CITY OF POPLAR BLUFF
STORM WATER MANAGEMENT PROGRAM
UPDATE
DRAFT SEPTEMBER 2023

SUBMITTED TO:
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

PREPARED FOR:
THE MAYOR AND CITY COUNCIL
OF THE CITY OF POPLAR BLUFF, MISSOURI

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1.0 PERMIT AREA CHARACTERISTICS

1.1 CITY OF POPLAR BLUFF DESCRIPTION

The City of Poplar Bluff is situated at the junction of US Highways 60 and 67 in the heart of Butler County, Missouri, serving as the County Seat. According to the 2020 United States Census, the population of Poplar Bluff is 16,225 persons. The City of Poplar Bluff Small MS4 operates under the authority of Missouri Operating Permit MOR040027.

The City of Poplar Bluff is a third-class city that operates under a Council – City Manager form of government. The City Council is comprised of seven elected council members, five representing separate wards of the city and two serving the city at-large. From these seven council members a Mayor and Mayor Pro-Tem are elected. Council members are elected for three-year terms. The City Council appoints a City Manager to oversee the day-to-day operations of the City.

1.2 LAND USE CHARACTERISTICS

The City of Poplar Bluff contains approximately 6,315 acres of land; 70% of which is zoned for residential use, 58% is zoned for single-family use, 6.7% duplexes and 4.8% for multi-family use according to the City's 2007 Comprehensive Plan. Today there are approximately 885 acres that fall within one of the City's three commercial zoning districts, representing approximately 14% of the City's total land mass. The City's industrial zoned areas consist of approximately 1,075 acres and make up 17% of the city's land area.

1.3 TOPOGRAPHY

Poplar Bluff is located at the convergence of two environmental zones, the Ozark Foothills and Mississippi Alluvial Valley. Both environmental areas consist of a variety of rich soils. Soils in the higher elevations are composed of rich clayey loam with underlying sand or gravelly clay. The surrounding swamplands, drained during the 19th century, consist of heavier clays composed of a sandy loam and alluvial soils rich in organic materials and well suited for agricultural use. Some of the largest trees in the region grew out of the fertile lowlands of the Black and St. Francis rivers, nourished by centuries of nutrient rich flood deposits and sedimentation. The natural swamps in the low-lying areas produced enormous cypress, water tupelo, while the higher grounds of the Ozark Foothills grew massive oaks, ash and other hardwoods such as Poplar, for which the city gained its namesake.

These two types of landforms continue to present challenges and opportunities with respect to land use & development. East of the Black River is a vast floodplain and the swampy lowlands of the Mississippi Alluvial Valley. The elevations in this area are between 320-340 feet above sea level. The low-lying flat lands are poorly drained and prone to flooding, but flat and otherwise easily accessible by rail and road. Due to these reasons, and the fact they attract huge concentrations of mosquitoes, they are better suited for agricultural and industrial uses rather than residential and commercial uses. West of the Black River are the rocky soils and hilly terrain known as the Ozark Foothills. This area is characterized by gently rolling topography drained by small streams, which have cut "V" shaped valleys creating steep slopes in some areas. The Ozark Foothills in this area range in elevation from 340 feet to 580 feet above sea level, with

the largest changes in elevation occurring along the major stream channels that flow through Poplar Bluff. The Ozark Foothills provide stable soils that are not prone to flooding. These areas are also further from the rail lines and other industrialized areas, yet still easily connected to the downtown and the local schools and parks Therefore, the Ozark Foothill area is better suited for residential and commercial use.

Excessive or steep slopes, such as those located in the Ozark Foothills, are a factor in many environmental problems and can significantly increase the vulnerability of land to damage from human activities. The potential for erosion and resulting sedimentation due to clearing increases as the slope increases. Generally, land with a slope of less than five (5) percent is considered moderately sloping and is capable of accommodating most types of development activities. Slopes exceeding 15 percent (15 feet of vertical change per 100 feet of horizontal distance) presents a major development constraint and are unsuitable for intensive development. Steep slopes also pose a problem for septic tank filtration systems, causing health and aesthetic problems. Therefore, slope is an important factor to consider when evaluating the relative suitability of vacant land for future development. Steep slope areas are often economically unfeasible due to the high costs to install public infrastructure and expensive construction techniques required. Therefore, this plan recommends future growth in areas with low to moderate slopes that support more economical development and conventional construction practices.

1.4 CLIMATE

The City of Poplar Bluff's climate is characterized by hot, humid summers and mild to cool winters. There are significant temperature differences with the warmest month occurring in July with an average high of 89 degrees and the coolest month in January with an average high of 39 degrees. Precipitation is well-distributed through out the year with an average annual rainfall of 46.8 inches.

1.5 LOCAL WATERSHEDS AND BODIES OF WATER

The river channel of the Black River cuts through the city limits of Poplar Bluff, along with several creeks including the largest, Pike Creek. The City falls within the Upper Black River Watershed that stretches from northern Reynolds County through Butler County to the Arkansas state line.

1.6 STORM WATER CONVEYANCE SYSTEM

The City of Poplar Bluff's storm water conveyance system is separate from the City's sanitary sewer system. The City's storm water system consists of both natural and man-made structures. Included within the system ae curb and gutter, storm drains, storm pipes, box culverts, detention basins, ditches, and streams.

Currently there are no accurate maps of the entire storm water conveyance system or no accurate count of all the inlets. As part of the Minimum Control Measures #3, Illicit Discharge Detection and Elimination, the City has included an activity to map the storm water conveyance system over the course of several years as funds allow. This will also include inlets and detention basins.

Runoff from the City crosses the city limits at seventeen (17) separate locations as shown on Exhibit 1, entitled Storm Water Outlets. Drainage throughout the City consists of a combination of creeks, ditches, culverts, underground storm sewer systems, floodgates and storm water pumps. The majority of the older portions of the City, and the low-lying areas drain though systems of ditches and culverts. Some of these areas have been enhanced throughout the years to eliminate flooding problems and reduce health and public safety risks associated with deep ditches.

Much of the drainage in the old downtown area consists of storm water inlets and underground storm sewers, which transport water out of the City and into Black River. The Relief Street/Valley Street drainage system consists of various types and sizes of collection pipes, numerous drop inlets and area drains, and a flood gate and lift station. The flood gate and lift station prevent rising flood waters of Black River from flooding the area while expelling runoff from within the drainage basin.

Since October of 1990, the City of Poplar Bluff has been requiring storm water management on new development and redevelopment projects within the City. In 2003, the City revised the Storm Water Management Ordinance to prohibit illicit discharge and establish enforcement procedures. Storm water detention has been the main method of storm water management required. Since 2003, housekeeping items on the current ordinance have taken place over the years.

The specific MS4 receiving waters of the state are:

Black River	Pike Creek	Hogg Creek
Hill Creek	Park Creek	Sunset Creek
Woodlawn Branch	Main Ditch	Cravens Ditch
Shady Creek		

1.7 SANITARY SEWER SYSTEM

The City's sanitary sewer system is operated by the City of Poplar Bluff Municipal Utilities Department. The system has a three-cell aerated covered lagoon with a nitrification reactor and UV disinfectant treatment plant that was completed in 2020 with a capacity well over six million gallons per day. The system is comprised of 24 collection basins and 3,600 manholes. The collection system is comprised of cured in place, clay, ductile iron, PVC, reinforced concrete pipe and truss pipe.

1.8 WATER QUALITY

The City of Poplar Bluff has four streams/rivers that are listed on the State of Missouri's List of Impaired Waters, or Section 303(d) of the Clean Water Act. These include the Black River, Craven Ditch, and Pike Creek.

Table 1.0 Impaired Water Bodies

Impaired Water Bodies					
Year	**Name**	**Impairment Size**	**Unit**	**Pollutant**	**Source**
2002	Black River	47.10	Miles	Mercury in Fish	Atmospheric Deposition
2012	Cravens Ditch	11.60	Miles	Oxygen, Dissolved	Unknown
2010	Pike Creek	6	Miles	Oxygen, Dissolved	Unknown

Main ditch is on the 2022 Public Notice Delist to be removed from the 303 (d) list.

2.0 PERMIT RESTRICTIONS AND EXEMPTIONS

2.1.A The City will prohibit non-stormwater discharges and stormwater discharges that combine with sources of non-stormwater into the MS4 except where authorized by the MOR04C018 permit.

2.1.B This operating permit does not affect, remove, or replace any requirement of the Endangered Species Act, the National Historic Preservation Act, the Comprehensive Environmental Response, Compensation and Liability Act, or the Resource Conservation and Recovery Act.

2.1.C The City will implement Best Management Practices (BMPs) via an iterative process to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) into the MS4 for the goal of attainment with Missouri Water Quality Standards.

2.1.D The city will implement and enforce a Storm Water management Program per the requirements of the operating permit in accordance with the Clean Water Act, NPDS regulations, and in accordance with the Missouri Clean Water Act.

2.1.E The City will comply with all provisions and requirements contained in the permit and with its individual SWMP including plans, ordinances, and schedules developed in fulfillment of the permit.

2.2 Authorization to Discharge and Application Requirements

2.2.A The City has submitted a complete application for the MS4 general permit. The City submitted their application on the latest version of the application on form K, Form M, as well as Form K.

2.2.B The City's permit applications were signed and certified by the City's MS4 coordinator in accordance with Missouri State Law.

2.2.C The City's permit applications were submitted within 180 days prior to the expiration date of its current operating permit.

3.0 STORMWATER MANAGEMENT PROGRAM AND PLAN

3.1 STORMWATER MANAGEMENT PROGRAM

3.1.A To the Extent allowable under state and local law, this Storm Water Management Program (SWMP) was developed and will be implemented and enforced according to the requirements of the general permit. The previous SWMP was assessed and modified as seen necessary.

3.1.B The City is updating its SWMP with appropriate appendices and supplemental attachments explaining the SWMP. The SWMP will describe schedule, procedures, contacts, or other items as required by the permit.

- The SWMP will be maintained to ensure consistency with the implantation, continuity of the SWMP, and iterative reviews of programmatic BMPs and procedures.

- The SMWP will be updated within 90 days after the renewal of the permit.

3.1.C Supplemental items were added to the SWMP. They are as follows:

3.1.D The city will implement problematic BMPs consistent with the provisions of this permit to achieve compliance with the standard of reducing pollutants to the maximum extent practicable per 40 CFR 122.34.

3.1.E The city will replace or modify ineffective BMPs with effective BMPs when deemed necessary. If the name of the MS4 contact changes, the city will update on the next SWMP report and/or via email to the Department at MS4@dnr.mo.gov.

3.2 SHARING RESPONSIBILITY

3.2.A The city currently does not share any responsibilities or control measures for its MS4 program within its boundaries with another government entity. The city of Poplar Bluff is solely responsible for oversight to ensure compliance with the permit.

3.3 REVIEWING AND UPDATING THE STORMWATER MANAGEMENT PROGRAM

3.3.A the MS4 operator will conduct an annual review of the SWMP in conjunction with the preparation of the MS4 SWMP Report required under Section 5.

3.3.B Changes to the SWMP as requested by the Department will be made in accordance with 10 CSR 20-6.200.

3.3.C In the event of a transfer of ownership, change in continuing authority, or change in responsibility for SWMP implementation; the city shall implement the Stormwater Management Program on all new areas added to the city's portion of the MS4 as expeditiously as possible but not later than one (1) year from the addition of the new areas.

4.0 MINIMUM CONTROL MEASURES

4.1 MCM 1 PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

The MS4 will implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

4.1.A The city will target the following audiences that are most likely to have significant stormwater impacts. They are as follows:

- Residents
- Developers and contractors

4.1.B In order to minimize the pollutants in storm water runoff, the city will target specific pollutants for each target audience. They are as follows:

Audience	Target Pollutant
Residents	Trash and other Solid Waste
Developers and Contractors	Sediment Runoff

4.1.C The city will utilize appropriate educational resources to be used as BMPs in conjunction with the selected pollutants for the selected target audiences. During the permit cycle, the city will continually evaluate the effectiveness of each BMP and modify or replace BMPs that are judged to be ineffective. The appropriate educational resources to be used as BMPs are as follows:

BMPs	Measurable Goals	Tracking & Adaptive Management	Implantation
Social media posts, social media campaign	As educational materials are developed, they will be shared with local citizens through the City's social media outlet that include Facebook and Twitter,	The number of views, impressions, and other interactions shall be tracked. Interactions from posts shall be recorded and filed. The MS4 Operator shall use this to see	As developed. Permit Year 2023-2028

	this will be done quarterly each year.	which messages get reaction, and if certain messages may need more education.	
Utility Bill Insert	The sum of all bill inserts distributed annually will be at a minimum equal to the most recent U.S Census Bureau decennial housing units value for the permit area.	The applicable U.S. Census housing units value shall be recorded, and the amount of material shall be recorded.	Annually. Permit Year 2023-2028
Targeted education campaign for developers and contractors regarding sediment runoff, via mail, email, or in person.	Education materials will be distributed as building permits are issued.	Educational material distributed shall be tracked. The city will follow up on if noticeable behavior has changed.	As permits are issued. Permit Year 2023-2028
Information and educational materials are added to the city's website.	The city's website is always available and will be maintained with up-to-date information and working links. All links will be checked, and the page shall be updated as necessary at a minimum annually. The city's website is maintained all year.	The number of visits will be tracked. The city will use this to see the total number of visits per month, and if certain materials or messages need more education.	Minimum Annually. Permit Year 2023-2028
Articles will be published in the local newspaper, the Daily American Republic.	Topics developed will be group specific and address the activities and or pollutants of concern at a seasonally appropriate time. A minimum of two articles annually shall be published.	To the extent possible, the pollutant will be evaluated before the article and again after to see if there has been change. Followings to social media accounts or website visits will be tracked to determine if the article was effective in reaching people.	Semi Annually. Permit Year 2023-2028

4.1.D The city will create opportunities, or support activities that are coordinated by citizen groups, for residents and others to become involved with the Stormwater Management Program. The activities, (BMPs) will make an effort to impact stormwater runoff by improving water quality. The involvement BMPs are as follows:

BMPs	Measurable Goals	Tracking & Adaptive Management	Implantation
The Poplar Bluff Parks and Recreation Department maintain Pet Waste Stations within the City parks and greenway trails. As new trails are constructed, more pet waste stations will be added as needed. Downtown Poplar Bluff will also continue to maintain the pet waste station that is located at the dog park in downtown Poplar Bluff.	There are currently six (6) locations located throughout the city and as new trails are constructed, more pet waste stations will be added as needed.	The city will track the amount collected by recording the amount of waste collected at each site. The amount shall be recorded and filed for convenience and to help determine effectiveness of this BMP. Priority areas can be determined based on the amount of waste collected at each site.	Monthly. Permit Year 2023-2028
The city supports and promotes its local litter clean up event Adopt-A-Street program.	Approximately six (6) miles of roadway have been adopted by citizens, clubs, organizations, church groups, and businesses.	The city will track participation by noting the street and number of bags collected. Adopted streets are to be cleaned quarterly and if the entity misses 2 or more simultaneous quarters, they will be removed from the program.	Quarterly. Permit Year 2023-2028
The Chamber of Commerce uses their resources to assist with paying to pick up litter along major intersections.	Services are provided as needed or as requested from the city. This is done at a minimum annually and over the course of a permit cycle will cover	The amount collected and paid will be tracked.	Annually. Permit Year 2023-2028

	at least two miles.		
The city of Poplar Bluff Street Sweeping Program.	The street sweeper runs three times a week.	Documentation includes the number of hours run and the amount collected in cubic yards.	Three times a week. Permit Cycle 2023-2028
The city of Polar Bluff's Bulky Item Pick Up offers an opportunity for residents to dispose of bulky items.	This is offered to residents on a monthly basis allowing up to four items to be picked up.	The number of citizens using this service and descriptions of refuse are tracked and recorded by the tickets sold.	Monthly. Permit Year 2023-2028
The city of Poplar Bluff offers a "Buff up the Bluff" program on a yearly basis allowing residents to bring yard waste and bulky items to the leaf disposal site.	Once per year, residents have the opportunity to bring yard waste and bulky items to be properly disposed of free of cost.	The number of citizens using this service and descriptions of refuse are recorded at each event. These records provide quantitative numbers and results which help judge its effectiveness.	Annually. Permit Year 2023-2028
The city of Poplar Bluff sponsors a "Stream Team" providing hands on projects such as litter control, stream bank stabilization, streamside tree planting, water quality monitoring, storm drain stenciling, etc.	This is hosted bimonthly and is made up of volunteers.	Locations and dates will be tracked along with amount of waste collected, or trees or plants planted or removed, what parameters of water quality were measured/monitored, or miles improved or restored.	Bimonthly. Permit Year 2023-2028

4.1.E The city will make every effort to support each BMP listed in 4.1.D. Support given to the residents of Polar Bluff and coordinating groups will be as follows:

- Plan, or assist with planning, the event or activity;
- Contribute supplies, materials, tools, or equipment;
- Provide assistance from MS4 staff during the activity;
- Provide assistance with recruiting volunteers for events;
- Make a space available for projects, meetings, or events;
- Advertisement for the events;

- Supply disposal services;
- Arrange land or stream access;
- Financial support; and
- In-kind donations such as food.

4.1.F The city shall review their Public Education and Outreach on Stormwater Impacts Program using adaptive management, at minimum, annually and update implementation procedures and or BMPs as necessary within the requirements of this permit.

4.2 MCM 2 PUBLIC PARTICIPATION

4.2.A The city shall develop and incorporate a program to bring about public participation in which the public has the opportunity to participate in the development and oversite of the City's Storm Water Management Program. The public will have the opportunity to participate in the permit renewal process as well as developing and implementing the Storm Water Management Program.

4.2.B In February of 2021, the City of Poplar Bluff put their public notice of the draft permit and the SWMP on their webpage and on their Facebook page with the opportunity for comments. The webpage still has the public notice active, however, no comments have been made.

4.2.C A public meeting has not been held to give the public an opportunity to comment on the states permit as well as the city's SWMP. (Meeting is required by the permit must be advertised for at least 30 days prior)

4.2.D The city will have a publicly available method to accept public inquiries, concerns or to take information. This is by means of:

- The City accepts public inquiries or concerns via email or phone calls to the City Hall

- The city has issued a Facebook page that allows for storm water management issues to be reported on the service. The public having access to the SWMP can comment/use the Facebook page to comment on any of the MCMs.

4.2.E Does the city have a stormwater management panel or committee and if so has it been made available to the public? Opportunities for a citizen representative to sit on the panel or committee should be provided.

4.2.F Poplar Bluff has a city manager form of government and therefore has a City Council. A representative of the MS4 Storm Water Management Program will provide an update to the City Council on the status and compliance of the SWMP, once a year.

4.2.G The Public Participation Program of the city was evaluated to ensure compliance with the SWMP and the permit, as well as promoted to the community.

4.2.H The City used tracking mechanisms to track attendance, inquiries or concerns per the requirements of the permit.

4.2.I The city will use adaptive management to review the Public Participation Program once a year. Coming as preparation for the MS4 Storm Water Management Program report. This review will be used to see the best way to reach the public, how effective the mechanism used, the effectiveness of reaching the public, and whether the public and city are working towards the same goals. Ultimately, trying to increase the input from the public to develop the SWMP.

4.3 MCM 3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

4.3.A The City will implement and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2)) within the MS4.

4.3.B The city's current storm sewer system map will be updated as needed to include any features which may have been added, removed or changed. ArcMap 10.1 was utilized to develop the city's GIS mapping system, which can be accessed at any time by City personnel. The map includes:

- Locations of all MS4 outfalls
- The names and locations of all receiving waters of the State that receives discharges from the MS4 outfalls
- The boundary of the regulated MS4
- The map is readily available and used by the field staff as needed
- The map and any accompanying necessary information will be made available to the Department

4.3.C The City will record the sources of information used for the map and track all outfalls using a numbering system, the date that the outfall location was verified and for the date that any newly added outfalls were added to the storm sewer system.

4.3.D The City will prohibit non-storm water discharges into the City's storm sewer system and will implement appropriate enforcement procedures and actions. The Stormwater Management Ordinance deals with illicit discharges and connections as seen in this SWMP, Exhibit 3 section (425.190.D).

4.3.E The City's dry weather screening strategy.

1. The city will conduct outfall field assessments. These screenings will occur during dry weather conditions, meaning that the last precipitation event occurred over 72 hours. These assessments are to check for the presence of a discharge. The required minimum dry weather screening of 60% of outfalls are to be assessed during the permit cycle and all the priority areas are to be screened each year.

2. The screening/assessment will include a checklist to keep track of each inspection, enhance consistency and to track the field screening. The observations recorded are as follows:

- Date and time
- Weather conditions and temperature
- Color of discharge
- Estimate of flow rate
- Odor
- Surface scum, algae bloom, floatable or oil sheen present
- Turbidity
- Stream impact including vegetation, fish, wildlife
- Length of impacted stream
- Notes of an obvious source of flow

4.3.F The City will maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program. If an unknown non-stormwater flow is detected this procedure will be followed:

- Visually follow the non-stormwater flow upstream to find the source of this flow
- If a sample is required, the city will work with the utility department to obtain the water quality data. (The SWMP should be updated with what samples the utility department can do and what samples would need to be sent to the lab. As well as any contact information for the utility department and the lab)

4.3.G The city will maintain procedures for tracing the source of an illicit discharge. If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected from another reporting method, the source will be traced. The investigative tools that will be used to are:

- Visually following the flow
- Storm sewer system sampling
- Full storm sewer map
- Closed circuit television
- Smoke or dye tracing
- Tunnel entry

4.3.H The City will maintain procedures for removing the source of the discharge. After locating the source, the pollutant and source must be removed. While the exact procedure will depend on the source and the circumstances. The procedures can be found in the Stormwater Management Ordinance, under the section dealing with illicit discharges and connections. The city will work with the course of the illicit discharge to remedy the situation by either implementing source control, or by remediation or restoration of the affected property.

4.3.I In order to prevent future illicit discharges, the city will identify priority areas such as:

- Areas with evidence of ongoing illicit discharges
- Areas with a past history of illicit discharges
- Certain land use influencing storm sewer/proximity of potential pollutant sources
- Areas of higher population density
- Neighborhoods with onsite sewage systems
- Areas with known litter or dumping issues
- Areas with large or increased number of citizen complaints
- Industrial areas

This list will be reviewed annually by the city to evaluate and make an necessary changes

4.3.J The city will maintain written procedures for implementing the IDDE program, including those components described within this section, to ensure program continuity and consistency. This program includes the description of dry weather field screening strategy, implementation to detect and address non-stormwater discharges, how the discharges are evaluated and the possible parameters that are tested.

4.3.K The city will conduct investigations into field screening discoveries, spills or in response to complaints from the general public, municipal staff or neighboring MS4s. This investigation is in efforts to determine the source of the connection, the nature and volume of discharge through the connection and the party responsible for the connection. A response will meet the following timeline:

1. Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare or the environment
2. Investigate within 5 business days, on average, any complaints, reports, or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.

3. If illicit connections or illicit discharges are observed related to, discharging to, or discharging from, an adjacent MS4, the city will notify the other MS4 within 24 hours of discovery or as soon as practicable.

4.3.L The city will have procedures for appropriate enforcement, this includes fines, the ability to collect cleanup and abatement costs and actions to ensure that the city's illicit discharge ordinance is being implemented. The ordinance being followed is the Stormwater Management Ordinance, under the section dealing with illicit discharges and connections.

4.3.M The city will maintain a database that will track and record dry weather field screenings, spills, incidents and investigations. To be recorded includes:

- Number of outfalls screened
- Number of complaints received and investigated
- Number of illicit discharges removed
- The date the illicit discharge was observed
- Summary of procedures used to investigate the illicit discharge
- The outcome of the investigation including sample results and findings
- Any follow up of the investigation including cleanup, enforcement actions, visits to confirm the illicit discharges have been removed
- The date the investigation or issue was closed or resolved

4.3.N The city will inform public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste. This will be done through the city's program for Public Education as mentioned previously.

4.3.O The IDDE Program will be reviewed annually, using adaptive management, to ensure that it is in compliance with the permit. Any revisions to the ordinance will be completed in the first year of the permit cycle and any revisions made to the map will be made in the first 2 years of the permit cycle.

4.3.P The City will develop and implement a training program for all municipal field staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. Training the staff members, who, may handle materials which may become an illicit discharge, which includes:

- New staff employee being hired needs to be trained within a year
- Fleet maintenance staff
- Staff at facilities with fuel, chemicals, washing of vehicles or equipment

- Road maintenance staff
- Road salt/de-icing staff
- Parks, swimming pools, or golf course staff who encounter spills, equipment or vehicle washing, fueling or chemicals.

4.4 MCM 4. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

4.4.A The city will develop, implement and enforce a program to reduce pollutants in any stormwater runoff to our MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre will be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

4.4.B The city currently has an ordinance that is included in Storm Water management in Chapter 425. However, this will need to be updated to include minor subdivisions. This update will include sites that are all greater than or equal to one acre. As well as sites that are less than one acre but are part of a common plan or development of sales that would disturb one acre or more. The ordinance includes sanctions that are designed to ensure compliance, to the extent allowable under state and local law.

4.4.C The City will review pre-construction plans. These reviews will consider/look at:

1. Potential water quality impacts and threats to the quality of the water by considering these factors:
    - Soil erosion potential
    - Site slope
    - Project size and type
    - Sensitivity of receiving waterbodies
    - Discharge flow type
    - Location of discharge point in relation to receiving water
    - Proximity of the site to receiving waterbodies
    - Other factors that are specific to the MS4 service area
2. Checklist is used to create consistency and good record
3. There are requirements in place for construction site operators to select, install, implement and maintain appropriate stormwater control measures.

   a. For example, including temporary and permanent BMPs. A temporary BMP is something that can be removed after construction is finished, whereas a permanent BMP will remain where it is placed.

4. The city needs to consider ways to minimize disturbed areas by having phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.

5. Finally, include requirements for construction site operators to control the waste from the construction-site that may have a negative effect on the water quality. This list of negative effect waste includes:

   - Discarded building materials
   - Concrete truck and mortar mix washout
   - Chemicals (such as fertilizer, paint, oils, herbicides, pesticides)
   - Litter
   - Sanitary waste

4.4.D The city will establish authority for site inspections and enforcement of control measures, using the ordinance. The Stormwater management ordinance will give the city the authority for site inspections and enforcement of control measures. To the extent allowable by state, federal and local law. The city will also implement procedures for inspecting construction/land disturbance projects. This procedure includes:

1. Identify priority sites for inspection based on nature of the construction activity, topography, disturbed area, and the characteristics of soils and sensitivity of, or proximity to, receiving water.

2. Construction site inspections shall include assessment of compliance with the city's Stormwater management ordinance.

3. The inspections shall evaluate any structure that functions to prevent pollution of stormwater or to remove pollutant from stormwater and use enforcement polices to require BMPs are implemented and effective

4. Final inspection, upon completion of the land disturbance and prior to final approval of construction project. Ensure all disturbed areas have been stabilized, that all temporary erosion and sediment control measures are removed.

5. The inspections conducted by the city will be documented with a checklist. This is very key in Poplar Bluff's case as a history of poor documentation has caused some confusion. As stated a folder will be created for each job site, which will hold the daily logs and inspection checklists as to create more organization.

4.4.E The city's construction site runoff control program needs to be clarified as to when each case needs to be used. This is something that will have to be redefined within the first year of the permit cycle. This program establishes, escalating enforcement ordinance that describes the action to be taken for violations. As to ensure compliance and procedures for when certain penalties, injunctions or other measures will be used.

- The city may issue a verbal warning to the construction site owner that will clarify the nature and location of the alleged non-compliance.
- The city may issue a written notice to the construction site owner that specifies the nature and location of the alleged non-compliance, with the steps necessary to bring the project back to compliance.
- The city may issue a stop work order to the construction site owner in which it orders the cease and desist of all work which violates the ordinance.
- The city may issue anyone in correspondence with the construction site a fine due to a violation of the ordinance.

4.4.F The city will require the construction site operator to conduct inspections at the minimum:

1. Every fourteen (14) days, when construction is active.
2. This inspection will occur 72 hours after the most recent storm event, and within 48 hours after any storm even equal to or greater than 2-year, 24-hour storm has ceased.

Any checklist used during this inspection will be submitted to the city or verified that the inspections are being conducted by the construction site operator.

4.4.G The city will maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of this permit. This may be supplemented with records such as a plan review checklist and email correspondence. The inventory must contain:

1. Relevant contact information for each project
2. Size of the project/area of disturbance
3. If the site is a priority site, if so, how high of priority

4.4.H The city will track their oversite inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the department upon request. The tracking must contain at least:

- Inspection date and time
- Inspector name

- Inspection findings

- Follow up actions and dates, including corrective actions and enforcement actions

4.4.I The city will review the Stormwater management program which includes the Stormwater management ordinance and ensure compliance with any requirements of this permit. Any changes that are made will be made within the course of the first year of the permit cycle. These changes can be made to the inspection procedures and enforcement procedures. The inventory of active sites will be updated as new projects are reviewed and projects are completed, these updates will also be done within the course of the first year of the permit cycle.

4.4.J The Stormwater management program includes procedures for the city to receive and consider information submitted by the public about land disturbance sites. These include:

- The city takes complaints from the public via phone calls and email about land disturbances.

- Facebook/webpage is also a location where the public can learn about the issue and further comment on posts, etc.

4.4.K The city will provide, or give support to, construction site runoff control training for the MS4 inspectors and plan reviewers at least once during the permit cycle. This training opportunity will be tracked and recorded for future reference. Any additional training, if needed, conducted by the city will be tracked and documented.

4.4.L The city will provide written procedures outlining the local inspection and enforcement procedures to the inspectors to ensure consistency among the inspections.

4.4.M The city will review the Construction Site Stormwater Runoff Control Program, at minimum once a year, using adaptive management. By evaluating this program, the ordinance, review procedures, inspection procedures, enforcement procedures, receipt of public information procedures and effectiveness of training procedures to ensure compliance with these requirements and help determine if any changes are necessary. The review may include the following:

1. Evaluating the most common violations, how the violations are handled, how many are escalated

2. If the education program can assist in reducing violations

3. Determining if the site plans match the sites when violations arise or if additional items need to be evaluated at plan review

4. Assessing public complaints being addressed in a timely manner

5. Evaluating if the inspections are thorough and consistent across different sites

4.5 MCM 5. POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

4.5.A The city will continue to develop, implement and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more and that discharge into regulated MS4. The city will ensure that controls are in place that were designed and implemented to prevent or minimize water quality impacts.

4.5.B The city's ordinance, Stormwater Management Ordinance, will need to be adjusted to include the developments that are one acre or greater and to include the one acre or less that are part of a larger common plan of development or sale that would disturb more than one acre. This will be updated within the first year of the permit cycle. This ordinance is to be put in place to:

- Protect sensitive areas
- Minimize the creation of stormwater pollution
- Utilize BMPs that effectively remove stormwater pollution
- Attempt to maintain predevelopment runoff conditions

4.5.C The city will continue to develop a strategy to minimize water quality impacts. This will include a combination of structural and non-structural controls (BMPs) appropriate for the permittee's community.

1. Structural controls include the following: extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs and others

    - The city's Stormwater Management Ordinance has put many structural controls in place. This list consists of storage volumes, outlet control structures, emergency spillways, dry detention facilities, wet detention facilities, impervious areas, rooftop storage, underground storage and design alternatives. The purpose of these systems is to detain, retain and in some cases reuse stormwater.

2. Non-structural controls include the following: stream buffers, no mow zones, preservation of open space, tree preservation, impervious cover reduction, land us planning, and low impact development.

- The Stormwater Management Ordinance will have to be adjusted to include some forms of non-structural controls, which will be done within the first year of the permit cycle.

4.5.D Pre-construction plan review will be conducted by the city to assess site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance. The city will update the pre-construction review to include a checklist for better documentation. The plan review process will evaluate non-structural BMP selection first,

such as comprehensive plans, zoning ordinance, buffer strips and maximization/preservation of open space. These non-structural BMPs help to prevent storm water runoff on the site and therefore influence the decisions that should be made regarding the chosen structural BMPs that help mitigate the stormwater related impacts after they have occurred.

4.5.E The city will continue to use the Stormwater Management Ordinance to ensure adequate long-term operation and maintenance (O&M) of the selected BMPs. It is recommended that the city includes an example O&M template is to be created that includes all expectations of the owner for maintenance.

- The city will address the long-term O&M during the plan review process and approval process. The city and the party responsible will also retain a copy of the O&M for the post-construction BMP.

- As mentioned in the Stormwater Management Ordinance (Section 425.170), the responsibility for maintenance falls on the owner or developer of the site. All storm water management systems will have adequate easements, dedicated to the public for storm water management use.

- As seen in the Stormwater Management Ordinance (Section 425.180, the city has the right to giver enforcement officials the inspection rights and right-of-entry privileges to ensure compliance with this ordinance.

4.5.F The city will inspect, or require inspection of, each water quality structural and non-structural water post-construction BMP according to the following at minimum:

1. A minimum of one inspection will be conducted during construction, and one inspection before the site is finalized, to verify water quality facilities are built as designed and any applicable boundaries or practices for non-structural BMPs are being observed. The inspector will have access to the approved plans to ensure proper installation.

2. A minimum of once in the first three years after the installation by the city.

3. Annually by the owner of the post-construction BMP, or by the city. If completed by the owner of the BMP, the inspection report will be submitted to the city for evaluation and review.

4. The city will inspect a minimum of 60% of all water quality post-construction BMPs within the five year permit cycle. The 60% will include any installations with ongoing or open enforcement issues

4.5.G The city's ordinance, Stormwater Management Ordinance, addresses the enforcement policies and failures to provide adequate operations and maintenance are as follows:

- The city can issue a notice to the permittee of the nature and location of the alleged non-compliance, along with the remedial work necessary to fulfill compliance.

- Any person, firm or corporation that fails to comply with or violates any of these regulations can be charged with a misdemeanor and upon conviction can be fined no more than $500 per day of violation, confined in the city jail for no more than 1 year, or both.

- The administrative officer can also issue a stop work order, which will halt all construction on a site. The stop work order will direct the parties involved to cease and desist all or any portion of the work on the development or a portion thereof which is not in compliance, except such remedial work necessary to bring the project into compliance.

The city will need to update the ordinance to take these into consideration during enforcement:

- The effect the violation has on the receiving water

- Compliance history of the post-construction BMP owner

- Cooperation of the owner or operator with compliance efforts

4.5.H The city will update the Stormwater Management Ordinance to include the enforcement actions that are taken by the city will occur in a timely manner, within 30 days of the violation. The city ordinance does include and maintain a minimum of two possible sanctions, these sanctions include:

- Education regarding the BMP and verbal warnings

- Written warnings or notice of violation

- Fines

4.5.I The city will update its inventory tracking the water quality post-construction BMPs so that the inventory includes:

1. Relevant contact information for responsible party

2. The type of post-construction BMP

3. Applicable operations and maintenance documents

4. Date the city approved the construction site plan

5. If the water quality facility is owned or operated by the city, any maintenance will be included, such as sediment clean out or replanting.

4.5.J The city will also record the post-construction BMP inspections, which can be done by retaining records such as inspection checklists and email correspondence. The city must track:

- Inspection date and times

- Inspector name
- Inspector's findings
- Any follow up actions including all enforcement actions

4.5.K The city will continue to evaluate the ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with the requirements of the permit and determine if any changes are necessary. Any changes will be made within the first year of the permit cycle. The inventory of water quality facilities will be updated as new facilities are added and projects are completed. These changes will also be made within the first year of the permit cycle.

4.5.L The city will provide appropriate training for the city inspectors at a minimum once every permit cycle. This may include Green Infrastructure training, or specific operation of proprietary post-construction BMPs. The city will provide overall training to explain the function of both structural and non-structural post-construction water quality BMPs. The attendance will be recorded and maintained by the city.

4.5.M The city will conduct adaptive management to review the Post-Construction Site Stormwater Management in New Development and Redevelopment Program and evaluate effectiveness of the overall program and determine if changes are needed. This review will be conducted annually and should include:

1. Reviewing the number and types of developments
2. How many BMPs were installed/inspected
3. The amount of watershed areas being treated
4. The types of violations found and how frequently
5. How education could improve the effectiveness of the program

4.6 MCM 6. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

4.6.A The city will develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

4.6.B The city will develop a training program during the first year of the permit cycle. This training will be dedicated for city municipal operations staff and will be given annually for staff who work with material handling, at city owned or operated vehicle/equipment areas, storage yards, and material storage facilities.

4.6.C This training program will be designed to prevent and reduce stormwater pollution. The training program will cover at a minimum these topics:

1. Vehicle and equipment washing
2. Fluid disposal and spills
3. Fleet, equipment, and building maintenance
4. Park and open space maintenance procedures (which includes fertilizer, herbicide, and pesticide applications)
5. New construction, road maintenance and land disturbances
6. Stormwater system maintenance
7. City operated salt and de-icing operations
8. Fueling
9. Solid waste disposal
10. Street sweeper operations
11. Illicit discharges

4.6.D The city will:

- Maintain material to use in the developed training program, such as those available from the EPA, the state or other organizations.
- Maintain written procedures for the training program. The training program will attempt to teach the staff about how to create controls to reduce or eliminate discharges of pollutants from city projects and landscaping projects, municipal buildings and properties, including streets, parks, etc. Each location should provide specific training to the possible pollutants faced.
- Maintain a written schedule to offer topic specific training when the topic is necessary. This would include training in swimming pool discharges in the summer, leaf disposal in the fall or even proper salt cleanup during the winter.

As mentioned previously, the training program will still need to be developed and therefore a detailed description of the training program can not be provided at the moment. This training program will be developed within the first year of the permit cycle.

4.6.E The city will maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program. This will include the following if owned and operated by the city:

- Maintenance yards
- Fleet or maintenance shops, including parks department

- Storage yards
- Parks, golf courses, swimming pools and splash pads
- Municipal parking lots
- Salt/Sand storage locations
- Snow disposal areas
- Other locations expected to contribute floatable/pollutants

4.6.F The city will develop and maintain a list of industrial facilities that the city owns and operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity. The permit number or a copy of the No Exposure Exemption Certificate needs to be included for each facility. The facilities include:

- Land disturbance permit
- Wastewater facilities
- airports

Note: NPDES facilities not owned or operated by the city does not need to appear on the list but the city will be aware of its presence and take it into account for a possible priority area for the IDDE program.

4.6.G The city will develop and maintain controls for reducing or eliminating the discharge of floatable and pollutants from municipal facilities that are listed previously. These controls will include at a minimum:

1. A list of potential pollutant sources at each facility, such as material used and stored on site.
2. A minimum of annual inspections of all municipally owned or operated facilities for stormwater issues. Records will be kept for inspections and follow up actions.
3. Use of structural controls/BMPs to reduce or prevent pollutants from entering waters of the state or into another city.
4. All paints, solvents, petroleum products, and petroleum waste products under the control of the permittee will be stored so these materials are not exposed to stormwater.
5. Sufficient practices of spill prevention, control and management will be provided to prevent any spill of these pollutants from entering the waters of the state. Spill kits will be stored at a facility where liquid product is held. Any containment system used to implement this requirement will be constructed of materials compatible with the substances contained and will also prevent the contamination of groundwater.

6. Tracking of rock salt/brine or other deicer usage

7. Maintaining municipal salt storage areas after use of rock salt includes sweep or shovel spillage in location area and storage area and unload salt hoppers or keep under cover when salt is in the hopper.

4.6.H The city will have procedures for proper disposal of waste removed from the city structures and areas of jurisdiction. The types of proper disposal of waste showed include:

- Street sweeper spoils and washout
- Accumulated sediment
- Dredged materials
- Floatable, trash and litter
- Leaves, other organic matter
- Other debris

4.6.I The city will maintain and utilize the following procedures, at minimum, for the washing of all municipal vehicles and equipment.

1. Use of any soap or detergent will only be where there is connection to sanitary sewer or equivalent treatment.

2. Any wash or rinse water that contains pollutants such as salt, oil, grease, sediment, grass clippings, lawn chemicals or pesticides will not be discharged to waters of the state or the city's sewer system with appropriate treatment.

3. Any washing or rinsing activities will be conducted in an appropriate area so the water is treated. This designated area/facility will be marked on a map for reference.

4.6.J The city will maintain written explanation of the controls, procedures, inspection schedules, and explanation of tracking of these controls. Tracking may be done by retaining inspection reports or checklists. Individual Stormwater Pollution Prevention Plans or one overarching O&M manual for all applicable city owned facilities may be used to comply with the permit. If a unified document is used, each individual site will be familiar with the document and a copy will be present on each site. Annually the city will evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation may also aid in finding priority areas or pollutants in relation to MCM 3, or adding more education in relation to MCM 1.

4.6.K The city will maintain procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management project will require the protection of water quality to the standards that are used to plan, design, build and maintain stormwater infrastructure.

4.6.L The city will continue to evaluate the current stormwater management program which includes training, inspection procedures, and other municipal operation procedures to ensure compliance with this permit. Any changes that are made will be updated within the first year of the permit cycle.

4.6.M The city will review and update implementation procedures annually to meet permit requirement. In order to do so the city will use adaptive management. The addition of BMPs will be included in the Stormwater Management Program Report as new projects come up and due to the completion of other projects.

5.0 – PROGRAM MANAGEMENT

5.1 REGULATORY BACKGROUND

As a result of the 1987 amendments to the Clean Water Act, the United States Environmental Protection Agency (EPA) began to regulate large to medium municipal separate storm sewer systems (MS4). The regulation of polluted discharges from urban runoff produced by these large to medium MS4's became a primary goal. The National Pollutant Discharge Elimination System (NPDES) program requires municipalities that discharge pollutants into waters of the United States to obtain an MS4 permit.

The City of Poplar Bluff is a Phase II Small MS4 covered by a general permit that regulates facilities within the city limits of Poplar Bluff. The Missouri Department of Natural Resources issued Permit # MOR040027 to the City of Poplar Bluff. This issued permit requires a Storm Water Management Plan (SWMP) that is to be evaluated and updated on a continuing basis and must adhere to the provisions of 40 CFR 122.34.

The goal of the SWMP is to educate the public along with targeted audiences described within this plan of the issues related to storm water runoff. The Plan shall be written to meet all six control measures determined by the governing state and federal regulations. The City's ultimate goal is to reduce the quantity of storm water runoff, while improving the quality of runoff.

5.2 MANAGEMENT STRUCTURE

Existing Storm Water Management is handled by the Planning Department. Current activities include reviewing site-specific storm water management plans for both new development and re-development projects within the City, and inspection of construction sites and existing facilities. Storm water drainage systems are managed and maintained by the City Street Department.

The implementation of the updated SWMP will require additional program management, and possibly restructuring of the City's storm water management program. Evaluation and possible modification of the management organizational structure is one of the first steps in implementing this updated SWMP. Program management will continue to be the responsibility of the Planning Department, but will require a greater amount of coordination and assistance from all City departments.

6.0 LOCAL IMPLEMENTATION PLAN

6.1 ORGANIZATION

Each program element or control measure of the Storm Water Management Program contains Best Management Practices (BMP's). Some of these BMP's are directly related to other elements of the SWMP. Figure entitled "SWMP Control Measures", shows a summary schematic of the six control measures and their respective BMP's. The following is a detailed discussion of the BMP's for each of the six program elements and how they will be monitored and evaluated. The primary contact for each of the following program implementations will be James Sisk, City Planner and/or Tony Chilton, City Inspector.

6.2 WORK PLAN

This document presents the updated Storm Water Management Program (SWMP) for the City of Poplar Bluff. This SWMP is part of the Phase II Storm Water requirements of the Missouri Department of Natural Resources (MDNR) Water Pollution Control Program and the Environmental Protection Agency (EPA). The MDNR application forms K & M for a Small Municipal Separate Storm Sewer System (MS4) Permit and the SWMP layout the City's steps to comply with these requirements. This SWMP details the six (6) minimum control measures that will be taken by the City of Poplar Bluff for the permit period of the years 2021 through 2026. The six minimum control measures are outlined as follows:

1. MCM 1 Public Education and Outreach Program on Storm Water Impacts
2. MCM 2 Public Involvement and Participation.
3. MCM 3 Illicit Discharge Detection and Elimination
4. MCM 4 Construction Site Storm Water Runoff Control
5. MCM 5 Post-Construction Storm Water Management in New Development and Redevelopment
6. MCM6 Pollution Prevention/Good Housekeeping for Municipal Operations

The sections that follow discuss program management. A table of implementation schedules for each of the six control measures is included in section 4.0. Monitoring, recordkeeping, and reporting procedures are described in section 5.0 and funding issues are discussed in section 6.0. The content of this report provides the foundation for developing and evolving the City of Poplar Bluff's Storm Water Management Program in this permit term.

The City's desire is to target two main audiences within the City that could potentially impact storm water quality. These groups will be targeted as their behaviors could have a significant impact on target pollutants. The groups that will be targeted are:

- Residents
- Developers and Contractors

The following is a list of targeted pollutants that could impact the quality of storm water runoff in the City of Poplar Bluff:

Audience	Target Pollutant
Residents	Trash and other Solid Waste
Developers and Contractors	Sediment Runoff

6.3 PUBLIC EDUCATION AND OUTREACH (4.1)

The goal of the Public Education and Outreach portion of the program is to raise awareness of storm water pollution prevention by educating people about the storm water system and its effects on health and the environment. Currently the City is promoting storm water issues though educating those applying for storm water management permits and enforcement of the revised Storm Water Management Ordinance. Public awareness has been high due to a recent influx of development within the community, federal buy out of properties located in the flood prone areas, and recent large intensity rainfall events. The SWMP during this permit term will target general understanding and awareness of storm water issues in an effort to create a more informed public. Specifically, the City would like the SWMP and education to target sediment runoff from construction as the primary pollution of concern. The primary sediment from these sites are in the form of suspended solids and nutrients (typically from fertilizers).

Development of Best Management Practices (BMP's) for this element of the program will take place throughout this permit term. The City is continuing to develop budgets, procedures, and responsibilities for departments to handle BMP's for this and most of the program. The following are best management practices that will be evaluated for implementation during this permit term.

1. Materials will be developed for each target audience listed above. Materials will cover such topics as causes of storm water pollution, steps to reduce storm water pollution, and guidance regarding the City's storm water ordinances. It is expected that a total of four (4) sets of materials will be developed per year targeting the different audiences listed above.

2. As the above referenced educational materials are developed, they will be shared with local citizens through the City's social media outlet that include Facebook and Twitter, this will be done quarterly each year. It is estimated based on past numbers of viewers of social media posts that these posts will reach an average of 800 persons.

3. Annually, materials will be included with local utility bills, reaching all households in Poplar Bluff, currently 7,181 total households.

4. Educational materials will also be distributed as building permits are issued. The City averages 225 building permits issued per year and anticipates that 50 contractors and/or developers will receive the educational materials through this means.

5. Educational materials will be added to the City's website to be always available to the public. The City's website averages 3,600 visits per month. It is estimated that at least

one of the developed educational materials will be downloaded per month, totaling 12 downloads per year.

6. The City will work with the local newspaper, the Daily American Republic to publish one newspaper article per year.

7. The Poplar Bluff Parks and Recreation Department will continue to maintain Pet Waste Stations within the City parks and greenway trails. As new trails are constructed, more pet waste stations will be added as needed. Downtown Poplar Bluff will also continue to maintain the pet waste station that is located at the dog park in downtown Poplar Bluff. A map will be developed noting the locations of the stations throughout the City. There are currently six (6) located throughout the city.

8. The City will continue to support and promote its Adopt-A-Street program and anticipates one (1) new street adopted per year.

9. The Chamber of Commerce has also used their resources to assist with paying to pick of litter along major intersections.

10. Evaluate the effectiveness of each BMP through adaptive management.

    a. Refer to Appendix 1

Measurement of these BMP's will be based on the number of individuals participating in each of the targeted activities. Frequency of the sharing of material on social media sites and updates to the city's website will be measured as well as the public viewing of each.

Measurement of these BMP's will be based on performance and effectiveness. The goal of the program over the permit term is to reach the entire City population or around 17,000 people. Performance measures for media campaigns will be based on the number of people reached and the frequency of the message. Effectiveness measures will be based on public feedback through correspondence, web page responses through e-mail, and possibly public surveys. Measurement of activities such as seminars will be done in a similar manner, by measuring the number of people in attendance, and the response of attendees. Again, a public survey may be used to help measure response.

6.4 PUBLIC PARTICIPATION AND INVOLVEMENT

The goal of the Public Participation and Involvement portion of the SWMP is to improve water quality and the success of the City in eliminating illicit discharges through the direct participation of the general public. The success of this program element is largely dependent on public awareness and the creation of platforms for public participation within the program and planning process. The City seeks public input for new policies and procedures, these include preliminary and final plats, rezoning requests, annexation requests, and comprehensive plans.

Development of Best Management Practices (BMP's) for this element of the program will take place throughout this permit term. The City is continuing to develop budgets, procedures, and responsibilities for departments to handle BMP's for this and most of the program. The

following are best management practices that will be evaluated for implementation during this permit term.

1. The City of Poplar Bluff will share a draft of this plan with the City Council along with sharing a draft through the City's social media outlets and website. This will allow for public input, participation, and involvement.

2. City Council shall receive an annual update on the SWMP.

3. The City will continue to offer an annual community clean up day, "Buff Up the Bluff". Curbside pick-up is offered for senior citizens on this day and roll-off dumpsters are provided by the City for residents to dispose of large amounts of trash. The City also collects tires and brush/limbs on that day as well.

4. City will continue to offering a monthly bulk-trash pick up service to city residents. The City will continue this service in an effort to provide citizens an opportunity to dispose of large, bulky items such as mattresses, appliances, and furniture.

5. The City will continue a program to stencil storm drain inlets. The goal is to stencil twelve (12) inlets per year. This activity will extend in to the next permit cycle and will continue annually as stenciled of one ward per year, which would lead to all inlets being stenciled in a five-year time period.

6. The City will explore the possibility of supporting the creation of a local stream team.

7. The City will develop a mechanism for citizens to report concerns about storm water pollution. This information, once developed, will be available via the city's website.

8. The City has recently created an "Adopt a Street" litter program that encourages local citizens and/or groups to adopt sections of City streets for litter pick up. The City will continue to support and promote this program and anticipates one (1) new street adopted per year. The Chamber of Commerce has also used their resources to assist with paying to pick of litter along major intersections.

Measurement of these BMP's will be based on the number of individuals participating in each of the targeted activities. Frequency of the sharing of material on social media sites and updates to the city's website will be measured as well as the public viewing of each.

6.5 ILLICIT DISCHARGE DETECTION AND ELIMINATION

The goal of the Illicit Discharge Detection and Elimination portion of the program is to minimize illicit discharge into waterways by increasing the City's capabilities to identify possible pollution sources, prohibiting illicit discharges through the City ordinances, and establishing a procedure for enforcement. BMP's for this element of the program are as follows:

1. The City will contract with an engineering firm to map all outfalls that discharge into waters of the state. One City Ward will be mapped each year, leading to all outfalls being

mapped within five (5) years. The data will be added as a layer to the City's GIS mapping system.

2. The City will develop a plan and inspection forms to conduct dry weather field screenings on the above referenced outfalls. As the outfalls are mapped, they will be added to a schedule of inspections.

3. In cooperation with an engineering firm, the City will develop procedures for locating priority areas that have a higher likelihood of illicit discharges. These areas will also be mapped as one ward per year, mapping all priority areas within five (5) years.

4. The City will contract with an engineering firm to develop and implement procedures for tracing the source of illicit discharges. This will also include methods for eliminating the discharge once the source is determined.

5. The City will continue to support the regional recycling center operated by the Ozark Foothills Solid Waste Management District. Approximately 1,100 tons of recyclables are diverted from the landfill annually through this recycling program. The City will assist in promoting the items they collect that include cardboard, tin, aluminum, paper, tires, used oil, electronics, plastics, and newspaper.

6. Continued Development and Increase the Level of Detail for the Storm Sewer System Map based on the City's GIS system developed using ArcMap 10.1 and utilizing readily available public data. The map outfalls within the City will be updated when the City limits change.

The two main BMP's to be implemented in this permit term are the continued development of the Storm Sewer System Map of the outfalls and also to include permitted basins and the categorization of areas according to the level of impact from storm events. Figure 3, Storm Water Outlets, is an initial portion of the City's Storm Sewer System Map. This map shows the basic drainage areas and identifies the points where storm water leaves the City boundary. Building a map of existing systems will be done over time by adding information to this map, starting with the addition of the permitted basins since the adoption of the 2003 ordinance.

During this permit term, the City will continue to evaluate and revise procedures for identifying illicit discharges, including procedures for identifying target areas, procedures for tracing contaminants to their sources, and procedures for reporting illicit discharges to the City. These procedures will be tested and adjusted to provide the highest level of detection and elimination within the City's budget and personnel constraints.

Measurement of these BMP's will be based on the amount of documentation completed, including mapping and detection procedures. Other units of measure include recording the number of illicit discharges eliminated and detected, the number of reported incidences, and recording known incidental non-storm water discharges. The City will rely on the public reporting the majority of illicit discharges but City staff also regularly inspect the City and will also notify the City Planner when any discharges are noticed. Water quality monitoring at outlet locations around the City is another measure that may be considered.

6.6 CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

The goal of the Construction Site Storm Water Runoff Control portion of the program is to reduce storm water pollutants to the maximum extent practical by requiring construction sites to reduce sediment from site runoff and minimize other pollutants such as litter by keeping sites clean. With the addition of Erosion Control to the Storm Water Management Ordinance in 2003, the focus for this permit term will be continued refinement of the enforcement procedures. BMP's for this program element include the following:

1. The City has reviewed and update City Ordinance Chapter 425, Storm Water Management Plan to include any development over 1 acre of disturbance in January 2023 and included within Exhibit 3 of this report.

2. The City will continue to review City Ordinance Chapter 425, Storm Water Management Plan to ensure that all pollutants are addressed that could result from construction site stormwater runoff. Along with the pollutants, the City will ensure that the ordinance includes requirements for construction site operators to control possible site runoff.

3. The City will develop a mechanism to receive citizen complaints regarding construction site stormwater runoff concerns. This mechanism will be developed in conjunction with the City's public education information and included on the City's website once developed. It is anticipated this mechanism will be in place by December 31, 2023.

4. The City has developed a site visit inspection procedure, form and schedule for visiting construction sites to ensure that each site is in compliance with local ordinances are appropriate measures are in place to control stormwater runoff from the site. The form is contained within Exhibit 5 but will be review annually and updated as needed.

The City prohibits runoff pollution from construction sites and currently reviews site specific BMP's, construction plans, and site-specific storm water management plans for all developments. The City is continuing to modify the procedures for inspection of construction sites and enforcement of runoff pollution prevention requirements. In addition to inspections, the City is continuing to develop procedures for the general public to submit complaints or report illicit discharges from construction sites. These inspection, enforcement, and reporting procedures will continue to be refined and modified to provide the highest level of pollution prevention within the City's budget and personnel constraints. In addition to these measures, the City will be developing standards details and construction requirements to better assist engineers, contractors, and developers in preparing construction site BMP's for their projects.

Measurable goals for this program element include documentation of ordinance revisions, planning processes, and inspection and reporting procedures. The City will maintain records of all submitted complaints and document their action or consideration of each. Recording the number of construction activities either meeting or failing to meet the required pollution prevention measures will also be done. In addition to documentation, water quality analysis may be considered as a measure of reduction in construction site pollution.

6.7 POST-CONSTRUCTION STORM WATER MANAGEMENT

The goal of the Post-construction Storm Water Management portion of the SWMP is to protect local waterways by reducing the discharge of storm water pollutants from both new development and redevelopment. The following outlines the BMP's for this program element:

1. The City will continue to review and update City Ordinance Chapter 425, Storm Water Management Plan, along with Section 500.030, Building Permit Fees, to ensure post-construction runoff from new developments and redevelopments are addressed.

2. The City will develop and implement a combination of structural and non-structural best management practices for post construction stormwater runoff controls. The City will continue to review local ordinances referenced above to ensure requirements for post-construction BMP's.

3. The City will continue to develop procedures, forms, and a schedule for periodic inspection of post-construction BMP's. The City will utilize the form contained within Exhibit 5 for this as well bit will review annually and update as needed.

The City's Storm Water Management Ordinance will be reviewed to ensure that it requires the development and design of a site-specific storm water management plan for most new development and re-development within the City. Inspection forms will be developed along with a schedule for inspecting post-construction BMP's. The City will assist engineers, contractors, developers, and operators in establishing, maintaining, and improving storm water management facilities by providing information and clarification where required. The City will require Engineer's Certification of Storm Water Management Features that deviate from approved plans.

Measurable goals for this program element again will include documentation and revision to the planning processes, inspection, and reporting procedures. The City will maintain records of all submitted complaints and document their action or consideration of each. Records will be kept of inspections and documentation of actions taken. Inspection reports will also help to qualify the status of existing facilities throughout the City. In addition to documentation, water quality analysis may be considered as a measure of reduction in construction site pollution.

6.8 POLLUTION PREVENTION/GOOD HOUSEKEEPING

The goal of the Pollution Prevention/Good Housekeeping portion of the SWMP is to improve and protect the quality of receiving waters by altering municipal operation performance.

1. The City has recently conducting monthly safety meetings with all employees. Once per quarter the training material will be of a subject related to pollution prevention and good housekeeping. This will be one part of a training program to prevent and reduce stormwater pollution from activities of city employees and departments.

2. The City has developed and implement an operation and maintenance program to prevent stormwater runoff pollution from City operations. This will include a list of all city facilities.

3. The City has developed an inspection program that will include inspection forms and schedules for inspecting city facilities, maintenance schedules, and maintenance BMP's. The City will utilize the form contained within Exhibit 5 for this as well bit will review annually and update as needed.

4. The City will develop written procedures for the proper disposal of waste such as dredged material, sediments, floatables, and other debris. This item is anticipated to be completed by December 31, 2023.

5. The City will review Floodplain development projects for impacts to the overall water quality prior to issuing approval of the Floodplain Development Permit.

6. The City will continue to review the proper storage of chemicals, fertilizers or other potential pollutants used by City employees.

The City of Poplar Bluff will continue to develop and implement training programs to educate employees on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as parks and open spaces, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. Also, continued development and documentation of maintenance and inspection schedules for the City's systems of creeks, drainage ditches, culverts, storm sewers, floodgates, and pumping stations will be conducted. These operations are currently performed by the City Street Department, but documentation and reporting will now be coordinated with the planning department as part of this SWMP. Attention will be given throughout the permit term to developing structural and non-structural BMP strategies to be applied by all departments to improve storm water quality. The City will prepare periodic updates to this SWMP as required in the final permit. In the final year of the permit term, the City will revise the SWMP and prepare new goals for the new permit term.

Measurable goals for this program element will include documentation of the planning processes, inspection and maintenance operations, and training activities. Inspection reports will also help to qualify the status of existing facilities throughout the City. In addition to documentation, water quality analysis may be considered as a measure of reduction in construction site pollution.

7.0 SCHEDULE OF IMPLEMENTATION

Table 2.0 on the following pages, entitled "5-year BMP Implementation Schedule: 2021 through 2026 contains a summary of best management practices and estimate of schedules for completing or conducting each item. The period from November 1, 2021 to September 30, 2026 anticipates the approval of the five-year term of the City of Poplar Bluff Municipal Separate Storm Sewer (MS4) National Pollutant Elimination Discharge System (NPDES) Permit by MDNR. Most of the BMP's and tasks are scheduled as either annual events or ongoing, continuing activities. Several indicate an anticipated completion date, while others are designated as "To Be Determined". Implementation schedules are kept general and are subject to modification as the program proceeds and evolves throughout the permit term.

TABLE 2.0 - 5-YEAR BMP IMPLEMENTATION SCHEDULE: 2021 through 2026

PROGRAM ELEMENT BMP'S, ACTIVITIES, AND TASKS	2022	2023	2024	2025	2026
3.3 Public Education and Outreach					
1 Public Educational Materials Developed					
2 Educational Material Shared through social media					
3 Educational Material Shared through City's website					
4 Public educational information shared through local newspaper article					
5 Maintain Pet Waste Stations					
3.4 Public Participation and Involvement					
1 Share draft of the City's SWMP					
2 Annual "Buff up the Bluff"					
3 Monthly Bulk Trash Pick-Up					
4 Stencil stormwater drain inlets					
5 Research creation of Stream Team					
6. Develop mechanism for public to report concerns					
7. Continue to support and promote local "Adopt a Street" Program					
3.5 Illicit Discharge Detection and Elimination					
1 Map all outfalls					
2 Begin Dry Weather inspections of mapped outfalls					
3 Develop procedure for identifying priority areas					
4 Develop procedures for tracing source of illicit discharges					
5 Continue to support local recycling center					
6 Develop of Storm Sewer System Map					

LEGEND: **X** = Completion **O** = Annual Event

TABLE 2.0 - 5-YEAR BMP IMPLEMENTATION SCHEDULE: 2021 through 2026

PROGRAM ELEMENT BMP'S, ACTIVITIES, AND TASKS	2022	2023	2024	2025	2026
3.6 Construction Site Storm Water Runoff Control					
1 Review and Update City Ordinances for project size requirements					
2 Review and Update City ordinances to ensure site owner requirements					
3 Develop a mechanism to receive citizen complaints					
4 Develop an inspection program for construction site visits					
3.7 Post-Construction Storm Water Management					
1 Review and Update City ordinances for post-construction requirements					
2 Develop and implement a list of post-construction BMP's to include in ordinance					
3 Develop inspection program for Post-Construction sites					
3.8 Pollution Prevention/Good Housekeeping					
1 Develop Quarterly employee training materials					
2 Develop operation and maintenance program for city facilities					
3 Develop a city facility inspection program					
4 Develop written procedures for proper disposal of waste					
5.Review Floodplain development projects for potential water quality issues					
6.Review procedures for proper storage of chemical, fertilizers, etc					

LEGEND: **X** = Completion **O** = Annual Event

8.0 MONITORING, RECORDKEEPING, AND REPORTING

Monitoring procedures when used shall meet all requirement of the MDNR MS4 NPDES Permit.

The City will keep records on all activities requiring records for a period of three years and shall make these records available upon request. Activities requiring record keeping include planning and development processes, written procedures and strategies, inspection reports, general public complaints and the City's response, water quality monitoring, and any other items requiring recording as stated above in this SWMP, or as developed throughout the permit term to provide measurable improvement for each of the measurable goals.

The City will submit a report to the permitting authority as specified in the permit terms. The report shall include the status of the City's compliance with the permit conditions, assessment of the appropriateness of the BMP's, and progress toward achieving measurable goals. Results of information collected during the reporting period will be included. The report will summarize activities planned for the next reporting cycle, including an implementation schedule, and any changes made to the SWMP.

9.0 FUNDING ISSUES

Funding for the SWMP implementation is perhaps the biggest challenge for an operator of a small MS4. Funds are needed to maintain the staff, equipment, and materials necessary to develop and implement the program effectively. Many new expenses will be generated by the SWMP including increased personnel time for development of procedures, inspection, maintenance, materials for education and training, and additional materials for municipal pollution prevention operations. These issues will be evaluated during the development of management processes and the development of each BMP. Possible funding options include debt financing, grants and loans, user fees, special site assessments, local contributions for site improvements, inspection fees, developers' fees, fees in lieu of constructing facilities, connection fees, and the City's general budget.

10.0 CONCLUSION

The City of Poplar Bluff has prepared this Storm Water Management Program to fulfill part of the obligation of MDNR and EPA NPDES Phase II Storm Water. This document is a guideline for the City to develop and implement BMP's to reduce storm water pollution. It should be noted however that this is a living document, which will be constantly evaluated and modified within the MDNR MS4 permit requirements in order to ensure storm water pollution control.

FIGURES

FIGURE 1 – VICINITY MAP

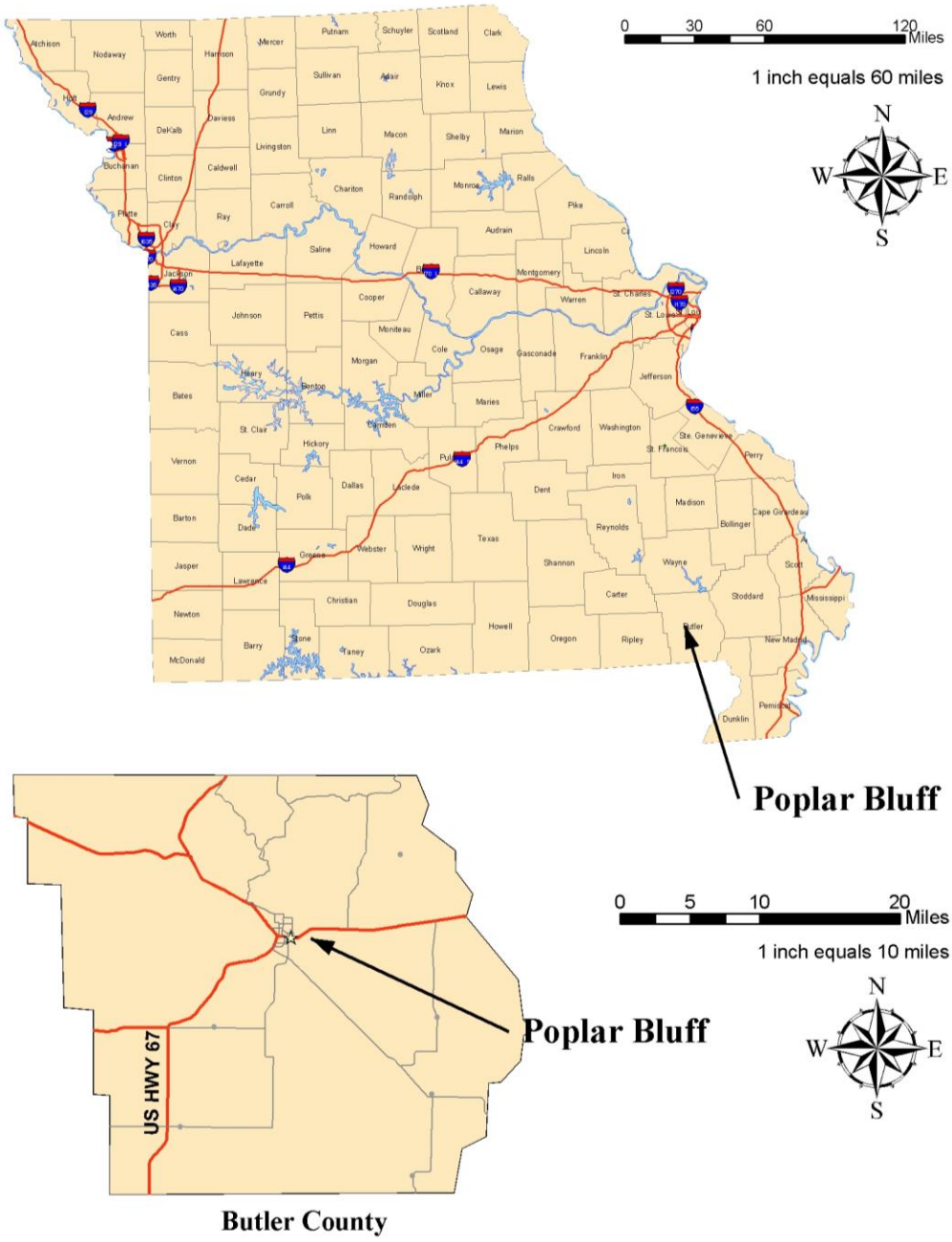


FIGURE 2 – TOPOGRAPHIC MAP

Poplar Bluff Topo Map

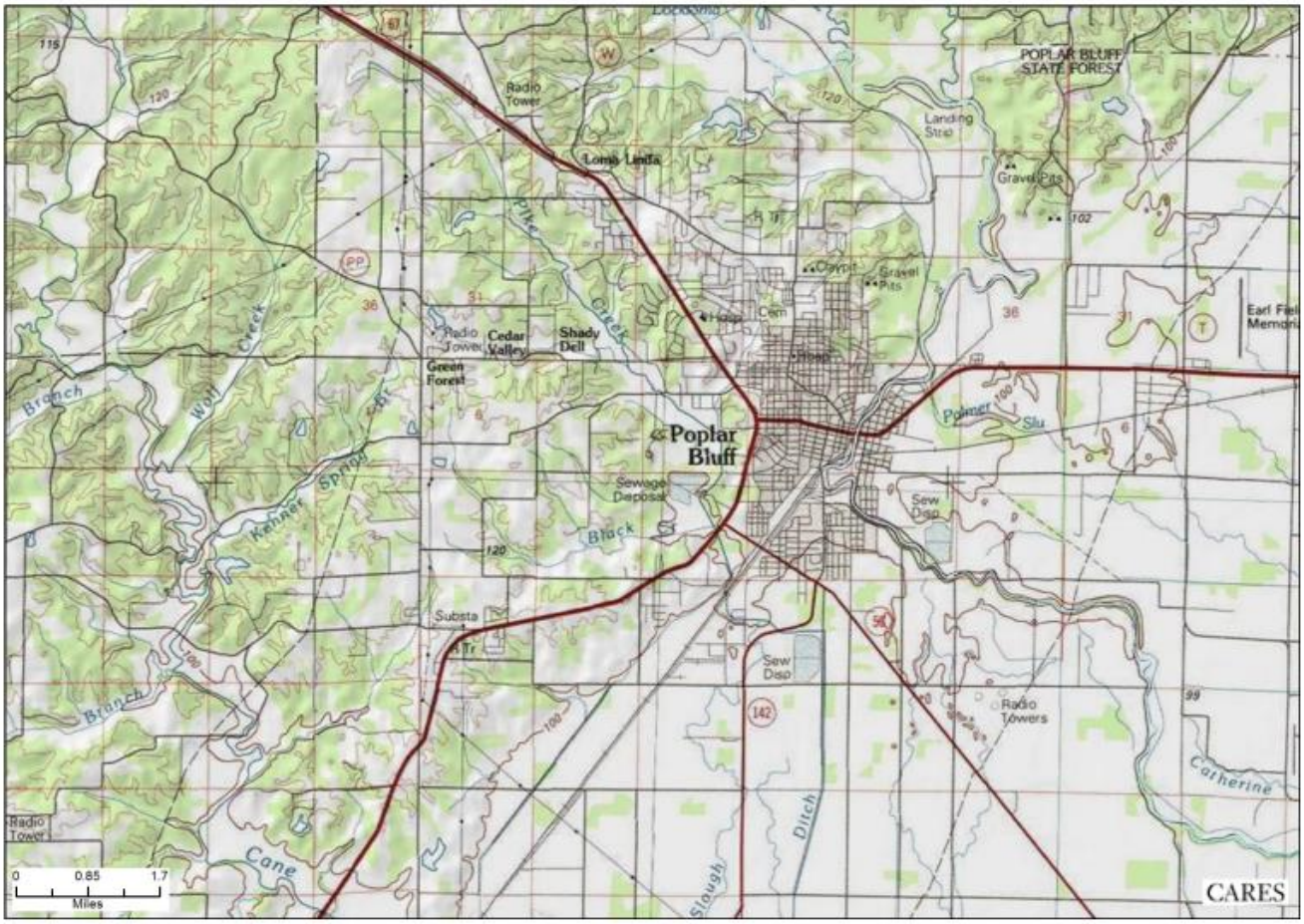
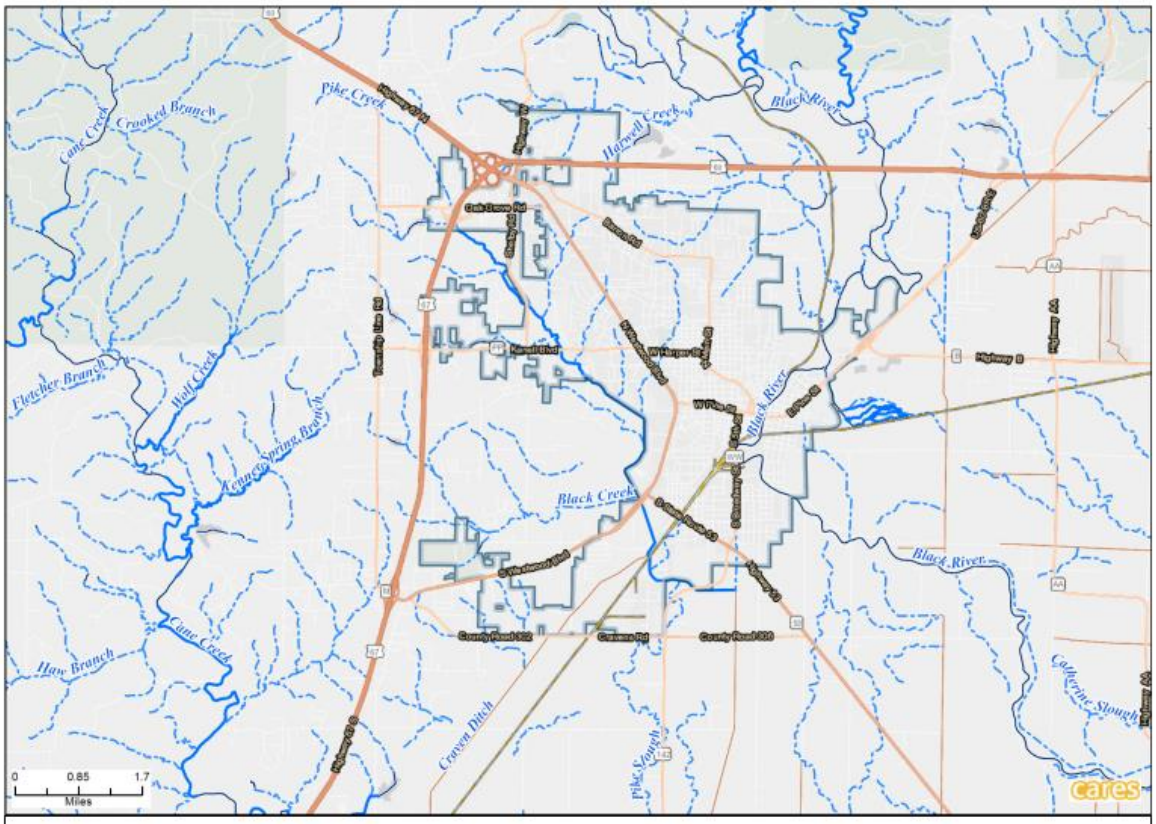


FIGURE 3 – WATERSHED MAP

FIGURE 4 – RIVERS AND STREAMS

Rivers and Streams



Map Legend

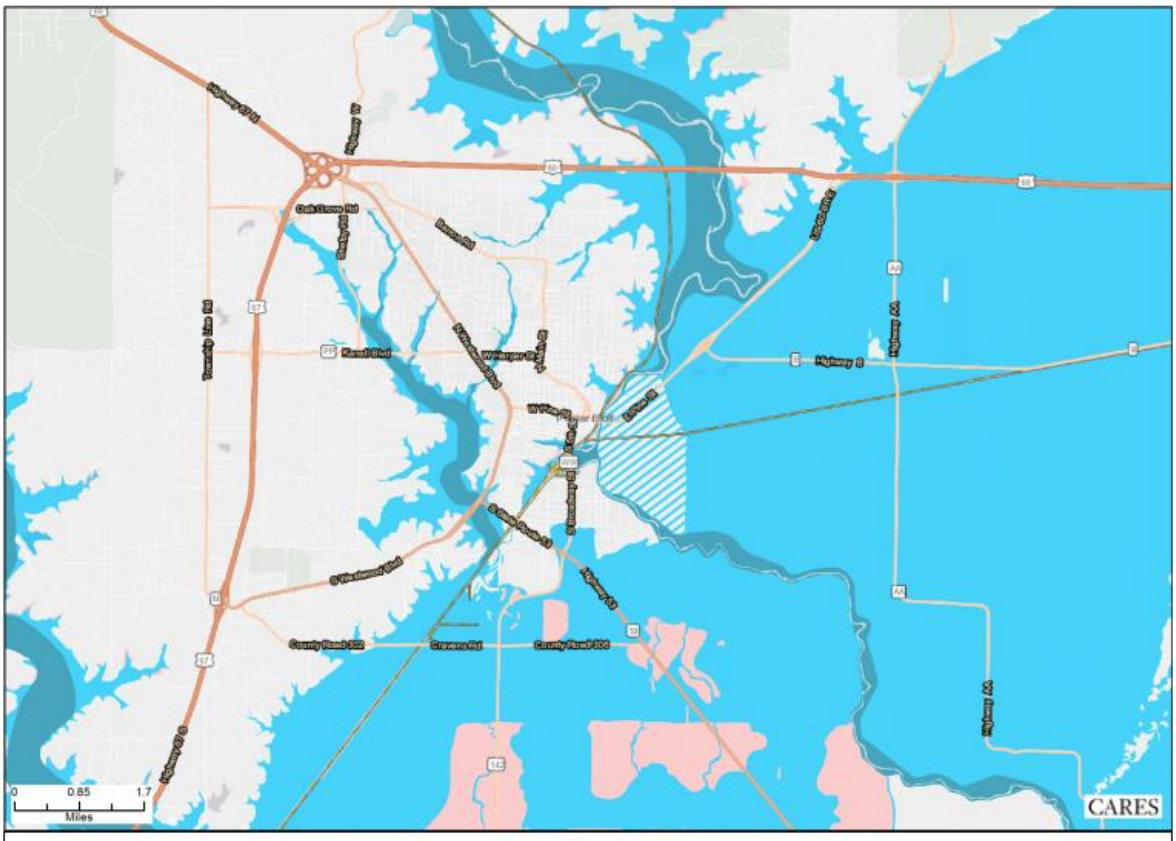
Hydrography - Rivers & Streams, USGS 2016

- Perennial
- Intermittent
- Unclassified
- Canal
- Pipe
- Artificial Path
- Coastline
- Connector

https://allthingsmissouri.org/missouri-map-room/, 12/7/2018

FIGURE 5 – FLOODPLAIN MAP

Floodplain



Map Legend

National Flood Hazard Layer - Flood Hazard Zones, FEMA 2016

- Floodway
- 1% Annual Chance (100 Year) Flood Zone
- 0.2% Annual Chance (500 Year) Flood Zone
- Area with Reduced Risk Due to Levee
- Future Conditions 1% Annual Chance
- Area of Undetermined Hazard
- Water

https://engagementnetwork.org/map-room/, 1/2/2019

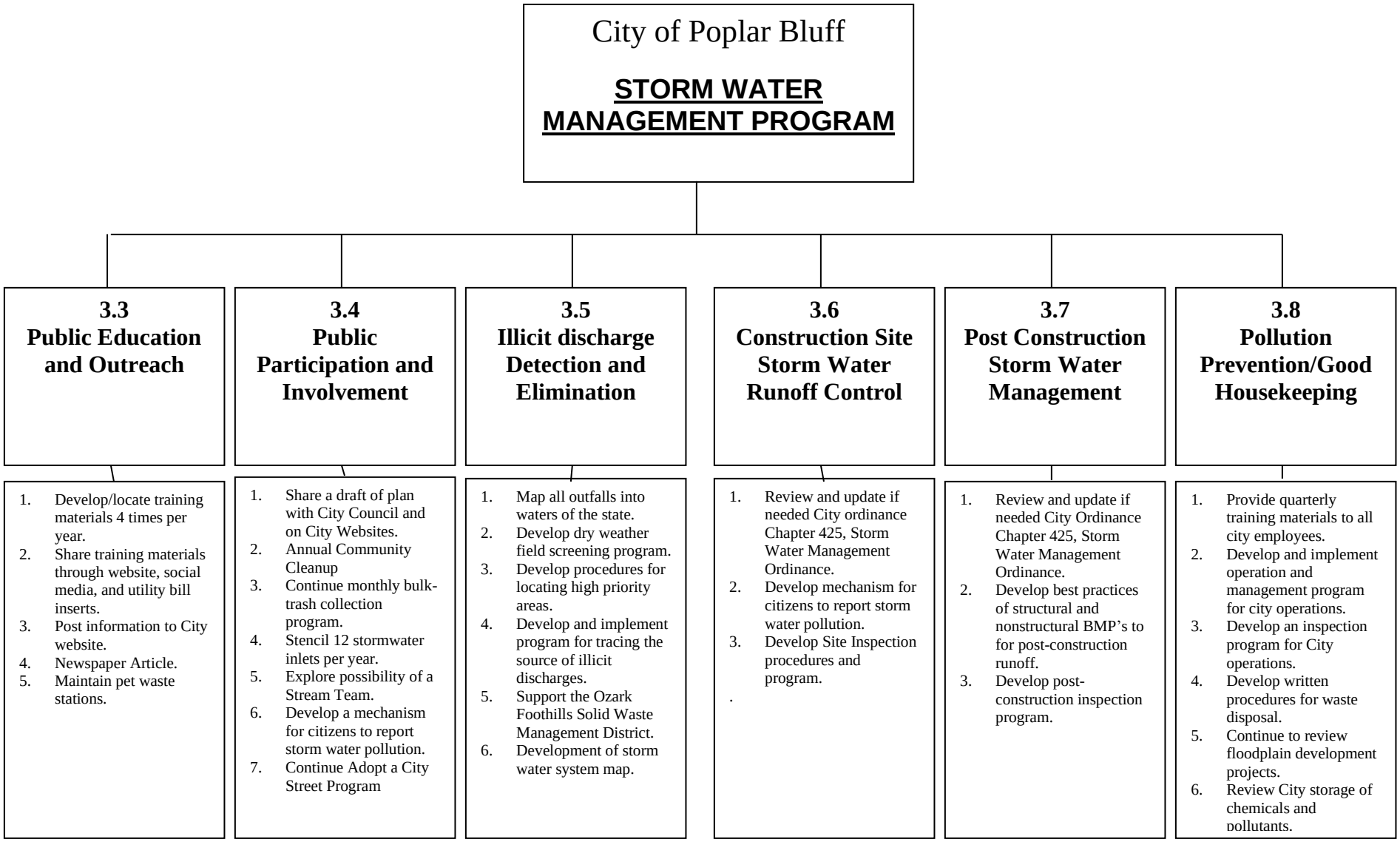


FIGURE 6 – SWMP CONTROL MEASURES

EXHIBIT 1

OUTLET INFORMATION

STORM WATER OUTLET – LEGAL DESCRIPTION

Outlet Number	Quarter	Quarter	Section	Township	Range	County	Lat.	Lon.
1	SE	NW	11	24N	6E	Butler	36.74389	90.38484
2	NE	NE	15	24N	6E	Butler	36.73336	90.39592
3	SE	NW	15	24N	6E	Butler	36.72956	90.40063
4	SE	SE	16	24N	6E	Butler	36.72246	90.43708
5	SE	SE	17	24N	6E	Butler	36.72431	90.44471
6	SW	SE	17	24N	6E	Butler	36.73549	90.44564
7	SW	SW	17	24N	6E	Butler	36.80423	90.43710
8	NW	NW	17	24N	6E	Butler	36.80425	90.43694
9	SW	NW	21	25N	6E	Butler	36.80388	90.42878
10	SW	NW	21	25N	6E	Butler	36.80386	90.42660
11	SW	SE	21	25N	6E	Butler	36.80385	90.42355
12	SW	NE	28	25N	6E	Butler	36.79729	90.41893
13	SW	NE	27	25N	6E	Butler	36.78847	90.39988
14	SW	NE	27	25N	6E	Butler	36.78842	90.39713
15	SE	SE	27	25N	6E	Butler	36.784136	90.39167
16	SW	SE	2	24N	6E	Butler	36.75129	90.38229
17	SW	SW	11	24N	6E	Butler	36.73696	90.38715

STORM WATER OUTLET – RECEIVING STREAM

Storm Water Outlet Number	Receiving Water
1	Black River
2	Main Ditch
3	Pike Creek
4	Main Ditch
5	Craven Creek
6	Craven Creek
7	Branch of Craven Creek
8	Black Creek
9	Unnamed Tributary to Black River
10	Unnamed Tributary to Black River
11	Unnamed Tributary to Black River
12	Unnamed Tributary to Black River
13	Unnamed Tributary to Black River
14	Unnamed Tributary to Black River
15	Unnamed Tributary to Black River
16	Unnamed Tributary to Black River
17	Main Ditch

EXHIBIT 2

MDNR NPDES MS4 GENERAL PERMIT

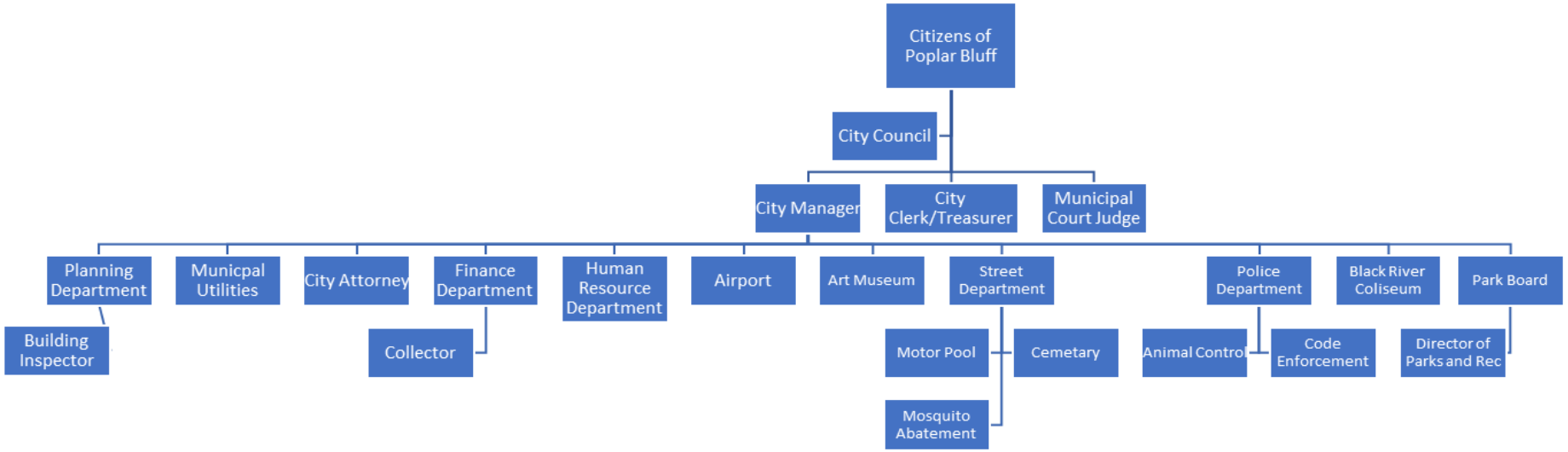
(to be included with SWMP upon issuance by MDNR)

EXHIBIT 3

EXISTING STORMWATER MANAGEMENT ORDINANCE

EXHIBIT 4

CITY ORGANIZATION CHART


Citizens of Poplar Bluff
City Council
City Manager
City Clerk/Treasurer
Municipal Court Judge
Planning Department
Municpal Utilities
City Attorney
Finance Department
Human Resource Department
Airport
Art Museum
Street Department
Police Department
Black River Coliseum
Park Board
Building Inspector
Collector
Motor Pool
Cemetary
Mosquito Abatement
Animal Control
Code Enforcement
Director of Parks and Rec