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
Pulaski County	ARR040024	88-00843

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	3200 Brown Street, Little Rock, AR 72204	
County	Pulaski	
Urbanized/Core Areas	Little Rock and North Little Rock Urbanized Area	
Receiving Stream	Ashley Bayou	
Ultimate Receiving Stream	Arkansas	
Contact Person & Title	~~Barbara Richard~~, Public Works Director	Steve Brummett
Telephone Number	(501) 340-6800	
Cognizant Official & Title	~~Barbara Richard~~, Public Works Director	Steve Brummett
Responsible Official & Title	Barry Hyde, County Judge	

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: STEVE BRUMMETT
Responsible Official Title: PUBLIC WORKS DIRECTOR
Responsible Official Signature: _____
Date: 1/3/18

Return the NOI form to the address below or send it electronically to: 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

Pulaski County Storm Water Management Program

INTRODUCTION

The 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.

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

Program Overview

Polluted storm water runoff is often transported to municipal separate storm sewer systems (MS4s) and ultimately discharged into local rivers and streams without treatment. EPA's Storm Water Phase II Rule establishes an MS4 storm water management program 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.

What are the program requirements for Pulaski County?

Operators 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 Department of Environmental Quality. When Pulaski County applies for its permit, coverage will be granted under the Arkansas Pollutant Discharge Elimination System or APDES.

- Develop a storm water management program, which includes the six minimum control measures.
- Implement the storm water 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. Pulaski County 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 county 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 county.

What is the Phase II Implementation schedule?

The dates below are approximate. Specific compliance dates will be set by each NPDES permitting authority as it changes appropriate regulations and issues general permits.

- **December 8, 1999**: The final Phase II rule is published in the Federal Register, with Conditional No Exposure Exclusion option available 60 days later for facilities for which EPA is the permitting authority.
- **October 2000** (1 year from the date of signature of the final rule): EPA is obligated to issue a menu of recommended BMPs for regulated small MS4s.
- **October 2001** (1 year after the issuance of the menu of BMPs): EPA is obligated to issue guidance on the development of measurable goals for regulated small MS4s.
- **December 8, 2002** (3 years from the date of publication of the final rule): The NPDES permitting authorities are required to issue general permits for Phase II regulated small MS4s and small (less than 5 acre) construction activity.
- **March 10, 2003** (3 years and 90 days from the date of publication of the final rule, or by the time specified in the permit): Operators of Phase II regulated small MS4s and small construction activity are required to obtain permit coverage.

- By the end of their first permit terms (**typically 5 years**), operators of regulated small MS4s would have to fully implement their storm water management programs.

What are the six minimum control measures?

The Phase II Rule outlines a small MS4 storm water 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. The Pulaski County Public Works Department will be responsible for implementing the Minimum Control Measures. 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 storm water 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 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:

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

Key points of contact:

Environmental Protection Agency-Region 6
Fountain Place, 12th 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
Attn: Eric Dunn, E.I.
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)

Pulaski County Public Works Department
Attn: Steve Brummett
3200 Brown Street
Little Rock, Arkansas 72204
1-501-340-6800 (office)
1-501-340-6810 (fax)

Pulaski County

Storm Water Management Program

TABLE OF CONTENTS

Pulaski County Storm Water

Management Program

Minimum Control Measure

Public Education and Outreach

Pulaski County believes an informed and knowledgeable community is crucial to the success of a storm water 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 county 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.

Pulaski County will implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local water bodies and the steps that can be taken to reduce storm water pollution. Pulaski County will determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

IMPLEMENTATION

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

1. Forming Partnerships. Pulaski County will seek to enter into partnership with other government entities within Pulaski County in order to develop a regional Storm Water Management Program. Pulaski County will also 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. Pulaski County will develop educational materials and activities that are relevant to local

situations and issues, and incorporate a variety of strategies to ensure maximum coverage. Pulaski County will utilize some or all of the following strategies:

- Brochures or fact sheets
- Recreational guides
- Alternative information sources
- A library of educational materials
- Volunteer citizen educators
- Event participation
- Educational programs
- Storm drain stenciling
- Storm water hotlines
- Tributary signage

3. Reaching Diverse Audiences. The public education program will use 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. Pulaski County will print posters and brochures and post large warning signs (e.g., cautioning against fishing or swimming) near storm sewer outfalls in order to reach audiences less likely to read standard materials. Pulaski County will direct materials and outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts. For example, information could be provided 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

Pulaski County will utilize a multi-year integrated approach to address the requirements and intent of the public education and outreach Minimum Control Measure. The integrated multi-year approach will include the following measurable goals:

Year 1-Public Education and Outreach

- Create a storm water hotline.
- Develop a program to train volunteer educators.
- Develop an informational pamphlet that describes NPDES Phase II regulations.
- Identify existing storm water educational programs.

Year 2-Public Education and Outreach

- Develop a household hazardous waste collection and disposal program

- Network with other governmental agencies in order to monitor potential pollutant sources.
- Conduct educational seminars.

Year 3-Public Education and Outreach

- Develop pamphlets, booklets and/or utility stuffers that address various types of pollution and prevention measures.
- Create the Pulaski County storm water management information web site.
- Develop an educational display booth for the purpose of promoting the storm water management program.

Year 4-Public Education and Outreach

- Develop a school curriculum on storm water education.
- Create a public service announcement for media distribution on storm water management.
- Develop a trash management program.

Year 5-Public Education and Outreach

- Develop and conduct seminars to educate the public concerning lawn and garden pollutants in order to reduce their effects on water quality.
- Develop and conduct seminars to educate the public concerning water conservation practices.
- Develop and conduct seminars to educate the public concerning pet waste management.

Year 6-Public Education and Outreach

- Develop and conduct seminars to educate contractors on ways to reduce construction site erosion. These seminars will be conducted at planning board meetings, pre-construction meetings, and at the construction site.
- Develop and conduct seminars to educate the public on the importance of retaining vegetation when possible in order to reduce soil erosion and added stormwater runoff.
- Implement signage program to help the public identify MS4 stormwater protection areas.

Year 7-Public Education and Outreach

- Develop a road signage program indicating individual watersheds within Pulaski County.

- Develop and conduct seminars to educate the public on proper disposal and storage of automotive chemical pollutants such as antifreeze, used motor oil, fuel, and batteries in order to reduce their effects on water quality.

2014 to 2019 Permit Period

Year 8-Public Education and Outreach

- Identify areas a stormwater information booth could best be utilized.
- Mail stormwater pollution prevention educational material to local industries, such as automotive repair shops and salvage yards, which could potentially pollute waterways. Industries that discharge into 303 (d) listed streams should receive educational information before other industries.

Year 9-Public Education and Outreach

- Identify schools that are willing to allow Pulaski County to give educational stormwater presentations in classrooms.

Year 10-Public Education and Outreach

- Update and expand existing educational school presentation.

Year 11-Public Education and Outreach

- Identify existing Public Education and Outreach programs utilized by other municipalities.

Year 12-Public Education and Outreach

- Continue stormwater related education among key Pulaski County employees.

2019 to 2024 Permit Period

Year 13-Public Education and Outreach

- Identify areas a stormwater information booth could best be utilized.

Year 14-Public Education and Outreach

- Mail stormwater pollution prevention educational material to local industries, such as automotive repair shops and salvage yards, which could potentially pollute waterways. Industries that discharge into 303

(d) listed streams should receive educational information before other industries.

Year 15-Public Education and Outreach

- Identify schools that are willing to allow Pulaski County to give educational stormwater presentations in classrooms.

Year 16-Public Education and Outreach

- Update and expand existing educational school presentations.

Year 17-Public Education and Outreach

- Identify existing Public Education and Outreach programs utilized by other municipalities.

Year 18-Public Education and Outreach

- Continue stormwater related education among key Pulaski County employees.

BMP/Measurable Goal/Justification

Year 1-Public Education and Outreach

- Create a storm water hotline.
- Develop a program to train volunteer educators.
- Develop an informational pamphlet that describes NPDES Phase II regulations.
- Identify existing storm water educational programs.

BMP: Create a storm water hotline
Measurable Goal: A storm water hotline will be established within the first year.
Justification: Pulaski County is too large an area for county personnel to police. Informed citizens around the county need a means of reporting potential storm water violations to the county. A storm water hotline will provide this means.

BMP: Develop a program to train volunteer educators.
Measurable Goal: Pulaski County will develop a program, which combines Audio-Visual capabilities and presentation materials for the purpose of training volunteer educators. Pulaski County will establish this program within the first year.
Justification: Pulaski County will train county personnel along with volunteer instructors in order to educate the citizens of Pulaski County about NPDES Phase II regulations and the county storm water management program. Informed citizens are a vital key to the success of the program. The greater the number of qualified instructors the more effective the program becomes.

BMP: Develop an informational pamphlet that describes NPDES Phase II regulations
Measurable Goal: Pulaski County will develop a pamphlet explaining the NPDES Phase II regulations within the first year.
Justification: Pulaski County will develop a pamphlet describing the NPDES Phase II regulations and the counties storm water management program. Informed citizens are a vital key to the success of the program.

BMP: Identify existing storm water educational programs.
Measurable Goal: Pulaski County will contact other city, county and state offices in order to acquire existing storm water educational programs within the first year.
Justification: The use of existing storm water training programs edited to meet Pulaski County's needs will be the most efficient and cost effective means of creating a program.

Year 2-Public Education and Outreach

- Develop a household hazardous waste collection and disposal program.
- Network with other governmental agencies in order to determine and monitor potential pollutant sources.
- Conduct educational seminars.

BMP: Develop a household hazardous waste collection and disposal program.
Measurable Goal: Pulaski County will develop a household hazardous waste collection and disposal program within the first year.
Justification: Due to the ever increasing number of household hazardous waste materials it is necessary that the public be made aware of the hazards they present and how they should be properly stored and disposed.

BMP: Network with other governmental agencies in order to determine and monitor potential pollutant sources.
Measurable Goal: Pulaski County will contact other governmental agencies within the second year to coordinate efforts in determining and monitoring potential pollutant sources.
Justification: To avoid duplication of efforts and to maximize resources Pulaski County will network with other governmental agencies.

BMP: Conduct educational seminars.
Measurable Goal: Pulaski County will conduct educational seminars combining audio-visual capabilities and presentation materials. Pulaski County will establish this program within the second year.
Justification: Pulaski County will conduct educational seminars utilizing both volunteer and county instructors to educate citizens about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff. Informed citizens are a vital key to the success of the program. The storm water management program gains strength as the number of informed citizens increases.

Year 3-Public Education and Outreach

- Develop pamphlets, booklets and/or utility stuffers that address various types of pollution and prevention measures.
- Create the Pulaski County storm water management information web site.
- Develop an educational display booth for the purpose of promoting the storm water management program.

BMP: Develop pamphlets, booklets and/or utility stuffers that address various types of pollution and prevention measures.
Measurable Goal: Pulaski County will develop pamphlets, booklets and/or utility stuffers that address various types of pollution and prevention measures. Pulaski County will develop these materials during the second year.
Justification: Pulaski County will 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.

BMP: Create the Pulaski County storm water management information web site.
Measurable Goal: Pulaski County will create a storm water management

information web site within the second year.
Justification: A website will be accessible to the citizens 24 hours a day. It will contain information about the key aspects of the storm water management program. It will provide a means of communication between the public and the county. Additionally, the internet is an effective means for communicating to citizens that may otherwise be unable to participate in public events and activities.

BMP: Develop an educational display booth for the purpose of promoting the storm water management program.
Measurable Goal: Pulaski County will create an educational display booth in order to promote the storm water management program within the third year.
Justification: An educational display booth will allow county personnel and volunteers the ability to gain exposure, distribute information and further promote the storm water management program.

Year 4-Public Education and Outreach

- Develop a school curriculum on storm water education.
- Create a public service announcement for media distribution on storm water management.
- Develop a trash management program.

BMP: Develop a school curriculum on storm water education.
Measurable Goal: Pulaski County will coordinate school districts within the county in order to develop a school curriculum on storm water education within the third year.
Justification: Educating school children on storm water and water quality practices, including water conservation measures, will help promote better public awareness.

BMP: Create a public service announcement for media distribution on storm water management.
Measurable Goal: Pulaski County will produce a public service announcement on storm water and what the public can do to prevent storm water impacts. This public announcement will be developed during the third year.
Justification: Pulaski County will utilize various forms of media to communicate to the public about the impacts of storm water pollutants. The media is an effective method for communicating to citizens.

BMP: Develop a trash management program.
Measurable Goal: Pulaski County will develop a trash management program that produces a decreased level of trash entering the waterways within the third year.
Justification: Trash management increases the aesthetic quality of the landscape and decreases health and safety threats to both wildlife and humans. In addition less litter from individuals will save the county money in terms of structural runoff control maintenance.

Year 5-Public Education and Outreach

- Develop and conduct seminars to educate the public concerning lawn and garden pollutants in order to reduce their effects on water quality.
- Develop and conduct seminars to educate the public concerning water conservation practices.
- Develop and conduct seminars to educate the public concerning pet waste management.

BMP: Develop and conduct seminars to educate the public concerning lawn and garden pollutants in order to reduce their effects on water quality.
Measurable Goal: Pulaski County will develop and conduct seminars concerning lawn and garden pollutants within the fourth year.
Justification: By performing a soil analysis, selecting native species and choosing proper grasses many pesticides and fertilizers can be reduced or eliminated, thereby reducing pollutants in the waterways.

BMP: Develop and conduct seminars to educate the public concerning water conservation practices.
Measurable Goal: Pulaski County will develop and conduct seminars concerning water conservation practices during the fourth year.
Justification: A reduction in the amount of water consumed can reduce the amount of sewer introduced into the wastewater or septic system.

BMP: Develop and conduct seminars to educate the public concerning pet waste management.
Measurable Goal: Pulaski County will develop and conduct seminars concerning pet waste management during the fourth year.
Justification: Pet waste management will provide a cleaner neighborhood in both site and smell and improved water quality through a reduction in nutrient inputs to water bodies.

Year 6-Public Education and Outreach

- Develop and conduct seminars to educate developers on erosion control methods and local/state erosion control laws.
- Develop and conduct seminars to educate the public on the importance of retaining vegetation when possible in order to reduce soil erosion and added stormwater runoff. Pulaski County will develop incentives for developers who choose to use Low Impact Development (LID) methods.
- Implement signage program to help the public identify MS4 stormwater protection areas.

BMP: Develop and conduct seminars to educate contractors on ways to reduce construction site erosion.
Measureable Goal: Pulaski County will educate developers on erosion control methods

and state/local erosion control laws. These seminars will be conducted at planning board meetings, pre-construction meetings, and at the construction site.
Justification: The more a developer knows about erosion control and local/state erosion controls laws the more likely they will implement erosion control BMPs on their construction site.

BMP: Develop and conduct seminars to educate the public on the importance of retaining vegetation when possible in order to reduce soil erosion and added stormwater runoff.
Measureable Goal: Pulaski County will develop and conduct seminars to educate the public on the importance of retaining vegetation when possible in order to reduce soil erosion and added stormwater runoff. Pulaski County will develop incentives for developers who choose to use Low Impact Development (LID) methods.
Justification: Retaining vegetation in the course of developing land is an effective way to reduce the amount of stormwater runoff and soil erosion.

BMP: Implement signage program to help the public identify MS4 stormwater protection areas.
Measureable Goal: Pulaski County will erect signs along Pulaski County roadways to help better identify MS4/urbanized areas. This signs will include the Pulaski County Stormwater Management Ordinance number and the stormwater hotline phone number.
Justification: These signs will help residence be aware they are in a stormwater regulated area. These signs will also display the phone number to the Pulaski County stormwater hotline so that violations can be reported.

Year 7-Public Education and Outreach

- Develop a road signage program indicating individual watersheds within Pulaski County.
- Develop and conduct seminars to educate the public on proper disposal and storage of automotive chemical pollutants such as antifreeze, used motor oil, fuel, and batteries in order to reduce their effects on water quality.

BMP: Develop a road signage program indicating individual watersheds within Pulaski County.
Measureable Goal: Pulaski County will erect signs along county roads indication watershed boundaries and transitions. Pulaski County will use watershed maps developed in-house to located watershed boundaries and transitions.
Justification: Erecting watershed signs along county roadways will display to passing traffic which watershed he or she is entering. This will give people an idea of where stormwater runoff eventually ends up and will hopefully discourage some pollution causing activities.

BMP: Develop and conduct seminars to educate public about automotive chemical pollutants in order to help reduce stormwater contamination.

Measureable Goal: Pulaski County will develop and conduct seminars to help educate the public on how they can properly dispose of and store pollution causing automotive chemicals such as antifreeze, used motor oil, fuel and batteries.
Justification: Educating the public on proper disposal and storage of automotive chemical will hopefully help keep some of these pollutants from entering waterways. If these chemicals are stored properly there is less of a chance for spills. Disposing of these chemicals properly will reduce the amount of pollutants from ending up in lakes, stream, and groundwater.

Year 8-Public Education and Outreach

- Identify areas stormwater informational booth could be best utilized.
- Mail stormwater pollution prevention educational material to local industries, such as automotive repair shops and salvage yards, which could potentially pollute waterways. Industries that discharge into 303 (d) listed streams should receive education information before other industries.

BMP: Mail Stormwater pollution prevention educational material to local industries, such as automotive repair shops and salvage yards, which could potentially pollute waterways. Industries that discharge into 303 (d) listed streams should receive educational information before other industries.
Measureable Goal: Inform industries located in MS4 areas, which could potentially pollute local waterways, about proper stormwater management practices. Information can be sent by mail on Pulaski County letterhead.
Justification: Industries which are more informed are less likely to conduct stormwater management practices which could lead to contamination of local waterways.

BMP: Identify areas stormwater informational booth could be best utilized.
Measureable Goal: Identify any events Pulaski County can participate in and display stormwater informational booth (such as GIS Day in North Little Rock). Create informational booth with maps, photos, and/or graphics. Answer any questions.
Justification: Finding areas to best utilize a stormwater informational booth will be an effective way of educating the general public and/or other agencies on the importance of stormwater management.

Year 9-Public Education and Outreach

- Identify schools that are willing to allow Pulaski County to give educational stormwater presentations in classrooms.

BMP: Identify schools that are willing to allow Pulaski County to give educational stormwater presentations in classrooms.
Measureable Goal: Find schools in Pulaski County (preferably schools in or near MS-4 areas that are willing to allow Pulaski County to give presentations covering stormwater related topics.

Justification: Educating young people about stormwater related issues will help bring about having a positive effect on overall stormwater awareness for years to come.

Year 10-Public Education and Outreach

- Update and expand existing educational school presentations.

BMP: Update and expand existing educational school presentations.
Measureable Goal: Compile updated material and photos for school stormwater presentations.
Justification: Having current educational material and photos for stormwater presentations will help insure students have received the pertinent information.

Year 11-Public Education and Outreach

- Identify existing Public Education and Outreach programs utilized by other municipalities.

BMP: Identify existing Public Education and Outreach programs utilized by other municipalities.
Measureable Goal: Compile and review other Public Education and Outreach programs utilized by other municipalities in Arkansas. Determine which programs could be modified and potentially added to Pulaski County's programs.
Justification: Reviewing other agency's Education programs will help inform Pulaski County about educational methods that could be utilized by Pulaski County.

Year 12-Public Education and Outreach

- Continue stormwater related education among key Pulaski County employees

BMP: Continue stormwater related education among key Pulaski County employees
Measureable Goal: Continue to educate key Pulaski County employees, such as construction crews, on ways to reduce stormwater runoff pollution. Educate crews on proper construction site BMPs. Educate automotive technicians on ways to reduce automotive chemical related stormwater contamination.
Justification: Pulaski County employees, such as construction crews and automotive technicians, must be informed about ways to reduce stormwater pollutants due to the nature of their work and potential form stormwater pollution.

Year 13-Public Education and Outreach

- Identify areas stormwater informational booth could be best utilized.

Year 14-Public Education and Outreach

- Mail stormwater pollution prevention educational material to local industries, such as automotive repair shops and salvage yards, which could potentially pollute waterways. Industries that discharge into 303 (d) listed streams should receive education information before other industries.

BMP: Mail Stormwater pollution prevention educational material to local industries, such as automotive repair shops and salvage yards, which could potentially pollute waterways. Industries that discharge into 303 (d) listed streams should receive educational information before other industries.
Measureable Goal: Inform industries located in MS4 areas, which could potentially pollute local waterways, about proper stormwater management practices. Information can be sent by mail on Pulaski County letterhead.
Justification: Industries which are more informed are less likely to conduct stormwater management practices which could lead to contamination of local waterways.

BMP: Identify areas stormwater informational booth could be best utilized.
Measureable Goal: Identify any events Pulaski County can participate in and display stormwater informational booth (such as GIS Day in North Little Rock). Create informational booth with maps, photos, and/or graphics. Answer any questions.
Justification: Finding areas to best utilize a stormwater informational booth will be an effective way of educating the general public and/or other agencies on the importance of stormwater management.

Year 15-Public Education and Outreach

- Identify schools that are willing to allow Pulaski County to give educational stormwater presentations in classrooms.

BMP: Identify schools that are willing to allow Pulaski County to give educational stormwater presentations in classrooms.
Measureable Goal: Find schools in Pulaski County (preferably schools in or near MS-4 areas that are willing to allow Pulaski County to give presentations covering stormwater related topics.
Justification: Educating young people about stormwater related issues will help bring about having a positive effect on overall stormwater awareness for years to come.

Year 16-Public Education and Outreach

- Update and expand existing educational school presentations.

BMP: Update and expand existing educational school presentations.
Measureable Goal: Compile updated material and photos for school stormwater presentations.
Justification: Having current educational material and photos for stormwater presentations will help insure students have received the pertinent information.

Year 17-Public Education and Outreach

- Identify existing Public Education and Outreach programs utilized by other municipalities.

BMP: Identify existing Public Education and Outreach programs utilized by other municipalities.
Measureable Goal: Compile and review other Public Education and Outreach programs utilized by other municipalities in Arkansas. Determine which programs could be modified and potentially added to Pulaski County's programs.
Justification: Reviewing other agency's Education programs will help inform Pulaski County about educational methods that could be utilized by Pulaski County.

Year 18-Public Education and Outreach

- Continue stormwater related education among key Pulaski County employees

BMP: Continue stormwater related education among key Pulaski County employees
Measureable Goal: Continue to educate key Pulaski County employees, such as construction crews, on ways to reduce stormwater runoff pollution. Educate crews on proper construction site BMPs. Educate automotive technicians on ways to reduce automotive chemical related stormwater contamination.
Justification: Pulaski County employees, such as construction crews and automotive technicians, must be informed about ways to reduce stormwater pollutants due to the nature of their work and potential form stormwater pollution.

Pulaski County Storm Water Management Program

Minimum Control Measure

Public Participation/Involvement

Pulaski County believes that the public can provide valuable input and assistance to a regulated small MS4's municipal storm water management program. Therefore, the county suggests that the public 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 storm water 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 storm water program on a watershed basis, as encouraged by EPA.

Pulaski County will comply with applicable State and local public notice requirements in the execution of this minimum control measure. Pulaski County will also determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Implementation approach, BMPs and measurable goals are described below.

Pulaski County will include the public in developing, implementing and reviewing its storm water management program. The public participation process will make every effort to reach out and engage all economic and ethnic groups. There are challenges associated with public involvement. Nevertheless, Pulaski County strongly believes that these challenges can be addressed through an aggressive and inclusive program.

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, Pulaski County will combine 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.

Pulaski County's notification program will target specific population sectors, including ethnic, minority, low-income communities, academia 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.

MEASURABLE GOALS

Pulaski County will utilize a 7 year integrated approach to address the requirements and intent of the public participation/involvement Minimum Control Measure. The integrated 7 year approach will include the following measurable goals:

Year 1-Public Participation/Involvement

- Notify the public of meetings and activities through media outlets.
- Establish a NPDES storm water advisory panel.
- Implement a storm water hotline.

Year 2-Public Participation/Involvement

- Implement the County household hazardous waste collection program.
- Organize and execute a stream cleanup and monitoring program.

Year 3-Public Participation/Involvement

- Organize and execute stenciling of storm water structures.
- Initiate a reforestation program

Year 4-Public Participation/Involvement

- Initiate a wetland plantings program.

- Volunteers attend conferences and other public meetings using an educational display booth to educate the public about the County's storm water management program.

Year 5-Public Participation/Involvement

- Pulaski County initiates volunteer monitoring program.
- Pulaski County initiates "Adopt-A-Stream" program.

Year 6-Public Participation/Involvement

- Display stormwater hotline phone number in MS4 urbanized areas.
- Create stream monitoring program
- Involve the public in the development and submittal of Pulaski County's NOI and SWMP description

Year 7-Public Participation/Involvement

- Initiate volunteer storm drain marking program.
- Install rain gauges around the county.

2014 to 2019 Permit Period

Year 8-Public Participation/Involvement

- Respond to all inquiries from the public concerning stormwater management.

Year 9- Public Participation/Involvement

- Identify existing public involvement/participation activities conducted by other municipalities.

Year 10- Public Participation/Involvement

- Educate Pulaski County employees on how they can be involved in stormwater management.

Year 11- Public Participation/Involvement

- Have storm drain markers available for volunteers, free of charge, for placement in MS-4 areas.

Year 12- Public Participation/Involvement

- Implement a plan to inform local Home Owners Association on ways to be involved in stormwater management.

2019 to 2024 Permit Period

Year 13-Public Participation/Involvement

- Respond to all inquiries from the public concerning stormwater management.

Year 14- Public Participation/Involvement

- Identify existing public involvement/participation activities conducted by other municipalities.

Year 15- Public Participation/Involvement

- Educate Pulaski County employees on how they can be involved in stormwater management.

Year 16- Public Participation/Involvement

- Have storm drain markers available for volunteers, free of charge, for placement in MS-4 areas.

Years 17 and 18- Public Participation/Involvement

- Implement a plan to inform local Home Owners Associations on ways to be involved in stormwater management.

BMP/Measurable Goal/Justification

Year 1-Public Participation

- Notify the public of meetings and activities through media outlets.
- Establish a NPDES storm water advisory panel.
- Implement a storm water hotline.

BMP: Notify the public of meetings and activities through media outlets.
Measurable Goal: Pulaski County will make public service announcements through media outlets concerning meetings and activities on the county's storm water management program. This public announcement will be developed during the first year.
Justification: Pulaski County will utilize various forms of media to communicate to the public about opportunities to participate in its storm water management program. The media is an effective method for communicating to citizens.

BMP: Establish a NPDES storm water advisory panel.
Measurable Goal: A NPDES storm water advisory panel will be established within the first year.
Justification: Involving citizens in the storm water management program will improve support by the public and allow the public to voice their concerns and suggestions.

BMP: Implement a storm water hotline
Measurable Goal: A storm water hotline will be established within the first year.
Justification: Pulaski County is too large an area for county personnel to police. Informed citizens around the county will participate in reporting potential storm water violations to the county. A storm water hotline will provide this means.

Year 2-Public Participation

- Implement the County household hazardous waste collection program.
- Organize and execute a stream cleanup and monitoring program.

BMP: Implement a household hazardous waste collection and disposal program.
Measurable Goal: Pulaski County will implement a household hazardous waste collection and disposal program within the first year.
Justification: Due to the ever increasing number of household hazardous waste materials it is necessary that the public become aware of the hazards they present and become involved in their proper disposal.

BMP: Organize and execute a stream cleanup and monitoring program.
Measurable Goal: Pulaski County will organize and execute a stream cleanup and monitoring program within the second year.
Justification: Cleanup and monitoring efforts involving the public benefit both the waterbody and the community. These efforts help citizens feel more involved in their community and foster a sense of responsibility for the water resources within them.

Year 3-Public Participation

- Organize and execute stenciling of storm water structures.
- Initiate a reforestation program

BMP: Organize and execute stenciling of storm water structures.
Measurable Goal: Pulaski County will organize and execute stenciling of storm water structures within the second year.
Justification: Storm drain stenciling projects offer an excellent opportunity to educate the public about the link between the storm drain system and drinking water quality. Stenciling projects can provide a lead into volunteer monitoring projects and increase community participation in other storm water related activities.

BMP: Initiate a reforestation program.
Measurable Goal: Pulaski County will initiate a reforestation program within the third year.
Justification: Pollutants can freely flow into valuable natural resources without a vegetative buffer along stream corridors and lakeshores. Trees and forested areas reduce runoff through interception and by increasing surface storage and infiltration.

Year 4-Public Participation

- Initiate a wetland plantings program.
- Volunteers attend conferences and other public meetings using an educational display booth to educate the public about the County's storm water management program.

BMP: Initiate a wetland plantings program.
Measurable Goal: Pulaski County will initiate a wetland plantings program within the third year.
Justification: By planting indigenous aquatic species, the natural functions of wetlands are restored, including storm water filtration, nutrient uptake, sediment removal and peak flow attenuation.

BMP: Volunteers attend conferences and other public meetings using an educational display booth to educate the public about the county's storm water management program.
Measurable Goal: Pulaski County will identify opportunities to attend conferences and other public meetings, which allow volunteers to educate the public on its storm water management program within the third year.

Justification: An educational display booth will allow volunteers to display and distribute materials related to the county's storm water management program. This is a two-fold benefit in that it allows both public participation and education.

Year 5-Public Participation

- Pulaski County will initiate volunteer monitoring program.
- Pulaski County will initiate "Adopt-A-Stream" program.

BMP: Pulaski County will initiate volunteer monitoring program.
Measurable Goal: Pulaski County will initiate a volunteer monitoring program within the fourth year.
Justification: The effectiveness of the storm water management program is best assessed through water quality monitoring. Trained volunteers are a vital element in collection of water quality data.

BMP: Pulaski County will initiate "Adopt-A-Stream" program.
Measurable Goal: Pulaski County will initiate an "Adopt-A-Stream" program within the fourth year.
Justification: Participants of the program help make areas in their watershed more visually attractive and improve habitat for wildlife, thus saving and restoring natural resources.

Year 6-Public Participation

- Display stormwater hotline phone number in MS4 urbanized areas.
- Create stream monitoring program.
- Involve the public in the development and submittal of Pulaski County's NOI and SWMP description

BMP: Display stormwater hotline phone number in MS4 urbanized areas.
Measurable Goal: Display stormwater hotline phone number on road signs in MS4/urbanized areas.
Justification: Displaying a number to report stormwater violations will encourage the public to become involved in reporting potential stormwater pollution.

BMP: Create stream monitoring program.
Measureable Goal: Pulaski County will communicate with and encourage citizens to monitor and report illicit discharges in local streams.
Justification: Since Pulaski County inspectors cannot monitor the whole county at once it is necessary to rely on citizens reports to help monitor streams within Pulaski County.

Year 7-Public Participation

BMP: Involve the public in the development and submittal of Pulaski County's NOI and Stormwater Management Program description.
Measurable Goal: Pulaski County's Stormwater Management Program will be available on ADEQ's website for a public commit period. The Pulaski County Stormwater Management Program will also be available on the Pulaski County Public Works website.
Justification: Involving the public in the development of the Stormwater Management Program will better educate the public on Pulaski County's role in stormwater management.

Year 8- Public Participation/Involvement

- Respond to all inquiries from the public concerning stormwater management.

BMP: Respond to all inquiries from the public concerning stormwater management.
Measurable Goal: Make sure all inquiries from the public are followed up on, especially issues concerning stormwater.
Justification: Involved citizens provide a very valuable source of information concerning stormwater management. Potential stormwater issues that may never have been spotted by Pulaski County staff is often brought to attention by involved citizens.

Year 9- Public Participation/Involvement

- Identify existing public involvement/participation activities conducted by other municipalities

BMP: Identify existing public involvement/participation activities conducted by other municipalities.
Measurable Goal: Communicate with other agencies in Arkansas that are active in stormwater management public involvement and participation activities.
Justification: Reviewing the other agency's activities could reveal potential methods and activities that can be used by Pulaski County.

Year 10- Public Participation/Involvement

- Educate Pulaski County employees on how they can be involved in stormwater management.

BMP: Educate Pulaski County employees on how they can be involved in stormwater management.
Measurable Goal: Educate staff on ways to participate in stormwater management, such as ways to properly dispose of household and automotive chemicals and yard waste.
Justification:

Year 11- Public Participation/Involvement

- Have storm drain markers available for volunteers, free of charge, for placement in MS-4 areas

BMP: Have storm drain markers available for volunteers, free of charge, for placement in MS-4 areas.
Measurable Goal: Store storm drain markers at Pulaski County Road & Bridge for use by Pulaski County citizens for use on culvert headwalls, drain inlets, and manholes located in urbanized areas. Storm drain will be marked with "Drains to River".
Justification: More storm drain marking will create more awareness about where water flows to. This could deter some people from dumping chemicals, trash, or yard waste into storm drains.

Year 12- Public Participation/Involvement

- Implement a plan to inform local home owners associations on ways to be involved in stormwater management.

BMP: Implement a plan to inform local Home Owners Associations on ways to be involved in stormwater management.
Measurable Goal: Make sure information is available for local home owners associations to use in implementing ways they can be involved in stormwater management. Reach out to and coordinate with these home owners associations, assisting in their involvement with stormwater management.
Justification: Coordinating with home owners associations will help bring about participation in stormwater quality monitoring and public participation.

Year 13- Public Participation/Involvement

- Respond to all inquiries from the public concerning stormwater management.

BMP: Respond to all inquiries from the public concerning stormwater management.
Measurable Goal: Make sure all inquiries from the public are followed up on, especially issues concerning stormwater.
Justification: Involved citizens provide a very valuable source of information concerning stormwater management. Potential stormwater issues that may never have been spotted by Pulaski County staff is often brought to attention by involved citizens.

Year 14- Public Participation/Involvement

- Identify existing public involvement/participation activities conducted by other municipalities

BMP: Identify existing public involvement/participation activities conducted by other municipalities.
Measurable Goal: Communicate with other agencies in Arkansas that are active in stormwater management public involvement and participation activities.
Justification: Reviewing the other agency's activities could reveal potential methods and activities that can be used by Pulaski County.

Year 15- Public Participation/Involvement

- Educate Pulaski County employees on how they can be involved in stormwater management.

BMP: Educate Pulaski County employees on how they can be involved in stormwater management.
Measurable Goal: Educate staff on ways to participate in stormwater management, such as ways to properly dispose of household and automotive chemicals and yard waste.
Justification:

Year 16- Public Participation/Involvement

- Have storm drain markers available for volunteers, free of charge, for placement in MS-4 areas

BMP: Have storm drain markers available for volunteers, free of charge, for placement in MS-4 areas.
Measurable Goal: Store storm drain markers at Pulaski County Road & Bridge for use by Pulaski County citizens for use on culvert headwalls, drain inlets, and manholes located in urbanized areas. Storm drain will be marked with "Drains to River".
Justification: More storm drain marking will create more awareness about where water flows to. This could deter some people from dumping chemicals, trash, or yard waste into storm drains.

Years 17 and 18- Public Participation/Involvement

- Implement a plan to inform local home owners associations on ways to be involved in stormwater management.

BMP: Implement a plan to inform local Home Owners Associations on ways to be involved in stormwater management.
Measurable Goal: Make sure information is available for local home owners associations to use in implementing ways they can be involved in stormwater management. Reach out to and coordinate with these home owners associations, assisting in their involvement with stormwater management.
Justification: Coordinating with home owners associations will help bring about participation in stormwater quality monitoring and public participation.

Pulaski County Storm Water

Management Program

Minimum Control Measure

Illicit Discharge Detection and Elimination

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-storm water wastes. Sources of illicit discharges may be sanitary wastewater, effluent from septic tanks, car wash wastewaters, improper oil disposal, 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 waterbodies. 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.

Pulaski County recognizes the adverse effects illicit discharges can have on receiving waters, therefore the county will develop, implement and enforce an illicit discharge detection and elimination program, which 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.
- 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.

Pulaski County's illicit discharge detection and elimination program will not address the following categories of non-storm water discharges or flows:

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

IMPLEMENTATION

Pulaski County'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 county will use the general guidance described below in order to meet its objectives.

The Map

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. Pulaski County 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 county will update the map yearly.

Legal Prohibition and Enforcement

Pulaski County will establish and enforce an ordinance, which includes prohibition of illicit discharges.

The Plan

The plan to detect and address illicit discharges is the central component of the county's illicit discharge detection and elimination program. The plan is dependant 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. Pulaski County will identify priority areas for detailed screening of the system based on the likelihood of illicit connections. The county will use various methods such as public complaints, visual screening and observation of outfalls during dry weather to locate problem areas. Dry-weather screening of all stormwater outfalls located in the MS4's coverage area at the time of this permit coverage over the permit term will occur.
2. Find the source. Additional efforts usually are necessary to determine the source of the problem once a problem area or discharge is found. Pulaski County will utilize various methods such as dye-testing buildings, dye/smoke testing buildings at the time of sale, tracing discharge upstream in the storm sewer and using video to inspect the storm sewers to find the source of illicit discharge.
3. Remove/correct illicit connections. Pulaski County will notify and direct the offending discharger to correct the problem. Pulaski County will utilize both education efforts and working with the discharger in resolving the problem before taking legal action.
4. Document actions taken. Pulaski County 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.

Education and Outreach

Pulaski County 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 county's illicit discharge

detection and elimination program. This action will help gain support for the county's storm water program. The county will execute various outreach efforts such as developing informative brochures, developing school curricula, designing a program to publicize and facilitate public reporting of illicit discharges, coordinating volunteers for locating outfalls and initiating recycling programs.

MEASURABLE GOALS

Pulaski County will utilize a 7 year integrated approach to address the requirements and intent of the illicit discharge detection and elimination Minimum Control Measure. The integrated 7 year approach will include the following measurable goals:

Year 1-Illicit Discharge Detection and Elimination

- Create and adopt a storm water management ordinance.
- Create a storm water hotline.
- Develop a household hazardous waste collection and disposal program.

Year 2- Illicit Discharge Detection and Elimination

- Develop a map of the major watersheds throughout Pulaski County.
- Develop a sub-watershed map.
- Develop pamphlets, booklets and/or utility stuffers that address various types of illicit discharges and prevention measures.

Year 3- Illicit Discharge Detection and Elimination

- Map the major storm drainage structures within a sub-watershed.
- Develop and implement a training program to educate County personnel and volunteers on identifying illicit discharges and connections.
- Develop a plan to detect and eliminate illicit discharges in industrial and business connections.

Year 4- Illicit Discharge Detection and Elimination

- Develop a recycling program.
- Develop a program to reduce the amount of illegal dumping through public education and development of a citizen-reporting program.

Year 5- Illicit Discharge Detection and Elimination

- Develop a program to reduce the number of failing septic systems.

- Continue to develop a storm sewer map.

Year 6- Illicit Discharge and Elimination

- Continue updating to develop storm sewer map.
- Coordinate with county road crews to help detect illicit discharges.
- Update MS4 urbanized area map for the 2010 census

Year 7- Illicit Discharge and Elimination

- Continue updating storm sewer map.
- Expand illegal dumping signage.

2014 to 2019 Permit Period

Year 8-Illicit Discharge and Elimination

- Identify additional drainage structures in need of storm sewer mapping including driveway culverts.
- Identify new areas for storm sewer mapping based on 2010 urbanized area boundaries.

Year 9- Illicit Discharge and Elimination

- Initiate storm sewer mapping of 2010 urbanized areas.

Year 10- Illicit Discharge and Elimination

- Identify any new drainage structures installed in urbanized areas
- Identify roads that are prone to flooding.

Year 11- Illicit Discharge and Elimination

- Revise Pulaski Count Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker.

Year 12- Illicit Discharge and Elimination

- Map any new drainage structures added since previous mapping

2019 to 2024 Permit Period

Year 13-Illicit Discharge and Elimination

- Identify additional drainage structures in need of storm sewer mapping including driveway culverts.
- Identify new areas for storm sewer mapping based on 2010 urbanized area boundaries.

Year 14- Illicit Discharge and Elimination

- Initiate storm sewer mapping of 2010 urbanized areas.

Year 15- Illicit Discharge and Elimination

- Identify any new drainage structures installed in urbanized areas
- Identify roads that are prone to flooding.

Year 16- Illicit Discharge and Elimination

- Revise Pulaski Count Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker.

Years 17 and 18- Illicit Discharge and Elimination

- Map any new drainage structures added since previous mapping.

BMP/Measurable Goal/Justification

Year 1-Illicit Discharge Detection and Elimination

- Create and adopt a storm water management ordinance.
- Create a storm water hotline.
- Develop a household hazardous waste collection and disposal program

BMP: Create and adopt a storm water management ordinance.
Measurable Goal: Pulaski County will create and adopt a storm water management ordinance within the first year.
Justification: A storm water management ordinance will establish the guidelines and regulations that are necessary to comply with NPDES Phase II Final Rule. This mechanism provides the county with the tool to manage and enforce its storm water management program.

BMP: Create a storm water hotline
Measurable Goal: A storm water hotline will be established within the first year.
Justification: Pulaski County is too large an area for county personnel to police. Informed citizens around the county need a means of reporting illicit discharges into the water bodies of the MS4. A storm water hotline will provide this means.

BMP: Develop a household hazardous waste collection and disposal program.
Measurable Goal: Pulaski County will develop a household hazardous waste collection and disposal program within the first year.
Justification: Due to the ever increasing number of household hazardous waste materials that may be dumped into the county's water bodies it is necessary that the public be made aware of the hazards they present and how they should be properly disposed.

Year 2- Illicit Discharge Detection and Elimination

- Develop a map of the major watersheds throughout Pulaski County.
- Develop a sub-watershed map.
- Develop pamphlets, booklets and/or utility stuffers that address various types of illicit discharges and prevention measures.

BMP: Develop a map of the major watersheds throughout Pulaski County.
Measurable Goal: Pulaski County will develop a map of the major watersheds throughout Pulaski County within the first year.
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 effecting 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: Develop a map of the sub-watersheds throughout Pulaski County.
Measurable Goal: Pulaski County will develop a map of the sub-watersheds throughout Pulaski County within the second year.
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 effecting a watershed. A watershed map will serve as a tracking, scheduling, and record keeping mechanism. A sub-watershed map will depict better detail of the storm water system than what is shown on the major watersheds map. Mapping will be an ongoing process to initially prepare and continually update changes.

BMP: Develop pamphlets, booklets and utility stuffers that address various types of illicit discharges and prevention measures.
Measurable Goal: Pulaski County will develop pamphlets, booklets and/or utility stuffers that address various types of illicit discharges and prevention measures. Pulaski County will develop these materials during the second year.
Justification: Pulaski County will combine traditional methods of education with alternative methods in order to inform as many citizens as possible about the impacts of storm water 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 and other organized efforts.

Year 3- Illicit Discharge Detection and Elimination

- Map the major storm drainage structures within a sub-watershed.
- Develop and implement a training program to educate county personnel and volunteers on identifying illicit discharges and connections.
- Develop a plan to detect and eliminate illicit discharges in industrial and commercial connections.

BMP: Map the major storm drainage structures within a sub-watershed.
Measurable Goal: Pulaski County will map the major storm drainage structures within a sub-watershed within the third year.
Justification: Pulaski County recognizes the need to include the major storm drainage structures within a sub-watershed in order to adequately depict it. 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 effecting a watershed. Mapping will be an ongoing process to initially prepare and continually update changes.

BMP: Develop and implement a training program to educate county personnel and volunteers on identifying illicit discharges and connections.

Measurable Goal: Pulaski County will develop and implement a training program to educate county personnel and volunteers on identifying illicit discharges and connections during the third year.
Justification: Illicit discharges into the water bodies of Pulaski County 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 storm water management program will train county personnel 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 county.

BMP: Develop a plan to detect and eliminate illicit discharges in industrial and commercial connections.
Measurable Goal: Pulaski County will develop a plan to detect and eliminate illicit discharges in industrial and commercial connections during the third year.
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. Pulaski County's plan will enlighten its citizens on the adverse consequences, how to identify, test, monitor, avoid and mitigate illicit discharges and connections.

Year 4- Illicit Discharge Detection and Elimination

- Develop a recycling program.
- Develop a program to reduce the amount of illegal dumping through public education and development of a citizen reporting program.

BMP: Develop a recycling program.
Measurable Goal: Pulaski County will develop a recycling program during the fourth year.
Justification: Many potential contaminants can be recycled that otherwise may become pollutants into the county's water bodies. Contaminants such as oil, plastics, batteries, tires and metals are recyclable wastes. When improperly disposed theses items can migrate into surface and ground water. A recycling program will allow a simple and effective way of disposal, reduce landfill waste and preserve resources.

BMP: Develop a program to reduce the amount of illegal dumping through public education and development of a citizen-reporting program.
Measurable Goal: Pulaski County will develop a program to reduce the amount of illegal dumping through public education and development of a citizen-reporting program during the fourth year.
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. Pulaski County's program will combine

citizen awareness, citizen reporting, clean up activities and enforcement to reduce the effects of illegal dumping.

Year 5 - Illicit Discharge Detection and Elimination

- Develop a program to reduce the number of failing septic systems.
- Continue to develop a storm sewer map.

BMP: Develop a program to reduce the number of failing septic systems.
Measurable Goal: Pulaski County will develop a program to reduce the number of failing septic systems during the fourth year.
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 county will take an active role in coordinating efforts to identify and mitigate failing systems in the county.

BMP: Continue to develop a storm sewer map.
Measurable Goal: Pulaski County will continue to develop a storm sewer map of the county within the fourth year.
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 effecting a watershed. A watershed map will serve as a tracking, scheduling, and record keeping mechanism. A sub-watershed map will depict somewhat better detail of the storm water system than what is shown on the major watersheds map. Mapping will be an ongoing process to initially prepare and continually update changes.

Year 6- Illicit Discharge and Elimination

- Continue updating to develop storm sewer map.
- Coordinate with county road crews to help detect illicit discharges.
- Update MS4 urbanized area map for the 2010 census

BMP: Continue updating storm sewer map.
Measureable Goal: Pulaski County will continue to develop a storm sewer map within the sixth year.
Justification: A map is necessary to demonstrate the basic awareness of the intake and discharge areas of the basin to assist in determining the types of sources on illicit discharges affecting the watershed. A watershed map will serve as a tracking, scheduling, and record keeping mechanism. A sub-watershed map will depict better detail of the stormwater system than what is shown on the major watershed maps. Mapping of the storm sewer systems is an ongoing process and information will continuously be updated.

BMP: Coordinate with county road crew employees to help detect illicit discharges.
Measureable Goal: The Pulaski County Stormwater Inspector will coordinate with county road crew employees to help better detect illicit discharges.
Justification: Coordinating with county road crews will help better detect illicit discharges by putting more eyes in more places within the Pulaski County. The Pulaski County Stormwater Inspector will conduct biannual training for these road crews so they will know what to look for and report.

BMP: Update MS4 urbanized area map for the 2010 census.
Measureable Goal: Pulaski County will update the MS4 urbanized area map from the 2010 census data with GIS software.
Justification: It is essential to update the MS4 urbanized area map after the 2010 census to add or subtract Phase II stormwater regulated areas. BMPs such as storm sewer mapping and development code/regulations will be affected in area by the 2010 census changes.

Year 7- Illicit Discharge and Elimination

- Continue updating storm sewer map.
- Expand illegal dumping signage

BMP: Continue expanding storm sewer map.
Measureable Goal: Expand storm sewer mapping throughout MS4 areas.
Justification: Expanding the storm sewer map system will help Pulaski County identify illicit discharges and illegal connections.

BMP: Expand illegal dumping signage.
Measureable Goal: Install new signs in areas prone to illegal dumping.

2014 to 2019 Permit Period

Year 8-Illicit Discharge and Elimination

- Identify additional drainage structures in need of storm sewer mapping including driveway culverts.
- Identify new areas for storm sewer mapping based on 2010 urbanized area boundaries.

BMP: Identify additional drainage structures in need of storm sewer mapping including driveway culverts.
Measureable Goal:
Justification:

BMP: Identify new areas for storm sewer mapping based on 2010 urbanized area boundaries.

Measureable Goal: Identify new areas, delineated in the 2010 census urbanized area, in need of storm sewer mapping.
Justification: Mapping the drainage structures in the 2010 urbanized areas will give Pulaski County the information needed to review drainage characteristics of these areas and also help identify illicit discharges.

Year 9- Illicit Discharge and Elimination

- Initiate storm sewer mapping of 2010 urbanized areas.

BMP: Initiate storm sewer mapping of 2010 urbanized areas.
Measureable Goal: Map out and delineate Pulaski County urbanized areas as defined by the 2010 census. Have contracted survey crew map the drainage structures with survey grade GPS. Have contracted survey crew photograph each drainage structure, list flow efficiency of each structure, list structural integrity of each structure, and list stormwater source for each structure. Process all data in ArcMap.
Justification: Having a database on drainage structures will help in planning drainage improvement projects and identifying illicit discharges.

Year 10- Illicit Discharge and Elimination

- Identify any new drainage structures installed in urbanized areas
- Identify roads that are prone to flooding.

BMP: Identify any new drainage structures installed in urbanized areas.
Measureable Goal: Roadway culverts have been mapped within the 2000 census urbanized area. Compile a list of drainage structures that have been installed since the mapping so they can be remapped; including updated elevations and culvert characteristics.
Justification: Having an up-to-date culvert inventory map will further assist in drainage improvement projects planning and illicit discharge detection.

BMP: Identify roads that are prone to flooding.
Measureable Goal: Compile a list and create a map of roads that are frequently submerged during heavy rain.
Justification: Will help identify areas to dispatch crews during flood events, for road barricading. Will assist in spotting other submerged areas that could contribute to stormwater pollution.

Year 11- Illicit Discharge and Elimination

- Revise Pulaski Count Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker
- Identify areas prone to illegal dumping

BMP: Revise Pulaski Count Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker
Measureable Goal: Require developers in MS-4 areas to mark newly installed storm drain markers with "Drains to River" marker.
Justification: Markers will create awareness of where storm drain flows and helps to deter Illicit discharge.

BMP: Identify areas prone to illegal dumping.
Measureable Goal: Identify areas of illegal dumping. Take enforcement action, clean up, and/or install signage at these locations.
Justification: Working to reduce the amount of illegal dumping will reduce the amount of illicit discharge into adjacent streams.

Year 12- Illicit Discharge and Elimination

- Map any new drainage structures added since first mapping

BMP: Map any new drainage structures added since last storm sewer mapping project.
Measureable Goal: Use project files created during installation of new drainage structures to identify and map, to survey grade, any new drainage structure installed in 2010 urbanized areas.
Justification: Keeping storm sewer map up-to-date is essential for identifying drainage characteristics of an area of to spot potential areas of illicit discharge.

2019 to 2024 Permit Period

Year 13-Illicit Discharge and Elimination

- Identify additional drainage structures in need of storm sewer mapping including driveway culverts.
- Identify new areas for storm sewer mapping based on 2020 urbanized area boundaries.

BMP: Identify additional drainage structures in need of storm sewer mapping including driveway culverts.
Measureable Goal:
Justification:

BMP: Identify new areas for storm sewer mapping based on 2020 urbanized area boundaries.
Measureable Goal: Identify new areas, delineated in the 2020 census urbanized area, in need of storm sewer mapping.
Justification: Mapping the drainage structures in the 2020 urbanized areas will give Pulaski County the information needed to review drainage characteristics of these areas and also help identify illicit discharges.

Year 14- Illicit Discharge and Elimination

- Initiate storm sewer mapping of 2020 urbanized areas.

BMP: Initiate storm sewer mapping of 2020 urbanized areas.
Measureable Goal: Map out and delineate Pulaski County urbanized areas as defined by the 2010 census. Have contracted survey crew map the drainage structures with survey grade GPS. Have contracted survey crew photograph each drainage structure, list flow efficiency of each structure, list structural integrity of each structure, and list stormwater source for each structure. Process all data in ArcMap.
Justification: Having a database on drainage structures will help in planning drainage improvement projects and identifying illicit discharges.

Year 15- Illicit Discharge and Elimination

- Identify any new drainage structures installed in urbanized areas
- Identify roads that are prone to flooding.

BMP: Identify any new drainage structures installed in urbanized areas.
Measureable Goal: Roadway culverts have been mapped within the 2000 census urbanized area. Compile a list of drainage structures that have been installed since the mapping so they can be remapped; including updated elevations and culvert characteristics.
Justification: Having an up-to-date culvert inventory map will further assist in drainage improvement projects planning and illicit discharge detection.

BMP: Identify roads that are prone to flooding.
Measureable Goal: Compile a list and create a map of roads that are frequently submerged during heavy rain.
Justification: Will help identify areas to dispatch crews during flood events, for road barricading. Will assist in spotting other submerged areas that could contribute to stormwater pollution.

Year 16- Illicit Discharge and Elimination

- Revise Pulaski Count Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker
- Identify areas prone to illegal dumping

BMP: Revise Pulaski Count Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker
Measureable Goal: Require developers in MS-4 areas to mark newly installed storm drain markers with "Drains to River" marker.
Justification: Markers will create awareness of where storm drain flows and helps to deter Illicit discharge.

BMP: Identify areas prone to illegal dumping.
Measureable Goal: Identify areas of illegal dumping. Take enforcement action, clean up, and/or install signage at these locations.
Justification: Working to reduce the amount of illegal dumping will reduce the amount of illicit discharge into adjacent streams.

Years 17 and 18- Illicit Discharge and Elimination

- Map any new drainage structures added since previous mapping

BMP: Map any new drainage structures added since last storm sewer mapping project.
Measureable Goal: Use project files created during installation of new drainage structures to identify and map, to survey grade, any new drainage structure installed in 2020 urbanized areas.

Justification: Keeping storm sewer map up-to-date is essential for identifying drainage characteristics of an area of to spot potential areas of illicit discharge.

Pulaski County Storm Water

Management Program

Minimum Control Measure

Construction Site Runoff Control

Polluted storm water 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.

Pulaski County recognizes the adverse effects of construction site runoff and will develop, implement, and enforce a program to reduce pollutants in storm water runoff to their MS4 from construction activities that result in a land disturbance of one acre or greater. Pulaski County will:

- Have an ordinance requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites.
- Have procedures for site plan review of construction plans that consider potential water quality impacts.
- Have procedures for site inspection and enforcement of control measures;
- Have sanctions 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.

IMPLEMENTATION

Pulaski County's construction site runoff program's objective is to reduce pollutants in storm water runoff. The county will use the general guidance described below in order to meet its objective.

Regulatory Mechanism

Pulaski County will establish a construction program through the development of an ordinance that controls polluted runoff from construction sites with a land disturbance of one acre or greater. The will be accomplished to the maximum extent practicable and allowable under law.

Site Plan Review

Pulaski County's construction program will include requirements for the implementation of appropriate BMPs on construction sites to control erosion and sediment and other waste at the site. Pulaski County will review the site plans submitted by the owner before ground is broke to determine if a construction site is in compliance with the requirements.

Site plan review aids in compliance and enforcement efforts since it alerts the county 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 county's record keeping and reporting purposes, which are required under the NPDES storm water permit, but also for members of the public interested in ensuring that the sites are in compliance.

Inspections and Penalties

The county's enforcement activities will begin once construction commences to insure BMPs are in place. The county will utilize site inspections and enforcement of control measures to deter infractions. Procedures will include priority site inspections based upon the construction activity, topography and soils characteristics. The inspection process will also give the county the opportunity to provide additional guidance and education, issue warnings or assess penalties.

Information Submitted by the Public

Pulaski County's construction program will consist of procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities. This will further reinforce the public participation component of the county's storm water program and

will recognize the crucial role that the public can play in identifying instances of noncompliance. The county will consider the information submitted and will determine the need to follow-up and or respond. The county 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 storm water 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 county program is needed to induce more localized site regulation and enforcement efforts. It will also enable the county 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 Pulaski County's program in the NPDES general permit for construction. This means that if a construction site is located in an area covered by the county's program, then the construction site operator's compliance with the county's program constitutes compliance with their NPDES permit. Pulaski County's storm water management program for construction should be a qualifying program since it will require 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 county's responsibilities under the construction site runoff control minimum measure profiled here.

MEASURABLE GOALS

Pulaski County will utilize a 7 year integrated approach to address the requirements and intent of the construction site runoff Minimum Control Measure. The integrated 7 year approach will include the following measurable goals:

Year 1-Construction Site Runoff Control

- Develop a storm water drainage manual.
- Create and adopt a storm water maintenance ordinance.
- Develop and implement procedures for site plan submittal and review.
- Develop a construction site inspection/enforcement program.

Year 2- Construction Site Runoff Control

- Develop an erosion and sediment control plan requirement.

Year 3- Construction Site Runoff Control

- Create a storm water hotline.

Year 4- Construction Site Runoff Control

- Develop a contractor certification program.

Year 5- Construction Site Runoff Control

- Establish procedures for receipt and consideration of information submitted by the public.

Year 6-Construction Site Runoff Control

- Conduct biannual employee training on stormwater/erosion control practices.

Year 7-Construction Site Runoff Control

- Conduct stormwater/erosion control inspections at least once a month for all construction sites that disturb one of more acres and discharge into an MS4 urbanized area.

2014-2019 Permit Period

Year 8-Construction Site Runoff Control

- Review all proposed development, coming before Pulaski County Planning Commission, for proper stormwater erosion control BMP's.

Year 9-Construction Site Runoff Control

- Review all floodplain development permits for proper ADEQ stormwater and 404 permitting. Developer must provide ADEQ stormwater and 404 permit (if required) before floodplain development permit can be issued.

Year 10-Construction Site Runoff Control

- Require Pulaski County contractors to receive stormwater/erosion control training, from Pulaski County Staff, before a construction project begins.

Year 11-Construction Site Runoff Control

- Inspect all new subdivision construction to make sure all ADEQ stormwater requirements are met.

Year 12-Construction Site Runoff Control

- Conduct random inspections of in-house project, checking for proper stormwater BMPS.

2019-2024 Permit Period

Year 13-Construction Site Runoff Control

- Review all proposed development, coming before Pulaski County Planning Commission, for proper stormwater erosion control BMP's.

Year 14-Construction Site Runoff Control

- Review all floodplain development permits for proper ADEQ stormwater and 404 permitting. Developer must provide ADEQ stormwater and 404 permit (if required) before floodplain development permit can be issued.

Year 15-Construction Site Runoff Control

- Require Pulaski County contractors to receive stormwater/erosion control training, from Pulaski County Staff, before a construction project begins.

Year 16-Construction Site Runoff Control

- Inspect all new subdivision construction to make sure all ADEQ stormwater requirements are met.

Years 17 and 18-Construction Site Runoff Control

- Conduct random inspections of in-house project, checking for proper stormwater BMPS.

BMP/Measurable Goal/Justification

Year 1-Construction Site Runoff Control

- Develop a storm water drainage manual.
- Create and adopt a storm water maintenance ordinance.
- Develop and implement procedures for site plan submittal and review.
- Develop a construction site inspection/enforcement program.

BMP: Develop a storm water drainage manual.
Measurable Goal: Pulaski County will develop a storm water drainage manual during the first year.
Justification: Siltation and the contribution of other pollutants from construction sites can cause physical, chemical and biological harm to our nations waters. A storm water drainage manual is necessary to provide guidelines and regulations to the citizens of Pulaski County, particularly design and construction professionals. This manual will provide a tool for the county to reduce pollutants from construction site runoff entering the waterbodies of the county.

BMP: Create and adopt a storm water maintenance ordinance.
Measurable Goal: Pulaski County will create and adopt a storm water maintenance ordinance during the first year.
Justification: Siltation and the contribution of other pollutants from construction sites can cause physical, chemical and biological harm to our nations waters. A storm water maintenance ordinance will establish the guidelines and regulations that are necessary to comply with NPDES Phase II Final Rule. This mechanism provides the county with the tool to manage and enforce its storm water management program.

BMP: Develop and implement procedures for site plan submittal and review.
Measurable Goal: Pulaski County will develop and implement procedures for site plan submittal and review during the first year.
Justification: Pulaski County 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 will require an erosion and sediment control plan. A site plan submittal and review process will assure the county that developers will design and implement appropriate erosion and sediment controls, as well as other BMP's related to construction sites.

BMP: Develop a construction site inspection/enforcement program.
Measurable Goal: Pulaski County will develop a construction site inspection/enforcement program during the first year.
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.

Year 2- Construction Site Runoff Control

- Develop an erosion and sediment control plan requirement.

BMP: Develop an erosion and sediment control plan requirement.
Measurable Goal: Pulaski County will develop an erosion and sediment control plan requirement during the first year.
Justification: Pulaski County 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 will require an erosion and sediment control plan.

Year3- Construction Site Runoff Control

- Create a storm water hotline.

BMP: Create a storm water hotline
Measurable Goal: A storm water hotline will be established within the first year.
Justification: Pulaski County is too large an area for county personnel to police. Informed citizens around the county need a means of reporting illicit discharges into the water bodies of the MS4. A storm water hotline will provide this means.

Year4- Construction Site Runoff Control

- Develop a contractor certification program

BMP: Develop a contractor certification program.
Measurable Goal: Pulaski County will develop a contractor certification program during the third year.
Justification: Contractors are the individuals ultimately responsible for the proper installation and maintenance of ESC practices on construction. A contractor certification program will help to improve compliance with ESC programs and foster better relationships between contractors and regulators. This program will involve training, refresher courses, periodic recertification as well as opportunities for learning new ESC technology.

Year 5- Construction Site Runoff Control

- Establish procedures for receipt and consideration of information submitted by the public.

BMP: Establish procedures for receipt and consideration of information submitted by the public.
Measurable Goal: Pulaski County will establish procedures for receipt and consideration of information submitted by the public during the fourth year.
Justification: In order to provide a link between the citizens and Pulaski County's government it is necessary to establish methods in which contact is available. The primary method for reporting water quality violations will be a hotline for citizens to report by telephone. The county's mailing address will be listed on brochures, which will provide an additional means for citizens to contact the county. Pulaski County will establish procedures that ensure responsiveness to citizen reports. Pulaski County's 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.

Year 6 – Construction Site Runoff Control

- Conduct biannual employee training on stormwater/erosion control practices.

BMP: Conduct biannual employee training on stormwater/erosion control practices.
Measureable Goal: The Pulaski County Stormwater Inspector will conduct biannual stormwater/erosion workshops for employees of the Pulaski County Road & Bridge to help ensure in-house activities and construction jobs are stormwater compliant.
Justification: Training the employees of Pulaski County Road & Bridge on Stormwater/erosion control practices is necessary to help ensure that the county is compliant with its own program. Pulaski County aims to be topnotch in its stormwater/erosion controls practices in order to set an example for the rest of the development community.

Year 7- Construction Site Runoff Control

- Conduct stormwater/erosion control inspections at least once a month for all construction sites that disturb one of more acres and discharge into an MS4 urbanized area.

BMP: Conduct stormwater/erosion control inspections at least once a month for all construction sites that disturb one of more acres and discharge into an MS4 urbanized area.
Measureable Goal: The Pulaski County Stormwater Inspector will conduct stormwater inspections of all construction sites that disturb one acre or more and discharge into an MS4 urbanized area at least once a month. The inspector will document all inspections

with photos and measurements and take necessary actions to mediate stormwater violations.
Justification: It is necessary to have a full time stormwater inspector keeping track and documenting all construction and development in the MS4 urbanized areas to help improve water quality in Pulaski County. It is essential to have a line of communication between Pulaski County and the development community to mediate activities that could impair water quality. By keeping close track of development within these MS4 urbanized areas Pulaski County can identify and correct stormwater issues early.

2014-2019 Permit Period

Year 8-Construction Site Runoff Control

- Review all proposed development, coming before Pulaski County Planning Commission, for proper stormwater erosion control BMP's.

BMP: Review all proposed development, coming before The Pulaski County Planning Commission, for proper stormwater erosion control BMP's.
Measurable Goal: Review all proposed development, coming before The Pulaski County Planning Commission, for proper stormwater erosion control BMP's. Require additional controls if needed. Receive a copy of the ADEQ stormwater permit if required.
Justification: It is best to catch erosion control deficiencies with development in the preliminary stages, allowing corrective actions to be taken before construction begins.

Year 9-Construction Site Runoff Control

- Review all floodplain development permits for proper ADEQ stormwater and 404 permitting. Developer must provide ADEQ stormwater and 404 permit (if required) before floodplain development permit can be issued.

BMP: Review all floodplain development permits for proper ADEQ stormwater and 404 permitting. Developer must provide ADEQ stormwater and 404 permit (if required) before floodplain development permit can be issued.
Measurable Goal: Require a copy of all needed ADEQ or Corps of Engineers permits before permitting a site for floodplain development.
Justification: Not issuing a floodplain development permit, without first receiving a copy of the ADEQ or COE permit creates an incentive for the developer to acquire proposed permits.

Year 10-Construction Site Runoff Control

- Require Pulaski County contractors to receive stormwater/erosion control training, from Pulaski County Staff, before a construction project begins.

BMP: Require Pulaski County contractors to receive stormwater/erosion control training, from Pulaski County Staff, before a construction project begins.
Measurable Goal: Before a Pulaski County owned project starts, contractor shall receive training and advising from Pulaski County Staff, before the project starts. This can occur at the pre-construction meeting.
Justification: Addressing stormwater installation or maintenance concerns before a project starts will help insure that BMPs work as designed throughout the duration of the project or until sufficient vegetation has been established.

Year 11-Construction Site Runoff Control

- Inspect all new subdivision construction to make sure all ADEQ stormwater requirements are met.

BMP: Inspect all new subdivision construction to make sure all ADEQ stormwater requirements are met.
Measurable Goal: Require developer to adhere to all erosion control plans and ADEQ stormwater permits (if one is required for the site).
Justification: Pulaski County inspects new roads and drainage systems which are built in new subdivisions. While inspecting these systems, steps can be taken to ensure stormwater BMPs are adequate.

Year 12-Construction Site Runoff Control

- Conduct random inspections of in-house projects, checking for proper stormwater BMPS.

BMP: Conduct random inspections of in-house project, checking for proper stormwater BMPS.
Measurable Goal: Conduct random inspections of in-house projects to make sure Pulaski County Crews have adequate BMPs on the jobsite.
Justification: Random inspections of in-house maintenance jobs will help ensure stormwater controls are in place and gives an opportunity to correct any deficient BMP's.

2019-2024 Permit Period

Year 13-Construction Site Runoff Control

- Review all proposed development, coming before Pulaski County Planning Commission, for proper stormwater erosion control BMP's.

BMP: Review all proposed development, coming before The Pulaski County Planning Commission, for proper stormwater erosion control BMP's.
Measurable Goal: Review all proposed development, coming before The Pulaski County Planning Commission, for proper stormwater erosion control BMP's. Require additional controls if needed. Receive a copy of the ADEQ stormwater permit if

required.
Justification: It is best to catch erosion control deficiencies with development in the preliminary stages, allowing corrective actions to be taken before construction begins.

Year 14-Construction Site Runoff Control

- Review all floodplain development permits for proper ADEQ stormwater and 404 permitting. Developer must provide ADEQ stormwater and 404 permit (if required) before floodplain development permit can be issued.

BMP: Review all floodplain development permits for proper ADEQ stormwater and 404 permitting. Developer must provide ADEQ stormwater and 404 permit (if required) before floodplain development permit can be issued.
Measurable Goal: Require a copy of all needed ADEQ or Corps of Engineers permits before permitting a site for floodplain development.
Justification: Not issuing a floodplain development permit, without first receiving a copy of the ADEQ or COE permit creates an incentive for the developer to acquire proposed permits.

Year 15-Construction Site Runoff Control

- Require Pulaski County contractors to receive stormwater/erosion control training, from Pulaski County Staff, before a construction project begins.

BMP: Require Pulaski County contractors to receive stormwater/erosion control training, from Pulaski County Staff, before a construction project begins.
Measurable Goal: Before a Pulaski County owned project starts, contractor shall receive training and advising from Pulaski County Staff, before the project starts. This can occur at the pre-construction meeting.
Justification: Addressing stormwater installation or maintenance concerns before a project starts will help insure that BMPs work as designed throughout the duration of the project or until sufficient vegetation has been established.

Year 16-Construction Site Runoff Control

- Inspect all new subdivision construction to make sure all ADEQ stormwater requirements are met.

BMP: Inspect all new subdivision construction to make sure all ADEQ stormwater requirements are met.
Measurable Goal: Require developer to adhere to all erosion control plans and ADEQ stormwater permits (if one is required for the site).
Justification: Pulaski County inspects new roads and drainage systems which are built in new subdivisions. While inspecting these systems, steps can be taken to ensure stormwater BMPs are adequate.

Years 17 and 18-Construction Site Runoff Control

- Conduct random inspections of in-house projects, checking for proper stormwater BMPS.

BMP: Conduct random inspections of in-house project, checking for proper stormwater BMPS.
Measurable Goal: Conduct random inspections of in-house projects to make sure Pulaski County Crews have adequate BMPs on the jobsite.
Justification: Random inspections of in-house maintenance jobs will help ensure stormwater controls are in place and gives an opportunity to correct any deficient BMP's.

Pulaski County Storm Water

Management Program

Minimum Control Measure

Post-Construction Runoff Control

Post-construction storm water management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly effect 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 storm water 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 storm water 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 waterbody 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 streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

Pulaski County's post-construction runoff program's objective is to reduce pollutants in post construction runoff from new development and redevelopment projects that result in the land disturbance of one acre or greater. The county's program will consist of the following items in support of this objective:

- Develop and implement strategies, which include a combination of structural and/or non-structural best management practices (BMPs).

- Execute an ordinance requiring the implementation of post-construction runoff controls to the maximum extent allowable under local law.
- 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.

IMPLEMENTATION

Pulaski County'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.

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 than can support it without compromising water quality.

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

Structural BMPs

Storage Practices. Storage or detention BMPs control storm water 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 storm water volume and settle out particulates for pollutant removal.

Infiltration Practices. Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, resulting

in reduced storm water quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.

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

MEASURABLE GOALS

Pulaski County will utilize a 7 year integrated approach to address the requirements and intent of the post-construction runoff control Minimum Control Measure. The integrated 7 year approach will include the following measurable goals:

Year 1-Post-Construction Runoff Control

- Develop and implement a storm water design manual, which includes a combination of structural and/or non-structural BMPs.
- Develop an ordinance, which includes post-construction runoff control.

Year 2- Post-Construction Runoff Control

- Develop a program that ensures adequate long-term operation and maintenance of controls.

Year 3- Post-Construction Runoff Control

- Create a storm water hotline.

Year 4- Post-Construction Runoff Control

- Develop a contractor certification program.

Year 5- Post-Construction Runoff Control

- Establish procedures for receipt and consideration of information submitted by the public.

Year 6- Post-Construction Runoff Control

- Review current stormwater management ordinance for effectiveness of post-construction runoff control. Revise if necessary.

Year 7- Post-Construction Runoff Control

- Modify existing subdivision code to include incentives for creating LIDs (Low Impact Development) and green infrastructure.

2014-2019 Permit Period

Year 8-Post Construction Runoff Control

- Review current County Subdivision Code for effective Post-Construction runoff control.

Year 9-Post Construction Runoff Control

- Require developers to address impact to 303 (d) listed waters for each proposed development in MS-4 areas.

Year 10-Post Construction Runoff Control

- Require complete drainage plans for each proposed subdivision or commercial development.

Year 11-Post Construction Runoff Control

- Require developers to submit long term operation and maintenance plans for required stormwater structures in regulated MS-4 areas.

Year 12-Post Construction Runoff Control

- Review existing stormwater management ordinance for effective Post-Construction Runoff Controls.

2019-2024 Permit Period

Year 13-Post Construction Runoff Control

- Review current County Subdivision Code for effective Post-Construction runoff control.

Year 14-Post Construction Runoff Control

- Require developers to address impact to 303 (d) listed waters for each proposed development in MS-4 areas.

Year 15-Post Construction Runoff Control

- Require complete drainage plans for each proposed subdivision or commercial development.

Year 16-Post Construction Runoff Control

- Require developers to submit long term operation and maintenance plans for required stormwater structures in regulated MS-4 areas.

Years 17 and 18-Post Construction Runoff Control

- Review existing stormwater management ordinance for effective Post-Construction Runoff Controls.

BMP/Measurable Goal/Justification

Year 1-Post-Construction Runoff Control

- Develop and implement a storm water design manual, which includes a combination of structural and/or non-structural BMPs.
- Develop an ordinance, which includes post-construction runoff control.

BMP: Develop and implement a storm water design manual, which includes a combination of structural and/or non-structural BMPs.
Measurable Goal: Pulaski County will develop and implement a storm water design manual, which includes a combination of structural and/or non-structural BMPs during the first year.
Justification: Siltation and the contribution of other pollutants from post-construction sites can cause physical, chemical and biological harm to our nations waters. A storm water drainage manual that includes structural and non-structural BMPs is necessary to provide guidelines and regulations to the citizens of Pulaski County, particularly design and construction professionals. The non-structural and structural BMPs must be accomplished through a combination of planning, review and approvals, site-based local controls, and vegetative practices.

BMP: Develop an ordinance that includes post-construction runoff control.
Measurable Goal: Pulaski County will develop an ordinance that includes post-construction runoff control during the first year.
Justification: Siltation and the contribution of other pollutants from construction sites can cause physical, chemical and biological harm to our nations waters. A storm water maintenance ordinance must address both construction and post-construction runoff control in order to comply with NPDES Phase II Final Rule. This mechanism provides the county with the tool to manage and enforce its storm water management program.

Year 2- Post-Construction Runoff Control

- Develop a program that ensures adequate long-term operation and maintenance of controls.

BMP: Develop a program that ensures adequate long-term operation and maintenance of controls.
Measurable Goal: Pulaski County will develop a program that ensures adequate long-term operation and maintenance of controls within the second year.
Justification: In order to ensure that long-term operation and maintenance of controls are met the county will develop a storm water drainage manual, a storm water ordinance and the means to enforce both.

Year 3- Post-Construction Runoff Control

- Create a storm water hotline.

BMP: Create a storm water hotline
Measurable Goal: A storm water hotline will be established within the first year.
Justification: Pulaski County is too large an area for county personnel to police. Informed citizens around the county need a means of reporting illicit discharges into the water bodies of the MS4. A storm water hotline will provide this means.

Year 4- Post-Construction Runoff Control

- Develop a contractor certification program.

BMP: Develop a contractor certification program.
Measurable Goal: Pulaski County will develop a contractor certification program during the third year.
Justification: 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. This program will involve training, refresher courses, periodic recertification as well as opportunities for learning new ESC technology.

Year 5- Post-Construction Runoff Control

- Establish procedures for receipt and consideration of information submitted by the public.

BMP: Establish procedures for receipt and consideration of information submitted by the public.
Measurable Goal: Pulaski County will establish procedures for receipt and consideration of information submitted by the public during the fourth year.
Justification: In order to provide a link between the citizens and Pulaski County's government it is necessary to establish methods in which contact is available. The primary method for reporting water quality violations will be a hotline for citizens to report by telephone. The county's mailing address will be listed on brochures, which will provide an additional means for citizens to contact the county. Pulaski County will establish procedures that ensure responsiveness to citizen reports. Pulaski County's 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.

Year 6- Post-Construction Runoff Control

- Review current stormwater management ordinance for effectiveness of post-construction runoff control. Revise if necessary.

BMP: Review current stormwater management ordinance for effectiveness of post-construction runoff control.
Measureable Goal: Pulaski County will review its stormwater management ordinance for effectiveness and make changes if needed.
Justification: The Pulaski County Stormwater Management should be reviewed periodically for its effectiveness at reducing stormwater runoff pollution.

Year 7- Post-Construction Runoff Control

- Modify existing subdivision code to include incentives for creating LID (Low Impact Development) subdivisions and green infrastructure.

BMP: Modify existing subdivision code to add incentives for creating LID (Low Impact Development) subdivisions and green infrastructure.
Measureable Goal: Pulaski County will review and modify its existing subdivision code to include incentives for creating LID subdivisions and green infrastructure.
Justification: Creating incentives for developers to create LIDs instead of conventional subdivision will help reduce the amount of stormwater pollution and runoff. These incentives will encourage the creation of subdivisions with large areas of undisturbed vegetation to absorb and filter rain water. Developing these LID subdivisions will require less earth work during construction which will reduce the amount of erosion and sediment runoff.

2014-2019 Permit Period

Year 8- Post-Construction Runoff Control

- Review current Pulaski County Subdivision and Development Code for effective Post-Construction Runoff Controls

BMP: Review current Pulaski County Subdivision and Development Code for effective Post-Construction Runoff Controls
Measureable Goal: Revise Subdivision Code if necessary.
Justification: Much of the Development in Pulaski County must meet standards outlined in the Pulaski County Subdivision and Development Code. Making sure nothing in the code impedes proper BMPs will help ensure overall water quality of nearby streams.

Year 9- Post-Construction Runoff Control

- Require developers to address impact to 303(d) listed water for each proposed development in MS-4 areas.

BMP: Require developers to address impact to 303(d) listed water for each proposed development in MS-4 areas.
Measureable Goal: Add a section to the County Subdivision and Development Code

requiring developers to address impact to 303(d) listed streams, ensuring that no part of the proposed developments adds to pollutants of concern.
Justification: Requiring developers to address potential impacts to 303 (d) listed streams is a proactive way to reduce the addition of pollutants of concern.

Year 10- Post-Construction Runoff Control

- Require complete drainage plans for each proposed subdivision or commercial development.

BMP: Require complete drainage plans for each proposed subdivision or commercial development.
Measureable Goal: Require and review drainage/detention plans for each new proposed subdivision or commercial development. Identify areas that could potentially negatively impact stormwater quality. These areas could be an inadequately designed detention ponds or ditches that could possibly erode from high water velocities after construction is completed.
Justification: Reviewing and correcting potential long-term drainage and erosion issues is a proactive way to help ensure stormwater quality and reduce local stream sedimentation.

Year 11- Post-Construction Runoff Control

- Require developers to submit long term operation and maintenance plans for required stormwater structures in regulated MS-4 areas.

BMP: Require developers to submit long term operation and maintenance plans for required stormwater structures in regulated MS-4 areas.
Measureable Goal: Receive and review operation and maintenance plans for required stormwater structures in MS-4 areas. Require developers to identify who will be in charge of maintenance of stormwater facilities.
Justification: The submittal of plans will help ensure that stormwater facilities, such as private detention ponds and drainage systems, are properly maintained.

Year 12- Post-Construction Runoff Control

- Review existing stormwater management ordinance for effective Post-Construction Runoff Controls

BMP: Review existing stormwater management ordinance for effective Post-Construction Runoff Controls.
Measureable Goal: Review and change existing stormwater ordinance, if necessary.
Justification: Reviewing and updating stormwater management ordinance if necessary is a step in making sure ordinance is in compliance with ADEQ requirements and effective in reducing stormwater pollutants and peak runoff.

2019-2024 Permit Period

Year 13- Post-Construction Runoff Control

- Review current Pulaski County Subdivision and Development Code for effective Post-Construction Runoff Controls

BMP: Review current Pulaski County Subdivision and Development Code for effective Post-Construction Runoff Controls
Measureable Goal: Revise Subdivision Code if necessary.
Justification: Much of the Development in Pulaski County must meet standards outlined in the Pulaski County Subdivision and Development Code. Making sure nothing in the code impedes proper BMPs will help ensure overall water quality of nearby streams.

Year 14- Post-Construction Runoff Control

- Require developers to address impact to 303(d) listed water for each proposed development in MS-4 areas.

BMP: Require developers to address impact to 303(d) listed water for each proposed development in MS-4 areas.
Measureable Goal: Add a section to the County Subdivision and Development Code requiring developers to address impact to 303(d) listed streams, ensuring that no part of the proposed developments adds to pollutants of concern.
Justification: Requiring developers to address potential impacts to 303 (d) listed streams is a proactive way to reduce the addition of pollutants of concern.

Year 15- Post-Construction Runoff Control

- Require complete drainage plans for each proposed subdivision or commercial development.

BMP: Require complete drainage plans for each proposed subdivision or commercial development.
Measureable Goal: Require and review drainage/detention plans for each new proposed subdivision or commercial development. Identify areas that could potentially negatively impact stormwater quality. These areas could be an inadequately designed detention ponds or ditches that could possibly erode from high water velocities after construction is completed.
Justification: Reviewing and correcting potential long-term drainage and erosion issues is a proactive way to help ensure stormwater quality and reduce local stream sedimentation.

Year 16- Post-Construction Runoff Control

- Require developers to submit long term operation and maintenance plans for required stormwater structures in regulated MS-4 areas.

BMP: Require developers to submit long term operation and maintenance plans for required stormwater structures in regulated MS-4 areas.
Measureable Goal: Receive and review operation and maintenance plans for required stormwater structures in MS-4 areas. Require developers to identify who will be in charge of maintenance of stormwater facilities.
Justification: The submittal of plans will help ensure that stormwater facilities, such as private detention ponds and drainage systems, are properly maintained.

Years 17 and 18- Post-Construction Runoff Control

- Review existing stormwater management ordinance for effective Post-Construction Runoff Controls

BMP: Review existing stormwater management ordinance for effective Post-Construction Runoff Controls.
Measureable Goal: Review and change existing stormwater ordinance, if necessary.
Justification: Reviewing and updating stormwater management ordinance if necessary is a step in making sure ordinance is in compliance with ADEQ requirements and effective in reducing stormwater pollutants and peak runoff.

Pulaski County Storm Water

Management Program

Minimum Control Measure

Pollution Prevention/Good Housekeeping

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

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

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

Pulaski County recognizes the benefits of pollution prevention practices and will therefore develop a strategy consisting of the following:

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

IMPLEMENTATION

Pulaski County's objective in developing a pollution prevention/good housekeeping program is to ensure that existing county, state or federal operations are performed in ways that will minimize contamination of storm water discharges. Pulaski County will use 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 will include 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 in the bullet 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. Pulaski County 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.

MEASURABLE GOALS

Pulaski County will utilize a 7 year integrated approach to address the requirements and intent of the pollution prevention/good housekeeping Minimum Control Measure. The integrated 7 year approach will include the following measurable goals:

Year 1-Pollution Prevention/Good Housekeeping

- Develop and implement an operations and maintenance program.
- Implement a used oil-recycling program.
- Materials management.

Year 2- Pollution Prevention/Good Housekeeping

- Implement covering of raw materials.
- Conduct employee training on the storm water management program.

Year 3- Pollution Prevention/Good Housekeeping

- Implement procedures for proper storage of hazardous materials.
- Develop a program to control and reduce illegal dumping.

Year 4- Pollution Prevention/Good Housekeeping

- Develop a spill response and prevention program.
- Develop a roadway and bridge maintenance program.

Year 5- Pollution Prevention/Good Housekeeping

- Landscaping and lawn care.
- Develop a herbicide and pesticide control program.

Year 6- Pollution Prevention/Good Housekeeping

- Implement a re-vegetation program.
- Inspect all in-house construction projects for stormwater/erosion control practices.

Year 7- Pollution Prevention/Good Housekeeping

- Monitor storm sewer discharges from county facilities.
- Monitor county shop automotive chemical storage and disposal.

2014-2019 Permit Period

Year 8- Pollution Prevention/Good Housekeeping

- Inspect storm drain inlets on Pulaski County Road and Bridge owned properties. Remove debris/pollutants if any are found.

Year 9- Pollution Prevention/Good Housekeeping

- Distribute training material that is available from the EPA or ADEQ to Pulaski County Road & Bridge employees.

Year 10- Pollution Prevention/Good Housekeeping

- Reevaluate Pulaski County Road and Bridge maintenance activities and a procedures include herbicide use, ditch excavation, asphalt/chipseal installation. Indentify activities that could potentially pollute stormwater.

Year 11- Pollution Prevention/Good Housekeeping

- Implement plan to reduce stormwater contamination created by activities found in previous year's reevaluation.
- Map all stock pile sites owned and used by Pulaski County Road and Bridge. Identify materials dumped at stock piles.

Year 12- Pollution Prevention/Good Housekeeping

- Implement plan to reduce discharge from stock pile materials such as ditch sediment, gravel, sand, and road salt.

2019-2024 Permit Period

Year 13- Pollution Prevention/Good Housekeeping

- Inspect storm drain inlets on Pulaski County Road and Bridge owned properties. Remove debris/pollutants if any are found.

Year 14- Pollution Prevention/Good Housekeeping

- Distribute training material that is available from the EPA or ADEQ to Pulaski County Road & Bridge employees.

Year 15- Pollution Prevention/Good Housekeeping

- Reevaluate Pulaski County Road and Bridge maintenance activities and a procedures include herbicide use, ditch excavation, asphalt/chipseal installation. Indentify activities that could potentially pollute stormwater.

Year 16- Pollution Prevention/Good Housekeeping

- Continue implementing plan to reduce stormwater contamination created by activities found in previous year's reevaluation.
- Continue Mapping all stock pile sites owned and used by Pulaski County Road and Bridge. Identify materials dumped at stock piles.

Years 17 and 18- Pollution Prevention/Good Housekeeping

- Continue Implementing plan to reduce discharge from stock pile materials such as ditch sediment, gravel, sand, and road salt.

BMP/Measurable Goal/Justification

Year 1-Pollution Prevention/Good Housekeeping

- Develop and implement an operations and maintenance program.
- Implement a used oil-recycling program.
- Materials management.

BMP: Develop and implement an operations and maintenance program.
Measurable Goal: Pulaski County will develop and implement an operations and maintenance program during the first year.
Justification: Many potential contaminants can enter the waterbodies of the county without proper operations and maintenance procedures. Pulaski County will develop and implement an operations and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from county operations into the storm sewer system.

BMP: Implement a used oil-recycling program.
Measurable Goal: Pulaski County will implement a used oil-recycling program during the first year.
Justification: Many potential contaminants can be recycled that otherwise may become pollutants into the county's water bodies. Oil is a potential contaminant that is recyclable. When improperly disposed oil can migrate into surface and ground water. A recycling program will allow a simple and effective way of oil disposal.

BMP: Develop a materials management program.
Measurable Goal: Pulaski County will develop a materials management program during the first year.
Justification: Responsibly managing common chemicals such as fertilizers, solvents, paints, cleaners and automotive products can significantly reduce polluted runoff.

Year 2- Pollution Prevention/Good Housekeeping

- Implement covering of raw materials.
- Conduct employee training on the storm water management program.

BMP: Implement covering of raw materials.
Measurable Goal: Pulaski County will implement covering of raw materials during the second year.
Justification: When raw materials are exposed to rain and/or runoff they have the potential to contaminate storm water. The use of tarpaulins, plastic sheeting, roofs, buildings and other enclosures are good and inexpensive methods for covering raw materials.

BMP: Conduct employee training on the storm water management program.
Measurable Goal: Pulaski County will conduct employee training on the storm water management program within the second year.
Justification: In house employee training programs are established to teach employees about storm water management, potential sources of contaminants, and best management practices. Employee training programs should instill all personnel with a thorough understanding of the county'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.

Year 3- Pollution Prevention/Good Housekeeping

- Implement procedures for proper storage of hazardous materials.
- Develop a program to control and reduce illegal dumping.

BMP: Implement procedures for proper storage of hazardous materials.
Measurable Goal: Pulaski County will implement procedures for properly storing hazardous materials during the second year.
Justification: The practice of covering and properly storing hazardous chemicals can have a dramatic impact upon the quality of water in Pulaski County. Hazardous chemicals should be properly labeled, stored, inventoried and periodically inspected for leaks and signs of corrosion as part of the county's hazardous materials storage program.

BMP: Develop a program to control and reduce illegal dumping through public education and development of a citizen reporting program.
Measurable Goal: Pulaski County will develop a program to reduce the amount of illegal dumping through public education and development of a citizen reporting program during the third year.
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. Pulaski County's program will combine citizen awareness, citizen reporting, clean up activities and enforcement to reduce the effects of illegal dumping.

Year 4- Pollution Prevention/Good Housekeeping

- Develop a spill response and prevention program.
- Develop roadway and bridge maintenance program.

BMP: Develop a spill response and prevention program.
Measurable Goal: Pulaski County will develop a spill response and prevention program.
Justification: Spills can occur at any place and time. A pre-planned response is the most effective way to reduce the potential impacts upon the waterbodies of Pulaski County. Pulaski County's spill response and prevention plan will clearly state measures

to stop the source of a spill, contain the spill, clean up the spill, dispose of contaminated materials and to train personnel to prevent and control future spills.

BMP: Develop a roadway and bridge maintenance program.
Measurable Goal: Pulaski County will develop a roadway and bridge maintenance program during the third year.
Justification: Roadways and bridges contribute pollutants such as heavy metals, hydrocarbons, sediment and debris to storm water runoff. Pulaski County's operation and maintenance program will reduce pollutant loads from existing road surfaces and bridges.

Year 5- Pollution Prevention/Good Housekeeping

- Develop a landscaping and lawn care.
- Develop an herbicide and pesticide control program.

BMP: Develop a landscaping and lawn care program.
Measurable Goal: Pulaski County will develop a landscaping and lawn care within the fourth year.
Justification: If lawns were classified as a crop they would rank as the fifth largest in the country on the basis of area after corn, soy beans, wheat and hay. An effective landscaping and lawn care program will reduce the amount of runoff and chemicals introduced into the water bodies of Pulaski County.

BMP: Develop a herbicide and pesticide control program.
Measurable Goal: Pulaski County will develop a pesticide control program within the fourth year.
Justification: Herbicides and pesticides can produce adverse impacts on the health of humans, animals and aquatic organisms. Pulaski County's herbicide and pesticide control program will promote the reduction of herbicide and pesticide usage through non-chemical methods such as biological, cultural and mechanical methods.

Year 6- Pollution Prevention/Good Housekeeping

- Implement a re-vegetation program.
- Inspect in-house construction projects for stormwater/erosion control practices.

BMP: Implement a re-vegetation program
Measureable Goal: Pulaski County Road & Bridge will implement a re-vegetation program for its in-house construction projects that require removing vegetation. For instance, if construction crews remove trees for a detour trees will be replanted when the detour is removed.
Justification: By replanting vegetation that has been removed during construction Pulaski County can return that portion or land back to preexisting or better conditions. This will also help to set an example for the rest of the development community.

BMP: Inspect in-house construction projects for stormwater/erosion control practices.
Measureable Goal: The Pulaski County Stormwater Inspector will inspect in-house construction projects for stormwater/erosion control practices. The inspector will make sure that in-house construction projects adhere to federal, state, and county stormwater regulations.
Justification: By being stormwater conscious and responsible during our construction activities Pulaski County Road & Bridge aims to do its part to help improve the water quality of the state.

Year 7- Pollution Prevention/Good Housekeeping

- Monitor storm sewer discharges from Pulaski County Road & Bridge facilities.
- Monitor county shop automotive chemical storage and disposal.

BMP: Monitor storm sewer discharges from Pulaski County Road & Bridge facilities.
Measureable Goal: The Pulaski County Stormwater Inspector will monitor storm sewer discharges from the Road & Bridge department. The inspector will monitor discharges from areas such as the wash bay, slat sheds, industrial sand stock pile, milled asphalt stock pile, and equipment yard. If the inspector sees a problem corrective actions will be taken.
Justification: Pulaski County Road & Bridge aims to minimize or eliminate stormwater pollution from leaving its facility. Keeping a close eye on what is stored and discharged from the Road & Bridge facility is essential for minimizing stormwater pollution and staying in compliance with ADEQ and Little Rock stormwater regulations.

BMP: Monitor county shop automotive chemical storage and disposal.
Measureable Goal: The Pulaski County Stormwater Inspector will monitor the county shop for proper automotive chemical storage and disposal.
Justification: Pulaski County should monitor its shop for proper storage and disposal of automotive chemicals to eliminate or minimize stormwater pollution impact to nearby waterways. Pulaski County will correct any problems that can result in stormwater pollution.

2014-2019 Permit Period

Year 8- Pollution Prevention/Good Housekeeping

- Inspect storm drain inlets on Pulaski County Road and Bridge owned properties. Remove debris/pollutants if any are found.

BMP: Inspect storm drain inlets on Pulaski County Road and Bridge owned properties. Remove debris/pollutants if any are found.
Measureable Goal: Remove debris, sediment, or any other pollutant which has collected in Pulaski County Road & Bridge owned properties such as carwash drain, culverts, ditches and stock pile retention berms.
Justification: Maintenance and inspection of these facilities will help ensure that any

potential pollutant on Pulaski County Road & Bridge properties does not enter into adjacent waterways.

Year 9- Pollution Prevention/Good Housekeeping

- Distribute training material that is available from the EPA or ADEQ to Pulaski County Road & Bridge employees.

BMP: Distribute training material that is available from the EPA or ADEQ to Pulaski County Road & Bridge employees.
Measureable Goal: Provide training material to Pulaski County Road & Bridge employees describing ways to help reduce stormwater pollution, covering areas, such as; proper chemical storage and disposal and BMP installation and maintenance.
Justification: Employees that are more informed on ways to reduce stormwater pollution are much more likely to use proper BMPs during day to day operations.

Year 10- Pollution Prevention/Good Housekeeping

- Reevaluate Pulaski County Road and Bridge maintenance activities and a procedures include herbicide use, ditch excavation, asphalt/chipseal installation. Indentify activities that could potentially pollute stormwater.

BMP: Reevaluate Pulaski County Road and Bridge maintenance activities and a procedures include herbicide use, ditch excavation, asphalt/chipseal installation. Indentify activities that could potentially pollute stormwater..
Measureable Goal: Identify any areas of normal operations and maintenance which methods can be improved to reduce overall stormwater pollution.
Justification: Identification of inadequate BMPs used in Pulaski County Road and Bridge maintenance activities is essential to correcting any deficient BMPs

Year 11- Pollution Prevention/Good Housekeeping

- Implement plan to reduce stormwater contamination created by activities found in previous year's reevaluation.

BMP: Implement plan to reduce stormwater contamination created by activities found in previous year's reevaluation.
Measureable Goal: Work with maintenance supervisors to correct any areas where BMPs have been determined to be inadequate.
Justification: Any maintenance activities which could contribute to stormwater pollution must be corrected.

- Map all stock pile sites owned and used by Pulaski County Road and Bridge. Identify materials dumped at stock piles.

BMP: Map all stock pile sites owned and used by Pulaski County Road and Bridge. Identify materials dumped at stock piles.
Measureable Goal: Create a database/inventory of the PCRB stockpile sites with the types and quantities of materials stored at each site.
Justification: The determination and possible relocation of stockpile sites that are in close proximity to adjacent waterways that could possibly contribute to stormwater pollution.

Year 12- Pollution Prevention/Good Housekeeping

- Implement plan to reduce discharge from stock pile materials such as ditch sediment, gravel, sand, and road salt.

BMP: Implement plan to reduce discharge from stock pile materials such as ditch sediment, gravel, sand, and road salt.
Measureable Goal: Determine if there is a potential for stockpile material to erode or leach into adjacent streams. Work to correct any potential areas of stormwater pollution.
Justification: Stockpile sites must be inspected and corrective actions taken if necessary to help reduce stormwater pollution at stockpile sites.

2019-2024 Permit Period

Year 13- Pollution Prevention/Good Housekeeping

- Inspect storm drain inlets on Pulaski County Road and Bridge owned properties. Remove debris/pollutants if any are found.

BMP: Inspect storm drain inlets on Pulaski County Road and Bridge owned properties. Remove debris/pollutants if any are found.
Measureable Goal: Remove debris, sediment, or any other pollutant which has collected in Pulaski County Road & Bridge owned properties such as carwash drain, culverts, ditches and stock pile retention berms.
Justification: Maintenance and inspection of these facilities will help ensure that any potential pollutant on Pulaski County Road & Bridge properties does not enter into adjacent waterways.

Year 14- Pollution Prevention/Good Housekeeping

- Distribute training material that is available from the EPA or ADEQ to Pulaski County Road & Bridge employees.

BMP: Distribute training material that is available from the EPA or ADEQ to Pulaski County Road & Bridge employees.
Measureable Goal: Provide training material to Pulaski County Road & Bridge employees describing ways to help reduce stormwater pollution, covering areas, such as; proper chemical storage and disposal and BMP installation and maintenance.

Justification: Employees that are more informed on ways to reduce stormwater pollution are much more likely to use proper BMPs during day to day operations.

Year 15- Pollution Prevention/Good Housekeeping

- Reevaluate Pulaski County Road and Bridge maintenance activities and a procedures include herbicide use, ditch excavation, asphalt/chipseal installation. Indentify activities that could potentially pollute stormwater.

BMP: Reevaluate Pulaski County Road and Bridge maintenance activities and a procedures include herbicide use, ditch excavation, asphalt/chipseal installation. Indentify activities that could potentially pollute stormwater..
Measureable Goal: Identify any areas of normal operations and maintenance which methods can be improved to reduce overall stormwater pollution.
Justification: Identification of inadequate BMPs used in Pulaski County Road and Bridge maintenance activities is essential to correcting any deficient BMPs

Year 16- Pollution Prevention/Good Housekeeping

- Implement plan to reduce stormwater contamination created by activities found in previous year's reevaluation.

BMP: Implement plan to reduce stormwater contamination created by activities found in previous year's reevaluation.
Measureable Goal: Work with maintenance supervisors to correct any areas where BMPs have been determined to be inadequate.
Justification: Any maintenance activities which could contribute to stormwater pollution must be corrected.

- Map all stock pile sites owned and used by Pulaski County Road and Bridge. Identify materials dumped at stock piles.

BMP: Map all stock pile sites owned and used by Pulaski County Road and Bridge. Identify materials dumped at stock piles.
Measureable Goal: Create a database/inventory of the PCRB stockpile sites with the types and quantities of materials stored at each site.
Justification: The determination and possible relocation of stockpile sites that are in close proximity to adjacent waterways that could possibly contribute to stormwater pollution.

Years 17 and 18- Pollution Prevention/Good Housekeeping

- Implement plan to reduce discharge from stock pile materials such as ditch sediment, gravel, sand, and road salt.

BMP: Implement plan to reduce discharge from stock pile materials such as ditch sediment, gravel, sand, and road salt.
Measureable Goal: Determine if there is a potential for stockpile material to erode or leach into adjacent streams. Work to correct any potential areas of stormwater pollution.
Justification: Stockpile sites must be inspected and corrective actions taken if necessary to help reduce stormwater pollution at stockpile sites.

303(d) Listed Waters

Pulaski County will utilize a multi- year integrated approach to address the requirements for MS4s discharging into 303(d) Listed Waters that are impaired from nutrient or bacteria content.

For Waters Impaired by Nutrient Content

Year 1- 303(d) Listed Waters

- Identify potential significant source of nutrient discharging into a 303(d) listed waterway.

Year 2- 303(d) Listed Waters

- Develop and implement a public education program to reduce the discharge of the pollutant of concern in municipal stormwater contributed by residential and commercial use of fertilizers.
- Develop and implement a program to reduce the discharge of pollutant of concern in municipal stormwater contributed by fertilizer use at municipal operations. (e.g., parks, roadways, municipal facilities).
- Develop and implement a program to reduce the discharge of pollutant of concern in municipal stormwater contributed by municipal and private goal courses within MS4 areas.

Year 3- 303(d) Listed Waters

Develop and implement a program to reduce the discharge of pollutant of concern in municipal stormwater contributed by any other significant source identified by Pulaski County.

2014-2019 Permit Period

Year 4-303(d) Listed Waters

- Require developers to submit long term operation and maintenance plans for required stormwater structures in MS-4 areas.
- Mail stormwater educational material to industries located in MS-4 areas that discharge to 303 (d) listed streams.

Year 5-303(d) Listed Waters

- Delineate watershed areas for streams where impairment is listed for a nutrient constituent.

Year 6-303(d) Listed Waters

- Require developers to address impact of nutrient constituent to 303 (d) list stream for each proposed subdivision or commercial development in MS-4 areas.

Year 7-303(d) Listed Waters

- Revised Pulaski County Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker.

Year 8-303(d) Listed Waters

Install signage on Pulaski County maintained roads indicating watershed boundaries for Fourche Creek and Bayou Meto.

2019-2024 Permit Period

Year 9-303(d) Listed Waters

- Require developers to submit long term operation and maintenance plans for required stormwater structures in MS-4 areas.
- Mail stormwater educational material to industries located in MS-4 areas that discharge to 303 (d) listed streams.

Year 10-303(d) Listed Waters

- Delineate watershed areas for streams where impairment is listed for a nutrient constituent.

Year 11-303(d) Listed Waters

- Require developers to address impact of nutrient constituent to 303 (d) list stream for each proposed subdivision or commercial development in MS-4 areas.

Year 12-303(d) Listed Waters

- Revised Pulaski County Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker.

Year 13-303(d) Listed Waters

Install signage on Pulaski County maintained roads indicating watershed boundaries for Fourche Creek and Bayou Meto if not already done.

For Waters Impaired by Bacteria Content

Year 1- 303(d) Listed Waters

- Identify potential significant source of bacteria discharging into a 303(d) listed waterway.

Year 2- 303(d) Listed Waters

- Develop and implement a public education program to reduce the discharge of bacteria in municipal stormwater contributed by pets, recreational and exhibition livestock, and zoos.
- Develop and implement a program to reduce the discharge of bacteria in municipal stormwater contributed to MS4 areas by on-site wastewater treatment systems.
- Review results of data from the Illicit Discharge and Detection and Elimination program and modify if necessary to prioritize the detection and elimination of discharges contributing bacteria to the MS4 area.

Year 3- 303(d) Listed Waters

- Develop and implement a program to reduce the discharge of bacteria in municipal stormwater contributed by any other significant source identified by Pulaski County.

2014-2019 Permit Period

Year 4-303(d) Listed Waters

- Require developers to submit long term operation and maintenance plans for required stormwater structures in MS-4 areas.
- Mail stormwater educational material to industries located in MS-4 areas that discharge to 303 (d) listed streams.

Year 5-303(d) Listed Waters

- Delineate watershed areas for streams where impairment is listed for bacteria.

Year 6-303(d) Listed Waters

- Require developers to address impact of bacteria pollution to 303 (d) list stream for each proposed subdivision or commercial development in MS-4 areas.

Year 7-303(d) Listed Waters

- Revised Pulaski County Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker.

Year 8-303(d) Listed Waters

Install signage on Pulaski County maintained roads indicating watershed boundaries for Fourche Creek and Bayou Meto.

2019-2024 Permit Period

Year 9-303(d) Listed Waters

- Require developers to submit long term operation and maintenance plans for required stormwater structures in MS-4 areas.
- Mail stormwater educational material to industries located in MS-4 areas that discharge to 303 (d) listed streams.

Year 10-303(d) Listed Waters

- Delineate watershed areas for streams where impairment is listed for bacteria.

Year 11-303(d) Listed Waters

- Require developers to address impact of bacteria pollution to 303 (d) list stream for each proposed subdivision or commercial development in MS-4 areas.

Year 12-303(d) Listed Waters

- Revised Pulaski County Subdivision Code, requiring developers to mark storm drain structures with "Drains to River" marker.

Year 13-303(d) Listed Waters

Install signage on Pulaski County maintained roads indicating watershed boundaries for Fourche Creek and Bayou Meto if not already done.

Monitoring

If an MS4 area discharges into a 303(d) listed stream that has a TMDL (Total Maximum Daily Load) established Pulaski County will monitor to determine if the stormwater controls are adequate to maintain compliance with the MS4's waste load allocation. Pulaski County will include quarterly grab samples for the pollutant(s) listed in the TMDL. Pulaski County will sample at the outflows as required in the TMDL report. If Pulaski County is not assigned a waste load allocation in the approved TMDL, no monitoring of the pollutant(s) of concern is required.

For MS-4s discharging into 303(d) listed streams with an impairment identified as caused by stormwater, monitoring must include quarterly grab samples for pollutant(s) listed in the 303(d) listing. Pulaski County will develop a sampling plan which, over time, will

help to identify those outfalls responsible for the discharge of the pollutant(s). The initial outfall(s) to be sampled will be representative of the varying land uses of the area. The initial sampling plan will be submitted to ADEQ for review. All sampling must be submitted with the MS-4 annual report.

Fourmile Creek, Cypress Bayou Watershed-WLA (Waste load allocations) and TMDL (Total Maximum Daily Load) for Fecal Coliform and E. Coli Bacteria.

The 2009 Report Pathogen TMDL For Planning Segments 4D Reaches Segments AR8020301-012, AR8020301-011, andAR8020301-010 establishes WLA and TMDL requirements for streams in the upper reaches of the Cypress Bayou Watershed in Pulaski County's MS-4 areas. The Fourmile Creek segment within Pulaski County is part of this watershed and the following WLAs for Fecal Coliform and E. Coli have been established for this water body:

Contact Type	Pathogen	WLA colony forming units/day
Secondary Recreation	Fecal Coliform	7.20E+10
Secondary Recreation	E. Coli	7.16E+10

Agriculture is the suspected source of the Pathogens listed above according to Table 1 of the document referenced above.

This section of Fourmile Creek will be sampled at the Hwy 5 bridge just outside Pulaski County according to the monitoring process listed on the previous page. The quarterly grab sample analyses will be submitted as part of the MS4's annual report.

GLOSSARY

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 alumina. 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.

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 us 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 - High density polyethylene. A type of 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 – an 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 statues, ordinances, and regulations to require control of pollutant sources and regulate the discharge of pollutants to the storm drain system, and to enter into interagency agreements, contracts, and memorandums of understanding.

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

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.

Organic - A term that refers to molecules made up of two ore 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.

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 terepthalate - 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.

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) – Pulaski 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 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. 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.

ACKNOWLEDGEMENTS

Pulaski County Judge

Barry Hyde

Quorum Court Members

Mr. Doug Reed, District 1
Mr. Tyler Denton, District 2
Ms. Kathy Lewison, District 3
Ms. Julie Blackwood, District 4
Ms. Lillie McMullen, District 5
Ms. Donna Massey, District 6
Ms. Teresa Coney, District 7
Mr. Curtis Keith, District 8
Ms. Judy Green, District 9
Mr. Barry Jefferson, District 10
Mr. Aaron Robinson, District 11
Mr. Luke McCoy, District 12
Mr. Phil Stowers, District 13
Mr. Paul Elliott, District 14
Ms. Staci Medlock, District 15

Director of Public Works

Mr. Steve Brummett

Director of Road and Bridge Department

Mr. Shane Ramsey

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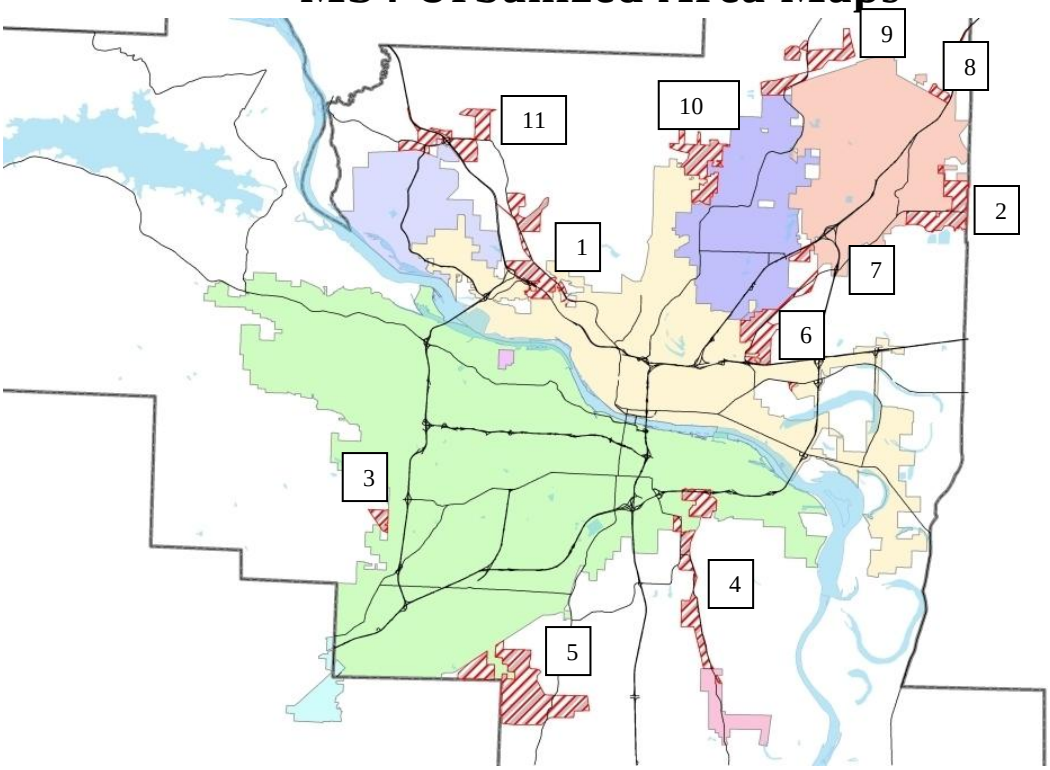
Mr. Sherman Smith, P.E., R.L.S., Director of Pulaski County Public Works Department
Ms. Barbara Richard, Director of Pulaski County Road and Bridge Department
Mr. Walter Catlett, P.E., Catlett Engineering, Inc.

MS4 Urbanized Area Maps



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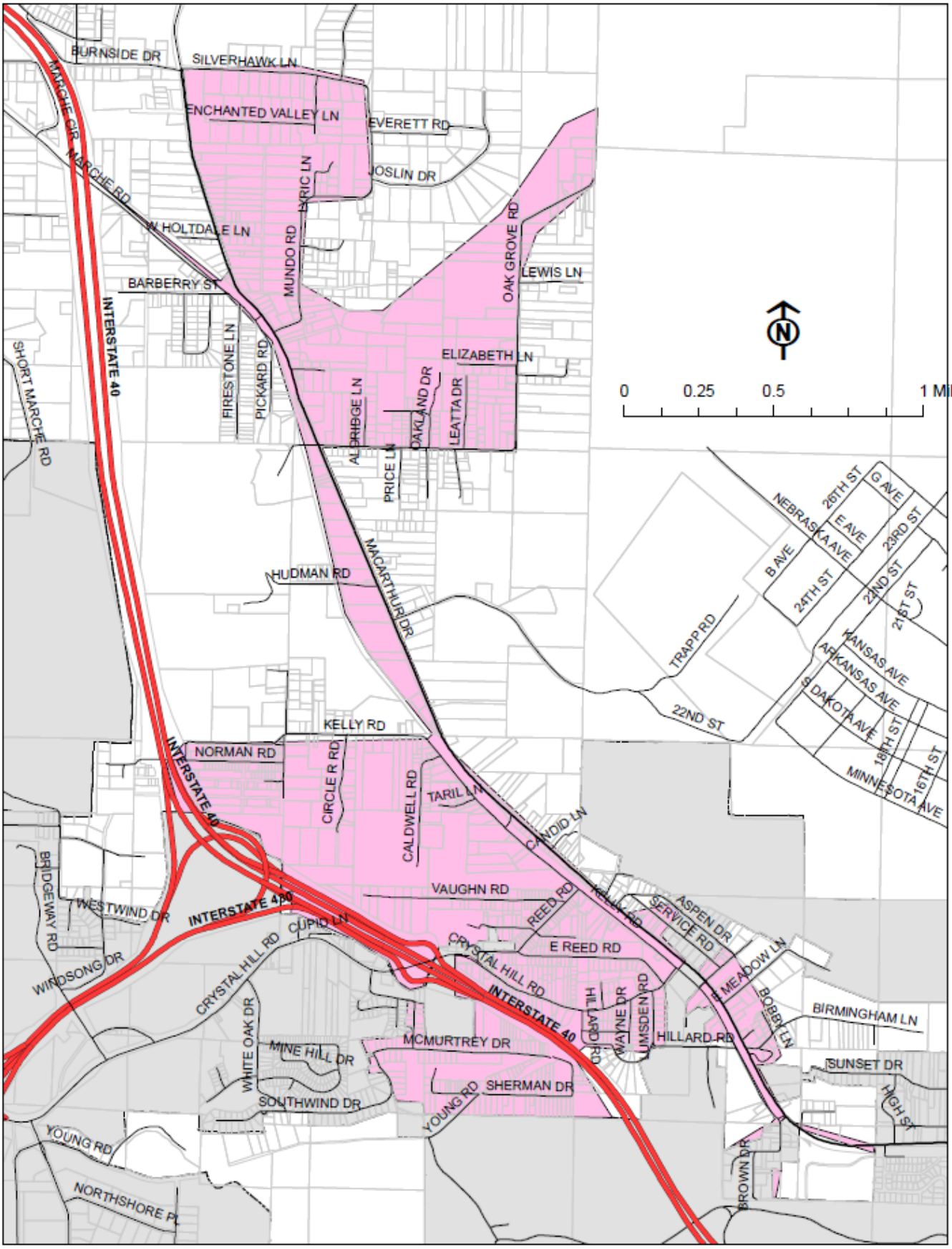
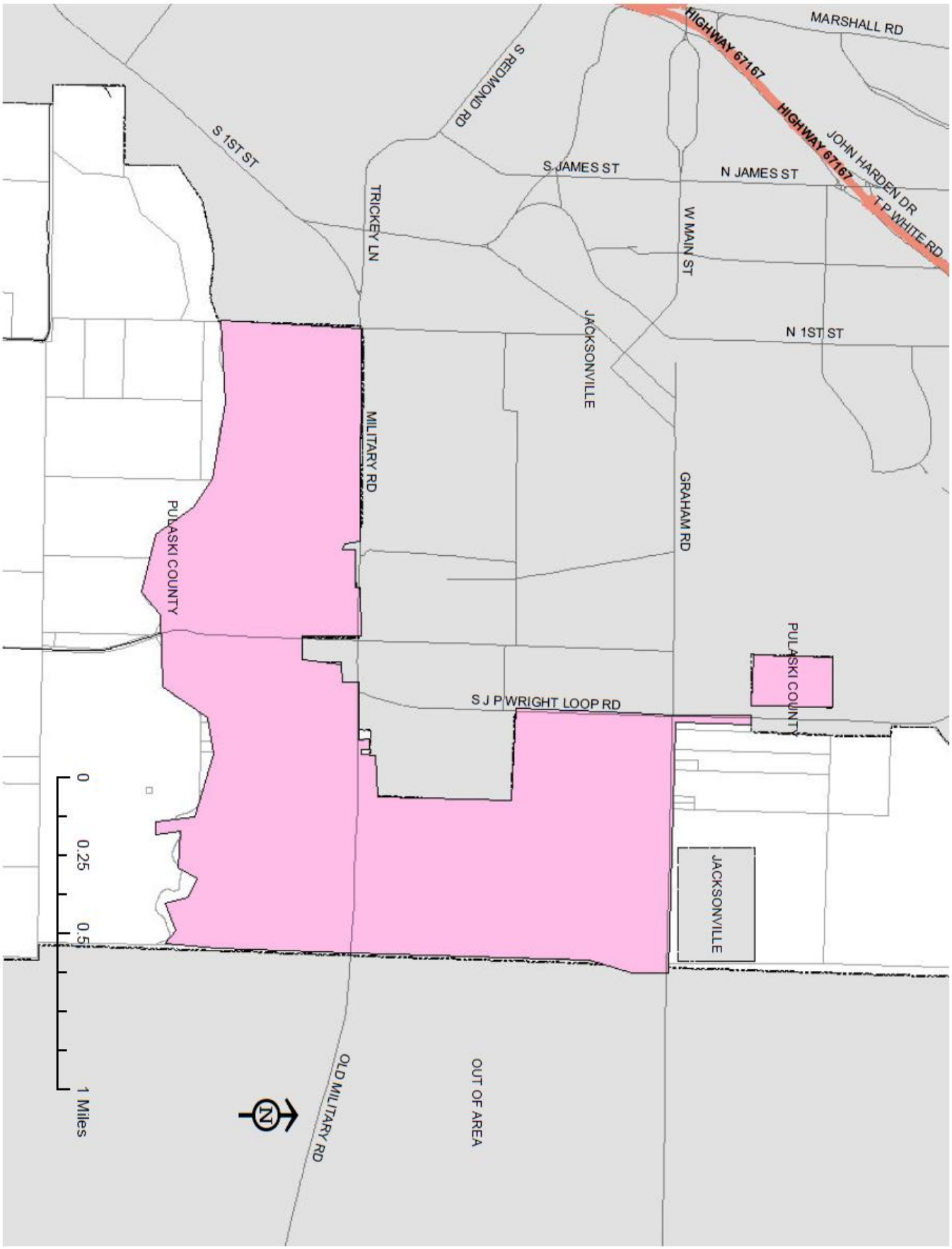
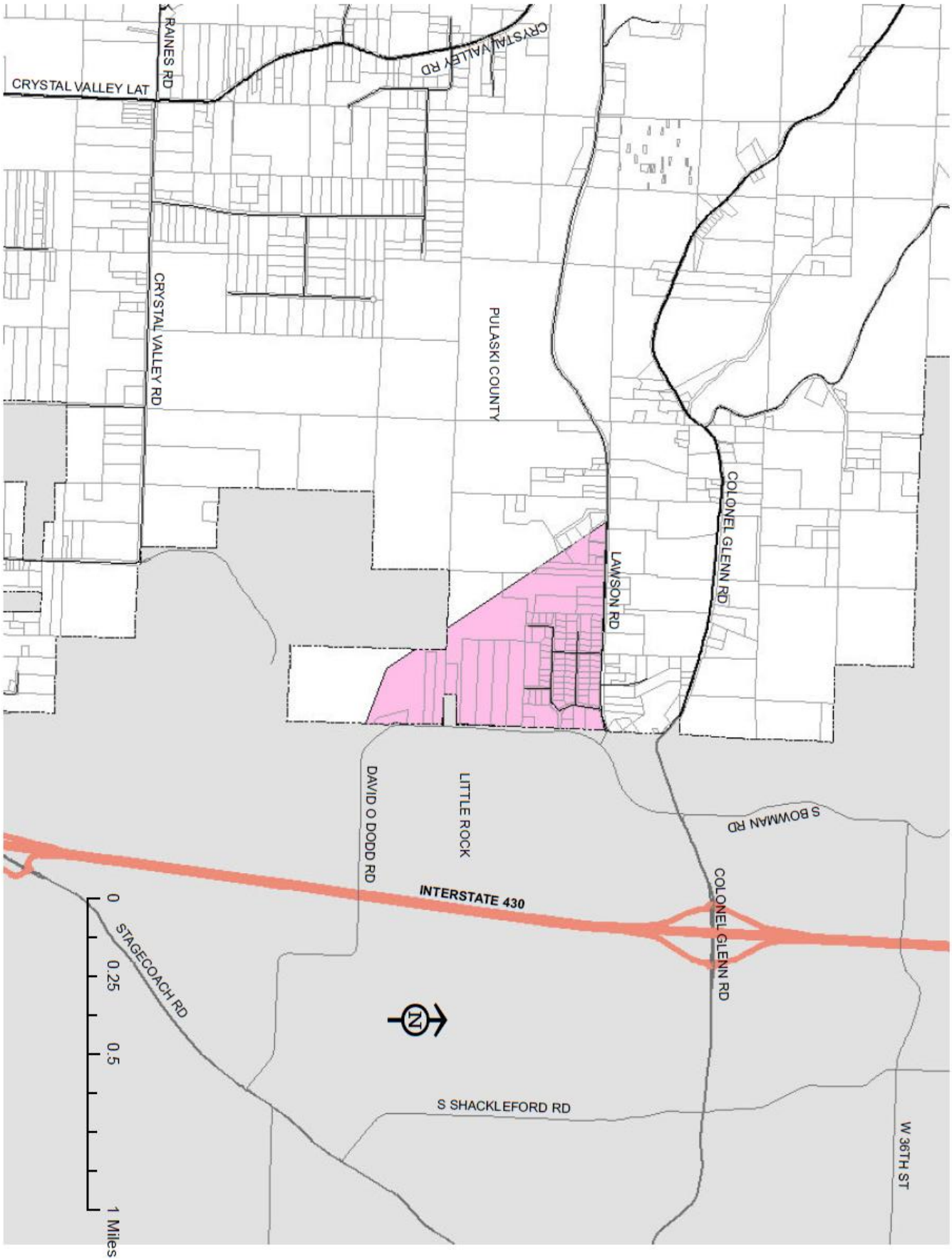


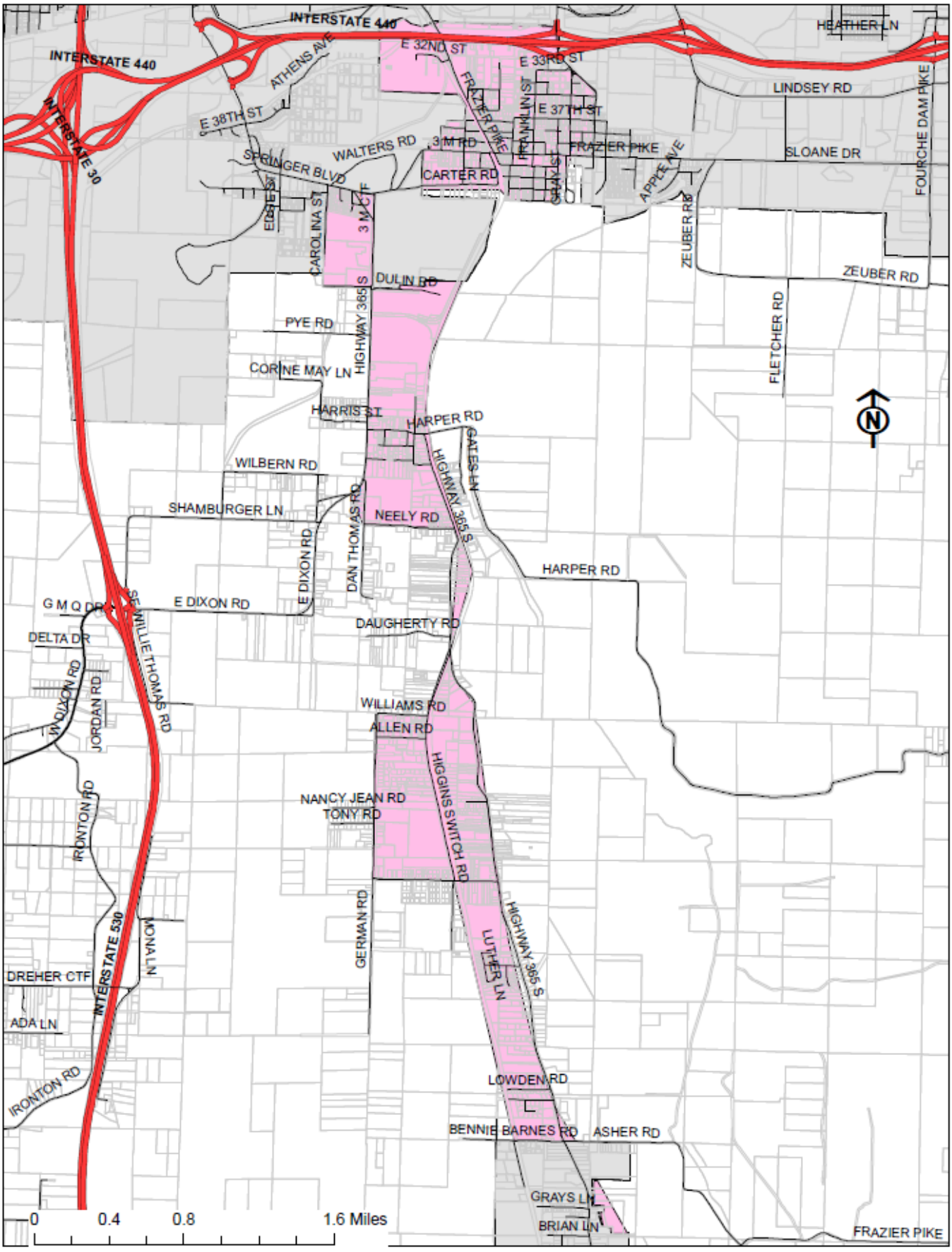
Crystal Hill



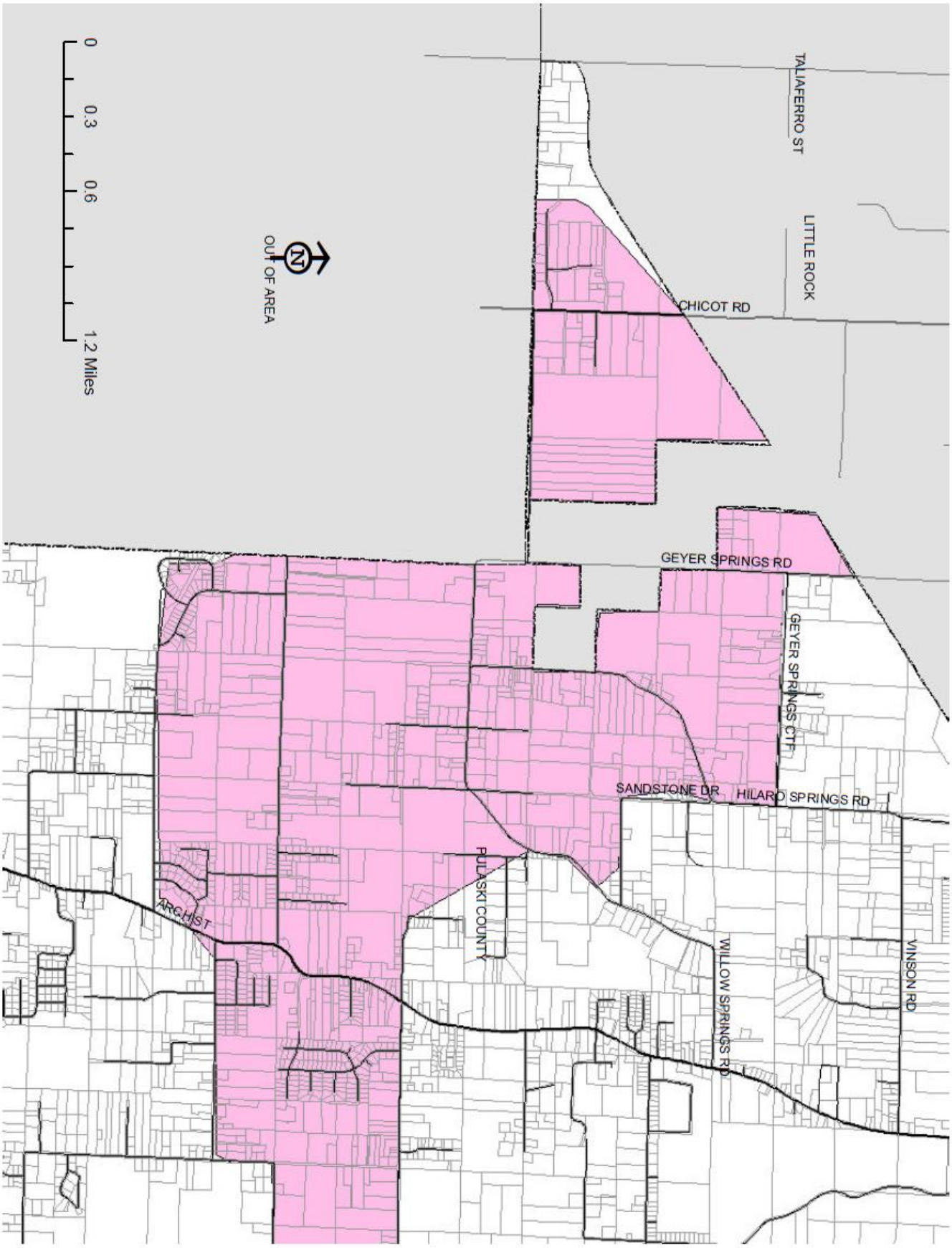
Military Road



Rolling Meadows



College Station/Sweet Home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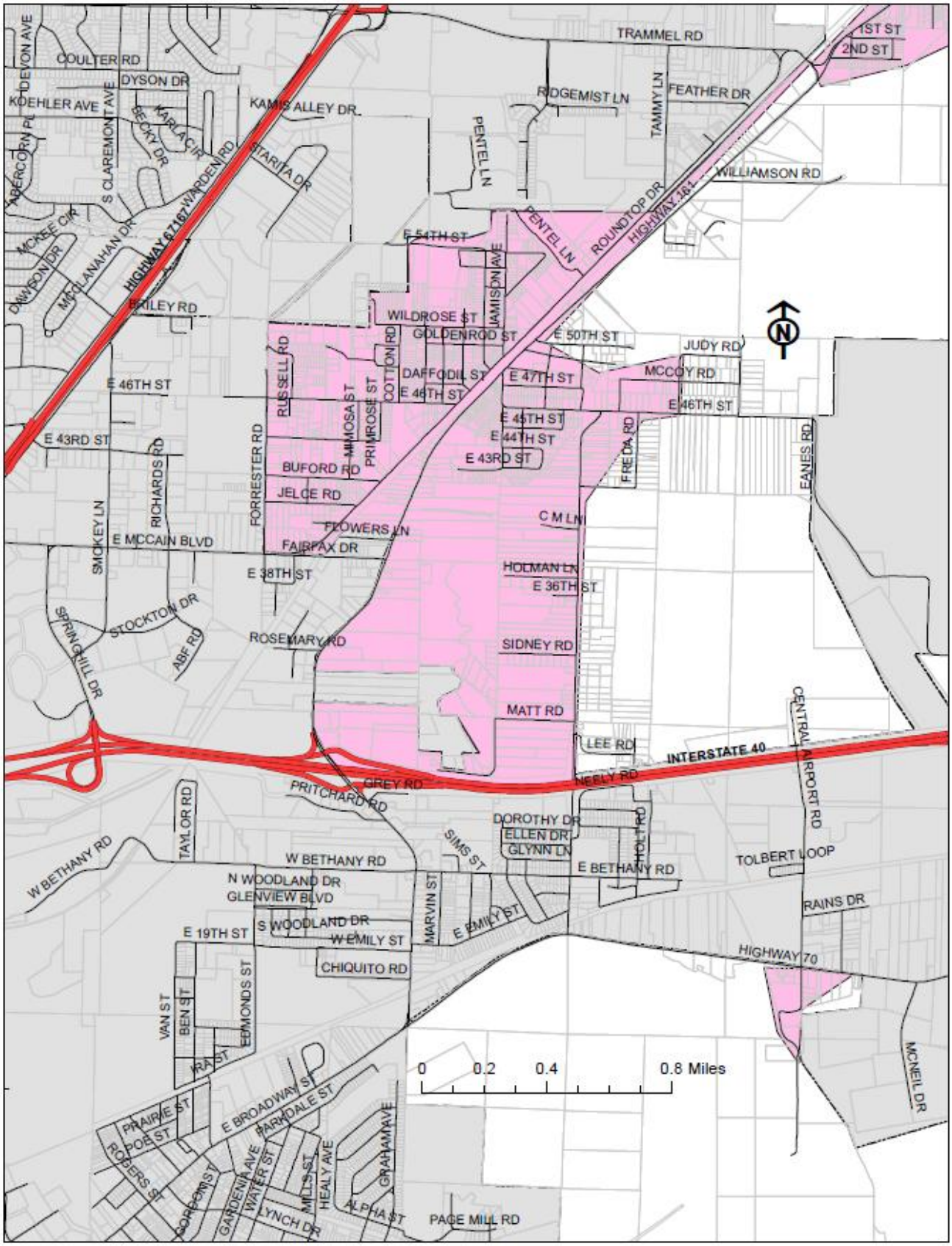
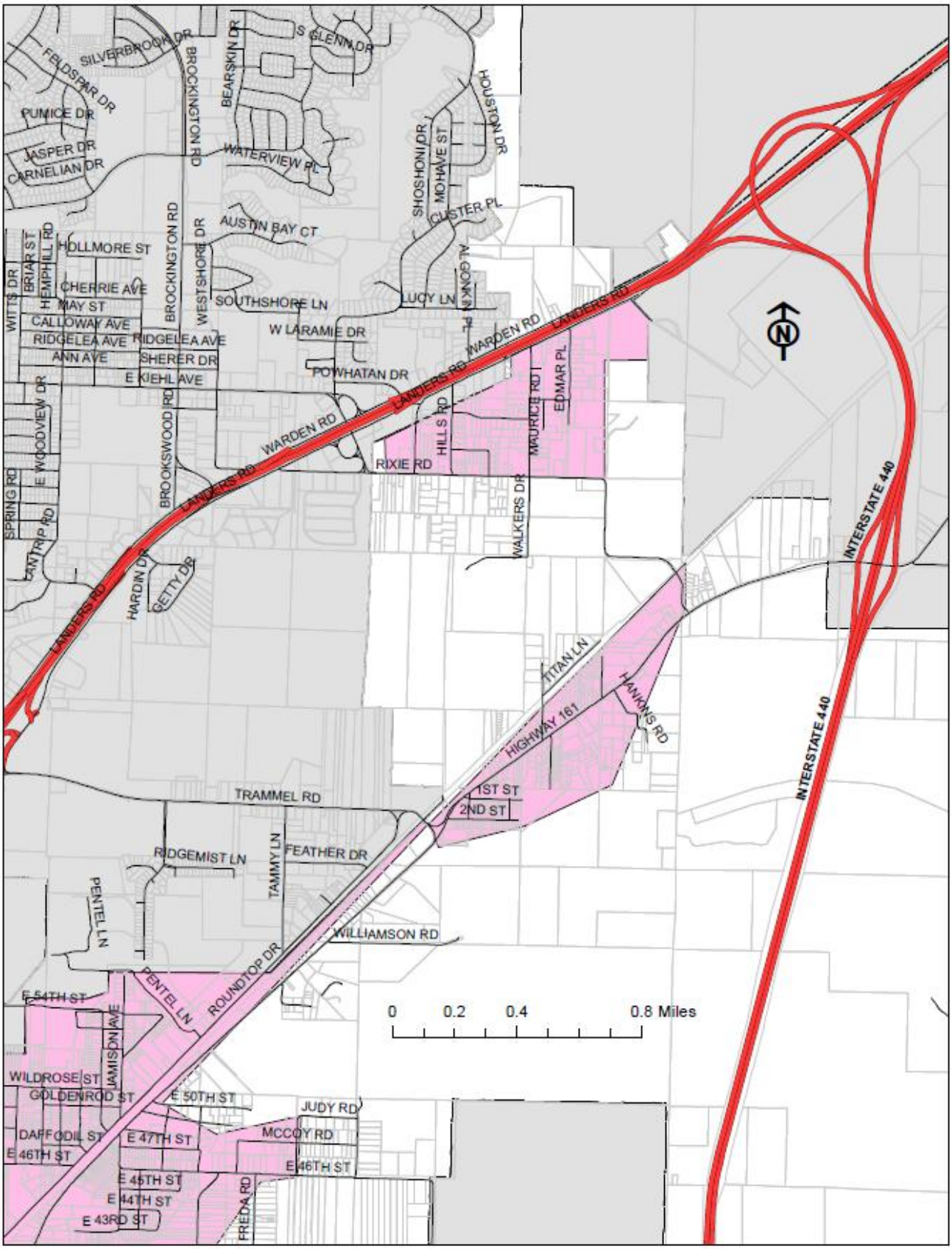
SANDSTONE DR
HILARO SPRINGS RD
PULASKI COUNTY
ARCHIST
WILLOW SPRINGS RD
VINSON RD

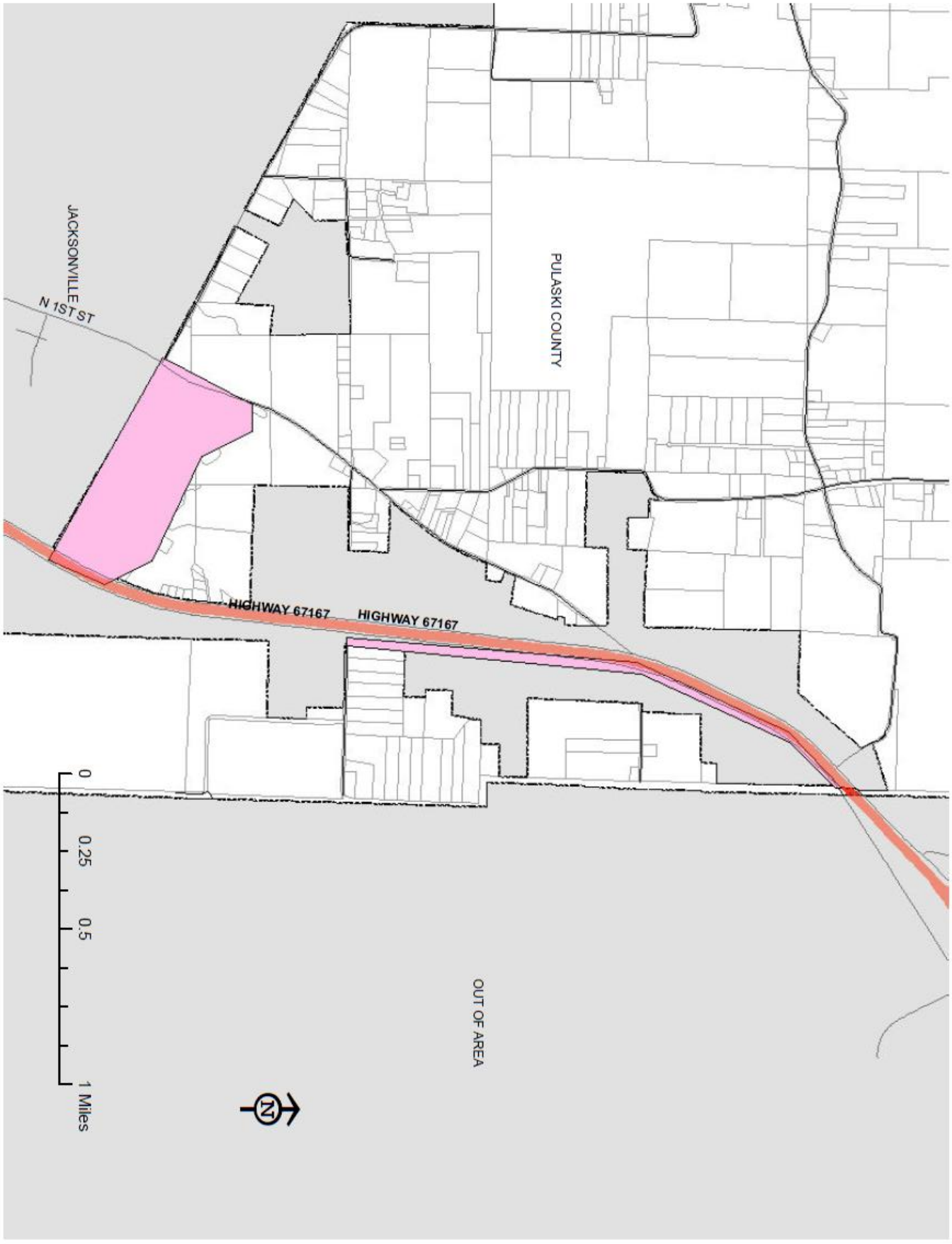
Landmark


TRAMMEL RD
1ST ST
2ND ST
COULTER RD
DYSON DR
KOEHLER AVE
KAMIS ALLEY DR
RIDGEMIST LN
FEATHER DR
TAMMY LN
PENTEL LN
WILLIAMSON RD
ROUNDTOP DR
HIGHWAY 161
HIGHWAY 67/167 WARDEN RD
STARITA DR
KARLA CIR
BECKY DR
S CLAREMONT AVE
ABERCORN PL
DEVON AVE
MCKEE CIR
DAWSON DR
MCCLANAHAN DR
BRILEY RD
E 54TH ST
WILDROSE ST
GOLDENROD ST
JAMISON AVE
E 50TH ST
JUDY RD
MCCOY RD
E 46TH ST
E 47TH ST
DAFFODIL ST
COTTON RD
RUSSELL RD
MIMOSA ST
PRIMROSE ST
E 45TH ST
E 44TH ST
E 43RD ST
FREDA RD
EANES RD
BUFORD RD
JELCE RD
FORRESTER RD
RICHARDS RD
SMOKEY LN
C M LN
FLOWERS LN
FAIRFAX DR
E MCCAIN BLVD
E 38TH ST
HOLMAN LN
E 36TH ST
STOCKTON DR
SPRINGHILL DR
ABF RD
ROSEMARY RD
SIDNEY RD
MATT RD
LEE RD
INTERSTATE 40
NEELY RD
GREY RD
PRITCHARD RD
CENTRAL AIRPORT RD
DOROTHY DR
ELLEN DR
GLYNN LN
HOLT RD
TAYLOR RD
W BETHANY RD
SIMS ST
E BETHANY RD
TOLBERT LOOP
N WOODLAND DR
GLENVIEW BLVD
S WOODLAND DR
W EMILY ST
E EMILY ST
MARVIN ST
RAINS DR
E 19TH ST
CHIQUITO RD
HIGHWAY 70
VAN ST
BEN ST
EDMONDS ST
IRA ST
MCNEIL DR
0 0.2 0.4 0.8 Miles
E BROADWAY ST
PARKDALE ST
PRAIRIE ST
POPE ST
ROBERTS ST
GORDON ST
GARDEN AVE
WATER ST
LYNCH DR
MILLS ST
HEALY AVE
GRAHAM AVE
ALPHA ST
PAGE MILL RD

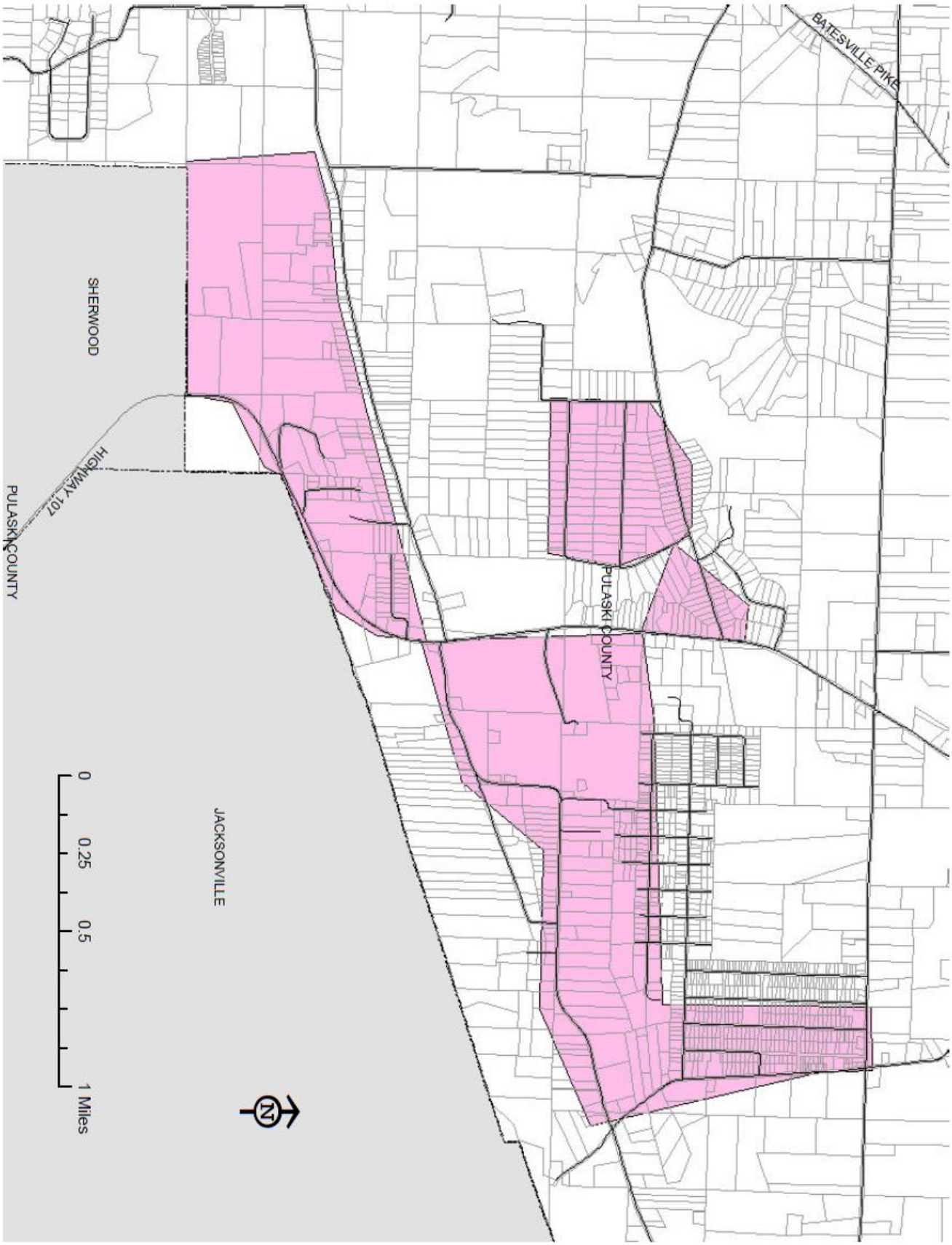
McAlmont


FELDSPAR DR
SILVERBROOK DR
PUMICE DR
JASPER DR
CARNELIAN DR
BROCKINGTON RD
BEARSKIN DR
S GLENN DR
WATERVIEW PL
HOUSTON DR
SHOSHONI DR
MOHAVE ST
CUSTER PL
ALGONK PL
AUSTIN BAY CT
WESTSHORE DR
HOLLMORE ST
BRIAR ST
HEMPHILL RD
WITTS DR
CHERRIE AVE
MAY ST
CALLOWAY AVE
RIDGELEA AVE
ANN AVE
SHERER DR
E KIEHL AVE
SOUTHSHORE LN
LUCY LN
W LARAMIE DR
POWHATAN DR
WARDEN RD
LANDERS RD
RIXIE RD
HILLS RD
MAURICE RD
EDMAR PL
WALKERS DR
BROOKSWOOD RD
E WOODVIEW DR
SPRING RD
CANTRIP RD
HARDIN DR
GETTY DR
INTERSTATE 440
TITAN LN
HANKINS RD
HIGHWAY 161
1ST ST
2ND ST
TRAMMEL RD
RIDGEMIST LN
FEATHER DR
TAMMY LN
PENTEL LN
WILLIAMSON RD
ROUNDTOP DR
E 54TH ST
JAMISON AVE
WILDROSE ST
GOLDENROD ST
DAFFODIL ST
E 46TH ST
E 50TH ST
E 47TH ST
JUDY RD
MCCOY RD
E 45TH ST
E 44TH ST
E 43RD ST
FREDA RD
0 0.2 0.4 0.8 Miles
N

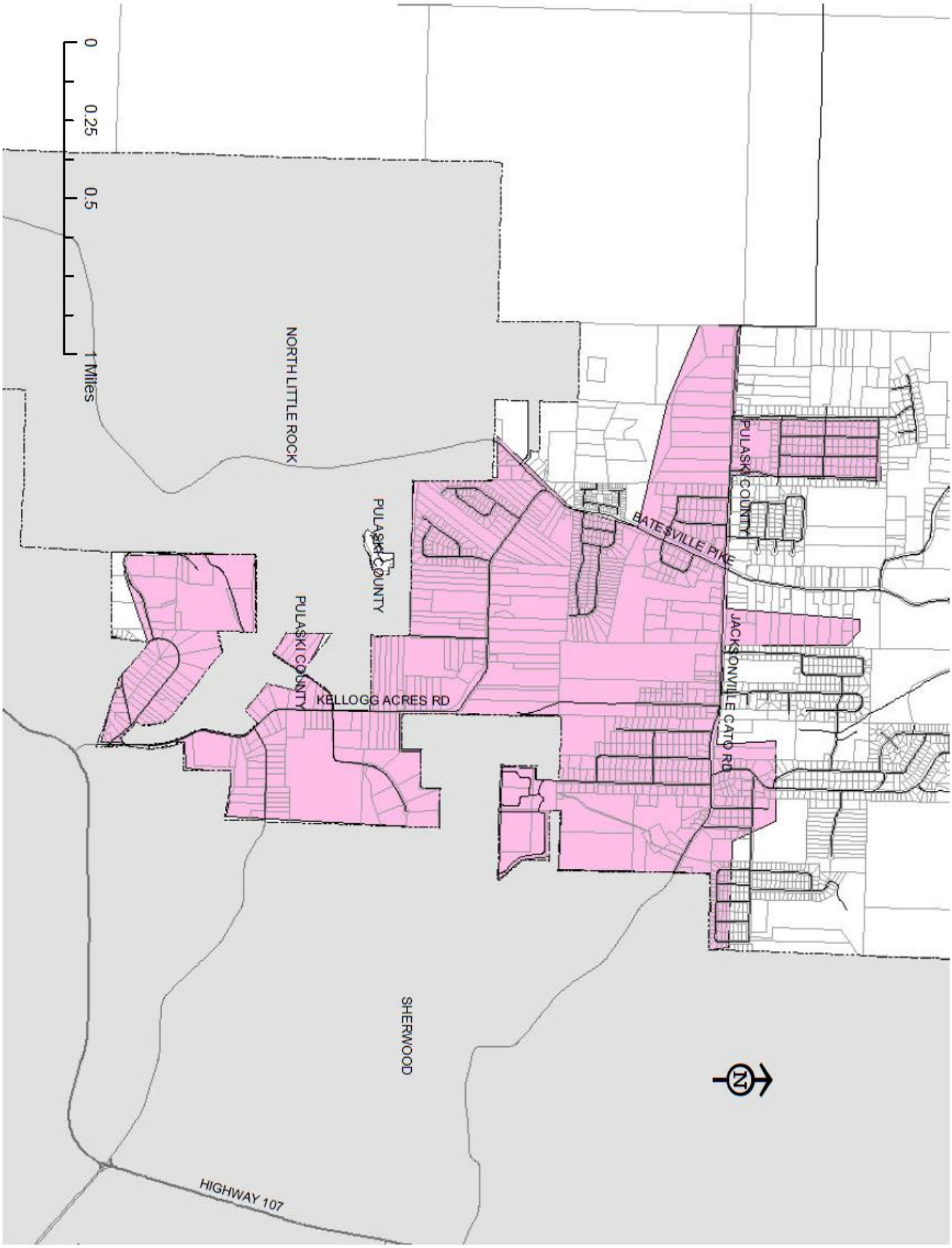
Highway 161



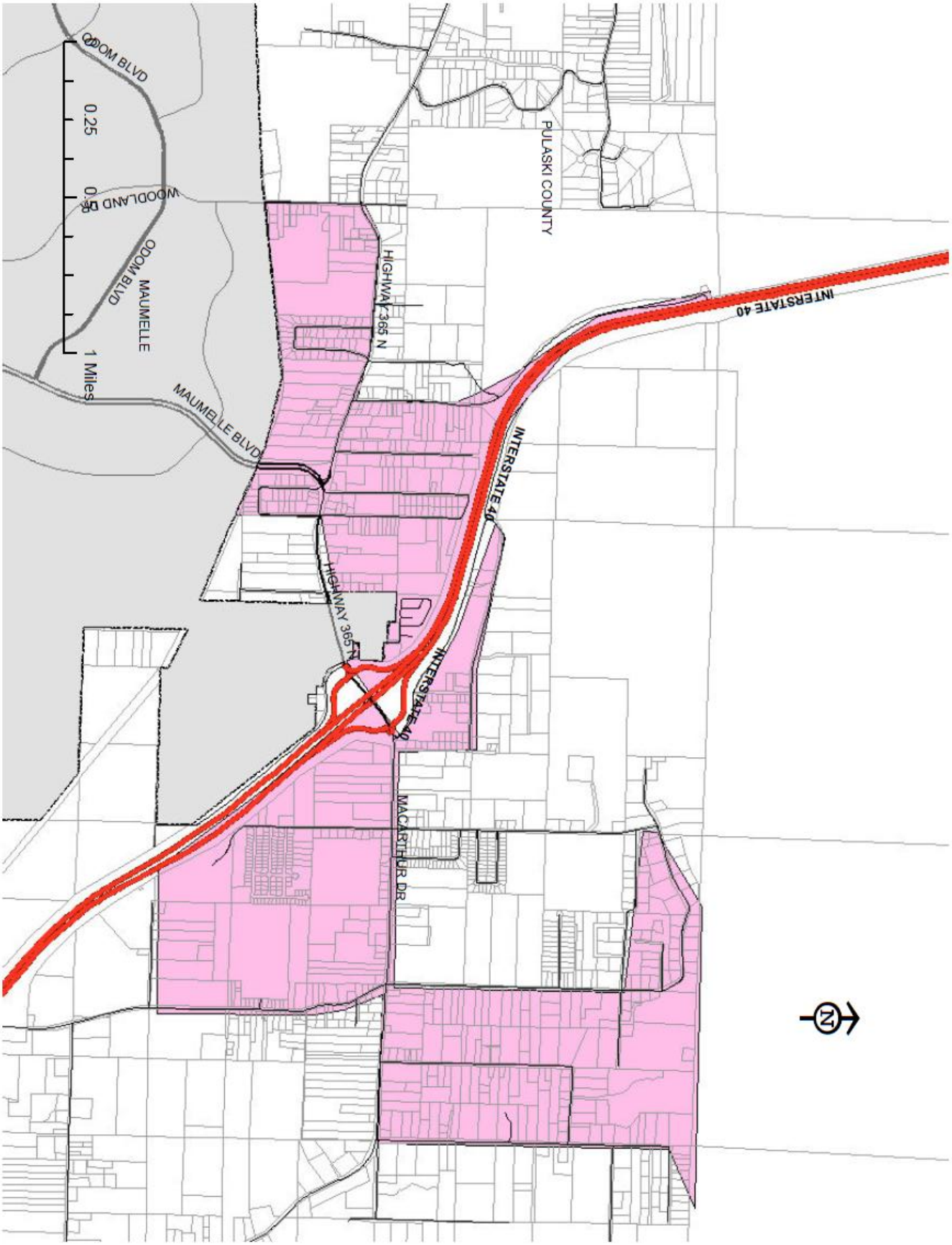
Jacksonville North


BATESVILLE PIKE
SHERWOOD
HIGHWAY 107
PULASKI COUNTY
PULASKI COUNTY
JACKSONVILLE
0
0.25
0.5
1 Miles
N

Jet City



Jacksonville Cato


ODOM BLVD
0.25
0.5
WOODLAND DR
ODOM BLVD
MAUMELLE
1 Miles
MAUMELLE BLVD
PULASKI COUNTY
HIGHWAY 365 N
INTERSTATE 40
INTERSTATE 40
HIGHWAY 365
INTERSTATE 40
MACARTHUR DR
N

Marche