed by living organisms.

**Organism** – any living plant or animal; a living body made up of cells, tissues and organs.

**Packaging** - the wrapping material around a consumer item that serves to contain, identify, describe, protect, display, promote, and otherwise make the product marketable and keep it clean.

**Paper** - a thin material made of pulp from wood, rags, or other fibrous materials and used for writing, printing, or wrapping.

**Pet Waste** - use designated dog runs for pets. Use disposable bags for clean up after pets.

**Pathogen** – disease-causing organisms.

**Plans** – a set of drawings that depicts improvements, which require permitting and/or city approval at the planning and/or public works department prior to construction.

**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)), or are incorporated into the California Water Code '13373. Specifically, pollutants that are carried by runoff from rainstorms or other watering activities. Examples of pollutants include but are not limited to the following:

- Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);
- Metals such as cadmium, lead, zinc, copper, silver, nickel, and chromium; and non-metals such as phosphorus and arsenic;
- Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease);
- Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora, or fauna;
- Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);
- 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.

**Pollutant Loading** – the quantity of a pollutant found in stormwater and/or urban runoff expressed in mass per unit of time. Pollutant loadings are commonly expressed in units of tons/year or pounds/year.

**Pollution Prevention** – eliminating or reducing at the source the use, generation, or release of toxic pollutants, hazardous substances, and hazardous wastes.

**Polyethylene terephthalate** - a type of plastic used to make soft drink bottles and other kinds of food containers. PET is also used to make fabric.

**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.

**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.

**Sedimentation** – in stormwater treatment, the settling out of solids by gravity; the addition of soils to lakes, a part of the natural aging process, making lakes shallower. The process can be greatly accelerated by human activities.

**Significant Contributor** – includes not only pollutant loading but also a discharge that destabilizes the physical structure of a water body such that the discharge that may exert detrimental effects on the quality and uses of that water body.

**Source Control BMP** – means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

**Storm Drain System** – any pipe or conduit used to collect and carry away stormwater runoff from the generating source to receiving streams. A sewer that conveys household and commercial sewage is called a sanitary sewer. A storm drain transports runoff from rain or snow.

**Storm Event** – means a rainfall event that produces more than 0.1 inch of precipitation and that, which is separated from the previous storm event by at least 72 hours of dry weather.

**Stormwater** – water which originates from atmospheric moisture (rainfall or snowmelt) and falls onto land, water, or other surfaces.

**Stormwater Management Program (SWMP)** – Hot Springs' all encompassing program to meet the requirements of NPDES Phase II Final Rule.

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

**Structural BMP** – a best management practice that involves design and construction of a facility to mitigate the adverse impact of urban runoff. The structures often require maintenance.

**Surface Water** – water on the earth's surface exposed to the atmosphere, such as rivers, lakes, streams, and the oceans.

**Suspended Solids** – small particles that hang suspended in the water column and create turbid, or cloudy, conditions.

**Toxicity** – the quality or degree of being poisonous or harmful to plant or animal life.

**Treatment** – means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media adsorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

**Treatment Control BMP** – means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process.

**Urban Runoff** – stormwater from city streets and gutters that usually contains a great deal of litter and organic and bacterial wastes.

**USEPA** – United States Environmental Protection Agency, the federal agency that enforces federal regulations and administers federal programs such as the NPDES program. These regulations require the discharges from defined municipal separate storm drain systems, industrial facilities, and construction activities to comply with the NPDES permit conditions intended to reduce or eliminate the discharge of pollutants from stormwater drainage systems.

**Water Pollution** – the addition of sewage, industrial wastes, or other harmful or objectionable material to water in sufficient quantities or concentrations to result in measurable degradation of water quality.

**Water Quality Criteria** – the levels of pollutants that affect the suitability of water for a given use. Generally, water use classifications include public water supply, recreation, propagation of fish and other aquatic life, agricultural use, and industrial use.

**Water Quality Standard** – acceptable limits on water quality parameters—those criteria set by the State of Arkansas, for instance, with review by the EPA, so that when enforced they will meet the goals of the Clean Water Act.



**Watershed** – area drained by a given stream; an area bounded peripherally by a water divide and draining to a particular water course or body of water. Topography is the primary determinant of watershed boundaries.

**Wetland** – swamps or marshes, especially areas preserved for wildlife. Wetlands are crucial wildlife habitats and are important for flood control and maintaining the health of surrounding ecosystems.

**Wet Pond** – pond for urban runoff management that is designed to detain urban runoff and always contain water.

**Stormwater  
Management Program  
2019-2024**



**STORMWATER  
DIVISION**

PO Box 700, Hot Springs, AR 71902



# City of Hot Springs

## Stormwater Management Program

2019-2024

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### ATTACHMENTS

- A. Stormwater Ordinance with Resolution No. 7340
- B. Best Management Practices Manual
- C. Example Stormwater Pollution Prevention Plan (2017 Revision)
- D. Submittal Requirements
- E. Stormwater Management Manual not attached due to size 368 pages  
(Available on CHS Website)

# **City of Hot Springs**

## **Stormwater Management Program**

### **INTRODUCTION**

The Stormwater Phase II Final Rule was signed by EPA Administrator Carol Browner on October 29, 1999 and it was published in the Federal Register on December 8, 1999.

The following are excerpts from various Environmental Protection Agency web sites and documents, which provide the basis for the development and implementation of the city's Stormwater Management Program.

#### **Program Overview**

Polluted stormwater runoff is often transported to Municipal Separate Storm Sewer Systems (MS4s) and ultimately discharged into local rivers and streams without treatment. EPA's Stormwater Phase II Rule establishes an MS4 stormwater management program that is intended to improve the Nation's waterways by reducing the quantity of pollutants that stormwater picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

#### **What are the program requirements for the City?**

Operators of regulated small MS4s are required to:

- Apply for National Pollutant Discharge Elimination System (NPDES) permit coverage under general permit number ARR040000. Hot Springs applied for its permit and ADEQ issued Hot Springs a regulated small MS4 general permit – ARR040015 effective May 28, 2004.
- Develop a stormwater management program, which includes the six minimum control measures.
- Implement the stormwater management program using appropriate storm water management controls, or "best management practices" (BMPs).
- Develop measurable goals for the program.
- Periodically evaluate effectiveness of the program.

The ultimate objective of this program is to protect water quality. Hot Springs recognizes the need and responsibility to implement a program that achieves the requirements mandated by NPDES Phase II Final Rule. However, due to limited assets and funding the city may at times not be able to fully meet all the annual goals set forth in this program due to unforeseen issues and budget restraints from other departments of the city.



## **What are the six minimum control measures?**

The Phase II Rule outlines a small MS4 stormwater management program comprising six required program elements that, when implemented in concert, are expected to result in significant reductions of pollutants discharged into receiving water bodies. These six elements, termed "minimum control measures" (MCM), are:

1. **Public Education and Outreach**  
Distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.
2. **Public Participation/Involvement**  
Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.
3. **Illicit Discharge Detection and Elimination**  
Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).
4. **Construction Site Runoff Control**  
Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb one or more acres of land (controls could include for example, silt fences and temporary storm water detention ponds).
5. **Post-Construction Runoff Control**  
Developing, implementing, and enforcing a program to address discharges of post-construction stormwater runoff from new development and redevelopment areas. Applicable controls could include preventative actions such as protecting sensitive areas (e.g., wetlands) or the use of structural BMPs such as grassed swales or porous pavement.
6. **Pollution Prevention/Good Housekeeping**  
Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques (e.g., regular street sweeping, reduction in the use of pesticides or street salt, or frequent catch-basin cleaning).

## **What are Best Management Practices (BMP's)?**

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.

The EPA has composed a National Menu of Best Management Practices (BMP's) for Stormwater Phase II. The menu is intended to provide guidance to regulated small MS4s as to the types of practices they could use to develop and implement their storm water management programs. The menu is intended as guidance only. The menu of BMPs is based on Phase II's six minimum control measures.

**Additional Sources of Information:**

- Stormwater Phase II Compliance Assistance Guide (EPA)
- Small Construction Activities (EPA)

**Key points of contact:****Environmental Protection Agency-Region 6**

Fountain Place, 12<sup>th</sup> Floor, Suite 1200  
1445 Ross Avenue  
Dallas, Texas 75202-2733  
1-800-887-6063  
1-214-665-2200 (office)  
1-214-665-7113 (fax)

**U.S. Army Corps of Engineers-Vicksburg District**

Regulatory Branch  
4155 E. Clay Street  
Vicksburg, MS. 39183  
(601) 631-5053

**Arkansas Department of Environmental Quality**

Attn: Mo Shafii, Assistant Chief, Water Division  
5301 Northshore Drive  
North Little Rock, AR 72118-5317  
(501) 682-0616

**Arkansas Soil and Water Conservation Commission**

101 East Capitol, Suite 350  
Little Rock, Arkansas 72201  
1-501-682-1611 (office)  
1-501-682-3991 (fax)

**Arkansas Department of Emergency Management**

P.O. Box 758  
Conway, Arkansas 72033-0758  
Incident reporting hotline: 1-800-322-4012  
1-501-730-9750 (office)  
1-501-730-9754 (fax)

**City of Hot Springs**

Attn: Danny Carder, Stormwater Division Manager  
P.O. Box 700  
Hot Springs National Park, Arkansas 71902  
1-501-321-6773 (office)  
1-501-321-6868 (fax)



# City of Hot Springs

## Stormwater Management Program

### Minimum Control Measure

## Public Education and Outreach

Pages 5-8

An informed and knowledgeable community is crucial to the success of a stormwater management program since it helps to ensure the following:

- Greater support for the program as the public gains a greater understanding of the reason why it is necessary and important. Public support is particularly beneficial when the city attempts to institute new funding initiatives for the program or seek volunteers to help implement the program.
- Greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.

The city will continue implementation of a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of stormwater discharges on local water bodies and the steps that can be taken to reduce stormwater pollution. Hot Springs has determined and will continue to implement the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

### RATIONALE / IMPLEMENTATION

Hot Springs recognizes three main action areas as important for successful implementation of a public education and outreach program. Those three areas are:

1. Forming Partnerships. Hot Springs will continue to work with other government entities within Hot Springs in order to identify tasks best handled through a regional Stormwater Management Program approach. Hot Springs will also continue to seek assistance from non-governmental organizations (e.g. environmental, industrial organizations), since many already have educational materials and perform outreach activities.
2. Using Educational Materials and Strategies. Hot Springs has developed and will continue to distribute educational materials and activities that are relevant to local situations and issues, and incorporate a variety of strategies to ensure maximum coverage.
3. Hot Springs will continue to utilize some of the following strategies:
  - Brochures or fact sheets
  - Television and radio public service announcements
  - Recreational guides
  - Alternative information sources
  - A library of educational materials

- Volunteer citizen educators
- Event participation
- Educational programs
- Volunteer storm drain marking program
- Storm water hotlines
- Tributary signage

4. Reaching Diverse Audiences. The public education program uses a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children. Hot Springs will continue to print posters and brochures in order to reach audiences less likely to read standard materials. Hot Springs will continue to direct materials and outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts. For example, an informative brochure was mailed to restaurants on the effects of grease clogging storm drains and to auto garages on the effects of dumping used oil into storm drains.

## **MEASURABLE GOALS**

Throughout the 5 year permit term Hot Springs will continue to utilize an integrated approach to address the requirements and intent of the public education and outreach Minimum Control Measure. The stormwater education and outreach program shall include more than one mechanism and target at least five different stormwater themes or messages over the permit term. At a minimum, at least one theme or message shall be targeted to the land and development community. According to the 2017 census Hot Springs' total population is 36,915. The stormwater public education and outreach program shall reach at least 60 percent (22,149) of the population over the permit term.

The integrated 5 year approach will include the following measurable goals:

### **Public Education and Outreach**

- Continue distribution of educational pamphlets and brochures addressing pollution and prevention measures and develop and distribute new ones as necessary to ensure a broad range of targeted messages are distributed. Utilize local government television channel 12 and local morning radio station KZNG to further enhance the success of the MCM. Some examples of educational themes already being distributed include:  
Concrete Truck Wash Out (public, land & development community)  
Stormwater BMPs and Urban Runoff (public, land & development community)  
Safe Car Washing (Public)  
Water Quality/Landscape Maintenance (public, land & development community)  
Restaurant Guide (food service owners / managers)  
Stormwater Inspector Certification Class (required prior to issuance of permit)
- Continue to implement and educate the public on the Stormwater Management Program (SWMP).
- Continue to implement and educate the public on the Best Management Practices Manual (BMP).



## **BMP/Measurable Goal/Justification**

### **Public Education and Outreach**

**BMP:** Continue implementation of a public education program to distribute educational materials.

**Measurable Goal:** (Began in 2005) Hot Springs will continue to distribute and develop pamphlets, booklets and/or utility stuffers that address various types of pollution and prevention measures. The city will also utilize local government channel 12 and local radio PSAs to further achieve the goals of this MCM.

**Justification:** Hot Springs shall combine traditional methods of education with alternative methods in order to inform as many citizens as possible about the impacts of storm water pollutants. Printed media is an effective method for communicating to citizens that may otherwise not be active in seminars and other organized efforts. Local television and radio is also an effective method for communicating to citizens as these broadcasts have the potential to reach the largest and most diverse portions of the city's population.

**BMP:** Continue implementation of a public education program to distribute educational materials.

**Measurable Goal:** (Began in 2005) Continue to implement and educate the public on the Stormwater Management Program (SWMP).

**Justification:** A SWMP provides the mechanism to guide Hot Springs in the execution of BMPs and the measurable goals associated with them.

**BMP:** Continue implementation of a public education program to distribute educational materials.

**Measurable Goal:** (Began in 2005) Continue to implement and educate the public on the Best Management Practices Manual (BMP) (attachment D, "Best Management Practices Manual").

**Justification:** A BMP manual provides definitions and descriptions for each of the BMPs and the measurable goals. It details the manner in which Hot Springs executes each of the measurable goals within the SWMP.

### **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:**

The City of Hot Springs' Stormwater Division will be the primary coordinator, creator and distributor of the BMPs related to the Public Education and Outreach MCM. The division will at times collaborate with the City's Sanitation Department and the Hot Springs Garland County Beautification Commission to further enhance the message and distribution of educational literature related to water quality.

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# City of Hot Springs

## Stormwater Management Program

### Minimum Control Measure

## Public Participation/Involvement

Pages 9-11

The public can provide valuable input and assistance to a regulated small MS4's municipal stormwater management program. Therefore, the public will be given opportunities to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a storm water management program because it allows for:

- Broader public support since citizens who participate in the development and decision making process are partially responsible for the program. This will make the public less likely to raise legal challenges to the program and more likely to take an active role in its implementation.
- Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of citizen volunteers.
- A broader base of expertise and economic benefits since the community can be a valuable, free and intellectual resource.
- A conduit to other programs as citizens involved in the stormwater program development process provide important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a stormwater program on a watershed basis, as encouraged by EPA.

The city will continue to comply with applicable state and local public notice requirements in the execution of this minimum control measure. Hot Springs has and will continue to determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Rationale, BMPs and measurable goals are described below.

### RATIONALE/ IMPLEMENTATION

The best way to handle common notification and recruitment challenges is to know the audience and think creatively about how to gain its attention and interest. Therefore, Hot Springs combines traditional methods of soliciting public input with alternative advertising methods. Newspaper advertising may be combined with radio or television spots, postings at bus stops, announcements in neighborhood newsletters, announcements at civic organization meetings, distribution of flyers, mass mailings, door-to-door visits, telephone notifications, and multilingual announcements.

Hot Springs' notification program will target specific population sectors, including ethnic, minority, low-income communities, academic institutions, educational institutions, neighborhood groups, community groups, outdoor-recreation groups, business and industry. The ultimate goal is to involve a diverse cross-section of people who can offer a multitude of concerns, ideas and connections during the program development process.

Some examples of public involvement / participation activities that the city has or will implement include:

- Arbor Day Festival
- Volunteer “Leave Your Mark in Hot Springs” stormwater inlet marker program. Volunteer groups place storm drain markers reading “No dumping, drains to lake” on inlets throughout the city.
- The annual “Trash Bash” lake and stream cleanup program event is sponsored by Entergy in cooperation with the city and Beautification Commission.
- Storm Drain Art Program
- Adopt a Stream program
- Annual Hazardous Waste Drop Off Event

The Hot Springs Stormwater Division has involved the community in the development of its NOI and SWMP by including input from local engineering firms, developers and construction companies. The city intends to continue their reliance on these partnerships for further input into a new water quality filtration initiative that will be implemented within the permit term.

### **MEASURABLE GOALS**

Hot Springs will utilize a 5 year integrated approach to address the requirements and intent of the public participation/involvement Minimum Control Measure. The stormwater public involvement / participation program shall include at least five public involvement activities over the permit term.

The integrated 5 year approach will include the following measurable goals:

#### **Public Participation/Involvement**

- Notify the public of meetings/activities regarding MS4’s NPDES activities through media outlets.
- Continue to receive input from the public to assist with the development of SWMP and BMP manual.

### **BMP/Measurable Goal/Justification**

#### **Public Participation/Involvement**

**BMP:** Comply with state and local public notice requirements when implementing a public involvement/participation program.

**Measurable Goal:** (Began in 2005) Notify the public of meetings/activities regarding MS4’s NPDES activities through media outlets.

**Justification:** Hot Springs will continue to utilize various forms of media to communicate to the public about opportunities to participate in its stormwater management program. The media is an effective method for communicating to citizens.

**BMP:** Develop a SWMP that allows the public opportunities to participate.

**Measurable Goal:** (Began in 2005) Continue to receive input from the public to assist with the development of SWMP and BMP manual.

**Justification:** The citizens of Hot Springs will better accept their SWMP and BMP manuals if they are allowed to provide input in the development of them. The city has established a means for the citizens of Hot Springs to provide input in the development of the SWMP and BMP.



### **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:**

The City of Hot Springs' Stormwater Division will be the primary coordinator, creator and distributor of the BMPs related to the Public Participation and Involvement MCM.

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# City of Hot Springs

## Stormwater Management Program

### Minimum Control Measure

## Illicit Discharge Detection and Elimination

Pages 12-18

Federal regulations define an illicit discharge as "... any discharge to an MS4 that is not composed entirely of storm water..." with some exceptions. These exceptions include discharges from NPDES-permitted industrial sources and discharges from fire-fighting activities. Illicit discharges are considered "illicit" because MS4s are not designed to accept, process, or discharge such non-stormwater wastes. Sources of illicit discharges include but are not limited to sanitary wastewater, effluent from septic tanks, car wash wastewaters, improper oil disposal, improper disposal of animals, radiator flushing disposal, laundry wastewaters, spills from roadway accidents and improper disposal of auto and household toxics.

Discharges from MS4s often include wastes and wastewater from non-storm sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows was from illicit and/or inappropriate discharges and connections to the MS4.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving water bodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

The Environmental Protection Agency recognizes the adverse effects illicit discharges can have on receiving waters. Therefore the City of Hot Springs has developed and will continue to implement and enforce an illicit discharge detection and elimination program that includes:

- A storm sewer system map, showing the location of major outfalls and the names and location of waters of the United States that receive discharges from those outfalls (completed in 2008) (attachment C, "Storm Sewer System Map").
- A storm sewer system map of the entire MS4 system, including catch basins, pipes, ditches and public and private stormwater facilities (began in 2009).
- An ordinance on non-storm water discharges into the MS4, and appropriate procedures and actions.
- A plan to detect and address non-storm water discharges, including illegal dumping, into the MS4.
- The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste.
- Appropriate best management practices (BMPs) and measurable goals for this minimum control measure.



Hot Springs' illicit discharge detection and elimination program addresses various categories of non-storm water discharges or flows if they are identified as significant contributors of pollutants to water bodies in the small MS4. The following may be identified as potential significant contributors:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water
- Springs and uncontaminated ground water infiltration
- Water from crawl space pumps
- Lawn watering
- Individual residential car washing
- De-chlorinated swimming pool discharges
- Street wash water
- Flows from riparian habitats and wetlands
- Flows from emergency firefighting activities

## **RATIONALE / IMPLEMENTATION**

The city's illicit discharge detection and elimination program objective is to gain a thorough awareness of its system in order to determine the types and sources of illicit discharges entering the system and establish the legal, technical and educational means needed to eliminate these discharges. The city uses the following general guidelines in order to meet its objectives.

### **General Guidelines**

#### **The Map**

The storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It helps to determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular water bodies these flows may be affecting. In 2008 Hot Springs completed the collection of information on outfall locations and conducted field surveys to verify locations (attachment C). Field surveys were conducted using ArcPad 7.1.1 and ArcMap 9.2. The field data was then layered onto the city's existing GIS aerial photographs and topographic map in order to determine major water shed basins and then further divided into sub-water shed basins and waters of the state. This required walking stream banks and shorelines for visual observation and data collection. Throughout the permit term of 2019 through 2024 the city will continue to develop a map of the entire MS4 storm sewer system using the same technique described above. The city will update the map as necessary.

### **Legal Prohibition and Enforcement**

The city has established and is enforcing Stormwater Ordinance no. 5378 with Resolution Number 5628 (attachment A "Stormwater Ordinance"), which includes prohibition of illicit discharges and illegal dumping and fines for violations.

## **The Plan**

The plan to detect and address illicit discharges is the central component of the city's illicit discharge detection and elimination program. The plan is dependent upon several factors, including available resources, size of staff, and degree and character of its illicit discharges. The plan will consist of the following four steps:

1. Locate problem areas. Hot Springs continues to identify priority areas for detailed screening of the system based on the likelihood of illicit connections. The city uses various methods such as public complaints, visual screening and, during the permit term, observation of all 524 mapped outfalls during dry weather to locate problem areas. Dry weather is considered 7 sequential days with a rain fall no greater than 1/4 inch. GIS zoning layers also help the city in determining industrial areas that may have a higher likelihood of illicit discharges.
2. Find the source. Additional efforts usually are necessary to determine the source of the problem once a problem area or discharge is found. Using the storm sewer map, illicit discharges will be traced to their source. If necessary the city will utilize a robotic pipe inspection camera to track the discharge to its source. The city may also utilize the wastewater treatment or third party laboratories for testing of samples suspected to be illicit discharges.
3. Remove/correct illicit connections. Hot Springs will notify ADEQ of verified illicit discharges. Hot Springs utilizes both educational efforts and working with the discharger in resolving the problem. The stormwater ordinance allows for the issuance of fines and citations for continued violations of the illicit discharge ordinance.
4. Document actions taken. Hot Springs will document all actions taken under the plan in order to manage and to illustrate that progress is being made to eliminate illicit connections and discharges. Actions will be documented and records retained. The annual report to ADEQ will include: number of outfalls dry-weather screened, number of dry-weather flows identified, number if illicit discharges identified, number of illicit discharges eliminated, provide schedules for elimination of illicit connections that have been identified, but have yet to be eliminated, and a summary of any storm sewer system updates.

## **Education and Outreach**

E.P.A. recognizes the importance of educational outreach to public employees, businesses, property owners, the general community and elected officials regarding ways to detect and eliminate illicit discharges as an integral part of the city's illicit discharge detection and elimination program. This action helps gain support for the city's stormwater program. The city executes various outreach efforts such as developing and distributing informative brochures, designing a program to publicize and facilitate public reporting of illicit discharges, coordinating volunteers for ongoing inspections of outfalls, promoting recycling programs and lake and creek cleanup programs.

## **MEASURABLE GOALS**

The city will utilize a 5 year integrated approach to address the requirements and intent of the Illicit Discharge Detection and Elimination Minimum Control Measure. The integrated 5 year approach includes the following measurable goals:

### **Illicit Discharge Detection and Elimination**



- Maintain and continue to develop a storm sewer map, which will be updated as determined necessary.
- Maintain a list and address allowable non-stormwater discharges if they become significant contributors of pollutants to the MS4.
- Maintain a point of contact for the public to report illicit discharges.
- Maintain local controls/conditions for incidental non-storm water discharges.
- Maintain an ordinance which includes prohibition of illicit discharges.
- Continue to implement and enforce the ordinance.
- Develop a program to reduce the number of failing septic systems.
- Inform ADEQ of illicit discharges and actions taken to eliminate discharges.
- Educate city agencies about illicit discharges and the procedures for reporting illicit discharges.
- Educate industries, businesses and public about illicit discharges and the means to eliminate them.
- Use public education program to educate/inform public employees and businesses about hazards associated with illicit discharges.

### **BMP/Measurable Goal/Justification**

#### **Illicit Discharge Detection and Elimination**

**BMP:** Maintain and continue to develop a storm sewer system map which shows locations of all outfalls with names/locations of all waters of the United States that receive discharge from this outfall. Continue to build the map to include the entire MS4 storm sewer system.

**Measurable Goal:** Hot Springs developed a storm sewer map in 2008 which includes all outfalls, major water sheds, sub water sheds, and waters of the US (attachment C). The creation of this map will continue throughout the permit term to include the entire MS4 storm sewer system and will be updated as determined necessary.

**Justification:** A map is necessary to demonstrate a basic awareness of the intake and discharge areas of the basin and to assist in determining the types and sources of illicit discharges affecting a watershed. A watershed map will serve as a tracking, scheduling, and record keeping mechanism. Mapping will be an ongoing process to initially prepare and continually update changes.

**BMP:** Prohibit through ordinance non-storm water discharges into the storm sewer system and implement enforcement procedures.

**Measurable Goal:** Maintain a list and address allowable non-stormwater discharges if they become significant contributors of pollutants to the MS4 (attachment A, pages 8-9).

**Justification:** Non-storm water discharges like landscape irrigation rising ground waters foundation drains just to name a few can impair water quality, particularly surface water and wells. Substances disposed of directly into storm drains can also lead to water quality impairment. Hot Springs's program combines citizen awareness, citizen reporting, cleanup activities and enforcement to reduce the effects of non-stormwater discharges not already identified as significant pollutant contributors.

**BMP:** Develop a plan to detect and eliminate illicit discharges in industrial and business connections.

**Measurable Goal:** Maintain a point of contact for the public to report illicit discharges. The point of contact is the city's Stormwater Hotline (501) 321-6778. The hotline is advertised in all educational literature, the government cable network, and City Services Guide.

**Justification:** Hot Springs is too large an area for city personnel to police. Informed citizens around the city need a means of reporting illicit discharges. A stormwater hotline provides the mechanism to communicate effectively with the city.

**BMP:** Develop a list of incidental non-stormwater discharges like charity car washes not already addressed as illicit discharges.

**Measurable Goal:** In 2010 Hot Springs developed local controls/conditions for incidental non-stormwater discharges.

**Justification:** Incidental non-stormwater discharges can impair water quality, particularly surface water and wells. Substances disposed of directly into storm drains can also lead to water quality impairment. Hot Springs's program will develop local controls/conditions for incidental non-stormwater discharges in order to reduce its effects.

**BMP:** Prohibit through ordinance non-storm water discharges into the storm sewer system and implement enforcement procedures.

**Measurable Goal:** In 2004 Hot Springs created and will continue to implement an ordinance that prohibits non-stormwater discharges (attachment A, pages 8-9). The ordinance will be revised and updated as necessary to ensure full compliance with ADEQ and NPDES permit requirements.

**Justification:** A stormwater management ordinance which prohibits non-stormwater discharges establishes the guidelines and regulations that are necessary to comply with NPDES Phase II Final Rule. This mechanism provides the city with the tool to manage and enforce its stormwater management program.

**BMP:** Develop and implement a program that addresses non-stormwater discharges into the storm sewer system and implement enforcement procedures.

**Measurable Goal:** Hot Springs has developed and will continue to implement an ordinance, which includes prohibition of illicit discharges (attachment A, page 8).

**Justification:** A stormwater management ordinance, which prohibits illicit discharges, establishes the guidelines and regulations that are necessary to comply with NPDES Phase II Final Rule. This mechanism provides the city with the tool to manage and enforce its storm water management program.

**BMP:** Educate/inform public, employees and businesses about the hazards associated with illicit discharges.

**Measurable Goal:** Hot Springs Neighborhood Services has developed a program to reduce the number of failing septic systems.

**Justification:** An improperly functioning septic system can allow sewer to migrate to the ground surface and into the water bodies of the county. These failures introduce pollutants such as nitrogen and micro-biological pathogens, which contain viruses and bacteria that present health problems for humans, animals and aquatic organisms. Since the Arkansas Department of Health is the agency responsible for septic tank systems the city will take an active role in coordinating efforts to identify and mitigate failing systems.

**BMP:** Prohibit through ordinance non-storm water discharges into the storm sewer system and implement enforcement procedures.

**Measurable Goal:** Hot Springs will inform ADEQ of illicit discharges and action taken to eliminate the discharge.

**Justification:** Illicit discharges into the water bodies of Hot Springs can carry raw sewage, heavy metals, oil and grease, solids, detergents, chlorine, potassium, ammonia, and nutrients, which can cause bacterial contamination, the spread of disease and close waters to fishing and recreation. Heavy metals are also known to be toxic to aquatic organisms. The stormwater management program continues to train city personnel, the public and volunteers on recognition, reporting procedures and corrective actions related to illicit discharges and connections. This program will reduce the effects of illicit discharges and connections on water bodies of the city.



**BMP:** Develop a plan to detect and address non-stormwater discharges, including illegal dumping

**Measurable Goal:** Hot Springs has developed and will continue to enforce an ordinance, which includes prohibition of illegal dumping (attachment A, page 7)

**Justification:** A storm water management ordinance, which prohibits illegal dumping, establishes the guidelines and regulations that are necessary to comply with NPDES Phase II Final Rule. This mechanism provides the city with the tool to manage and enforce its stormwater management program.

**BMP:** Develop a plan to detect and eliminate illicit discharges in industrial and business connections.

**Measurable Goal:** Hot Springs continues to educate city agencies about illicit discharges and the procedures for reporting illicit discharges. The plan for detection and elimination of these discharges has been established (see "The Plan" pages 15-16 in SWMP).

**Justification:** When educated, city agencies become aware of how to identify potential illicit discharges, the impact they can have on stormwater management, reporting procedures of illicit discharges and how they can be avoided or mitigated. This will reduce the amount of illicit discharges that enter our water bodies.

**BMP:** Develop a plan to detect and eliminate illicit discharges in industrial and business connections.

**Measurable Goal:** Hot Springs continues to educate industries, businesses and public about illicit discharges and the means to eliminate them. The plan for detection and elimination of these discharges has been established (see "The Plan" pages 15-16 in SWMP).

**Justification:** Cross connections can occur inadvertently or intentionally. An illicit cross connection can introduce such contaminants as heavy metals, oil and grease, nutrients or raw sewage into the storm water system. Hot Springs' plan enlightens its citizens, industries and businesses on the adverse consequences, how to identify, test, monitor, avoid and mitigate illicit discharges and connections.

**BMP:** Educate and inform the public, employees and businesses about the hazards associated with illicit discharges.

**Measurable Goal:** Hot Springs uses a public education program to educate/inform public employees and businesses about hazards associated with illicit discharges.

**Justification:** Hot Springs combines traditional methods of education with alternative methods in order to inform as many citizens as possible about the impacts of stormwater pollutants. When educated, the public will become aware of how to identify potential illicit discharges, the impact they can have on stormwater management, reporting procedures of illicit discharges and how they can be avoided or mitigated. Printed media will be an effective method for communicating to citizens that may otherwise not be active in seminars or other organized efforts.

### **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.

## **RESPONSIBILITY:**

The City of Hot Springs' Stormwater Division will be the primary enforcement authority related to the implementation and success of the Illicit Discharge Detection and Elimination MCM. The city has partnered with B&F Engineering to complete the full storm sewer system mapping project over the next 5 years.

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# City of Hot Springs

## Stormwater Management Program

### Minimum Control Measure

## Construction Site Runoff Control

Pages 19-25

Polluted stormwater runoff from construction sites often flows into MS4s and ultimately is discharged into local rivers and streams. Pollutants commonly discharged from construction sites include sediment, solid/sanitary wastes, phosphorous (fertilizer), nitrogen (fertilizer), pesticides, oil/grease, concrete truck washout, construction chemicals and construction debris. Sediment is usually the main pollutant of concern. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forestlands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to our nation's waters. For example, excess sediment can quickly fill rivers and lakes, requiring dredging and destroying aquatic habitats.

EPA recognizes the adverse effects of construction site runoff. Hot Springs has developed and will continue to implement and enforce a program to reduce pollutants in stormwater runoff to their MS4 from construction activities that result in land disturbance. Through the implementation of this Stormwater Management Program, the city has and will continue to:

- Maintain an ordinance requiring the implementation of proper erosion and sediment controls on applicable construction sites, which includes procedures for site plan review and approval of construction plans that consider potential water quality impacts, and includes procedures for site inspection and enforcement of control measures.
- Include penalties for reported violations to ensure compliance, which are established within the ordinance.
- Establish procedures for the receipt and consideration of information submitted by the public.
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

### RATIONALE / IMPLEMENTATION

The city's construction site runoff program's objective is to reduce pollutants in stormwater runoff. The city uses the general guidance described below in order to meet its objective.

### Regulatory Mechanism

Hot Springs has established a construction program through the development of an ordinance that controls polluted runoff from all new commercial construction sites regardless of size, residential construction sites adjacent to water bodies which have a "potential to pollute" and projects considered to be "part of a larger common plan of development".

## **Site Plan Review**

Hot Springs' construction program includes requirements for the implementation of appropriate BMPs on construction sites to control erosion and sediment and other waste at the site. Hot Springs reviews all Stormwater Pollution Prevention Plans submitted before ground is broken and a building permit is issued to determine if a construction site is in compliance with the requirements (attachment B, "Example SWPPP submittal package").

Within the SWPPP submittal Hot Springs requires:

- Stormwater Pollution Prevention Plan using the city's template.
- Stormwater QLP Site Notice or ADEQ –NOC for projects larger than 5 acres.
- Detention / retention calculations and details for projects greater than 1 acre.
- Detention / retention maintenance agreement signed by owner.
- Stormwater post construction water quality plan for all new projects.
- Site map with details of flow, controls, buffers, areas undisturbed, etc.
- Project stormwater site inspector who has been certified through the city.

Site plan review aids in compliance and enforcement efforts since it alerts the city early in the process to the planned use or no-use of proper BMPs and provides a way to track new construction activities. The tracking of sites is useful not only for the city's record keeping and reporting purposes, which are required under the NPDES storm water permit, but also for the public interested in ensuring that the sites are in compliance.

## **Inspections and Penalties**

The city's enforcement activities will begin once construction commences to ensure BMPs are in place. The city will utilize site inspections and enforcement of control measures to deter infractions.

Inspection Procedures Include:

- An initial site inspection of the project prior to land disturbance to ensure controls and documentation are properly installed and in place.
- All permitted projects shall be inspected by the city at least once every thirty days or on a greater frequency for non-compliant projects. Monthly inspections are documented and recorded using the city's inspection form template.
- Priority site inspections based upon the construction activity, topography and soils characteristics. The inspection process will also give the city the opportunity to provide additional guidance and education and issue warnings.

Penalties and Enforcement Procedures Include:

- Projects in minor non-compliance which do not have a direct potential to pollute are first given a verbal warning and deadline for compliance.
- Projects with continued non-compliance after verbal warnings are issued a Notice of Violation (NOV). The notice outlines the violations, necessary repairs, and a deadline for compliance. This notice is mailed through certified mail and includes a minimum \$50.00 administrative enforcement fee.
- Projects in non-compliance with a direct potential to pollute, land disturbance prior to permitting, or continued non-compliance after NOV are issued a Stop Work Order.



- In most situations the Stop Work Order ensures compliance with stormwater regulations, but if necessary the city ordinance allows for the issuance of a criminal citation. If a citation is issued the fine is determined by the Garland County Court and can be a maximum of \$500.00 for each violation and \$250.00 for each day that violations persisted.
- ADEQ will be notified for any violations resulting in a NOV, Stop Work Order or citation.

### **Information Submitted by the Public**

Hot Springs' construction program consists of procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities. This further reinforces the public participation component of the city's stormwater program and helps to recognize the crucial role that the public can play in identifying instances of non-compliance. The city considers the information submitted and determines the need to follow-up and/or respond. The city will demonstrate acknowledgement and consideration of information submitted. A tracking process in which submitted public information, both written and verbal, is recorded and then given to the construction site inspector for possible follow-up.

### **Phase I NPDES**

Phase I NPDES storm water program requires operators of construction activities that disturb five or more acres to obtain a NPDES construction stormwater permit. General permit requirements include the submission of a Notice of Intent (NOI) and the development of a storm water pollution prevention plan (SWPPP). The SWPPP must include a site description and measures and controls to prevent or minimize pollutants in storm water discharges. The Phase II Final Rule similarly regulates discharges from smaller construction sites disturbing equal to or greater than one acre and less than five acres.

Even though all construction sites that disturb more than one acre are covered nationally by an NPDES storm water permit, the construction site runoff control minimum measure for the city program is needed to induce more localized site regulation and enforcement efforts. It will also enable the city to more effectively control construction site discharges into its MS4s.

To aid operators of regulated construction sites in their efforts to comply with both local requirements and their NPDES permit, the Phase II Final Rule includes a provision that allows the NPDES permitting authority to reference a "qualifying local program" like Hot Springs's program in the NPDES general permit for construction. This means that if a construction site is located in the city limits, then the construction site operator's compliance with the city's program constitutes compliance with their NPDES permit. Hot Springs' Stormwater Management Program for construction is a qualifying local program since it requires a SWPPP, in addition to the requirements summarized in this document.

The ability to reference other programs in the NPDES permit is intended to reduce confusion between overlapping and similar requirements, while still providing for both local and national regulatory coverage of the construction site. The provision allowing NPDES permitting authorities to reference other programs has no impact on or direct relation to the city's responsibilities under the construction site runoff control minimum measure profiled here.

## **MEASURABLE GOALS**

Hot Springs will utilize a 5 year integrated approach to address the requirements and intent of the Construction Site Runoff Minimum Control Measure. The integrated 5 year approach will include the following measurable goals:

### **Construction Site Runoff Control**

- Create a stormwater maintenance ordinance. (Completed in 2005 and revised 2008)
- Adopt a stormwater maintenance ordinance, which requires erosion and sediment controls with sanctions. (Completed in 2005 and revised 2008)
- Develop and implement a site plan submittal/review process. (Completed in 2005)
- Incorporate erosion and sediment control requirements with the site plan submittal process. (Completed in 2005)
- Include requirements for submittal of required ADEQ permits for sites 5 acre and larger during submittal process. (Completed in 2005)
- Develop procedures for receipt and consideration of information submitted from the public. (Completed in 2005)
- Notify ADEQ upon validation of reported infractions resulting in an NOV, Stop Work Order or citation. (Began in 2005)
- Develop a construction site inspection program. (Completed in 2005)
- Develop contractor site inspector certification program. (Completed in 2006)
- Establish requirements for contractors to construct and maintain erosion and sediment control measures at the construction activity. (Completed in 2005)
- Conduct education seminars for contractors on waste associated with their profession that may cause adverse impacts to water quality. (Will continue through permit term, see Public Education & Outreach)



## **BMP/Measurable Goal/Justification**

**BMP:** Develop/implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 form construction activities.

**Measurable Goal:** (Completed in 2005) Hot Springs has created, adopted and will continue to enforce a stormwater maintenance ordinance, which requires erosion and sediment controls with sanctions (attachment A).

**Justification:** An ordinance without sanctions is traditionally ignored. Hot Springs will not implement an ordinance that can't be enforced. 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 establishes the guidelines and regulations that are necessary to comply with NPDES Phase II Final Rule. This mechanism provides the city with the tool to manage and enforce its stormwater management program.

**BMP:** Develop/implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 form construction activities.

**Measurable Goal:** (Completed in 2005) Hot Springs has developed a site plan submittal/review process for 100% of projects requiring NPDES permitting, which incorporates erosion and sediment control requirements.

**Justification:** Hot Springs has developed a site plan submittal/review process, which incorporates erosion and sediment control requirements. Ordinances promote the public welfare by guiding, regulating, and controlling the design, construction, use and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. Erosion and Sediment Control (ESC) ordinances consist of permit application and review, and require an erosion and sediment control plan. A site plan submittal and review process assures the city that developers will design and implement appropriate erosion and sediment controls, as well as other BMP's related to construction sites.

**BMP:** Develop/implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 form construction activities.

**Measurable Goal:** (Completed in 2005) Hot Springs includes requirements for submittal of required ADEQ permits for sites five acre and larger during submittal process.

**Justification:** Siltation and the contribution of other pollutants from construction sites can cause physical, chemical and biological harm to our nation's waters. ADEQ initial requirements for stormwater pollution prevention plans targeted five acre sites and larger. That has been changed to 1 acre sites and larger. This is necessary to comply with NPDES Phase II Final Rule. This mechanism provides the city with another tool to help manage and enforce its stormwater management program. Since Hot Springs is considered to be a Qualifying Local Program they will only require ADEQ – NOC proof of coverage for projects five acres or greater.

**BMP:** Develop/implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 form construction activities.

**Measurable Goal:** (Completed in 2005) Hot Springs has developed procedures for receipt and consideration of information submitted by the public.

**Justification:** In order to provide a link between the citizens and Hot Springs's government it is necessary to establish methods in which contact is available. The primary method for reporting water quality violations is a hotline for citizens to report by telephone. The city's mailing address is listed on brochures, which provide an additional means for citizens to contact the city. Hot Springs has established procedures that ensure responsiveness to citizen reports. Hot Springs' intent is to ensure all reports are investigated promptly and thoroughly in order to support the efforts of the citizens therefore ensuring success of the program.

**BMP:** Develop/implement a program to reduce pollutants in any stormwater runoff that enters the small MS4 form construction activities.

**Measurable Goal:** (Completed in 2005) Hot Springs has implemented a site plan submittal/review process, which incorporates erosion and sediment control requirements (attachment B).

**Justification:** Hot Springs has developed a site plan submittal/review process, which incorporates erosion and sediment control requirements. Ordinances promote the public welfare by guiding, regulating, and controlling the design, construction, use and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. Erosion and Sediment Control (ESC) ordinances consist of permit application and review, and require an erosion and sediment control plan. A site plan submittal and review process assures the city that developers will design and implement appropriate erosion and sediment controls, as well as other BMP's related to construction sites.

**BMP:** Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than one acre if part of a larger common plan of development or sale.

**Measurable Goal:** (Completed in 2005) Hot Springs will contact ADEQ upon validation of reported infractions resulting in a NOV, Stop Work Order or citation.

**Justification:** The success of this program depends on the cooperation and assistance of all governmental agencies. Enforcement of penalties for reported infractions requires the cooperation of all governmental agencies as well.

**BMP:** Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than one acre if part of a larger common plan of development or sale.

**Measurable Goal:** (Completed in 2005) Hot Springs has developed a construction site inspection program.

**Justification:** To insure that BMPs are properly installed it is necessary to develop procedures for site inspection and enforcement of control measures to deter infractions. Inspector training programs can help to enforce compliance by limiting the burden of inspection for local regulatory agencies. By freeing up staff and other resources, more frequent and thorough inspections can be made.

**BMP:** Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than one acre if part of a larger common plan of development or sale.

**Measurable Goal:** (Completed in 2006) Hot Springs developed a contractor certification program.

**Justification:** Contractors are the individuals ultimately responsible for the proper installation and maintenance of ESC practices on construction. A contractor certification program helps to improve compliance with ESC programs and foster better relationships between contractors and regulators. This program involves training, refresher courses, periodic recertification as well as opportunities for learning new ESC technology.

**BMP:** Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than one acre if part of a larger common plan of development or sale. Require proper stormwater construction permits from ADEQ for sites five acres and larger.

**Measurable Goal:** (Completed in 2005) Hot Springs has established requirements for contractors to construct and maintain erosion and sediment control measures at the construction activity (attachment B, pages 5-8).

**Justification:** Hot Springs recognizes that erosion and sedimentation from construction sites lead to reduced water quality and other environmental degradation. Ordinances promote the public welfare by guiding, regulating, and controlling the design, construction, use and maintenance of any development or other activity



that disturbs or breaks the topsoil or results in the movement of earth on land. ESC ordinances consist of permit application and review, and require an erosion and sediment control plan.

**BMP:** Develop a contractor oriented program that reduces pollutants from entering stormwater from construction activities equal to one acre or greater to include disturbances less than one acre if part of a larger common plan of development or sale. Require proper stormwater construction permits from ADEQ for sites five acres and larger.

**Measurable Goal:** (Began in 2005 will continue through permit term, see Public Education & Outreach, pages 6-9) Hot Springs conducts educational seminars for contractors on waste associated with their profession that may cause adverse impacts to water quality.

**Justification:** Hot Springs recognizes that wastes from construction sites lead to reduced water quality and other environmental degradation. Hot Springs will continue to conduct educational seminars utilizing both volunteer and city instructors to educate contractors about the impacts of waste associated with their profession on storm water discharges to water bodies and the steps that they can take to reduce pollutants in stormwater runoff.

### **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 city's intention to minimize the number of non-compliance issues through education, training, inspections, and enforcement.

### **RESPONSIBILITY:**

The City of Hot Spring's Stormwater Division will be the primary enforcement authority related to the implementation and enforcement of the Construction Site Stormwater Runoff Control MCM. The city engineer reviews all detention / retention plans and calculations. Other city departments are trained to recognize violations and report them to the Stormwater Division. The city also educates and utilizes input / complaints from citizens to aid in identifying possible stormwater violations.

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# City of Hot Springs

## Stormwater Management Program

### Minimum Control Measure

## Post-Construction Runoff Control

Pages 26-30

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 storm water discharges is the most cost-effective approach to stormwater quality management.

There are generally two 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 and 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 by increasing the quantity of water delivered to the water body during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete 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.

Hot Springs' 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 city's program consists of the following items in support of this objective:

- Continue to develop and implement strategies, which include a combination of structural and/or non-structural best management practices (BMPs).
- Maintain an ordinance requiring the implementation of post-construction runoff controls.
- Ensure adequate long-term operation and maintenance of controls.
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

### Redevelopment Project Definition

The term "redevelopment" refers to alterations of a property that change the "footprint" of a site or building in such a way that there is a disturbance of one acre or greater of land. The term does not include such activities as exterior remodeling. Because redevelopment projects may have site constraints not found on new development sites, the rule provides flexibility for implementing post-construction controls on redevelopment sites that consider these constraints.



## **RATIONALE / IMPLEMENTATION**

Hot Springs' post-construction runoff program's objectives will be met through a combination of both structural and non-structural BMPs. The post-construction program is very similar to the construction site runoff program and therefore will be developed in tandem.

### **Non-Structural BMPs**

**Planning and Procedures:** Runoff problems can be addressed 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 that 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 City of Hot Springs highly encourages and supports environmentally sustainable building design, construction and planning for low impact development. The city'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 2009-2014 permit term the city will continue to evaluate and establish new initiatives and incentives to promote low impact development. Some proposed examples include:

- Fast tracking LID or LEED projects through the permit and plan review process.
- Reduced building and stormwater permit cost 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 city 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 city will continue to work with local engineering firms and city 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 to be included 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 signed by the owner of the project. The city 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.

**Storage Practices:** Hot Springs' Stormwater Ordinance requires the construction and maintenance of a detention / retention facility for all projects which disturb one acre or greater of land. Storage or detention BMPs control stormwater by gathering runoff in wet ponds, dry basins, or multi-chamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices both control stormwater volume and settle out particulates for pollutant removal.

**Infiltration Practices:** Hot Springs encourages the use of infiltration devices in all new construction and building and planning codes are designed to allow these devices upon approval of the city. Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, resulting in reduced stormwater 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 city's code and stormwater ordinance prohibits the discharge of any debris or chemicals into the storm sewer system and gives the city 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.

## **MEASURABLE GOALS**

Hot Springs will utilize a 5 year integrated approach to address the requirements and intent of the Post-Construction Runoff Control Minimum Control Measure. The integrated 5 year approach includes the following measurable goals:

### **Post Construction Runoff Control**

- Maintain a stormwater maintenance ordinance, which includes post-construction runoff control measures.
- Maintain a stormwater maintenance ordinance, which includes a requirement for long term operation and maintenance of BMP's.
- Continue to develop strategies, which include a combination of structural and/or non-structural BMP's.
- Implement a program to address stormwater runoff from all new construction /redevelopment projects regardless of size and land disturbance.

### **BMP/Measurable Goal/Justification**

**BMP:** Maintain a stormwater maintenance ordinance, which includes post-construction runoff control.

**Measurable Goal:** (Completed in 2005) Create a stormwater maintenance ordinance, which includes post-construction runoff control measures.

**Justification:** 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 city with the tool to manage and enforce its stormwater management program.



**BMP:** Maintain a stormwater maintenance ordinance, which includes post-construction runoff control.

**Measurable Goal:** (Completed in 2005) Create a stormwater maintenance ordinance, which includes a requirement for long term operation and maintenance of BMP's.

**Justification:** In order to ensure that long-term operation and maintenance of controls are met the city has developed a stormwater drainage manual, a stormwater ordinance and the means to enforce both.

**BMP:** Develop and adopt a stormwater maintenance ordinance, which includes post-construction runoff control.

**Measurable Goal:** (Began in 2005) Continue to develop strategies, which include a combination of structural and/or non-structural BMP's.

**Justification:** Hot Springs's post-construction runoff program's objectives will be met through a combination of both structural and non-structural BMPS. The post-construction program is very similar to the construction site runoff program and therefore will be developed in tandem.

**BMP:** Develop/implement/enforce a program to address stormwater runoff from new sites and redevelopment projects.

**Measurable Goal:** (Began in 2005) Implement a program to address stormwater runoff from new sites/redevelopment projects regardless of size and land disturbance.

**Justification:** Siltation and the contribution of other pollutants from construction sites can cause physical, chemical and biological harm to our nation's waters. ADEQ initial requirements for stormwater pollution prevention plans targeted five acre sites and larger. That has been changed to one acre sites and larger. The City of Hot Springs regulates stormwater runoff from all construction activities regardless of size. This is necessary to comply with NPDES Phase II Final Rule. This mechanism provides the city with another tool to help manage and enforce its stormwater management program.

### **MEASURING SUCCESS:**

Success of the Post-Construction Stormwater Management in New Development and Redevelopment MCM will be measured and achieved by the city's requirement for 100% of all new construction projects regardless of size to install and maintain a water quality device as deemed appropriate by the city'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 performed 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. Due to the city's water quality requirement on all new construction these figures shall represent the total number of new construction projects within the Hot Springs' jurisdiction.

## **RESPONSIBILITY:**

The City of Hot Spring's Stormwater Division will be the primary administrative authority related to the implementation and enforcement of the Post-Construction Stormwater Management in New Development and Redevelopment MCM. The city's Planning and Building Department will also play a key role in the encouragement and continued development of initiatives, incentives and elimination of impediments for Low Impact Development

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# City of Hot Springs

## Stormwater Management Program

### Minimum Control Measure

### Pollution Prevention/Good Housekeeping

Pages 36-39

Hot Springs recognizes that pollution prevention/good housekeeping for city operations is a key element of its stormwater management program. This measure will require the city 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 city or facility operations. It also can result in a cost savings for the city, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

Hot Springs 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 city operations into the storm sewer system.
- Continue employee training on how to incorporate pollution prevention/good housekeeping techniques into city operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.
- Continue to analyze and determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

## **RATIONALE / IMPLEMENTATION**

The City of Hot Springs' objective in developing a pollution prevention/good housekeeping program is to ensure that existing city, state or federal operations are performed in ways that will minimize contamination of storm water discharges. The City of Hot Springs uses the general guidance described below in order to meet its objectives:

- Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural controls to reduce floatables and other pollutants discharged from the separate storm sewers.
- Controls for reducing or eliminating the discharge of pollutants from areas such as roads and parking lots, maintenance and storage yards and waste transfer stations. These controls include regular street sweeping and programs that promote recycling, minimize pesticide use and ensure the proper disposal of animal waste.
- Procedures for the proper disposal of waste removed from separate storm sewer systems and areas listed above, including dredge spoil, accumulated sediments, floatables, and other debris.
- Ways to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporation of additional water quality protection devices or practices. The City of Hot Springs will coordinate with flood control managers for the purpose of identifying and addressing environmental impacts.

The effective performance of this control measure hinges on the proper maintenance of the BMPs used, particularly for the first two bullets above. For example, structural controls, such as grates on outfalls to capture floatables, typically need regular cleaning, while non-structural controls, such as training materials and recycling programs, need periodic updating.

### **Employee Training:**

Each city facility will hold training classes and/or training during orientation for eligible employees on how to incorporate pollution prevention/good housekeeping techniques into city operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. An eligible employee is any new or veteran employee whose day-to-day work activities have the potential to impact stormwater quality. Eligibility is determined by each facility's department supervisor / director.

Each facility operator will also include and document stormwater training in their normal employee training program and special training for new eligible employees during orientation. Stormwater training DVDs, work books and tests are available from the Stormwater Division's educational library. Some examples of training material available include:

- "Municipal BMPs" DVD
- "Ground Control" DVD
- "Planning for the Future" DVD
- "Stormwater Compliance Training from Harrison County" DVD

Records and documentation of all training will be kept. Documentation should include at a minimum: date, department, employee name(s), training topic, length of training and test results if given.



## **MEASURABLE GOALS**

The City of Hot Springs will utilize a 5 year integrated approach to address the requirements and intent of the pollution prevention/good housekeeping Minimum Control Measure. The integrated 5 year approach will include the following measurable goals:

### **Pollution Prevention / Good Housekeeping**

- Perform biennial site inspections of each city facility with regard to stormwater runoff and materials storage.
- Continue to develop and hold training classes for all eligible MS4 employees to prevent/reduce runoff from MS4 operations.
- Use available training materials in the development of employee stormwater education programs, i.e. prevent or reduce pollution from open space maintenance, new construction, land disturbances and stormwater systems.
- Continue to enforce a program to control and reduce illegal dumping.
- Implement a used oil recycling program..

### **BMP/Measurable Goal/Justification**

**BMP:** Continue to develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations.

**Measurable Goal:** (Began in 2009) Perform biennial site inspections of each city facility with regard to stormwater runoff and material storage. All city facilities including those already covered under an Industrial Permit shall be inspected biennially for compliance with stormwater regulations (See pages 41-45 for City Facilities List and Industrial Permit). .

**Justification:** Municipal facilities like sanitation and fleet services can have a great impact on the quality of stormwater runoff if proper training and structural BMPs are not in place and maintained. A biennial site inspection of each city facility helps to ensure that training is being performed and updated as needed and also to ensure that BMPs are in place and maintained.

**BMP:** Continue to develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations.

**Measurable Goal:** (Began in 2008) Each city facility will hold stormwater training classes for all eligible MS4 employees to prevent/reduce runoff from MS4 operations. An eligible employee is any new or veteran employee whose day-to-day work activities have the potential to impact stormwater quality.

**Justification:** In-house employee training programs are established to teach employees about stormwater management, potential sources of contaminants, and best management practices. Employee training programs should instill all personnel with a thorough understanding of the city's storm water pollution prevention plan, including BMPs, processes and materials they are working with, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents.

**BMP:** Develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations. **Measurable Goal:** (Began 2007) Use available training materials in the development of employee stormwater education programs i.e. prevent or reduce pollution from open space maintenance, new construction, land disturbances and stormwater systems.

**Justification:** In-house employee training programs are established to teach employees about stormwater management, potential sources of contaminants, and best management practices. Employee training programs should instill all personnel with a thorough understanding of the city's stormwater pollution prevention plan, including BMPs, processes and materials they are working with, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents. The City of Hot Springs will develop and implement an operations and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from city operations into the storm sewer system.

**BMP:** Develop and implement an operation and maintenance program that includes a training component to prevent or reduce pollutant runoff from MS4 operations.

**Measurable Goal:** (Began in 2005) Continue to develop and implement a program to control and reduce illegal dumping through public education and development of a citizen reporting program.

**Justification:** Illegal dumping of wastes, whether solids or liquid can impair water quality particularly surface water and wells. Substances disposed of directly into storm drains can also lead to water quality impairment. The City of Hot Springs' program combines citizen awareness, citizen reporting, cleanup activities and enforcement to reduce the effects of illegal dumping.

### **MEASURING SUCCESS:**

Measuring success of the Pollution Prevention / Good Housekeeping for Municipal Operations MCM will be measured by the acceptance and compliance with stormwater regulations by city 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.

### **RESPONSIBILITY:**

The City of Hot Springs' Stormwater Division will be the primary administrative authority related to the implementation and enforcement of the Pollution Prevention / Good Housekeeping for Municipal Operations MCM. Each city facility's director / manager will also play a key role in overseeing compliance with the MCM by continuing employee training and maintenance of various BMPs (See pages 41-45 for City Facilities List and Industrial Permit).

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Individual City Facilities / Departments  
(See pages 41-45 for list of facilities)





## CITY OF HOT SPRINGS FACILITIES

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### **Airport**

Hot Springs Memorial Field (airport on second reference), 525 Airport Road  
Airport Terminal Building, 525 Airport Road  
Hot Springs Office and Technology Park, Fiber Optic Circle

### **Hot Springs Municipal Building**

Hot Springs Municipal Building, 133 Convention Boulevard  
Board Chambers  
City Manager  
Deputy City Manager/City Clerk  
Human Resources  
Hot Springs Area Metropolitan Planning Organization  
Planning & Development  
    Planning Division  
    Code Compliance Division  
    Community Safety Division  
Public Works  
    Engineering Division  
Public Information

### **City Services Complex**

Service Complex Main Gate, 639 Shady Grove Road  
Fleet Fuel Island, 118 Fuel Lane  
Fleet Truck Wash, 208 A Scalehouse Lane  
Fleet Service, 412 Leawood  
Fleet Service Surplus Lot, 208 B Scalehouse Lane  
Sanitation Commercial Operations Center, 238 Scalehouse Lane  
Pre-wash Rack, 125 Scalehouse Lane  
Sanitation Scalehouse, 211 Scalehouse Lane  
Sanitation Transfer Station, 213 Services Lane  
Sanitation Weld Shop, 248 B Services Lane  
Sanitation Paint Shop, 254 Services Lane  
Street Division Carpenter Shop, 248 A Services Lane  
Street Division Covered Storage, 228 Services Lane  
Street Division Office, 214 Services Lane  
IT Operations Center, 134 Fuel Lane  
IT Vehicle Storage, 133 Fuel Lane

**District Court**

Garland County Courts Building, 607 Ouachita

**Finance**

Hot Springs Financial Services Building, 349 Malvern Avenue

**Finance**

Accounting Division

Billing Division

Customer Service Division

**Purchasing / Treasurer**

City Treasurer

Purchasing

Revenue Collection

**Fire**

Central Fire Station (Station No. 1), 310 Broadway

Park Avenue Fire Station (Station No. 3), 758 Park Avenue

Airport Road Fire Station (Station No. 4), 523 Airport Road

Lakeshore Drive Fire Station (Station No. 6), 220 Lakeshore Drive

Golf Links Road Fire Station (Station No. 7), 1311 Golf Links Road

**Hot Springs Intracity Transit**

Intracity Transit office, Transportation Depot, 100 Broadway Terrace

IT Operations Center, 134 Fuel Lane, City Services Complex

IT Vehicle Storage, 133 Fuel Lane, City Services Complex

**Municipal Annex, 111 Opera**

Parks & Recreation – Suite A

Municipal Annex Conference Room

Utility Administration – Suite B

Utility Engineering

Information Systems – Suite C

Geographic Information Systems (GIS) Division

**Municipal Utilities**

Utility Administration, 111 Opera, Suite B

Utility Engineering

Water Division

Wastewater Division

Utility Service Center, 795 Adams

Wastewater Lift, 775 Adams

Wastewater Collection, 745 Adams

Utility Service Center, 798 Adams

Utilities Customer Service, 795 Adams

Utilities Motor Shop, 795 Adams

Utilities Inventory Materials, 775 Adams

Central Wastewater Treatment Plant, 320 Davidson Drive

Lakeside Water Plant, 300 Pineland Drive



Ouachita Water Plant, 860 Cozy Acres  
Compost Facility, 318 Davidson Drive  
Future facility: Southwest Wastewater Treatment Plant, 365 Winkler Road

### **Parks & Recreation**

Administration – 111 Opera, Suite A

Parks Division

Recreation Division

Parks Maintenance – 236 Davidson Drive

Hot Springs Youth Center – 228 Orange Street

City Parks:

Carpenter Dam Park, 1398 Carpenter Dam Road  
Kenneth Adair Memorial Park, 358 Central Avenue  
Chattanooga Park, 530 Chattanooga Street  
DeSoto Park, 1700 Park Avenue  
Entergy Park, 1400 Carpenter Dam Road  
Family Park, 215 Family Park Road  
Hill Wheatley Park, 688 Majestic Lodge Road  
Hinsley Family Park, Kingsway Road / Meadowlake Drive  
Hollywood Park, 411 Hollywood  
Jonestown Community Park, 302 Hobson Avenue  
Kimery Park, 271 Kimery Lane  
Linden Park, 381 Walnut Street  
Transportation Plaza Trail, 100 Broadway Terrace  
Valley Street Skatepark, 411 Valley Street  
Wade Street Park, 300 Wade Street  
Whittington City Park, 1201 Whittington Avenue  
Hot Springs Creek Greenway, Phase I  
Friendship Park  
Jaycee Trail

### **Planning & Development, Hot Springs Municipal Building**

Code Compliance Division

Community Safety Division

Planning Division

### **Police Department, 641 Malvern Avenue**

### **Public Works**

Animal Services Division, 319 Davidson Drive

John Seales Animal Services Center or Hot Springs Animal Shelter

Engineering Division

Engineering Conference Room, Hot Springs Municipal Building, 133 Convention Boulevard

Street Division, City Services Complex, 214 Services Lane

Traffic Division, Cedar Street, 111 Cedar

Property Maintenance Division, 433 Oaklawn

## **Sanitation**

Sanitation Administration, 218 Runyon  
Sanitation Recycling Center, 218 Runyon  
Sanitation Residential Operations Center, 121 Utility Court  
Sanitation Commercial Operations Center, 238 Scalehouse Lane  
Sanitation Paint Shop, 254 Services Lane  
Sanitation Weld Shop, 248-B Services Lane  
Sanitation Transfer Station, 213 Services Lane  
Sanitation Scalehouse, 211 Scalehouse Lane

## **Transportation Center** (includes Plaza and Depot)

Transportation Plaza (property)  
Transportation Depot (building), 100 Broadway Terrace  
Hot Springs Intracity Transit, 100 Broadway Terrace

## **Other Facilities**

Exchange Street Parking Plaza, 128 Exchange Street  
Exchange Street surface parking lot  
Civic Center parking lots  
    Church Street lot  
    Gulpha Street West lot  
    Gulpha Street East lot  
    Laurel Street lot  
    Palm Street West lot  
    Palm Street East lot



**City of Hot Springs Industrial Permits ARR000000**

At this time the only city facility covered under the NPDES General Stormwater Permit Number ARR000000 is the Compost Facility.

Permit Tracking Number ARR000166, AFIN:26-0014  
Randy Atkinson  
City of Hot Springs Compost Facility  
320 Davidson Drive  
Hot Springs, AR. 71901

Other city facilities including Sanitation, Airport, Waste Water and Water Treatment Facilities maintain stormwater coverage under their general operating permit and each maintains a Stormwater Management Plan and conducts periodic stormwater related inspections and reporting to ADEQ.

<b><u>Facility Description</u></b>	<b><u>Permit Number</u></b>
Transfer Station	AR001426
Major Municipal Water	AR0033880
HS Water Backwash	ARG640060
Ouachita Water Backwash	ARG740098
HS Memorial Field Airport	

## GLOSSARY

Pages 41- 46

**Aluminum** - aluminum is a lightweight, silver-white, metallic element that makes up approximately 7 percent of the Earth's crust. Aluminum is mined in the form of bauxite ore where it exists primarily in combination with oxygen as aluminum. Aluminum is used in a variety of ways, but perhaps most familiarly in the manufacture of soft drink cans.

**Aquatic Life** – any indigenous species of plants or animals living in water.

**Aquifer** – an underground geological formation or group of formations containing usable amounts of groundwater that can supply wells and springs; an underground bed or stratum of sand, gravel, or rock that stores or conveys water below the surface of the soil.

**Bacteria** – single-celled microorganisms that lack chlorophyll. Some bacteria are capable of causing human, animal or plant diseases; others are essential in pollution control because they break down organic matter in the air and in the water.

**Best Management Practice (BMP)** – means any program, technology, process, phasing criteria, operational methods or measures, engineered systems, or practice or combination of practices determined to be the best known or most practicable means of preventing, controlling, or reducing pollution to a level compatible with water quality goals.

**Clean Water Act (CWA)** – Federal Water Pollution Control Act enacted in 1972 and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to waters of the United States unless the discharge is in accordance with an NPDES permit. The 1987 amendment requires that municipalities regulate industrial and construction stormwater discharges and those stemming from development.

**Close the Loop** - a term used to describe the last, and most important, step in the recycling process. It refers to the point when a consumer buys a recycled product after it has been put into a recycling program and reprocessed into a new item.

**Coliforms** – any of a number of organisms common to the intestinal tract of animals, the presence in water of which is an indicator of pollution and of potentially dangerous bacterial contamination.

**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.

**Compost** - composting is nature's way of recycling. Composting refers to a solid waste management technique that uses natural processes to convert organic materials to humus through the action of micro organisms. Compost is a mixture that consists largely of decayed organic matter and is used for fertilizing and conditioning land.



**Conservation** - conservation is the wise use of natural resources (nutrients, minerals, water, plants, animals, etc.). Planned action or non-action to preserve or protect living and non-living resources.

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

**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.

**Control** – means to minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

**Designated Uses** – those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act. Uses can include cold water fisheries, public water supply, agriculture, etc.

**Development** – means 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.

**Discharge** – the volume of water that passes through a given cross section of a channel or sewage outfall during a unit of time.

**Discharging Directly** – means outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

**Dissolved Oxygen (DO)** – the amount of free (not chemically combined) oxygen in water; the concentration of oxygen held in solution in water, which is vital to fish and other aquatic organisms and for the prevention of odors. It is usually measured in mg/L or expressed as a percentage of the saturation value for a given water temperature and atmospheric pressure. In general, oxygen levels decline as pollution increases.

**Dissolved Solids** – the total amount of dissolved material, organic and inorganic, contained in water or wastes. Excessive dissolved solids make water unpalatable for drinking and unsuitable for industrial uses.

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

**Effluent** – a discharge of pollutants (usually in liquid form) into the environment, partially or completely treated or in its natural state; generally used in regard to discharges into waters; liquid flowing out of a system, such as discharge of stormwater from an urban outfall, liquid waste from a factory, or water leaving a sewage treatment plant.

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

**Filtration** – in stormwater treatment, a common process that removes particulate matter by separating water from solid material, usually by passing it through sand.

**Fossil Fuels** - fossil fuels are the remains of plant and animal life that are used to provide energy by combustion; coal, oil, natural gas.

**Glass** - glass is a hard, brittle, generally transparent or translucent material typically formed from the rapid cooling of liquefied minerals. Most commercial glass is made from a molten mixture of soda ash, sand, and lime.

**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.

**HDPE** – type of high density polyethylene plastic that is commonly used in milk and water jugs.

**Hazardous Material** – a material that is easily ignitable under ordinary temperature and pressure; readily supplies oxygen or reactive gas to a fire; is corrosive (highly acidic or caustic); is explosive or generates toxic gas; is acutely toxic to animals if it comes into contact with skin or is inhaled, eaten or drunk; or contains toxic chemicals that can be dissolved in an acidic environment, such as a landfill.

**Heavy Metals** – metals with high molecular weights that are of concern because they are generally toxic to animal life and health if naturally occurring concentrations are exceeded. Examples include arsenic, chromium, lead, and mercury.

**Hillside** – means property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is twenty-five percent or greater and where grading contemplates cut or fill slopes.

**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.).

**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.

**Industrial/Commercial Facility** – any facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services.

**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 statutes, 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.



**Maximum Extent Practicable (MEP)** – standard for implementation of stormwater management programs to reduce pollutants in stormwater. MEP refers to stormwater management programs taken as a whole. It is the maximum extent possible taking to account equitable consideration and competing facts, including, but not limited to, the gravity of the problem, public health risk, societal concern, environmental benefits, pollutant removal effectiveness, regulatory compliance, public acceptance, implementability, cost and technical feasibility. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal permits shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

**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.

**Municipal Solid Waste** - garbage or refuse that is generated by households, commercial establishments, industrial offices or lunchrooms and sludges not regulated as a residual or hazardous waste. This does not include source-separated recyclables.

**New Development** – means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

**Non-point Source Pollution** – water pollution caused by rainfall moving over and through ground which carries pollutants.

**Non-Renewable Resource** - a resource that is NOT capable of being naturally restored or replenished; a resource that is exhausted because it has not been replaced (e.g. copper) or because it is used faster than it can be replaced (e.g. oil, coal [what we call fossil fuels]). Their use as material and energy sources leads to depletion of the Earth's reserves and are characterized as such as they do not renew in human relevant periods (They are not being replenished or formed at any significant rate on a human time scale).

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

**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. This manual serves to assist in meeting the requirements of the NPDES Permit.

**Operator** – a state, city, town or other public entity that discharges to the waters of the United States. The city of Hot Springs is the operator of the small MS4 per NPDES phase II regulations, as permitted by the Arkansas Department of Environmental Quality, and is the entity responsible for implementation and enforcement of its Stormwater Management Program.

**Organic** - a term that refers to molecules made up of two or more atoms of carbon, generally pertains to compounds formed by living organisms.

**Organism** – any living plant or animal; a living body made up of cells, tissues and organs.

**Packaging** - the wrapping material around a consumer item that serves to contain, identify, describe, protect, display, promote, and otherwise make the product marketable and keep it clean.

**Paper** - a thin material made of pulp from wood, rags, or other fibrous materials and used for writing, printing, or wrapping.

**Pathogen** – disease-causing organisms.

**Plans** – a set of drawings that depicts improvements, which require permitting and/or city approval at the planning and/or public works department prior to construction.

**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)), or are incorporated into the California Water Code ‘ 13373. Specifically, pollutants that are carried by runoff from rainstorms or other watering activities. Examples of pollutants include but are not limited to the following:

- Commercial and industrial waste (such as fuels, solvents, detergents, plastic pellets, hazardous substances, fertilizers, pesticides, slag, ash, and sludge);
- Metals such as cadmium, lead, zinc, copper, silver, nickel, and chromium; and non-metals such as phosphorus and arsenic;
- Petroleum hydrocarbons (such as fuels, lubricants, surfactants, waste oils, solvents, coolants, and grease);
- Excessive eroded soils, sediment, and particulate materials in amounts which may adversely affect the beneficial use of the receiving waters, flora, or fauna;
- Animal wastes (such as discharge from confinement facilities, kennels, pens, recreational facilities, stables, and show facilities);
- 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.

**Pollutant Loading** – the quantity of a pollutant found in stormwater and/or urban runoff expressed in mass per unit of time. Pollutant loadings are commonly expressed in units of tons/year or pounds/year.

**Pollution Prevention** – eliminating or reducing at the source the use, generation, or release of toxic pollutants, hazardous substances, and hazardous wastes.

**Polyethylene Terephthalate** - a type of plastic used to make soft drink bottles and other kinds of food containers. PET is also used to make fabric.

**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 stormwater 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 stormwater 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.

**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.

**Sedimentation** – in stormwater treatment, the settling out of solids by gravity; the addition of soils to lakes, a part of the natural aging process, making lakes shallower. The process can be greatly accelerated by human activities.

**Significant Contributor** – includes not only pollutant loading but also a discharge that destabilizes the physical structure of a water body such that the discharge that may exert detrimental effects on the quality and uses of that water body.

**Source Control BMP** – means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent stormwater pollution by reducing the potential for contamination at the source of pollution.

**Storm Drain System** – any pipe or conduit used to collect and carry away stormwater runoff from the generating source to receiving streams. A sewer that conveys household and commercial sewage is called a sanitary sewer. A storm drain transports runoff from rain or snow.

**Storm Event** – means a rainfall event that produces more than 0.1 inch of precipitation and that, which is separated from the previous storm event by at least 72 hours of dry weather.

**Stormwater** – water which originates from atmospheric moisture (rainfall or snowmelt) and falls onto land, water, or other surfaces.

**Stormwater Management Program (SWMP)** – Garland County's all encompassing program to meet the requirements of NPDES Phase II Final Rule.

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

**Structural BMP** – a best management practice that involves design and construction of a facility to mitigate the adverse impact of urban runoff. The structures often require maintenance.

**Surface Water** – water on the earth's surface exposed to the atmosphere such as rivers, lakes, streams, and the oceans.

**Suspended Solids** – small particles that hang suspended in the water column and create turbid, or cloudy, conditions.

**Toxicity** – the quality or degree of being poisonous or harmful to plant or animal life.

**Treatment** – means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

**Treatment Control BMP** – means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

**Urban Runoff** – stormwater from city streets and gutters that usually contains a great deal of litter and organic and bacterial wastes.

**USEPA** – United States Environmental Protection Agency, the federal agency that enforces federal regulations and administers federal programs such as the NPDES program. These regulations require the discharges from defined municipal separate storm drain systems, industrial facilities, and construction activities to comply with the NPDES permit conditions intended to reduce or eliminate the discharge of pollutants from stormwater drainage systems. In California, the USEPA has delegated its authority to issue NPDES permits to the State Water Resource Control Board and the nine Regional Water Quality Control Boards.

**Water Pollution** – the addition of sewage, industrial wastes, or other harmful or objectionable material to water in sufficient quantities or concentrations to result in measurable degradation of water quality.

**Water Quality Criteria** – the levels of pollutants that affect the suitability of water for a given use. Generally, water use classifications include public water supply, recreation, propagation of fish and other aquatic life, agricultural use, and industrial use.

**Water Quality Standard** – acceptable limits on water quality parameters—those criteria set by the State of California, for instance, with review by the EPA, so that when enforced they will meet the goals of the Clean Water Act.

**Watershed** – area drained by a given stream; an area bounded peripherally by a water divide and draining to a particular water course or body of water. Topography is the primary determinant of watershed boundaries.

**Wetland** – swamps or marshes, especially areas preserved for wildlife. Wetlands are crucial wildlife habitats and are important for flood control and maintaining the health of surrounding ecosystems.

**Wet Pond** – pond for urban runoff management that is designed to detain urban runoff and always contain water.

**CHAPTER 13****STORMWATER MANAGEMENT**

- Div. I. Stormwater Management in General
  - Art. I. General Provisions, §§15-13-1--15-13-1.2
  - Art. II. Stormwater Concept and Plan, §§15-13-1.3--15-13-1.10
  - Art. III. Maintenance, Construction and Inspection, §§15-13-1.11--15-13-1.13
  - Art. IV. Miscellaneous Provisions, §§15-13-1.14--15-13-3
- Div. II. Stormwater Fees
  - Art. I. Permit Fee Schedule, §15-13-4
  - Art. II. Stormwater Utility Fund, §15-13-5
- Div. III. Hot Springs Creek Tunnel Regulations, §15-13-6

**DIVISION I. STORMWATER MANAGEMENT IN GENERAL****ARTICLE I. GENERAL PROVISIONS****15-13-1. Stormwater management ordinance - Adoption.**

The following regulations, designed to lessen or deter hazards to persons, property and the environment caused by increased runoff, obstructions to drainage and introduction of excessive silts, debris and pollutants into the drainage system, lakes, ponds, streams, rivers and other water bodies in the City of Hot Springs, and to otherwise promote the public health, safety and welfare of the public are hereby adopted and this ordinance may be referred to as the "Hot Springs Stormwater Management Ordinance."

**15-13-1.1. Introduction and findings.**

The Board of Directors finds that uncontrolled stormwater runoff from developed land adversely affects the public health, safety and welfare because:

- (a) Impervious surfaces increase the quantity and velocity of surface runoff, which reduces percolation of water through soil and increases erosion and flooding;
- (b) Improper stormwater collection and conveyance adversely affects property and increases the incidence and severity of flooding, which can endanger property and human life;
- (c) Increased erosion leads to sedimentation in stormwater management systems, which decreases the system's capacity; and
- (d) Many future problems can be avoided if land is developed in accordance with sound stormwater runoff management practices.

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Cross reference- §16-4-1, Subdivision Code.

Editors note: The Stormwater Management Program adopted by Resolution No 7340 is on file in the office of the city clerk.



**15-13-1.2. Purpose and definitions.**

(a) The purpose of this ordinance is to set forth the minimum requirements for construction site erosion control and stormwater management associated with both future land development and existing developed land within the city. These requirements will diminish threats to public health, safety, public and private property and natural resources of the City of Hot Springs by establishing performance standards that:

- (1) Protect life and property from dangers associated with flooding;
- (2) Protect public and private property from damage resulting from runoff or erosion;
- (3) Ensure the annual runoff rates and volumes from post development site conditions mimic the annual runoff rates and volumes from pre-development site conditions;
- (4) Ensure the site design minimizes the generation of stormwater and maximizes pervious areas for stormwater treatment;
- (5) Promote regional stormwater management by watershed;
- (6) Provide a single, consistent set of performance standards that apply to all developments;
- (7) Protect water quality from nutrients, pathogens, toxic matters, debris and other contaminants;
- (8) Promote infiltration and groundwater recharge;
- (9) Provide a vegetated corridor (buffer) to protect water resources from development;
- (10) Protect functional values of natural water courses and wetlands;
- (11) Provide plant and animal habitat and support riparian ecosystems;
- (12) Achieve an 80% reduction in sediment load rates to the City of Hot Springs waters compared to no controls for all new development, a 40% reduction in sediment load rates compared to no controls for all redevelopment and street reconstruction, and a 20% reduction in sediment load rates compared to no controls for existing developments;
- (13) Minimize sedimentation to the water resources of the City of Hot Springs;
- (14) Protect functional values of natural water courses and wetlands;

- (15) Protect public and private property from damage resulting from runoff or erosion;
- (16) Control soil erosion and sedimentation to minimize soil deposition in streams and other receiving water bodies and storm drainage systems;
- (17) Require implementation of Best Management Practices to minimize the discharge of chemicals and other illicit discharges and pollutants, either directly or indirectly into the streams, rivers, lakes and other bodies of water; and into the city's drainage infrastructure; and
- (18) Assuring the City of Hot Springs is and will remain in compliance with federal and state law.

(b) The application of this ordinance and the provisions expressed herein shall be the minimum stormwater management requirements and shall not be deemed a limitation or repeal of any other powers granted by state statute. In addition, if site characteristics indicate that complying with these minimum requirements will not provide adequate designs or protection for local property or residents, it is the designer's responsibility to exceed the minimum requirements as necessary.

(c) Enforcement and administration of this ordinance shall be the responsibility of such office(s) or officer(s) as designated by the City Manager, hereinafter termed Administrative Authority. The Administrative Authority may appoint such inspectors and assistants as necessary to assist in the performance of these duties. The Administrative Authority shall also be responsible to address other stormwater issues as they relate to the city's compliance with its Small MS4 Storm Water Permit as issued by ADEQ to the City of Hot Springs.

(d) Definitions. 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.

*C.H.S. (CHS)* - City of Hot Springs

*City engineer* – The civil engineer responsible for directing the city engineering department in the execution of its duties.

*City engineering department* - The department responsible for all stormwater management activities and implementation of the provisions of this ordinance.

*Collector and arterial streets and highways* – These are certain streets as depicted on the latest City of Hot Springs Master Street Plan Map for a particular design capacity and purpose.

*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.

*Detention basin* - An open excavation or depression in the ground surface used for temporary storage of stormwater prior to release downstream.

*Detention pond* - A stormwater detention facility which maintains a fixed minimum water elevation between runoff events except for the lowering resulting from losses of water due to infiltration or evaporation.

*Detention/Retention maintenance plan* - Pre and post construction maintenance is the responsibility of the owner or property owners association. Timing and methods must be described in the maintenance plan. Maintenance responsibilities include: sediment removal, outlet cleaning, mowing, herbicide spraying, litter control, and routine inspections. (Ord. No. 5628, §1(p), 1-8-08)

*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; or (Ord. No. 5628, §(q), 1-8-08)
- (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; or

(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.

*Freeboard* - The vertical clearance of the lowest structural member of the bridge superstructure above the water surface elevation of the overtopping flood; the vertical distance between the level of the water surface usually corresponding to the design flow and a point of interest such as levee top or specific location on the roadway grade.

*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 or 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 statutes, 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 disturbing 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 benefitted 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 or 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 given 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 (horizontal distance) 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, brook, 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 City 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. (Ord. No. 5628, §1(p), 1-8-08)

*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. The definitions of certain words and phrases as used throughout this ordinance are included in Appendix A hereof.

## ARTICLE II. STORMWATER CONCEPT AND PLAN

### 15-13-1.3. Performance standards and design criteria.

(a) The City of Hot Springs Stormwater Management Manual, as adopted by this ordinance, shall be the source for design criteria and performance standards with respect to stormwater management.

(b) Stormwater concept and stormwater management plans and design reports that are incidental to the overall or ongoing site design shall be prepared and certified by an Engineer, Landscape Architect, or a Soil and Erosion Control Specialist with sufficient training and education in erosion control prevention and with approval by the Administration Authority. In addition, the person must verify that the plans have been designed in accordance with this ordinance and the standards and criteria stated or referred to in this ordinance. (Ord. No. 5628, §1(a), 1-8-08)



**15-13-1.4. Stormwater management permit.**

The stormwater management permit does not authorize:

- (a) Discharges mixed with sources of non-stormwater unless the non-stormwater discharges are determined not to be a significant contributor of pollutants as defined in Part VII of the Arkansas General Permit No. ARR040000 to waters of the United States;
- (b) Stormwater discharges associated with industrial activity as defined in 40 CFR 122.26(b)(14)(I)-(ix) and (xi), except as allowed under Part I.B.2.b;
- (c) Stormwater discharges associated with construction activity as defined in 40 CFR 122.26(b)(14)(x) or 40 CFR 122.26(b)(15), except as allowed under Part I.B.2.a;
- (d) Stormwater discharges currently covered under an individual or other general NPDES permit;
- (e) Stormwater discharges whose direct, indirect, interrelated, interconnected, or interdependent impacts would jeopardize a listed endangered or threatened species or adversely modify designated critical habitat as defined by the U.S. Fish & Wildlife Services (USF&WS). <http://endangered.fws.gov/> ;
- (f) Stormwater discharges or implementation of the stormwater management plan, which adversely affect properties listed or eligible for listing in the National Register of Historic Places, unless you are in compliance with requirements of the National Historic Preservation Act and have coordinated any necessary activities to avoid or minimize impacts with the appropriate State Historic Preservation Officer;
- (g) Stormwater discharges that will cause or contribute to non-attainment of water quality standards, including failure to protect and maintain existing designated uses of receiving waters. ADEQ may require an application for an individual NPDES permit to authorize discharges of stormwater from any activity that ADEQ determines to cause or makes a contribution to exceed a water quality standard or that ADEQ determines to cause or contribute to the loss of a designated use of receiving waters;
- (h) Discharges to waters for which there is an approved Total Maximum Daily Load and/or implementation plan (TMDL/IP) addressing discharges of stormwater associated with MS4s, unless the MS4 operator develops and certifies a SWMP that is consistent with the assumptions and allocations in the approved TMDL/IP. To be eligible for coverage under this general permit, operators must incorporate into their SWMP any conditions applicable to their discharges necessary for consistency with the assumptions and allocations of the TMDL/IP within any time frames established in the TMDL/IP. If a specific numeric waste load allocation has been established that would apply to the project's discharges,

the operator must incorporate that allocation into its SWMP and implement necessary steps to meet that allocation. Information regarding existing and proposed TMDLs can be obtained from the Water Quality Section of the ADEQ Water Division at (501) 682-0660 or from the ADEQ website at the following address: [http://www.adeq.state.ar.us/water/branch\\_planning/](http://www.adeq.state.ar.us/water/branch_planning/);

- (i) Stormwater discharges which are prohibited for permitting in 40 CFR 122.4 of the federal regulation.

**15-13-1.5. Stormwater submittal requirements.**

(a) Large, and Small Construction Sites as described below are required to submit the following documents prior to any earth moving activities:

- (1) Stormwater Management Plan
- (2) Stormwater Pollution Prevention Plan (SWPPP)
- (3) Stormwater Detention/Retention Plan (includes maintenance plan)(Ord. No. 5628, §1(b), 1-8-08)
- (4) Stormwater Quality Plan
- (5) A copy of the approved ADEQ NPDES permit

(b) Special Construction Sites as described below are required to submit the following documents prior to any earth moving activities:

- (1) Post on-site (CHS) Stormwater Construction Notice (Ord. No. 5628, §1(c), 1-8-08)
- (2) Develop Stormwater Pollution Prevention Plan (SWPPP)
- (3) Submit copy of SWPPP to CHS prior to construction for review.
- (4) Use Best Management Practices (BMPs) to reduce runoff.
- (5) Maintain SWPPP on-site and inspect stormwater controls weekly.
- (6) Remove all unnecessary BMPs after final stabilization.
- (7) Maintain a solid waste dumpster located at the site to properly dispose of building materials and solid waste.

(c) Construction sites are defined as follows:

- (1) Large construction sites include any construction sites that will result in the disturbance (e.g., clearing, grading, excavating, etc.) of five (5) or more acres of total land area.

- (2) Small construction sites include any construction activity that will result in the disturbance (e.g., clearing, grading, excavating, etc.) of greater than or equal to one (1) acre and less than five (5) acres of total land area or less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more, but less than five (5) acres. Provided, however, that any new commercial construction site under (1) acre which includes construction activity that will result in the disturbance (e.g., clearing, grading, excavating, etc.) will meet the requirements of a small construction site.
- (3) Special Construction Sites: Any construction activity that meets the following definition:
  - a. Any construction activity (e.g., clearing, grading, excavating, etc.) less than 1 acre of land with the potential to pollute, which is adjacent to any lake, stream, tributary, creek or other flowing body of water.
  - b. Road, pipeline, and utility maintenance activities are not regulated under this permit unless one or more acres of underlying and/or surrounding soil are cleared, graded or excavated as part of the operation.
  - c. Road, pipeline and utility maintenance activities are regulated when bordering lakes or streams under either the small, medium or large construction site category. (Ord. No. 5628, §1(d), 1-8-08)

**15-13-1.6. Stormwater and urban runoff pollution control.**

(a) Illegal dumping/disposal. No person shall throw, deposit, place, leave, maintain, or keep or permit to be thrown, placed, left, maintained or kept, any refuse, rubbish, garbage, or any other discarded or abandoned objects, articles, or accumulations, in or upon any street, alley, sidewalk, storm drain, inlet, catch basin, conduit or drainage structure, business place, or upon any public or private plot of land in the city, so that the same might be or become a pollutant, except in containers, recycling bags, or other lawfully established waste disposal facility.

(b) Disposal in storm sewer. No person shall intentionally dispose of grass, leaves, dirt, or other landscape debris into a water resource buffer, street, road, alley, catch basin, culvert, curb, gutter, inlet, ditch, natural watercourse, flood control channel, canal, storm drain or any fabricated natural conveyance.

(c) Illicit discharges and connections. No person shall cause any illicit discharge to enter the municipal stormwater system unless such discharge: (1) consists of non-stormwater that is authorized by an NPDES point source permit; or (2) is associated with fire fighting activities.



(d) Storage of materials, machinery and equipment. Objects, such as motor vehicles including parts, containing grease, oil or other hazardous substances, and unsealed receptacles containing hazardous materials, shall not be stored in areas susceptible to runoff as is prohibited in areas identified by FEMA as designated floodplain areas identified as shown on current FEMA FIRM maps. Any machinery or equipment that is to be repaired or maintained in areas susceptible to runoff shall be placed in a confined area to contain leaks, spills or discharges.

(e) Removal of debris and residue. Debris and residue shall be removed, as noted below:

- (1) All motor vehicle parking lots shall be swept, at a minimum of twice a year to remove debris. Such debris shall be collected and properly disposed. However, parking lots are not required to be swept for one month following a day on which precipitation of one-half inch or more occurs.
- (2) Fuel and chemical residue or other types of potentially harmful material, such as animal waste, garbage or batteries, which is located in an area susceptible to runoff, shall be removed as soon as possible and disposed of properly. Household hazardous waste may be disposed of through city collection programs or at any other appropriate disposal site and shall not be placed in a trash container.

(f) Non-stormwater discharges. All discharges covered by this permit shall be composed entirely of stormwater except the following non-stormwater discharges that are combined with stormwater may be authorized by this permit:

- (1) Discharges from fire fighting activities; fire hydrant flushings; water used to wash vehicles (where detergents are not used) or control dust; potable water sources including uncontaminated waterline flushings; irrigation drainage; routine external building wash down which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used; uncontaminated air conditioning or compressor condensate; uncontaminated springs; uncontaminated ground water; foundation or footing drains where flows are not contaminated with process materials such as solvents; and uncontaminated excavations dewatering.
- (2) Except as described in (f)(1) above, discharges of material other than stormwater must be in compliance with an individual NPDES permit issued for the discharge.

(g) Good housekeeping provisions. Any owner or occupant of property within the city shall comply with the following good housekeeping requirements:

- (1) Discharges. No person shall leave, deposit, discharge, dump, or otherwise expose any chemical or septic waste in an area where discharge to streets or storm drain system may occur. This section shall apply to both actual and potential discharges.

- (2) Pools are not allowed to discharge chlorinated water into the stormwater system. Pool discharges should utilize a water filtering device if possible. (Ord. No. 5628, §1(e), 1-8-08)
- (3) All large, medium, small and special construction sites must have solid waste dumpsters located at the site to properly dispose of building materials and solid waste.
- (h) Construction site stormwater runoff control. Any owner, developer or occupant of property within the city shall install and maintain erosion and sediment controls during land disturbing activities (§15-13-1.4) in order to reduce pollutants from stormwater from entering waterways.
- (i) Post-construction stormwater runoff control. Any owner, developer or occupant of property within the city shall install and maintain erosion and sediment controls during land disturbing activities (§15-13-1.4) from new development and redevelopment projects in order to reduce pollutants from stormwater from entering waterways.
- (j) Runoff. Runoff of water from residential property shall be minimized to the maximum extent practicable. Runoff of water from the washing down of paved areas in commercial or industrial property is prohibited unless necessary for health or safety purposes and not in violation of any other provisions in community codes.

**15-13-1.7. Stormwater Management Manual.**

(a) To assist in the design and evaluation of stormwater management facilities in the City of Hot Springs, a Stormwater Management Manual is hereby adopted. This manual contains the submittal requirements for development within the City of Hot Springs. The required submittal documents prior to earthmoving activities within the City of Hot Springs, which are addressed in the manual, are:

- (1) Stormwater Management Plan
- (2) Stormwater Pollution Prevention Plan
- (3) Detention/Retention Plan (includes maintenance plan) (Ord. No. 5628, §1(f), 1-8-08)
- (4) Stormwater Quality Plan
- (b) The City of Hot Springs will allow the use of the following software for the analysis of stormwater detention facilities: Pond 2, HEC-1, HEC-HMS or an acceptable equal approved by the Administrative Authority.
- (c) Stormwater detention pond outlets shall be designed to limit the peak stormwater discharge rate of the 2-, 10-, 25-, 50-, and 100-year storm frequencies after development to pre-development rates. The principal outlet will be designed to safely convey the runoff resulting from a 25-year event chance storm. A second outlet, the emergency outlet, will be designed to safely convey the runoff resulting from a 100-year event storm.

(d) All private systems must be designed to discharge at pre-developed rates unless approved by the Administrative Authority. New stormwater drainage systems cannot tie into existing systems of lesser capacity. In other words, a larger pipe cannot discharge into a smaller pipe of lesser capacity.

**15-13-1.8. Permits and fees required.**

(a) A stormwater management permit will be required for construction site activities and those activities associated with excavation, filling, grading and removal of trees or surface vegetation unless otherwise exempt by this ordinance. The permit application and required submittal documents, when applicable, shall include a copy of the permit coverage for large construction sites issued from the Arkansas Department of Environmental Quality (ADEQ). Approvals shall be secured per size of development from the City of Hot Springs and ADEQ, as applicable prior to starting any clearing or earth work. It is the developer's responsibility to determine if other permits are required and to secure them. (Ord. No. 5628, §1(g), 1-8-08)

(b) The following permit requirements must be met:

(1) No final occupancy permit shall be issued without the following:

- a. Recorded easements for stormwater management facilities.
- b. Receipt of an as-built plan which includes a certification of the storm drainage system.

(2) No site grading permit shall be issued or modified without the following:

- a. Right of entry for emergency maintenance, if necessary.
- b. Right of entry for inspections.
- c. Any off-site easements needed.
- d. An approved stormwater management plan.

(c) The approved stormwater management plan shall contain certification by the applicant that all land clearing, construction, development and drainage will be done according to the stormwater management plan or previously approved revisions. Any and all site grading permits may be revoked at any time if the construction of stormwater management facilities is not in strict accordance with approved plans.

(d) In addition to the plans and permits required from the city, applicants shall obtain all state and federal permits for the proposed development. The applicant shall also be responsible for determining the existence and limits of any wetlands and/or floodways as may be applicable, and be responsible for securing permits and approvals from the U.S. Army Corps of Engineers and Federal Emergency Management Agency as required.



(e) Permit fees. The permit and rates associated with the implementation of this ordinance will be based on the disturbance for more than 4,000 square feet of land as stated in this ordinance. Such fees shall be established by resolution of the Board of Directors.

(f) Triple fees. A triple fee penalty may be imposed on the original cost of the permit if land disturbance activities occur prior to receiving approval from the Administrative Authority. (Ord. No. 5628, §1(h), 1-8-08)

#### **15-13-1.9. Exemptions.**

(a) Any land disturbing activity with the potential to pollute less than 1 acre within 100 feet of a stream or a lake is not exempt from this ordinance. (Ord. No. 5628, §1(i), 1-8-08)

(b) The following activities are exempt from requirements of this ordinance:

- (1) Land use for agricultural purpose.
- (2) Land where timber extraction takes place, provided that it is to be re-seeded as timber land.
- (3) Construction activity on an area less than 1 acre that is not adjacent to a stream or lake and not for commercial use.
- (4) Reserved. (Ord. No. 5628, §1(j), 1-8-08)
- (5) One commercial or industrial project built on an individual lot that is part of a larger subdivision that has been issued an approved drainage control permit when the proposed project is demonstrated to be in compliance with the overall subdivision drainage permit.
- (6) Existing commercial and industrial structures where additional structural improvements are less than 500 square feet.
- (7) Maintenance or clearing activity that does not change or affect the quality, rate, volume, or location of stormwater flows on the site, or runoff from the site.
- (8) Any activity directly related to the planting, growing and harvesting of agricultural crops.
- (9) Action taken under emergency conditions, either to prevent imminent harm or danger to persons, or to protect property from imminent danger of fire, violent storms or other hazards.

#### **15-13-1.10. Permit conditions, application and processing.**

(A) Permit conditions - Each permit issued shall be subject to the following conditions:

- (1) Area. The development, including associated construction, shall be conducted only within the area specified in the approved permit.

- (2) Execution. Activities requiring a stormwater management permit shall not commence until the permit is in the possession of the permittee. The approved permit shall be on file with the Administrative Authority and a copy on file with the contractor at the project site, and available for review and inspection upon request.
- a. The plan shall be implemented prior to the start of any land disturbing activity and shall be maintained over the duration of the project. Stormwater components of the plan shall be maintained in perpetuity.
  - b. The permittee is responsible for successful completion of the erosion control plan and the stormwater management plan. The permittee shall be liable for all costs incurred, including environmental restoration costs, resulting from noncompliance with an approved plan.
  - c. Application for a permit shall constitute express permission by the permittee and landowner for the local approval authority to enter the property for purposes of inspection or curative action. The application form shall contain a prominent provision advising the applicant and landowner of this requirement.
  - d. All incidental mud-tracking off-site onto adjacent thoroughfares shall be cleaned up and removed by the end of each working day using proper disposal methods.
- (3) Inspections. A schedule of inspections to be carried out during the construction phase of permitting shall be established by the Administrative Authority as a condition to the permit.
- a. Application for a permit under this ordinance shall constitute permission by the applicant and landowner for the local approval authority to enter upon the property and inspect during the construction phase prior to the inspections pursuant to paragraphs (4) and (5), as necessary to confirm compliance with the requirements of this ordinance.
  - b. Applicant and landowner for the local approval authority to enter upon the property and inspect during the construction phase prior to the inspections as necessary to confirm compliance with the requirement of this ordinance.
  - c. As part of the plan approval process, the Administrative Authority shall determine the minimum number of inspections required to assure compliance. The site of any regulated land disturbing activity should be inspected once every 30 days, or more frequently as determined by the Administrative Authority during the construction phase.
  - d. The permittee shall notify the Administrative Authority before construction activity begins. (Ord. No. 5628, §1(l), 1-8-08)

- e. The Administrative Authority shall inspect the property to verify compliance with the erosion control plan within 10 days of notification of soil stabilization.
- (4) Duration.
    - a. Unless revoked or otherwise modified, the duration of a stormwater management permit issued pursuant to this chapter shall be one year.
    - b. If the permitted project discharge structure is not completed prior to expiration, the stormwater management permit duration can be extended to cover the project duration subject to approval of the Administrative Authority.
  - (5) Maintenance. Maintenance activities, as specified in the approved maintenance plan, shall be executed routinely, with scheduled reporting documents kept current, stored on the project site, and available for review and inspection upon request.
  - (6) Modifications. If the activity authorized by the permit is not completed according to the approved schedule and permit conditions, the Administrative Authority shall be notified. For revisions resulting in a schedule extension of more than 30 days, or if deviations from the permit conditions are expected to occur, approval of a permit modification is required by the Administrative Authority.
  - (7) Transfer. No transfer, assignment or sale of the rights granted by virtue of an approved permit shall be made without prior written approval from the Administrative Authority.
  - (8) Special. Any additional special conditions, as deemed appropriate by the Administrative Authority, shall be established to address specific project needs or circumstances.
- (B) Permit application. A storm water permit application shall be submitted to the Administrative Authority using appropriate forms as provided. A permit application shall contain sufficient information and plans to allow the Administrative Authority to determine whether the project complies with the requirements of this ordinance. The specific items to be submitted for a permit application shall be in the form and follow the procedures as described in the Stormwater Management Manual and this Ordinance.
- (c) Approval process.
    - (1) The Administrative Authority shall verify that the permit application is complete and in accordance with this ordinance.
    - (2) Within the time frame set by the Administrative Authority, plan review staff shall either approve the submitted plan or notify the applicant of any deficiencies.



- (3) The Administrative Authority shall notify the applicant in writing of any deficiency in the proposed plan and the applicant shall be given an opportunity to correct any deficiency.
- (4) Upon approval of the Administrative Authority, the stormwater management permit shall be issued by the Administrative Authority after the applicant has met all other requirements of this ordinance.

### ARTICLE III. MAINTENANCE, CONSTRUCTION AND INSPECTION

#### **15-13-1.11. Public and private maintenance responsibilities under the stormwater management system.**

(a) Owner inspections and maintenance. The owner shall be responsible for inspections and maintenance on the site.

- (1) Inspections and maintenance must be documented and readily available for review. Inspections are required as follows:
  - a. Once every 7 days on exposed soil areas.
  - b. Within 24 hours after a one-half inch rain event over 24 hours.
  - c. Once every 30 days on stabilized areas.
  - d. As soon as runoff occurs or prior to resuming construction on frozen ground.
- (2) Maintenance is required as follows:
  - a. When sediment reaches  $\frac{1}{2}$  the height of the BMP on perimeter control devices, sediment must be removed within 48 hours.
  - b. If the perimeter control device is not functional it must be repaired or replaced within 48 hours. (Ord. No. 5628, §1(m), 1-8-08)
  - c. Temporary sediment basins shall be maintained when sediment reaches  $\frac{1}{2}$  the outlet height or  $\frac{1}{2}$  the basin storage volume. Basin must be drained or sediment removed within 72 hours.
  - d. Construction site vehicle entrance and exit locations sediment must be removed from paved surfaces within 24 hours of discovery.
  - e. Immediate maintenance may be required by the Administrative Authority if the conditions of the site are a public hazard or has the potential to cause environmental damage or pollution. (Ord. No. 5628, §1(m), 1-8-08)

- (b) Public responsibilities:
  - (1) Administration - Administration of these regulations shall be by the Administrative Authority, who shall review to determine approval, disapproval or modification of stormwater management plans as provided herein.
  - (2) All areas and/or structures to be dedicated to the city must be dedicated by plat or separate instrument and accepted by a formal letter from the Administrative Authority.
  - (3) Operation and maintenance of publicly-owned facilities - The Administrative Authority shall be responsible after written approval and acceptance for the operation and maintenance of all drainage structures and improved courses which are part of the drainage structures and improved courses which are part of the stormwater runoff management system under public ownership and which are not constructed and maintained by or under the jurisdiction of any state or federal agency.
- (c) Private responsibilities:
  - (1) Each developer of land within the corporate limits of the city has a responsibility to provide on the developer's property all approved stormwater runoff management facilities to ensure the adequate drainage and control of stormwater on the developer's property both during and after construction of such facilities.
  - (2) Each developer, owner or property owners association has a responsibility and duty before and after construction to properly operate and maintain any on-site stormwater runoff control facility which has not been accepted for maintenance by the public. Such responsibility is to be transmitted to subsequent owners through appropriate covenants.
  - (3) All private systems not dedicated to the city shall have adequate easement to permit the Administrative Authority to inspect and, if necessary, to take corrective action should the responsible entity fail to properly maintain the system.
  - (4) All private stormwater facilities shall be maintained in proper condition consistent with the performance standards for which they were originally designed.
  - (5) All private systems must be designed to discharge at pre-developed rates unless approved by the Administrative Authority. New stormwater drainage systems cannot tie into existing systems of lesser capacity. In other words, a larger pipe cannot discharge into a smaller pipe of lesser capacity. See Article II, Section 4 for detention plan requirements.
- (d) Maintenance Agreement (privately-owned facilities only):

- (1) A proposed inspection and maintenance agreement shall be submitted to the Administrative Authority for all private on-site stormwater discharge control facilities prior to the approval of the stormwater management plan. Such agreement shall be in a form and content acceptable to the Administrative Authority and shall be the responsibility of the private owner. Such agreement shall provide for access to the facility by virtue of a non-exclusive perpetual easement in favor of the city at reasonable times for regular inspection by the Administrative Authority. This agreement will identify who will have the maintenance responsibility. Possible arrangements for this maintenance responsibility might include the following:
  - a. Use of homeowner associations;
  - b. Arrangements to pay the city for maintenance;
  - c. Private maintenance by development owner(s), or contracts with private maintenance companies.
- (2) All maintenance agreements shall contain or uphold, without limitation, the following provisions:
  - a. A description of the property on which the stormwater management facility is located and all easements from the site to the facility;
  - b. Size and configuration of the facility;
  - c. A statement that properties which will be served by the facility are granted rights to construct, use, reconstruct, repair and maintain access to the facility;
  - d. A statement that each lot served by the facility is responsible for repairs and maintenance of the facility and any unpaid ad valorem taxes, public assessments for improvements, and unsafe building and public nuisance abatement liens charged against the facility, including all interest charges together with attorney fees, costs and expenses of collection. If an association is delegated these responsibilities, then membership into the association shall be mandatory for each parcel served by the facility and any successive buyer. The association shall have the power to levy assessments for these obligations, and that all unpaid assessments levied by the association shall become a lien on the individual parcel;
  - e. All stormwater facilities must be designed to minimize the need for maintenance, to provide easy vehicle and personnel access for maintenance purposes, and be structurally sound. It shall be the responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the facilities for inspection or maintenance;



- f. All settled materials from ponds, sumps, grit chambers and other devices, including settled solids, shall be removed and properly disposed of as needed to insure the proper functioning of the stormwater facility as per its design capacity.

**15-13-1.12. Inspection authority.**

Inspections will be performed by the Administrative Authority on a regular basis during construction to ensure that the stormwater management plan measures are properly installed and maintained. The Administrative Authority shall inspect all stormwater facilities during the first year of operation, and at least once every five years thereafter. In all cases the inspectors will attempt to work with the applicant or developer to maintain proper stormwater management.

**15-13-1.13. Bonds, maintenance assurances and final approval.**

(a) Maintenance agreement. A maintenance agreement approved by the Administrative Authority assuring perpetual maintenance of stormwater management improvements shall be agreed upon by the Administrative Authority and the applicant.

(b) Maintenance of detention ponds (wet type) shall be the responsibility of the owner of record and/or the property owners' association.

(c) Maintenance of detention basins (dry type) shall be the responsibility of the owner of record and/or property owners' association. The owner of record and/or property owners' association shall be responsible for all other maintenance, plantings, reseeding, or resodding. The owner shall also be responsible for removing and replacing any landscaping, playground equipment or other facilities within the basin.

(d) Maintenance bond. A one year maintenance bond against defects in workmanship shall be required by the Administrative Authority for any portion of the stormwater management improvements dedicated to the public, said maintenance bond to be provided by cashiers check, irrevocable letter of credit or acceptable surety authorized to do business in the State of Arkansas. All forms of maintenance bonds shall be subject to approval by the Administrative Authority and the City Attorney. The value of bond shall be an amount equal to 100% of the value of the stormwater system improvements.

**ARTICLE IV. MISCELLANEOUS PROVISIONS****15-13-1.14. Variances and appeals.**

- (a) Variances from requirements.
- (1) The Administrative Authority may grant on a case-by-case basis a variance from the requirements of this ordinance if there are exceptional circumstances applicable to the site such that strict adherence to the provisions of the ordinance will result in unnecessary hardship and not fulfill the intent of the ordinance.

- (2) An applicant may include in the application a request for a variance. No variance shall be granted unless applicant demonstrates and the Administrative Authority finds that all of the following conditions are present:
- a. Enforcement of the standards set forth in this ordinance will result in unnecessary hardship to the landowner.
  - b. The hardship is due to exceptional physical conditions unique to the property.
  - c. Granting the variance will not adversely affect the public health, safety or welfare, nor be contrary to the spirit, purpose and intent of this ordinance.
  - d. The project will have no adverse impact upon any of the stated purposes of this ordinance.
  - e. The applicant has proposed an alternative to the requirement from which the variance is sought that will provide equivalent protection of the public health, safety and welfare, the environment and public and private property.
  - f. The net cumulative effect of the variance will not impact downstream conditions.
  - g. Existing regional facilities are shown to meet the performance standards of this ordinance.
- (3) If all of the conditions of paragraph (2) are met, a variance may only be granted to the minimum extent necessary to afford relief from the unnecessary hardship with primary consideration given to water quality.
- (4) The content of a variance shall be specific and shall not affect other approved provisions of a SWPPP.
- (5) Economic hardship is not sufficient reason for granting a variance.
- (6) A written request for a variance shall be required and shall state the specific variance sought and the reasons, with supporting data, for the granting. The request shall include descriptions, drawings, calculations and any other information that is necessary to evaluate the proposed variance.
- (7) Any substantial variance from the stormwater management plan shall be referred to all agencies which reviewed the original plan.

(b) Appeals.

- (1) Any person aggrieved by a decision of the Administrative Authority (including any decision with reference to the granting or denial of a variance from the terms of this ordinance) may appeal same by filing a written notice of appeal with the Administrative Authority within thirty (30) calendar days of the issuance of said decision by the Administrative Authority. The Administrative Authority can then reverse his/her decision or send this notice to the Board of Directors with comments. A notice of appeal shall state the specific reasons why the decision of the Administrative Authority should be reconsidered and the Administrative Authority shall prepare and send to the Board of Directors and Appellant, with fifteen (15) days of receipt of the notice of appeal, a written response to said notice of appeal.
- (2) All such appeals shall be heard by the Board of Directors which is hereby granted specific authority to hear and determine such appeals in a quasi-judicial capacity. Said appeal shall be heard by the Board of Directors at its next regularly scheduled meeting date, not to exceed thirty (30) days after receipt of the notice of appeal, or at such other time as may be mutually agreed upon in writing by the Appellant and the Chairperson of the Board of Directors. The Board of Directors will then render a decision within fifteen (15) days after the appeal has been heard.
- (3) The Board of Directors may, in conformity with the provisions of this ordinance, reverse or affirm, wholly or partly, or modify the order, requirement, decision or determination appealed from and may make such order, requirement, decision or determination as ought to be made, and shall have all the powers of the officer from whom the appeal is taken.
- (4) The concurring vote of a majority of the Board of Directors shall be necessary to reverse the decision of the Administrative Authority.
- (5) Each party to the appeal shall be entitled to a hearing before the Board of Directors under judicial forms of procedure, at which hearing each party shall have the right to present evidence and sworn testimony of witnesses, to cross-examine witnesses, and to cause a transcription of the proceeding to be prepared.
- (6) Should either party be dissatisfied with the decision of the Board of Directors, any appeal of said decision may be appealed to a court of competent jurisdiction in accordance with the laws of Garland County and the State of Arkansas.

**15-13-1.15. Alternative methods.**

(a) Alternatives to on-site detention. Where on-site detention is deemed inappropriate due to local topographical or other physical conditions, alternate methods for accommodating increases in stormwater runoff may at the Administrative Authority's discretion be considered. The methods may include:

- (1) Off-site detention or comparable drainage improvements.



- (2) In-lieu monetary contributions to be specifically used for channel or drainage system improvements, or off-site detention improvements by the city within the same watershed. Channel improvements shall only be used if they are an integral part of a detailed watershed study.
- (b) In-lieu contributions to regional or sub-regional detention. An owner or developer may contribute to the construction of a regional or sub-regional detention site constructed or to be constructed in lieu of constructing on-site detention. However, no in-lieu contributions are allowed when existing flooding occurs downstream from the development, or if the development will cause downstream flooding.
- (c) In-lieu fees. The in-lieu fee contribution shall be based upon an amount of \$10,000 per-acre-foot of stormwater storage.
- (d) Watershed facility improvement funds. In-lieu contributions paid to the city shall be budgeted by contributing to a "Watershed Facility Improvement Fund." Said funds shall be appropriated only for planning, design and construction for correction of existent drainage problems within the watershed from which the contribution is generated.
- (e) Regional or sub-regional detention sites. The acquisition of regional or sub-regional detention sites and construction of facilities thereon will be financed by the city. Monies contributed by the owners as above provided shall be used for regional and sub-regional detention site studies, land acquisition and facility construction thereof in the watershed in which the development is located.
- (f) Watershed boundaries. The boundaries of watersheds and priority in construction of detention facilities and drainage improvement construction shall be as established by the Administrative Authority and approved by the Board of Directors.

**15-13-1.16. Violations.**

(a) Violations and penalties. A site grading permit may be suspended or revoked by the Administrative Authority if one or more of the following violations have been committed:

- (1) Violation(s) of the conditions of the stormwater management plan approval.
- (2) Construction not in accordance with the intent of the approved plans.
- (3) Non-compliance with correction notice(s) or stop work order(s).
- (4) The existence of an immediate danger in a downstream area in the judgement of the Administrative Authority.

(b) If one or more of these conditions is found, a written notice of violation(s) shall be served upon the owner or authorized representative and an immediate stop-work order may be issued. The notice shall set forth the measures necessary to achieve compliance with the plan. Correction of these violations must be started immediately and completed within 7 working days of original notification or the owner shall be deemed in violation of this ordinance.

(c) The City Attorney may institute injunctive, mandamus, or other action or proceedings at law or equity for the enforcement of this ordinance or to correct violations of this ordinance, and any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

(d) It shall be a violation of this ordinance for any owner, operator or contractor to commence any soil disturbance activity that requires permit coverage without prior approval from the Administrative Authority. Failure to obtain approval may result in enforcement fees, citations, court cost and/or fines. (Ord. No. 5628, §1(n), 1-8-08)

(e) Enforcement/Stop work order. Whenever the Administrative Authority finds any noncompliance with the provisions of this ordinance, the Administrative Authority shall attempt to communicate with the owner or person performing the work to obtain immediate and voluntary compliance if such person is readily available. If the owner or person performing the work is not readily available or if that person refuses to voluntarily comply immediately or the noncompliance presents an imminent danger or will cause or threatens to cause bodily injury or damage to off-site property including, but not limited to, off-site run-off, the Administrative Authority shall post in a conspicuous place on the premises, a stop work order which shall cause all activity not necessary to correct the noncompliance to cease until noncompliance is corrected.

(f) The stop work order shall provide the following information: Date of issuance, project name and permit number and reason for issuance and the signature of the inspector that issues the order.

(g) It shall be a violation of the ordinance for the unauthorized removal of the stop work order from the premises when posted on the project site.

(h) In addition to posting a stop work order, the local approval authority shall provide notification to the owner or contractor by personal service, written notice by certified mail, or facsimile transmission. The permittee, landowner and contractor shall have 72 hours from the time and date of notification by the Administrative Authority to correct any noncompliance with the plan.

(i) Inspection. The Administrative Authority shall be responsible for determining whether the stormwater management plan is in conformance with the requirements specified by the city's Stormwater Management Manual. Also, the Administrative Authority shall be responsible for determining whether the development site is proceeding in accordance with the approved drainage plan. Periodic inspection of the development site shall be made the Administrative Authority. Through such periodic inspections, the Administrative Authority shall ensure that the stormwater management plan is properly implemented and that the improvements are maintained.

(j) Remedial work. If it is determined through inspection that the development is not proceeding in accordance with the approved stormwater management plan and drainage and/or building permit, the Administrative Authority shall immediately issue written notice to the permittee concerning the alleged noncompliance, accompanied by documentary evidence demonstrating noncompliance and specifying what remedial work is necessary to bring the project into compliance. The permittee, upon notification, shall immediately, unless weather conditions

or other factors beyond the control of the permittee prevent immediate remedial action, commence the recommended remedial action and shall complete the remedial work within 72 hours or within a reasonable time as determined in advance by the Administrative Authority. Upon satisfactory completion of remedial work, the Administrative Authority shall issue a notice of compliance and the development may proceed.

(k) Enforcement fee. Where code enforcement action is needed to bring a site into compliance with the Clean Water Act, fees will be charged to the permit holder and or the property owner. The enforcement fee shall be established by resolution of the Board of Directors.

#### **15-13-1.17. Penalty.**

The penalty for violation of this ordinance shall, upon conviction in the Hot Springs District Court, or any other court of competent jurisdiction, be such fines and penalties as established by the general penalty clause for the Hot Springs Code of Ordinances as may now or hereafter be enacted by the Hot Springs Board of Directors.

#### **15-13-1.18. Conflict resolution and interpretation.**

(a) Interpretation. In their interpretation and application, the provisions of these regulations shall be held to be the minimum requirements for the promotion of the public health, safety and general welfare.

(b) Conflict with other laws. Whenever the provision of this ordinance impose more restrictive standards than are required in or under any other ordinance, the regulations herein contained shall prevail. Whenever the provisions of any other ordinance require more restrictive standards than are required herein, the requirements of such shall prevail.

#### **15-13-1.19. Disclaimer of liability.**

(a) The performance standards and design criteria set forth herein and in the Stormwater Management Manual establish minimum requirements which must be implemented with good engineering practice and workmanship. Use of the requirements contained herein shall not constitute a representation, guarantee or warranty of any kind by the city or its officers and employees of the adequacy or safety of any stormwater management structure or use of the land. Nor shall the approval of the stormwater management plan imply that the land uses that are permitted will be free from damages caused by stormwater runoff. The degree of protection required by these regulations is considered reasonable for regulatory purposes and is based on historical records, engineering and scientific methods of study. Larger storms may occur or stormwater runoff heights may be increased by man-made or natural causes. These regulations, therefore, shall not create liability on the part of the city or any officer or employee with respect to any legislative or administrative decision lawfully made hereunder.

(b) Neither approval of a plan under the provisions of this ordinance nor the compliance with the provisions of this ordinance shall relieve any person from the responsibility for damage to any person or property otherwise imposed by law.



**15-13-1.20. Amendments.**

For the purpose of providing for the public health, safety and general welfare, the Board of Directors may, from time to time, amend the provisions of these regulations. This ordinance may be amended in the manner as prescribed by law for its original adoption. Before the Board of Directors considers an amendment to this ordinance, it must seek the advice of the Administrative Authority who will make a recommendation for each amendment within thirty (30) days of this request.

**15-13-2. Pre-existing projects.**

Any applicant or owner of a parcel of land within the jurisdiction of the City of Hot Springs who has constructed a required stormwater management facility or who is in the application process shall be held to the requirements in effect at the time the permit was approved.

**15-13-3. Severability.**

The provisions of this ordinance are severable. If any term, requirement or provision of this ordinance or the application thereof to any person or circumstance shall, to any extent, be found invalid or unenforceable, the remainder of this ordinance or the application of such terms, requirements and provisions to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby and each term, requirement or provision of this ordinance shall be valid and be enforced to the fullest extent permitted by law. The City hereby declares that it would have enacted the remainder of these regulations even without any such part, provision or application found to be unlawful or invalid.

(Ord. No. 5378, §§ 1-3, 9-6-05)

HOT SPRINGS CODE  
STORMWATER MANAGEMENT

DIVISION II. STORMWATER FEES

ARTICLE I. PERMIT FEE SCHEDULE

**15-13-4. Stormwater management - Fee schedule.**

*The following fee schedule is hereby adopted:*

**STORMWATER MANAGEMENT ORDINANCE FEE SCHEDULE**

**(a) Permit Fees**

Single family dwelling or part of larger common plan	\$25.00
Multiple family dwelling (4 units or less)	\$100.00
Multiple family dwelling (5 units or more)	\$250.00
Commercial & industrial buildings:	
(Less than 10,000 sq. ft.)	\$100.00
(10,000 sq. ft. or larger)	\$250.00
Commercial & industrial building additions:	
(Less than 10,000 sq. ft.)	\$50.00
(10,000 sq. ft. or larger)	\$100.00
Parking lots (Less than 4,000 sq. ft.)	\$50.00
Parking lots (4,000 sq. ft. - 9,999 sq. ft.)	\$75.00
Parking lots (10,000 sq. ft. or more)	\$100.00
Subdivisions (up to 5 lots)	\$100.00
Subdivisions (6 to 12 lots)	\$200.00
Subdivisions (13 or more lots)	\$400.00
Land disturbance only (1 to 5 acres)	\$100.00
Land disturbance only (more than 5 acres)	\$150.00
Any activity with the potential to pollute (adjacent to a water body)	\$75.00

**(b) Enforcement Fees.**

Administration Enforcement fee for monitoring and processing violation compliance (1 hr. minimum)	\$50.00/hr.
Street Sweeper (minimum)	\$100.00
Other equipment or action (minimum)	\$100.00

*Triple Fee Penalty (Triple the original cost of the stormwater permit for starting construction before permitting if the site was required to meet compliance with stormwater requirements).*

(Res. No. 6826, §1, 4-7-08)

*Editor's note - §15-13-4 was adopted by Resolution but included in the Code of Ordinances due to its permanent nature.*

## ARTICLE II. STORMWATER UTILITY FUND

**15-13-5. Stormwater utility fund.****15-13-5.1. Creation.**

There is hereby created a fund to be entitled the "Stormwater Utility Fund" and all revenues generated by or on behalf of the stormwater drainage utility fees shall be deposited in said Stormwater Utility Fund and shall be used exclusively for the operation of the City of Hot Springs Stormwater Management Program and other storm-related equipment, construction, materials, supplies or services, including, but not limited to, storm-related disaster recovery and emergency preparedness provided to the community.

**15-13-5.2. Stormwater utility fee.**

From and after the effective date of the ordinance, there shall be added to each municipal utility account (water, wastewater and/or solid waste), within the corporate limits of the city, a Stormwater utility fee based on impervious surface area in square feet (s.f.), as follows:

		Cost Per Month					
		Current	June-2016	Jan-2017	Jan-2018	Jan-2019	Jan-2020
Residential		\$3.00	\$4.00	\$4.00	\$4.00	\$4.25	\$4.25
Commercial	0 - 9,999	\$6.00	\$8.00	\$10.00	\$12.00	\$12.00	\$12.00
Impervious Surface in Square Feet	10,000 - 49,999	\$6.00	\$10.00	\$12.00	\$21.60	\$28.80	\$36.00
	50,000 - 99,999	\$6.00	\$12.00	\$30.00	\$54.00	\$72.00	\$90.00
	100,000 - 249,999	\$6.00	\$28.00	\$70.00	\$126.00	\$168.00	\$210.00
	250,000 - Above	\$6.00	\$60.00	\$150.00	\$270.00	\$360.00	\$450.00

(Ord. No. 6153, §1, 6-7-2016)

**15-13-5.3. Billing and collection.**

For purposes of billing and collection, the stormwater utility fee shall be considered a municipal utility fee and shall be billed and collected in the same manner and subject to the same procedures as all other municipal utilities (water, wastewater and sanitation) pursuant to the Uniform Municipal Utility Billing Procedure Ordinance.

**15-13-5.4. Effective date.**

The stormwater utility fee, authorized in §15-13-5.2 hereof, shall be effective on all municipal utility bills rendered from and after August 1, 2016. (Ord. No. 6153, §3, 6-7-2016)

(Ord. No. 5629, §1-4, 1-8-08)



## DIVISION III. HOT SPRINGS CREEK TUNNEL REGULATIONS

**15-13-6. Hot Springs Creek Tunnel Regulations.**

The following regulations are hereby adopted and shall govern the location, installation and maintenance of certain facilities located within the Hot Springs Creek Tunnel.

**15-13-6.1. Short title.**

This Ordinance shall be known and cited as the Hot Springs Creek Tunnel Regulations.

**15-13-6.2. Purpose and scope.**

The primary purpose of the Hot Springs Creek Tunnel is to provide stormwater drainage and flood control. In this regard, no facilities, utility lines, structures or obstacles of any kind or nature whatsoever shall be placed within the tunnel except as permitted by this ordinance. This ordinance shall govern the location, installation and maintenance of all facilities permitted to be located within the tunnel. Any thermal water collection lines and facilities as installed and maintained by the National Park Service and within that portion of the tunnel within the federally exclusive jurisdiction and boundary of Hot Springs National Park are hereby exempt from the requirements of this ordinance.

**15-13-6.3. Definitions.**

The following words, terms and phrases, when used in this ordinance, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning.

*Administrative authority:* such employees of the city as designated by the city manager with the authority and responsibility to administer this ordinance.

*Applicant:* the person, firm or corporation submitting a permit application pursuant to the provisions of this ordinance.

*City:* the municipal corporation known as the City of Hot Springs, Arkansas. The words "the city" or "this city" shall be construed as if the words "of Hot Springs, Arkansas" follow and shall extend to and include its several officers, board of directors, agents and employees.

*City engineer:* the employee of the city designated by the city manager as the city engineer or acting in the capacity of the city engineer.

*Permittee:* the person, firm or corporation to whom a permit has been issued pursuant to the requirements of this ordinance and who has installed facilities within the tunnel.

*Facilities:* such piping, lines, supports and materials installed, or proposed to be installed, within the tunnel for provision of a given utility.

*Tunnel:* that portion of Hot Springs Creek and its tributaries as contained within and flowing through man-made structures, located within public rights-of-way and private and public property commencing on Park Avenue (east branch - 1560 feet in length) and Whittington Avenue (west branch - 750 feet in length), and following underneath and adjacent to Central Avenue, Malvern Avenue and Broadway Street and terminating in the 100 block of Broadway Terrace (4,620 feet in length) and including a tributary within the Fountain Street right-of-way approximately 504 feet in length running northeast from Central Avenue.

*Utility:* the piping, lines, supports and ancillary equipment of such public and private utilities (natural gas, telephone, electricity, water, wastewater and thermal water) that may now or hereinafter exist within the tunnel.

*Utility company or Owner:* such person, firm or corporation as may own, maintain or otherwise be responsible for facilities placed within the tunnel.

#### **15-13-6.4. Permit applications.**

Any applicant desiring to place facilities within the tunnel, access the tunnel for repairs, maintenance, or inspection or otherwise enter the tunnel shall make application with the administrative authority on such forms as may be prescribed by the administrative authority. The application forms for tunnel access shall include the following information together with such other information as the administrative authority may require including name and contact information for all persons to be entering the tunnel, the purpose of their entry and the expected duration. Applications for placement of new facilities or replacement of existing facilities shall, in addition, include such information as the administrative authority shall deem necessary to ascertain the purpose of the facilities and compliance with the requirements of this ordinance.

#### **15-13-6.5. Access notification required.**

Any person entering the tunnel, for any purpose whatsoever, shall obtain a confined space entry permit from the Hot Springs Fire Department not less than twenty-four (24) hours prior to entering the tunnel. On the date of entry, the permit holder shall notify the fire department not less than one hour prior to their anticipated entry time. The permit holder will state the number of persons entering the tunnel and the anticipated duration of each entry. The permit holder shall notify the fire department immediately upon exiting the tunnel. If the entry includes any sections within the federally exclusive jurisdiction and boundary of Hot Springs National Park, such person(s) shall also notify the Superintendent of Hot Springs National Park. The administrative authority shall provide copies of any construction permit applications to the Fire Department and Superintendent of Hot Springs National Park when entry is anticipated.

#### **15-13-6.6. Construction permit required.**

A construction permit, issued by the administrative authority, shall be obtained prior to constructing, repairing, or otherwise placing or maintaining any facilities within the tunnel or entering the tunnel for any purpose. All construction, maintenance or repair commenced pursuant to a construction permit shall be accomplished in accordance with the requirements of this ordinance. Should the administrative authority detect any construction deficiencies, the owner shall be given a reasonable time to correct such deficiencies. Failure to do so will result in the removal of any deficient facilities from the tunnel by the city.

**15-13-6.7. Other permits.**

The applicant shall, in addition, obtain such other permits and authorizations as may be required for activities within the boundary of Hot Springs National Park.

**15-13-6.8. Facility permit required.**

Once facilities are constructed and installed by the owner and inspected and approved as meeting the requirements of this ordinance by the administrative authority, a permanent facility permit shall be granted. Facilities may not be located or maintained within the tunnel without a valid facility permit issued by the administrative authority. A permitted facility is hereby considered to be conditional from year-to-year and, therefore, subject to annual renewal and inspection by the administrative authority. The administrative authority shall maintain a record of all such facility permits on such forms and in such manner as the administrative authority may prescribe. It is the permittee's responsibility to keep their contact and permit information current.

**15-13-6.9. Maintenance required.**

All facilities shall be maintained in good working order by the owner at all times. The administrative authority shall inspect the tunnel not less than annually and shall provide to the owner a "notice of repair" if any deficiencies are found. The owner shall accomplish all required repairs within ninety (90) days of such notification. Failure to make necessary repairs will result in such facilities being declared abandoned and subject to removal by the city.

**15-13-6.10. Additional facilities.**

Additional facilities shall not be added to the tunnel unless an existing facility is removed or utilized for such additional facility. Provided, however, additional facilities may be permitted in the main tunnel and tributary branches after the tunnel capacity has been determined by the city engineer to have available capacity and the installation thereof is approved by the board of directors.

**15-13-6.11. Required materials.**

The following materials and construction methods shall apply to all facilities placed within the tunnel after the effective date of this ordinance.

- (a) Facility materials shall be of a type that will not promote additional maintenance due to excessive corrosion or calcification of pipe cross sectional area as approved by the city engineer. Prohibited pipe materials are black steel, clay, concrete, and any other material not approved by the city engineer
- (b) Thermal water utility pipe shall have the minimum necessary thermal insulation, when needed, with a hard continuous smooth cover with no loose joints that could inhibit the stormwater flow and with the ability to stay intact under stormwater conditions as approved by the city engineer for permitted use.



- (c) Facility attachments to the tunnel wall should be located in a manner that does not block any stormwater pipe outfall into the tunnel, provides the least obstruction to stormwater flow with no protruding pipe hangers and a solid connection to the upper tunnel wall section as approved by the city engineer.
- (d) Facility attachments may be located in the tunnel arch section against reinforced concrete material but not attached to the stone-arched sections.
- (e) All facilities shall have the smallest cross section area as possible to serve the intended use.

**15-13-6.12. Abandoned facilities.**

Any facilities determined by the administrative authority to be abandoned may be removed by the city not less than thirty (30) days after issuance of a "notice of removal." For purposes of this section, abandoned facilities includes the following:

- (a) any facility determined as not being in active service for a period of one year or longer; or
- (b) any facility which is not repaired within ninety (90) days after a "notification to repair" has been issued by the administrative authority; or
- (c) any facility for which the annual permit has not been renewed within three months of the expiration thereof.

**15-13-6.13. Training required.**

Any persons entering the tunnel must be properly trained in the safety procedures of working in an underground environment, defined by OSHA as a "confined space" or in the company of such duly trained person(s).

**15-13-6.14. Pre-existing facilities.**

Facilities existing within the tunnel prior to the effective date of this ordinance (pre-existing facilities) shall be inspected and granted a facility permit. The owners of such facilities shall be notified of any needed repairs. Such repairs shall be made within ninety (90) days of such notification, or such facilities shall be considered abandoned. Pre-existing facilities will not be required to meet the material standards as required by the ordinance except and unless such facilities are replaced. Pre-existing facilities shall otherwise be subject to the provisions of this ordinance.

**15-13-6.15. Notice.**

All notices as required herein shall be in writing to the address of record on the facility permit. Notice of repair shall be by regular first-class mail. Notice of removal shall be by certified mail, return receipt requested. Should written notice not be accepted or otherwise accomplished by mail, a legal notice shall be placed in a newspaper of general circulation.

**15-13-6.16. Penalty.**

The penalty for violation of this ordinance shall, upon conviction in the Hot Springs District Court, or any other court of competent jurisdiction, be such fines and penalties as established by the general penalty clause of the Hot Springs Code of Ordinances as may now or hereafter be enacted by the Hot Springs Board of Directors.

(Ord. No. 5683, §1, 10-7-08)

REVISED July 2017

## CITY OF HOT SPRINGS

# STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

## TEMPLATE COMPLETION INSTRUCTIONS

The following template of the City's Stormwater Pollution Prevention Plan is required to be used in the Stormwater Permit submittal package. **The SWPPP must be completed by a person with sufficient training in Sediment and Erosion control and approved by the CHS Stormwater Division (Administration Authority).** (Contact CHS Stormwater Division for more information)

The following template contains **examples** of the information needed by the permittee relative to the particular project and owner. The plan is in a Microsoft Word version so that the permittee can easily cut out the examples and insert the needed information.

Upon completion of the SWPPP all examples and comments in **RED** should have been removed and replaced by the projects particular information.

The SWPPP submittal package must also contain:

- Project plan / site map showing various details. (See Section F)
- QLP Site Notice (found on Stormwater Website)
- Details of sediment and erosion controls
- Details of post construction water quality device i.e. filter baskets, bio-swales, etc.
- Calculations and details of detention / retention device (if project is greater than one acre)
- Signatures of project owner, contractor and stormwater site inspector
- Listed Stormwater Site-Inspector must have a valid certification from the City of Hot Springs

### NOTE:

Any site over one (1) acre disturbed or any commercial site regardless of size will require the following in addition to the CHS SWPPP:

- Detention/Retention Plan (prepared by a licensed professional engineer)
- Stormwater Management Plan
- Stormwater Quality Plan/with post maintenance plan (If required)

See the CHS Stormwater Management Manual for information regarding these plans.



Stormwater Pollution Prevention Plan (SWPPP)  
For  
Construction Activity

National Pollution Discharge Elimination System  
General Permit #ARR150000

Prepared for

XXXX

---

Date: XXXX

---

Prepared by

XXXX

---



# Stormwater Pollution Prevention Plan (SWPPP)

## General Permit #ARR150000

### General Information:

**EXAMPLE:** Construction of approximately a XXXX square feet building with approximately XXXX square feet of associated parking, driveways, storm drain and other appurtenances.

### Project Name:

XXX

### Physical Address of Site:

XXX

**Latitude:** <http://itouchmap.com/latlong.html>

XX.XXX (decimal format, not DMS)

### Longitude:

XX.XXX (decimal format, not DMS)

**Owner / Operator Name, Address, Phone and Email:** (No PO Boxes)

XXX

XXXXXX

XX, XX XXXXX

()XXX-XXXX

xx@xxxx.com

**Contractor Name, Address, Phone and Email:** (No PO Boxes)

XXX

XXXXXX

XX, XX XXXXX

()XXX-XXXX

xx@xxxx.com



## A. Site Description

1) Pre-Construction Topographic View: Attached

2) Project Description and Intended Use after Notice of Termination is filed and City's permit is closed:

The site is proposed to be developed for a new XXXX square foot building to serve as XXXX. The site will have a XXX square foot asphalt parking area with associated driveway.

3) Sequence of Activities: **(UPDATE THIS INFO—Must Be Project Specific)**

### Initial Development

- Meet all City of Hot Springs and ADEQ stormwater requirements
- Install erosion and sediment controls
- Contact City of Hot Springs Stormwater Division prior to any land disturbing activities for an initial site inspection
- Clearing and grubbing
- Grading

### Final Development

- Install building foundation, gravel parking area, and drives
- Install landscape and sod

4) Total Acres Available / Total Acres Disturbed:

Of the total XX acres, approximately XX acres will be disturbed by construction activities.

### Commercial Properties (only):

Total amount of planned impervious surface including roof top, driveways, and parking lots: \_\_\_\_\_ square feet

5) Existing Site Information:

a. Runoff Coefficient based on coefficient values from the [CHS Stormwater Management Manual Section 400](#)

**RUNOFF COEFFICIENTS NOT REQUIRED FOR SINGLE FAMILY RESIDENCE LESS THAN 1 ACRE.**

Before construction starts, the site has a runoff coefficient of \_\_\_\_\_

After construction is completed, the site will have a runoff coefficient of \_\_\_\_\_

b. Soil Information: **The existing soil conditions are sandy clay and topsoil.**



**B. Responsible Parties for Stormwater Pollution Prevention:**

The stormwater controls will be installed, maintained and inspected by \_\_\_\_\_.

**C. Receiving Waters:**

The following bodies of water receive runoff from the construction site:

The site's stormwater drains into XXX Creek, thence Lake Hamilton, thence into Lake Catherine, and ultimately into the Ouachita River.

**D. TMDL and 303 (d) lists:**

The stormwater from the construction site discharges to Lake Hamilton, ultimately into the Ouachita River. This water body is not on the 303(d) list of impaired water bodies for siltation/turbidity. Since this water body is not impaired, a TMDL is not applicable to this construction project.

**E. Attainment of Water Quality Standards after Authorization:**

The water quality standards for any receiving waters of this project's stormwater runoff will be continually monitored. In the case that the water quality standards change and the receiving water body becomes impaired and is listed on the 303(d) list the SWPPP will be updated to include measures necessary to meet the TMDL requirements.

**F. Site Map:**

The site map shall show, at a minimum, the following items:

1. Direction of stormwater flow
2. Areas of soil disturbance and areas not to be disturbed
3. Location of major structural and nonstructural controls
4. Main construction entrance and exit
5. Location where stabilization practices are expected to occur
6. Location of offsite materials, storage, waste or borrow areas
7. Locations used for concrete truck wash out
8. Locations of portable toilets and any other hazardous materials
9. Location of all surface water bodies (including wetlands)
10. Locations where stormwater is discharged to a surface water and / or municipal separate stormwater sewer system, if applicable
11. Locations where stormwater is discharged off-site (should be continuously updated)



12. Areas where final stabilization has been accomplished and no further construction will take place
13. Location of detention / retention facility (include detail with elevations and profiles of outfall / overflow devices)

**G. Stormwater Controls** (This section should be revised with project specific BMP's. Language in red should only be considered as an example.)

**1. Erosion and Sediment Controls Best Management Practices (BMP's):**

Initial clearing and land disturbance will be limited to that which is necessary for the installation of erosion and/or sediment controls.

Wire backed silt fence will be installed along the perimeter of the site to reduce the likelihood of sediment discharge onto adjacent properties or into water's of the State. Other structural controls, such as velocity dissipation, diversion berms, swales or approved equivalent will be installed as necessary to reduce or eliminate the runoff from the site to the water's of the state, municipal storm sewer system, and adjacent properties.

Any off site accumulation of sediment, including off site track tracking, will be cleaned immediately if necessary, but no later than 48 hours after discovery.

There are/are not offsite material storage or borrow areas to be covered within this permit.

**2. Stabilization Practices:**

Temporary seeding and mulch will be used no later than 14 days from the last construction activity on exposed soil areas. Temporary seeding will be conducive to the season. Seeding in the winter months will be annual rye applied at 200 pounds per acre (ppa). Seeding at all other times of the year will be a mixture of perennial rye (300 ppa) and common Bermuda (30 ppa). A commercial type fertilizer (10-10-10) will be applied to all seeded areas. Seeded area will also be mulched with 4,000 PPA straw reasonably free from noxious and foreign matter detrimental to the seeded grass.

A 25 foot buffer zone will be maintained for projects adjacent to any water body including streams, wetlands, creeks, rivers, and lakes. A 50 foot buffer will maintained if the water body is listed as an impaired 303 (d) or exceptional water body.

Records of all stabilization activities and buffer zone conditions shall be kept and noted on weekly inspection reports.

Permanent stabilization of disturbed areas will be achieved by installing additional landscaping, asphalt and building infrastructure.



**H. Other Controls:** (All items in this section are required. A statement as to why a control measure will not be implemented should be included for anything that is inapplicable to the site)

- A stabilized construction exit will be installed to help reduce vehicle tracking of sediments from leaving the site. The construction exit will be shown on the SWPPP sitemap. Exit will be installed after excavation work has been completed, in order to ensure positive drainage of the site's runoff.
- Once waste is being generated at the site, solid waste containment will be implemented to properly dispose of solid waste materials, including trash and construction debris. The solid waste dumpster will be shown on the SWPPP sitemap.
- Prior to any concrete work being performed, a designated concrete truck washout area will be located and maintained on-site to reduce hazardous concrete washout from entering the storm sewer system and will be shown on the SWPPP site map. The washout will be distinguished with a sign to assure visibility to concrete truck drivers.
- A portable restroom facility will be delivered and located in an area to reduce the chance of a hazardous spill into the storm sewer system. The temporary restroom will be shown on the SWPPP site map and will be maintained in accordance with applicable sanitary waste disposal regulations.
- There will/will not be hazardous materials or wastes stored onsite. (If yes, provide detail or include information for compliant secondary containment.)

**I. Non-Stormwater Discharges:**

Allowable Non-Stormwater Discharges: (Choose only the discharges that are applicable to this construction site.)

1. Firefighting activities.
2. Fire hydrant flushing.
3. Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II. A.I.2 of ADEQ Permit #ARR150000.
4. Potable water sources including uncontaminated waterline flushing.
5. Landscape irrigation.
6. Routine external building wash down which does not use detergents or chemicals.
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill materials have been removed) and where detergents or other chemicals are not used.
8. Uncontaminated air conditioning, compressor condensate
9. Uncontaminated springs, excavation dewatering and groundwater
10. Foundation or footing drains where flows are not contaminated with process material such as solvents.
11. Swimming pool discharge where chlorine has been allowed to evaporate for 3-4 days prior to draining.



#### **J. Post Construction Stormwater Management:**

Post construction water quality will be achieved by diverting stormwater runoff through adequate **XXX control measure**, which will filter out floatable debris down to ½ inch size.

#### **K. State or Local Plans:**

The City of Hot Springs in which the construction activity occurs will be contacted to determine if there are erosion control and / or stormwater runoff requirements in the city code, city ordinances or city permits. All applicable requirements will be met. Documentation of compliance will be attached to this SWPPP for submittal to ADEQ.

#### **L. Inspections:**

- Erosion and sediment controls will be inspected every 7 days and within 24 hours after any storm event of ¼ inch or greater to make sure the controls are in effect and do not require any maintenance. Inspections will be performed by an inspector who has obtained certification by the Hot Springs Stormwater Division.
- Inspection results will be documented on an inspection report and maintained on site for review by state and local inspectors.
- A rain gauge will be kept on site and daily records of rain fall will be kept with inspection reports.

**The following are the minimum inspection, maintenance, and reporting practices that will be used to maintain erosion and sediment controls at our construction site:**

1. City of Hot Springs Inspection Form ([Attachment B](#))
2. All controls will be inspected to ensure that they meet manufacture's specifications.
3. Sediment basins and sediment traps will be cleaned when they reach 50% of the original capacity.
4. All site entrances and exits will be checked to ensure no off-site tracking.
5. All inspection reports will be maintained for a minimum of 3 years after permit termination.
6. In addition to inspections , records will be kept of the following:
  - a. Dates when major grading activities occur
  - b. Dates when construction activities cease in an area, temporarily or permanently
  - c. Dates when an area is stabilized, temporarily or permanently

#### **M. Maintenance of Controls:**

- Any repairs or replacement will be done as soon as possible but no later than 48 hours after the inspection. Repairs and replacements will be documented on the inspection report.



- Sediment deposits will be removed once sediment has reached one half (1/2) the height of a wire backed silt fence.
- Sediment deposits will be removed once sediment has reached one half (1/2) the height of any other BMP such as check dams, storm wattles, rock bags, sediment basin or traps, or any other device.

**N. Completion of Job:**

- After the completion of the job all sediment and erosion controls will be removed and the street will be cleaned to make sure it is free of debris.
- The City of Hot Springs will be contacted to schedule a final inspection of the site and to terminate the City of Hot Springs Stormwater Permit.

**O. Employee Training:**

The City of Hot Springs requires each project to be inspected by an individual who has passed the City of Hot Springs Stormwater Site-Inspector Certification Course. The Certified Inspector will be qualified to provide training to other pertinent contractors or employees working at this site. The owner/operator is responsible to ensure that the certified individual provides adequate training to other employees, contractors and/or subcontractors to implement and comply with conditions of the Permit.

**P. Contractors:**

All contractors should be identified in the plan. Plan can be updated as contracts are issued.

Contractor Printed Name:		Contractor Signature:	
Contractor Contact Number:			
Contractor Printed Name:		Contractor Signature:	
Contractor Contact Number:			
Contractor Printed Name:		Contractor Signature:	
Contractor Contact Number:			
Contractor Printed Name:		Contractor Signature:	
Contractor Contact Number:			

**Q. Stormwater Site Inspector Information:** *All stormwater site inspectors must be certified through the City of Hot Springs.*

Inspector Printed Name:		Inspector Signature:	
Inspector Phone Number:		CHS Certification # _____	Expiration: _____
Inspector Printed Name:		Inspector Signature:	
Inspector Phone Number:		CHS Certification # _____	Expiration: _____



**Certification Statement:**

"I certify under penalty of law that this document and all attachments, such as inspection forms, were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Owner / Operator Printed Name: \_\_\_\_\_

Owner / Operator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor's Printed Name: \_\_\_\_\_

Contractor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# City of Hot Springs

## Submittal Requirements for a Stormwater Permit

Construction activity 1 acre or more land disturbance or Any New Commercial Project regardless of size requires:

- Stormwater Pollution Prevention Plan (SWPPP) (2 hard copies) Submit to Stormwater Division
- Stormwater Management Plan (SWMP) (1 copy) Submit to Stormwater Division
- Stormwater Quality Plan/with post maintenance plan (1 copy) Submit to Stormwater Division
- Stormwater Detention/Retention Plan Submit 1 copy each to Engineering & Stormwater Divisions
- All plans **shall be** completed and signed by a licensed professional
- **Must use** the most current version (July 2017) of the CHS SWPPP Template and Inspection Forms
- Each Plan **shall be** submitted as a separate plan and titled appropriately
- Each site **must have** a Stormwater Inspector that has been certified by the CHS Stormwater Division
- Large sites 5 acres or more must obtain a ADEQ Permit (NOI) prior to receiving a CHS Stormwater Permit

Construction activity 1 to 5 acres land clearing or grubbing with no development, Single Family Residence that is Part of a Larger Common Plan (Subdivision platted after 06/2005), or a Special Construction Site (Land disturbance adjacent to a waterbody) requires:

- Stormwater Pollution Prevention Plan (SWPPP) Submit to Stormwater Division
- Stormwater Quality Plan/post maintenance plan (If required) Submit to Stormwater Division
- **Must use** the most current version of the CHS SWPPP Template and Inspection Forms
- SWPPP **must be** completed by a person that **has been approved** by the Administrative Authority (CHS Stormwater Division)
- Each site **must have** a Stormwater Inspector that has been certified by the CHS Stormwater Division
- Large sites 5 acres or more must obtain a ADEQ Permit (NOI) prior to receiving a CHS Stormwater Permit

All other construction activities that do not require a CHS Stormwater Permit:

- Use Best Management Practices (BMP's) to keep sediment out of the street and on their property
- Properly store and dispose of all hazardous materials
- Properly dispose of all solid waste

Please contact the CHS Stormwater Division at (501) 321-6743 with any questions or concerns