ARKANSAS STATE UNIVERSITY

# *Stormwater Management Plan*

*Environmental Health and Safety*

## Executive Summary

The primary purpose of this plan is to meet the requirements of the Arkansas Department of Environmental Quality (ADEQ) issued National Pollutant Discharge Elimination System (NPDES) small Municipal Separate Storm Sewer System (MS4) permit issued to the Arkansas State University (A-State) main campus (Jonesboro). ADEQ enforces the requirement of the Clean Water Act (CWA) and this stormwater management plan (SWMP) outlines how A-State complies with the portions of the CWA that pertain to stormwater by meeting the permit requirements. The SWMP is meant to describe how A-State identifies sources of pollution that might impact stormwater discharges, implements Best Management Practices (BMPs) for activities (such as construction and municipal tasks) to reduce pollution to stormwater and measures the effectiveness of BMPs in reducing discharge of pollutants into stormwater that leaves campus to associated waterways of the state.

A-State Environmental Health and Safety (EHS) has the primary responsibility for ensuring compliance with stormwater requirements and for developing and implementing procedures to that end. A-State also has a Stormwater Advisory Committee (SWAC) that reviews procedures developed by EHS and makes recommendations prior to implementation. The SWAC has the opportunity to review construction plans to provide input on reducing the stormwater impact of those projects. EHS updates the SWAC quarterly on the activities it undertakes to meet the SWMP requirements.

A-State EHS has identified sources of stormwater pollution and ranks them on the basis of the likelihood of each pollutant entering the stormwater conveyance. With the list of sources identified, EHS develops and implements BMPs for each Minimum Control Measure required by the state. Minimum control measures include: public education and outreach on stormwater impacts, public involvement/participation, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction stormwater management in new development and redevelopment and pollution prevention/good housekeeping for municipal operations (for the A-State campus, municipal operations includes Facilities Management). This plan discusses how each BMP addresses the minimal control measures intended to reduce stormwater pollution and how the effectiveness of each BMP at achieving this goal is measured.

In conjunction with the mission of Arkansas State University Environmental Health and Safety, EHS develops and uses training, educational materials and public involvement activities to raise awareness of the campus community to their role in protecting water quality. These activities help prevent some stormwater pollution before it occurs. When the potential for stormwater pollution is high, A-State has BMPs intended to ensure that every reasonable measure is taken to reduce the impact of stormwater pollution. This includes punitive measures for any on campus that violate the requirement set forth in this plan. We believe that the combination of these two approaches is the most effective means of reducing the impact of stormwater pollution on water quality. Reducing the impact of stormwater pollution on campus by these means is in line with university mission of educating leaders, enhancing intellectual growth and enriching lives.

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# Chapter 1: Introduction

Stormwater is water that starts to run along the ground rather than soaking into the ground. Stormwater can carry with it unwanted pollutants into the waterways of the state. The pollutants that stormwater can carry include sediment, oil, pesticides, nutrients (like fertilizer), litter and many others. These pollutants can have effects very near to the source of pollution (such as carrying mud and dirt onto a road or sidewalk creating an unsafe situation) and very far away (such as carrying fertilizers from crops planted in the Mississippi River drainage basin causing dead zones in the Gulf of Mexico near the mouth of the Mississippi River). Thus, it is important to take steps to minimize pollution to protect our natural resources including our drinking water. The ultimate purpose of stormwater management is for A-State to do its part in protecting the waterways of the state of Arkansas and the United States.

## 1.1 Regulatory Background

In 1948, the United States established the Federal Water Pollution Control Act. This was the first law to provide broad protection for our water from pollution. In 1972, the law was amended and became known as the Clean Water Act (CWA). The Environmental Protection Agency (EPA) is the entity responsible for writing the regulations to enforce the CWA. In the state of Arkansas, the Arkansas Department of Environmental Quality (ADEQ) is the agency tasked with enforcing the regulations.

Arkansas State University is classified as a small Municipal Separate Storm Sewer System (MS4); a small MS4 is a municipality that has stormwater discharges from an urbanized area that serves less than 100,000 individuals. Each MS4 must obtain a permit from the state to discharge stormwater to the waterways of the state. This permit, called a National Pollutant Discharge Elimination System (NPDES) permit, requires the covered MS4 to develop a Stormwater Management Plan (SWMP). A-State has had several SWMPs in past years; since the NPDES permit must be renewed in 2019, an update to the SWMP seemed appropriate. This SWMP is the document that A-State uses to provide guidance to university employees, contractors and students and to enforce the stormwater regulations.

The program requirements for Arkansas State University include: application for an NPDES permit for stormwater discharge, development of a stormwater management plan (which describes the required six minimum control measures), implementation of a stormwater management program using appropriate best management practices (BMPs), development of measurable goals for the stormwater program and evaluation of the effectiveness of the program periodically. A copy of the current permit is appendix B to this plan.

## 1.2 Roles and Responsibilities

Like safety and compliance in other areas, the responsibility for preventing stormwater pollution lies with everyone in the community. Staff, faculty, students and contractors all have an important role in helping ensure that stormwater is polluted as little as practicable. The roles and responsibilities for each person in the community are listed below.

### 1.2.1 Responsible Official

The responsible official is a person within the organization that has the authority to make decisions on behalf of the MS4. The responsible official at A-State is currently the Assistant Vice Chancellor for Human Resources. The responsibilities of the responsible official include:

- Signing the permit application every time a renewal is required.
- Reviewing and signing the annual report each year.
- Responding to queries, inspections and findings by ADEQ.

### 1.2.2 Environmental Health and Safety (Cognizant Official)

The Environmental Health and Safety (EHS) office has the primary responsibility for ensuring university compliance with the requirements of the SWMP. The director of EHS is the cognizant official, which is the person authorized by the responsible official to have responsibility for the environmental matters of the campus. The responsibilities of EHS include:

- Development and implementation of the SWMP and any related stormwater pollution prevention plans (SWPPPs).
- Semiannual sampling of outfalls as required by the SWPPPs for certain stormwater-related pollutants.
- Quarterly inspection of sites that have a SWPPP.
- Comprehensive annual inspection of sites that have a SWPPP.
- Review of construction plans to ensure compliance with stormwater regulations.
- Monthly inspection of construction sites to check for compliance with stormwater regulations.
- Communication of inspection findings to the appropriate campus or contractor authority to encourage correction.
- Enforcement of requirements of the SWMP if non-compliant issues are not corrected. This can include work stoppage and levying of fines (upon agreement from Facilities Management and the responsible official).
- Development of literature and training for informing faculty, staff, students, administration and contractors of the impacts of stormwater pollution.
- Organization of events for public involvement in the identification and/or reduction of stormwater pollution.
- Respond to stormwater complaints and issues reported by the campus community.

### 1.2.3 Stormwater Advisory Committee (SWAC)

The stormwater advisory committee is made up of individuals from various parts of the campus. The committee meets quarterly to discuss stormwater issues on campus. The SWAC includes member from

the following areas: Environmental Health and Safety, Ecotoxicology, Parking Services, Facilities Management (Landscape Architect, Grounds Services or Recycling and Building Services), the student body and from the community outside of A-State. The responsibilities of the SWAC include:

- Review of to ensure compliance with stormwater regulations.
- Periodic review of the SWMP and SWPPPs.
- Providing of ideas for public involvement activities.

### 1.2.4 Facilities Management

Construction projects on the campus are completed through the construction office of Facilities Management. If the completed project will be managed by the university, Facilities Management has a greater role than projects that will be managed by outside entities. The responsibilities of Facilities Management include:

- Signing of the Notice of Intent and the Notice of Termination for projects that will be managed by the university once completed.
- Support of enforcement actions against construction contractors including stop work orders and fines.
- Compliance with the requirements of the SWPPP written for Facilities Management including corrections of issues found on inspections.
- Communication of projects that could impact stormwater quality to EHS.
- Maintenance of BMPs associated with the Facilities Management site.

### 1.2.5 Construction Site Management

Construction site management are the individuals that have authority on the construction site to correct stormwater compliance issues that are found. This can be a project manager, engineer, site foreman or any other individual with such authority. The responsibilities of the construction site management include:

- Development of the Notice of Intent and SWPPP for the construction site.
- Completion of field inspection at the interval required by the SWPPP.
- Maintenance of the SWPPP and the site map as changes are made.
- Maintenance of BMPs on the construction site.
- Correction of stormwater compliance issues identified by EHS on monthly inspections.
- Communication of stormwater requirements to all contractors on the construction site.

### 1.2.6 Other Contract Personnel

Other contract personnel are individuals that work on campus that are not employed by the university that are not construction site management. These contract personnel may be individuals that work on a construction site or individuals that perform other tasks on campus. The responsibilities of other contract personnel include:

- Compliance with the stormwater requirements described in information provided to the contractor by Facilities Management (literature provided by EHS).
- Correction of issues at the direction of construction site management (on construction sites only and only for issues caused by the contractor).

### 1.2.7 Other Staff, Faculty and Administrators

Most of the individuals on the A-State campus do not have an active daily role in stormwater compliance. However, they do have the opportunity to be additional sets of eyes on the campus at large. Stormwater issues can occur at any time and EHS only performs periodic inspections. The responsibilities of staff, faculty and administrators include:

- Report any issues with stormwater pollution to EHS.
- Complete stormwater awareness training.
- Refrain from littering.

### 1.2.8 Students and Other Campus Community Members

Everyone else in the campus community has a role in helping control stormwater pollution as well. The responsibilities of everyone else include:

- Report any issues with stormwater pollution to EHS.
- Refrain from littering.

## Chapter 2: Site Information

The Arkansas State University Jonesboro campus is located within the city limits of Jonesboro, Arkansas. The city of Jonesboro is a separate MS4 from the A-State MS4; some stormwater leaves the City of Jonesboro MS4 and enters the A-State MS4. All of the stormwater leaves the A-State MS4 into Turtle Creek. Turtle Creek flows into the St. Francis River which in turn empties into the Mississippi River. The Mississippi River empties into the Gulf of Mexico. Any pollution of stormwater within the campus of A-State can have an impact very far from where it initially occurs.

Before entering Turtle Creek, most of the stormwater from the university flows into a stormwater ditch known as Turtle Creek Lateral. In the past, A-State had clear cut this ditch once a year. However, Facilities Management and the Stormwater Advisory Committee agreed that allowing vegetation to grow on the ditch bank is a better way to manage the stormwater that flows on campus. This has the advantage of stabilizing the ditch banks and potentially removing unwanted contaminants from stormwater. For these reasons, A-State no longer clear cuts Turtle Creek Lateral. A-State intends to

study the scientific literature on the subject and perhaps perform novel research regarding storm ditch vegetation during the permit cycle.

A-State has many places where stormwater can enter the waterways of the state. There are stormwater inlets all over campus; EHS is working to ensure that all stormwater inlets are marked with an indicating plate demonstrating that they drain to a waterway (an example is pictured to the right). A map of these inlets is included in appendix D of this plan. EHS plans to have every inlet marked by the end of 2019. Water from these inlets and other places makes its way to about 50 outfalls from the university. EHS inspects these outfalls annually during periods of dry weather to detect any illicit discharges to stormwater conveyance. A map of these outfalls is included in appendix E of this plan. Finally, as of 2019, the Arkansas State University MS4 does not discharge stormwater to any impaired waters.

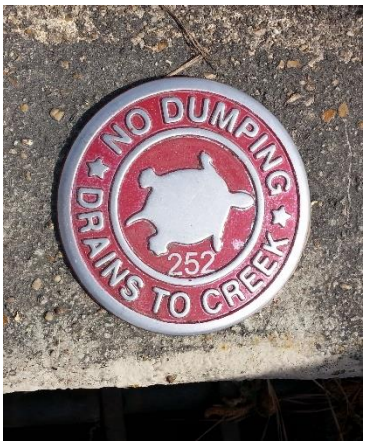


**Figure 1: Stormwater Drain Marker**

## Chapter 3: Potential Sources of Stormwater Contamination

It is important to identify the potential sources of stormwater contamination to maximize the effectiveness of control measures. Identification of these contaminants is determined by past and current sampling of stormwater as well as knowledge of the day-to-day operations of the university. The table below lists the contaminants, their sources and frequency of occurrence.

| Source | Contaminants | Frequency |
|---|---|---|
| Animal Waste | Fecal coliforms and nutrients from animal (farm animals and pets) urine and feces | Common, but small quantities |
| Construction activities | Sediment and construction derbis | Common |
| Erosion | Sediment and organic matter | Common |
| Grounds maintenance | Organic matter (grass, leaves, twigs, etc.), sediment, fuel, oil, pesticides, herbicides | Common (fuel, oil, pesticides, herbicides in small quantities |
| Irrigation runoff | Water, fertilizers, pesticides | Common |
| Litter and debris | Litter and debris | Common |
| Vehicle and equipment leaks | Cleaning products, oil/grease, other vehicle fluids | Common, but small quantities |
| Chemical spills | Cleaning chemicals, fuel, paint, laboratory chemicals | Rare |
| Other maintenace activities | Wash water, paint chips, cleaning products, dirt, sediment, food residue, solvents, oil and grease | Rare |
| Outdoor storage | Sand, asphalt, soil, pesticides, herbicides, fertilizer, paint, solvents, fuel | Rare |
| Sewer line leakage | Raw sewage | Rare |
| Trash storage areas | Litter, derbis, food residue | Rare |

**Figure 2: Potential Sources of Contamination of Stormwater.**

Most contamination of stormwater can be prevented by simply taking measures to control them. Some sources cannot be controlled so easily, though. For example, oil and fuel that leaks from vehicles while driving on the road is inevitable. These types of pollution contribute little to the overall pollution. Control measures are primarily concerned with educating people to keep the rare events from becoming frequent and controlling the common and large quantity contaminants that are caused by human activity. While A-State strives to eliminate as much pollution as feasible from stormwater conveyance, primary attention is given to controlling sediment runoff due to human activity, which is the most common pollutant to the waterways of the state according to the Environmental Protection Agency. 70 percent of sediment erosion into waterways is caused by human activity.

## Chapter 4: Minimum Control Measures

Because of the risk of stormwater pollution to the health of our environment, EPA and ADEQ require as a part of our permit and SWMP certain minimum control measures. The six minimum control measures include:

- Public education and outreach on stormwater impacts,
- Public involvement/participation,
- Illicit discharge detection and elimination,
- Construction site stormwater runoff control,
- Post-construction stormwater management in new development and redevelopment and
- Pollution prevention/good housekeeping for municipal operations.

For each control measure, A-State is required to have best management practices (BMPs) implemented for each measure and measurable goals for determining the success of each BMP including a rationale for why each BMP and associated measureable goals were chosen. The individuals tasked with implementing and coordinating the BMPs described in the SWMP is also required, including an organizational chart. The organizational chart is Appendix F of this plan.

## Chapter 5: Best Management Practices

Best management practices are the strategies an entity employs in implementing control measures. The goal of these BMPs is to reduce stormwater pollution. Some BMPs directly influence contaminant levels by actively blocking water or filtering it before it moving into stormwater conveyance. The majority of BMPs are indirect, though. Whether it be inspection of areas to look for risks of contamination or public education and involvement initiatives, the goal of these indirect practices is to increase awareness about stormwater pollution and because of such prevent some pollution before it happens. This section outlines the BMPs that are used by A-State and the rationale behind selecting these BMPs to meet the minimum control measures required by the EPA and ADEQ.

### 5.1 Public Education and Outreach

This control measure is intended to increase public awareness about stormwater pollution. The more aware the public is of the impacts of stormwater pollution, the more likely they are to take action to prevent or lessen it in their daily activities. Public education and outreach is intended to help the public, which at A-State includes students, faculty, staff and contractors, understand the types of stormwater pollution and what they can specifically do to reduce stormwater pollution.

### 5.1.1 Rationale

While awareness of pollution in general has grown in the public in the years since the initial first requirements for small MS4s to obtain a permit from the state for the discharge of stormwater, the public in general is still largely unaware of the impacts of stormwater pollution. A-State being an institution of higher learning is uniquely positioned to meet the goal of public education as education is the primary reason for the existence of the university. The public education and outreach goals are approved and updated by the Stormwater Advisory Committee and are chosen to reach as much of the public as possible. It is the goal of A-State to reach 100% of the campus community during the 5 year term of each permit cycle. The BMPs chosen are listed in the next section and are chosen to maximize this potential.

The permit also requires that A-State chose five different themes to highlight during the permit term. These themes were chosen to address the most common forms or stormwater pollution that occur with the greatest frequency. The public education themes include:

- Oil, petroleum products and other process chemicals -- 2019
- Herbicides and pesticides -- 2020
- Erosion control (construction activities and grounds maintenance) -- 2021
- Illicit discharge detection -- 2022
- Litter and debris – 2023

The development and distribution of materials is largely the responsibility of the Director of EHS with input from the Stormwater Advisory Committee and Facilities Management.

### 5.1.2 Implementation and Measurable Goals

Most of these BMPs have already been implemented in past years, but there are some new BMPs and measurable goals for those BMPs. Each of these is described in the table below. Distribution of brochures reaches more individuals than any of the other methods as students are required to participate in safety week. Over the course of the permit cycle, 100% of the students are reached. The brochures also reach all employees that go through new employee orientation (required for new employees) and any that participate in the benefits fair. Stormwater training reaches Facilities Management personnel (required annually) and many others. New brochures targeted toward contractors should reach close to 100% of contractors on campus.

| Best Management Practice | Description | Measurable Goal | Responsible Party | Implentation |
|---|---|---|---|---|
| Distribute Stormwater Awareness Brochures | EHS develops new brochures each year that promote stormwater pollution awareness. The educational theme of each year is highlighted in the brochure. These are distributed at various events that include: the employee benefits fair, new employee orientation and outside of presentations done as a part of safety | Development of materials each year and number of people that participate in the events described. | EHS | Already implemented |
| Stormwater Awareness Training | Live training and a training video are available to employees about the impacts of stormwater pollution, what the university is doing to prevent it and how | Number of people that participate in the training. | EHS | Already implemented |
| Stormwater Webpage | A-State has a webpage that supplements the information that is found in the training and in the brochures. | Number of hits on the webpage | EHS | December 2019 |
| Online Links to Stormwater Resources | In the training and on the website, additional resources regarding stormwater pollution are discussed. The Stormwater Advisory Committee (SWAC) will suggest additional links and the links will change on an annual basis to contain the most pertinent information. | Adding of links to the website and updating/changing of those links each year | EHS/SWAC | December 2019 |
| Stormwater Awareness for Contractors | Contractors on campus are a part of the campus community. Information targeted toward contractors will be developed and distributed. This will also be updated annually to highlight the educational | Development of materials each year and number of brochures distributed. | EHS/Facilities Management | December 2019 |

**Figure 3: Best Management Practices for Public Education and Outreach**

## 5.2 Public Involvement/Participation

This control measure is intended to increase public inclusion in and participation in the campus stormwater management. According to EPA Factsheet 2.4 for the Stormwater Phase II Final Rule, "The public can provide valuable input and assistance to a regulated small MS4's municipal stormwater management program…" A-State wants the public (which includes the faculty, staff and students) to have as much involvement as they wish to have in the stormwater management program. Public involvement and participation activities are targeted toward encouraging engagement in our environmental programs, including stormwater management.

### 5.2.1 Rationale

A-State has historically had several ways that the campus community can be involved in stormwater management at the university. The Stormwater Advisory Committee includes members from various places within the campus community and includes one member from outside the campus community. The A-State Environmental Health and Safety Office participates annually in community awareness activities, like Earth Day, to educate the campus community and beyond on the impacts or stormwater

pollution, preventative measures that the university undertakes and ideas on how the community can impact water quality. We have both of these methods to be effective in meeting the goal of public participation so we have decided to continue both of these best management practices.

The Stormwater Advisory Committee had some additional ideas on how we could increase community involvement. These ideas included continuing to pursue campus community cleanup initiatives and a newsletter to the campus community that highlights stormwater activity. Having a community cleanup involves the community more intimately, but tends not to be very broad in scope. A newsletter is the converse of that; it is lest impactful but reaches more people. Thus, the committee felt that having both types of BMPs would have the maximum impact on the community. Along with these two new ideas, EHS intends to finish marking all storm drains by the end of the permit cycle. We have asked employees to become involved in this endeavor by informing EHS when they observe an unmarked storm drain.

### 5.2.2 Implementation and Measurable Goals

As mentioned above, two of these BMPs have been implemented in past years. In addition to these two, there are three new BMPs. They are listed in the table below. We feel this combination of BMPs will increase public involvement both in the number of people involved and the depth of their involvement in stormwater pollution prevention. While having 100% of the public involved is not realistic, providing a variety of opportunities for the public involvement gives 100% of the campus community the option of participating.

| Best Management Practice | Description | Measurable Goal | Responsible Party | Implentation |
|---|---|---|---|---|
| Stormwater Advisory Committee | The committee meets quarterly to update the campus community on stormwater activity, discuss current BMPs and brainstorm for new BMPs to make our control measures even more effective. | Number of meetings held | Various | Already implemented |
| Storm drain marking | All of the drains that receive stormwater are being marked to indicate that they lead to the creek. EHS is in the process of marking all of the drains, but seeks the help of the campus community in identifying unmarked drains. | Number of drains marked | EHS | In process, to be completed by the end of the permit cycle |
| Participation in community environmental awareness events | Information about the impacts of stormwater pollution are demonstrated at a booth during on campus events (Earth Day). | Number of people participating in the event. | EHS | Already implemented |
| Participation in environmental cleanup initiatives | EHS organizes events for cleaning up litter from the campus and in the stormwater receving stream several times over the permit cycle. | Number of people participating in the event | EHS | December 2019 |
| Campus Community Newsletter | EHS intends to send a newsletter semiannually updating the campus community on EHS activities. This will include a section dedicated to stormwater activities. | Number of people receiving the communication | EHS | December 2019 |

**Figure 4: Best Management Practices for Public Involvement/Participation**

## 5.3 Illicit Discharge Detection and Elimination

An illicit discharge is defined by federal regulations as "…any discharge to a MS4 that is not composed entirely of stormwater…", although there are a few exceptions to this rule. This control measure is intended to reduce the amount of stormwater pollution that occurs by unauthorized discharges and illegal dumping. This is accomplished by a combination of identification of outfalls, visual inspections, training, reporting mechanisms and response to illicit discharges if they do occur.

There are a number of non-stormwater discharges that are allowed under the NPDES permit conditions. These include:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Uncontaminated groundwater infiltration
- Uncontaminated pumped groundwater
- Potable water discharges
- Foundation drains
- Air conditioning condensate
- Street wash water
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- Flows from riparian habitats and wetlands
- Dechlorinated swimming pool discharges

While these discharges are allowed, the campus community is encouraged to minimize these types of discharges as well. Guidance for reducing these types of discharges to stormwater is given in the stormwater awareness training, literature distributed at events and on the A-State Environmental Health and Safety website on the page dedicated to stormwater.

### 5.3.1 Rationale

Detection and elimination of illicit discharges to stormwater requires a multi-faceted approach. Identification of potential problem areas, training on how to identify illicit discharges and a mechanism for reporting such issues are all items that A-State considers important for this BMP to be effective. A map of stormwater outfalls (Appendix E) and visual inspection of those outfalls are practices that are currently underway at A-State. The map is reviewed on an annual basis for accuracy and is also updated when new outfalls are added. The response to illicit discharges has also already been implemented; however, the mechanism for correction and enforcement will change with the new permit. Enforcement of stormwater rules is discussed in chapter 7 of this SWMP.

Training of employees on identifying illicit discharges is something that A-State has been doing in training for a number of years, but this had not been counted as a measurable goal. More detail has been added to the training this year. Because of this training, there have been informal reports for illicit discharges (emails, phone calls, etc.), but there has never been an official reporting mechanism. A-State

and the SWAC feel that having a specific reporting mechanism will make reporting concerns easier, thus, adding this as a measurable goal seems appropriate.

### 5.3.2 Implementation and Measurable Goals

As mentioned above, three of these BMPs have been implemented in past years. In addition to these two, there are two new BMPs. They are listed in the table below. The BMPs that have already been implemented (map of stormwater outfalls, visual inspection of outfalls during dry weather and response to illicit discharges) have been effective in the past and thus will continue to be measured. The new BMPs should enhance our effectiveness in identifying and eliminating illicit discharges.

| Best Management Practice | Description | Measurable Goal | Responsible Party | Implentation |
|---|---|---|---|---|
| Map of stormwater outfalls | A map is available that contains has the location of all of the stormwater outfalls from the university. The maps is reviewed annually for changes. | Review of map details | EHS/Facilities Management | Already implemented |
| Visual inspection of outfalls during dry weather | All outfalls are inspected for illicit discharge. Outfalls at Facilities Management and at the farm are inspected quarterly. All other out falls are inspected annually. | Number of inspections | EHS | Already implemented |
| Training on identifying and reporting of illicit discharges | This is covered in all training materials and there will be a special focus on this during one year of the permit cycle. | Since training numbers are counted in another BMP, number of times reviewed will be counted | EHS | December 2019 |
| Reporting mechanism for illicit discharges | EHS will add a mechanism on the EHS webpage for reporting environmental concerns. | Adding of mechanism to website | EHS | January 2021 |
| Response to illicit discharges | EHS and Facilities Management responds to issues with stormwater including illicit discharges. | Number of issues corrected | EHS/Facilities Management | Already implemented |

**Figure 5: Best Management Practices for Illicit Discharge Detection and Elimination**

## 5.4 Construction Site Stormwater Runoff Control

Stormwater runoff from construction sites can cause environmental problems and is unsightly when it is polluted with sediment due to lack of effective BMPs. Sediment is the main pollutant of concern in stormwater according to the EPA. Thus the majority of attention on construction sites is dedicated to allowing the lowest amount of sediment practicable to leave the construction site. The construction site management is responsible for BMPs to control sediment leaving the construction site; A-State is responsible for ensuring that construction sites are using and maintaining the appropriate BMPs on the construction site.

### 5.4.1 Rationale

A-State EHS and the stormwater advisory committee have determined that the current BMPs used for construction site stormwater runoff control are effective so those BMPs will remain in place. A more well-defined enforcement procedure for non-compliance with stormwater requirements at construction sites is necessary. A-State has been using the city of Jonesboro enforcement procedure up to this point; a simpler procedure has been devised with similar penalties to the city. The end goal being of implementing a new procedure is improvement to the overall performance of BMPs on a construction site when inadequacies are found rather than simply punitive measures.

### 5.4.2 Implementation and Measurable Goals

Site plan review for construction and monthly inspection of construction sites are BMPs that have long been a part of the stormwater management program. These BMPs will continue to be used as they are required by regulations and have been deemed very effective. A new, formal escalation process for enforcement of stormwater requirements has been developed. This new procedure better explains the expectations and responses to noncompliance issues of Arkansas State University. Enforcement procedures are explained more fully in chapter 7. Lastly, the ability of the public to comment on stormwater concerns relating to construction activities is a permit requirement. The addition of a reporting mechanism for illicit discharges will be added to the EHS website (see previous section). This same mechanism can be used for reporting issues with construction site activities as well. The best management practices for construction site stormwater runoff control are listed in the table below.

| Best Management Practice | Description | Measurable Goal | Responsible Party | Implentation |
|---|---|---|---|---|
| Site plan review for construction | New construction that exceeds 1 acre of distrubed ground must submit construction plans, notice of intent and stormwater pollution prevention plans prior to breaking ground. | Number of plans reviewed | EHS/Facilities Management | Already implemented |
| Monthly inspection of construction sites | EHS inspects every construction site that exceeds 1 acre at least monthly to investigate compliance with stormwater regulations and to ensure the protection of stormwater. | Number of inspections performed | EHS | Already implemented |
| Enforcement of noncompliance with stormwater requirements | When construction contractors fail to correct findings from construction inspections, enforcement actions including fines and stop work orders can be issued depending on the type and severity of the uncorrected findings. | Number of enforcement actions taken | EHS | December 2019 |
| Response to public inquiries, concerns and other information about construction activities | As a small MS4, A-State is required to consider information submitted by the public regarding construction activities as well as respond to complaints and questions. These can be submitted by the online mechanism, by email or by phone. | Number of public concerned, questions and comments addressed | EHS | December 2019 |

**Figure 6: Best Management Practices for Construction Site Stormwater Runoff Control**

## 5.5 Post-Construction Stormwater Management in New Development and Redevelopment

When redevelopment takes place within the A-State MS4 that disturbs an acre or greater, the project is treated the same as a new construction projects. All of the BMPs that apply to construction sites equally apply to redevelopment. The primary purpose for the best management practices that occur in this section is ensuring that the stormwater compliance process is seen through past the end of the construction phase. Furthermore, post-construction stormwater management must be considered in the design phase to achieve the required goal of 80% or greater removal of total suspended solid (TSS) from flows if the TSS exceeds the predevelopment level. Design of systems to retain stormwater for ground infiltration or slow stormwater flow is also encouraged in the design process.

### 5.5.1 Rationale

As mentioned above, several BMPs that apply to other areas equally apply to post-construction stormwater management. However, there are a few areas that are not addressed in other sections. First, the completion of a Notice of Termination (NOT) is required for any site that has completed construction. Since this is completed after construction has finished, it seems appropriate for it to be included as a post-construction BMP. This is the only BMP for post-construction that is completed after construction.

Planning is necessary prior to construction for some of the post-construction requirements to be implemented. New stormwater outfalls may be constructed if a new construction or redevelopment takes place near the campus perimeter. Other stormwater issues can be identified prior to construction if EHS and the stormwater advisory committee are a part of the design review process. Facilities Management has informally asked for input regarding stormwater from EHS and the SWAC on new construction and redevelopment in the past. EHS and the SWAC will continue to be a part of the design process, specifically as it relates to stormwater management into the future. Thus, identification of new outfalls as the result of new construction or redevelopment and design review for post-construction stormwater management seem appropriate as BMPs. As physical post-construction stormwater BMPs are added as the result of new construction or redevelopment, additional inspections regarding maintenance of these physical BMPs will be added.

### 5.5.2 Implementation and Measurable Goals

Notices of termination have been completed for construction projects according to the regulations since A-State became a small MS4, but this has not been counted as a measurable goal until now. Adding this as a measurable goal will help ensure that NOTs are completed in a timely manner. Outfalls have also been added in an informal manner in the past; using this as a measurable goal will help ensure that new outfalls are identified early in the design and construction process rather than during or even after construction. Lastly, using design review for post-construction stormwater management as a measurable goal will ensure that EHS and the SWAC continue to have a seat at the table in the design phase. The best management practices for post-construction stormwater management in new development and redevelopment are listed in the table below.

| Best Management Practice | Description | Measurable Goal | Responsible Party | Implentation |
|---|---|---|---|---|
| Completion of notices of termination | When construction is complete on a site, a notice of termination must be initiated. The notice of termination (NOT) is completed when the site has achieved 80% or more of vegetative cover. | Number of NOTs completed | EHS/Facilities Management | Already implemented |
| Identification and screening of new outfalls | New outfalls may result from new construction. These outfalls will be added to the dry weather screening. | Number of new outfalls added | EHS | December 2019 |
| Design review for post-construction stormwater management | A-State intends to ensure that stormwater management post-construction is considered as a part of the design review. | Number of SWAC members that participate in design review | EHS | December 2019 |

**Figure 7: Best Management Practices for Post-Construction Stormwater Management in New Development and Redevelopment**

## 5.6 Pollution Prevention/Good Housekeeping for Facilities

Good housekeeping may be the most important aspect of stormwater pollution prevention. If areas within the MS4 that have the potential to pollute stormwater are kept neat and clean, the likelihood of those areas causing a contamination issue are greatly reduced. The most important elements of a good housekeeping program for municipal operations are training, inspection and procedures directly targeted as maintaining cleanliness. All of these aspects are addressed in the BMPs used by A-State in this section and other sections of the stormwater management plan.

### 5.6.1 Rationale

Training, inspections and cleaning procedures are the critical components of a good housekeeping program, thus it is appropriate to address all three of these areas with best management practices. Training on good housekeeping (along with other aspects of stormwater management) is included as a best management practices in other sections of this plan; to include it as a BMP in this section would be redundant. Inspection of areas at Facilities Management (the primary area of municipal activities) that have the potential to pollute stormwater and inspection of fuel storage areas all over campus are vital to ensure that these areas are well-maintained. Regular inspections are counted as a BMP. Efforts made to keep the campus clean also contribute to reducing stormwater pollution therefore these items are included as BMPs as well.

### 5.6.2 Implementation and Measurable Goals

Street sweeping, trash/litter collection and recycling are ongoing BMPs from previous SWMPs. Inspection of municipal operations has been occurring for many years as well, but has not been listed as a BMP in the stormwater management plan until now. Inspection of oil storage areas is a part of another environmental plan, but has not been included in this plan until now. The best management practices for pollution prevention and good housekeeping for are listed in the table below.

| Best Management Practice | Description | Measurable Goal | Responsible Party | Implentation |
|---|---|---|---|---|
| Street sweeping | When excess sediment is identified on streets within the A-State campus, a street sweeper is used to remove the sediment from the road. | Volume or weight of sediment collected | Facilities Management | Already implemented |
| Trash and litter collection | Waste placed in proper receptacles reduces the amount of litter and keeps stormwater cleaner. | Volume or weight of waste collected | Facilities Management | Already implemented |
| Recycling | Recycling of materials that can be recycled reduces environmental impact. | Volume or weight of recyclable materials collected | Facilities Management | Already implemented |
| Inspection of municipal operations | Quarterly inspections are conducted to ensure areas that have the potential to pollute stormwater at Facilities Management are kept clean and orderly. | Number of inspections conducted | EHS | Already implemented |
| Inspection of petroleum/oil storage areas | Recurring inspections are done to ensure that oil and petroleum products do not contaminate rainwater and stormwater. | Number of inspections conducted | EHS | December 2019 |

**Figure 7: Best Management Practices for Pollution Prevention and Good Housekeeping in Facilities**

# Chapter 6: Recordkeeping

All records regarding stormwater management are kept and maintained by Arkansas State University Environmental Health and Safety department. The records kept include annual reports, inspection reports, email communications (when necessary), testing results (when sampling is performed), stormwater advisory committee meeting minutes and any communication between the state (ADEQ) and the university regarding stormwater. Details on how the records are kept and how long they are maintained is given in section 6.3

## 6.1 SWMP Updating

By permit requirement, the SWMP must be reviewed annually to see if updates are necessary. A standing item on the fall SWAC meeting agenda is review of the SWMP. Review of the plan will be documented in Appendix A. Changes will also be documented here. If a change requires resubmission of the SWMP to the state, this will be documented in this appendix and the appendix will be transferred to the new SWMP.

## 6.2 Monitoring

Requires monitoring of stormwater for the A-State MS4 includes inspection of outfalls during dry weather. All outfalls are inspected annually and some outfalls that have the highest risk of having illicit discharge are monitored quarterly. While sampling and testing are not required within the A-State MS4 because of the lack of activities require sampling, EHS reserves the right to sample stormwater when illicit discharge is expected or if there is suspicion of some impact to the environment.

## 6.3 Recordkeeping

Records for stormwater are kept in two ways: most records for the current year are kept in a notebook with sections for each type of record. Records kept this way include: construction site inspections, municipal activities inspections, monthly stormwater checklists for Facilities Management, annual reports to ADEQ and stormwater advisory committee meeting minutes. Notices of coverage and stormwater pollution prevention plans for construction sites are kept in a filing cabinet in the EHS Director's office.

All records are kept for a minimum of three years. Many records are kept beyond this because the records are used for historical purposes. Notices of coverage for ongoing project are posted on the construction site and are available to the public for viewing. These NOCs are removed once the notice of termination has been accepted by the state.

## 6.4 SWMP Annual Reports

A-State must complete an annual report to ADEQ each year. According to the permit, the following items must be included in the report:

- The status of compliance with permit conditions;
- An assessment of the appropriateness of the identified best management practices and the progress towards achieving the measureable goal for each of the minimum control measures;
- Results of information collected and analyzed, if any, during the reporting period, including monitoring data used to assess the success of the program at reducing the discharge of pollutants;
- A summary of the stormwater activities A-State plans to undertake during the next reporting cycle (including an implementation schedule);
- Proposed changes to the stormwater management program, including changes to any BMPs or any identified measurable goals that apply to the program elements;
- Description and schedule for implementation of additional BMPs that may be necessary, based on monitoring results, to ensure compliance with applicable TMDLs and implementation plans and
- Notice that A-State is relying on another government entity to satisfy some of the permit obligations (if applicable).

The last two bullet points do not currently apply to A-State, but they are listed here since they appear in the permit. The annual report is completed using a template downloaded from the ADEQ website. The annual report is completed and submitted by March 31 of each year.

# Chapter 7: Enforcement of Stormwater Rules

To ensure that the campus community, including contractors that are on campus, comply with the stormwater regulations, and enforcement mechanism is necessary. Previously, A-State had used the Jonesboro City ordinance as the enforcement procedure for stormwater violations. However, A-State has now developed a separate procedure that is similar to the city ordinance, but is adapted to meet the unique needs of the university community.

## 7.1 Illicit Discharges

Illicit discharges are any discharges other than stormwater to the waters of the state. A-State has best management practices in place to help prevent illicit discharges; however, unforeseen events, carelessness or purposeful action can lead to illicit discharges that cannot be controlled by any BMPs. Thus, A-State has a SOP that specifically outlines the process for escalating and enforcing the stormwater rules, which includes the prohibition on illicit discharges. The enforcement procedure for illicit discharges is explained in SOP SW-002 *Enforcement of Stormwater Requirements on Campus* and is attached as Appendix G to this plan.

## 7.2 Construction Site Stormwater

Construction sites have the highest probability of contaminating stormwater and thus need more regular attention. Inspections are performed on construction sites at least monthly. A clearly defined enforcement procedure is necessary to ensure that any non-compliant issues found as a result of inspections are corrected in a timely manner. The enforcement procedure for construction site stormwater is explained in SOP SW-001 *Enforcement of Stormwater Requirements on Construction Sites* and is attached as Appendix H to this plan.