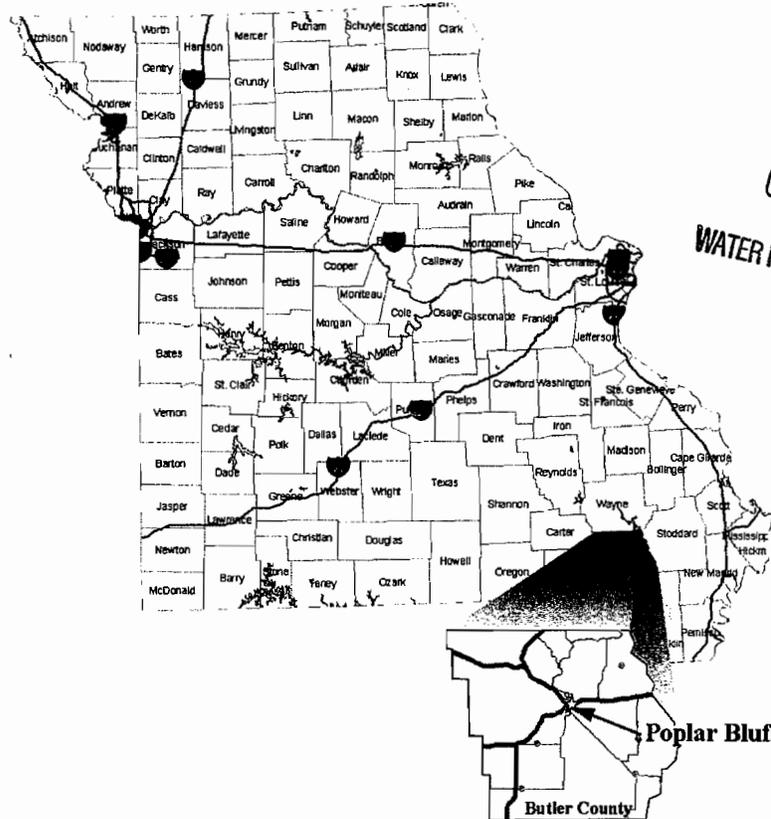

CITY OF POPLAR BLUFF
STORM WATER MANAGEMENT PROGRAM
UPDATE
DRAFT VERSION - OCTOBER 20, 2008



RECEIVED
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WATER PROTECTION PROGRAM



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 INTRODUCTION

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 2008 through 2012. The six minimum control measures are outlined as follows:

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

The sections that follow also discuss existing facilities and program management. A table of implementation schedules for each of the six control measures is included in section 5.0. Monitoring, recordkeeping, and reporting procedures are described in section 6.0 and funding issues are discussed in section 7.0. The content of this report provides the foundation for developing and evolving the City of Poplar Bluff's Storm Water Management Program in this second permit term.

2.0 EXISTING FACILITIES

The City of Poplar Bluff is the county seat of Butler County and has a population of 16,651 as of the 2000 census. Figure 1, entitled Vicinity Map, shows the location of Poplar Bluff within the State of Missouri, and Butler County. The City is situated within the Black River Drainage Basin between Black River to the north and east, and Pike Creek to the west and south. Figure 2, entitled Topographic Map, shows the contours of the area, and the locations of Black River and Pike Creek. The City is divided between two distinct physiographic provinces known as the Ozarks and the Southeast Lowlands. Most of the City falls within the Ozarks and is characterized by moderate relief and well-developed creeks and streams. Very small relief and poor drainage characterize the areas of the City located in the Southeast Lowlands. This area contains many man-made drainage ditches.

The entire city encompasses about 10,368 acres (16.2 square miles). Runoff from the City crosses the city limits at 17 separate locations as shown on Figure 3, 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 through 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.

3.0 PROGRAM MANAGEMENT

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 redevelopment 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.

4.0 PROGRAM ELEMENT IMPLEMENTATION

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 4 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.

4.1 PUBLIC EDUCATION AND OUTREACH

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 through 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.

Development of Best Management Practices (BMP's) for this element of the program will continue to take place through the first year of the permit term. Budgets will have to be revised and responsibilities assigned to handle BMP's for this and most aspects of the program. The following are best management practices that will be evaluated for implementation during this permit term:

1. City Web Site – Storm Water Page.
2. Storm Water Informational Billing Inserts.
3. Storm Water Newspaper Articles.
4. Permit Application Attachments; Information for Developers and Contractors.
5. Storm Water Education Seminars for Engineers, Contractors, and Developers utilizing the input from the Department of Natural Resources local representatives.

Measurement of these BMP's will be based on performance and effectiveness. 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.

4.2 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.

Development of Best Management Practices (BMP's) for this element of the program will take place throughout the 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. Promote Public Meetings and Open Workshops related to Storm Water.
2. Encourage New Development to Size Storm Water Structures to help meet City-wide Goals.
3. Encourage Volunteer Programs such as "Stream Team".

4. Encourage Educational Volunteers for Workshops and Seminars.
5. Encourage Participation in Illicit Discharge Identification.

Measurement of these BMP's will be based on the number of individuals participating in each of the targeted activities. Frequency of workshops and public meetings will be measured as well as the public attendance of each. The number and frequency of volunteer activities and the number of volunteers participating in each will be measured and recorded. Developer participation exceeding minimum requirements will be rewarded in the form of public recognition.

4.3 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. Continued Development and Increase the Level of Detail for the Storm Sewer System Map.
2. Continue Enforcement Procedures.
3. Inform Public of Hazards of Illicit Discharges (see Public Participation and Involvement).
4. Revise and Update Procedures for Reporting Illicit Discharges.
5. Categorize Areas According to Level of Impact from Storm Events.
6. Establish Procedures for Tracing and Identifying Illicit Discharges Sources.

The two main BMP's to be implemented in this permit term are the continued development of the Storm Sewer System Map 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 all of 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. Water quality monitoring at outlet locations around the City is another measure that may be considered.

4.4 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. Conduct Pre-Design Conferences with Developers.
2. Enhancement of the Procedures for Site Plan Review.
3. Modifications to Update the Procedures for Inspection and Enforcement.
4. Continued Development of the Procedures for Reporting Construction Site Runoff Pollution.
5. Review and Revision of Standards for Construction Site BMP's.

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 over one acre. 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.

4.5 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. Enforce the Existing Storm Water Management Ordinance.

2. Enhance the Procedures for Periodic Inspection of Storm Water Management Facilities.
3. Conduct Inspection and Enforcement of Storm Water Management Facilities.

The City's Storm Water Management Ordinance requires the development and design of a site-specific storm water management plan for most new development and re-development within the City, and is currently more stringent than the State of Missouri requirements. Inspections will continue and intensify as the procedures for inspection are modified to meet the needs and resources of the City. The City will continue to 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.

4.6 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. Continue Periodic Training Programs.
2. Maintenance and Inspection Schedule.
3. Review Departmental Operating Procedures.
4. Revise SWMP in 2008.

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.

5.0 SCHEDULE OF IMPLEMENTATION

Table 5.0 on the following pages, entitled “5-year BMP Implementation Schedule: 2008 through 2012” contains a summary of best management practices and estimate of schedules for completing or conducting each item. The period from 2008 to 2012 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 5.0 - 5-YEAR BMP IMPLEMENTATION SCHEDULE: 2008 through 2012

PROGRAM ELEMENT BMP'S, ACTIVITIES, AND TASKS	2008	2009	2010	2011	2012
4.1 Public Education and Outreach					
1 City Web Site - Storm Water Page					
2 Storm Water Informational Billing Inserts	●	●	●	●	●
3 Storm Water Newspaper/media Articles	●	●	●	●	●
4 Permit Application Attachment; Information for Developers and Contractors					
5 Storm Water Education Seminars	TBD	●	●	●	●
4.2 Public Participation and Involvement					
1 Public Meetings and Workshops					
2 Encourage New Development to Size Storm Water Structures to meet City-wide Goals					
3 Encourage and Promote Volunteer Programs					
4 Encourage Educational Volunteers for Workshops and Seminars					
5 Encourage Participation in Identifying Illicit Discharges					
4.3 Illicit Discharge Detection and Elimination					
1 Development and increased Detail of Storm Sewer System Map					
2 Enforcement Procedures					
3 Inform Public of Hazards of Illicit Discharges	●	●	●	●	●
4 Revise and Update Procedures for Reporting Illicit Discharges		◆		◆	
5 Categorize Areas According to Level of Impact from Storm Events				◆	
6 Establish Procedures for Tracing and Identifying		◆			
4.4 Construction Site Storm Water Runoff Control					
1 Conduct Pre-Construction Conferences with Developers					
2 Enhancement of the Procedures for Site Plan Review		◆		◆	

LEGEND: ◆ = Completion ● = Annual Event ■ = Ongoing; Continuing TBD = To Be Determined

TABLE 5.0 - 5-YEAR BMP IMPLEMENTATION SCHEDULE: 2008 through 2012

PROGRAM ELEMENT BMP'S, ACTIVITIES, AND TASKS	2008	2009	2010	2011	2012
3 Modifications to Update the Procedures for Inspection and Enforcement	◆		◆		
4 Continued Development of the Procedures for Reporting Construction Site Runoff Pollution		◆		◆	
5 Review and Revision of Standards for Construction Site BMP's					
4.5 Post-Construction Storm Water Management					
1 Enforce the Existing Storm Water Management Ordinance					
2 Enhance the Procedures for Periodic Inspection of Storm Water Management Facilities	◆		◆		◆
3 Conduct Inspection and Enforcement of Storm Water Management Facilities					
4 Require Engineer's Certification of Storm Water Management Features					
4.6 Pollution Prevention/Good Housekeeping					
1 Continue Periodic Training Program		◆		◆	
2 Maintenance and Inspection Schedule for Storm Drainage System					◆
3 Review Departmental Operating Procedures	●	●	●	●	●
4 Revise SWMP					◆

LEGEND: ◆ = Completion ● = Annual Event ■ = Ongoing; Continuing TBD = To Be Determined

6.0 MONITORING, RECORDKEEPING, AND REPORTING

Monitoring procedures when used shall meet all requirements 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.

7.0 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.

8.0 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

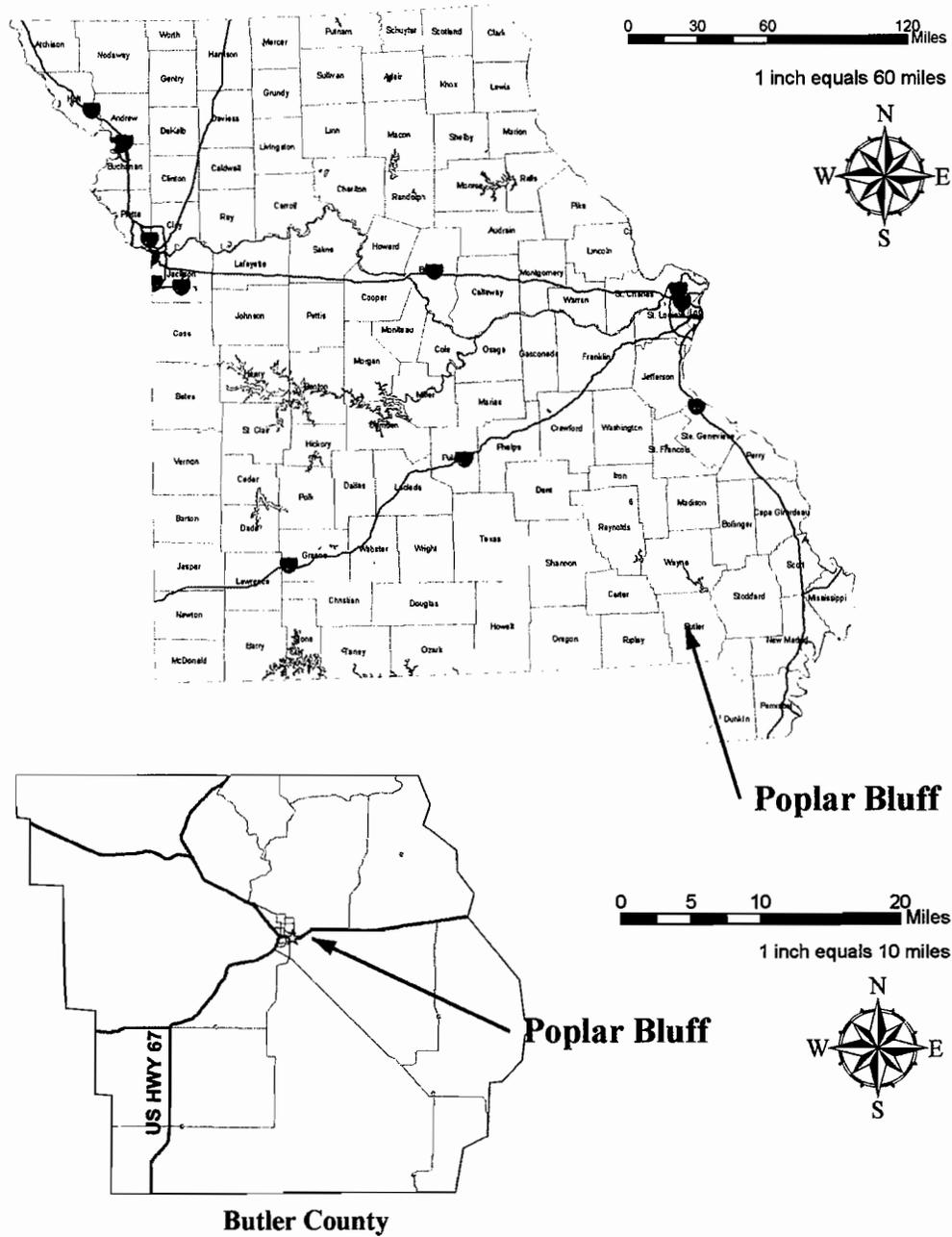


FIGURE 1 – VICINITY MAP



FIGURE 2 – TOPOGRAPHIC MAP

POPLAR BLUFF, MISSOURI

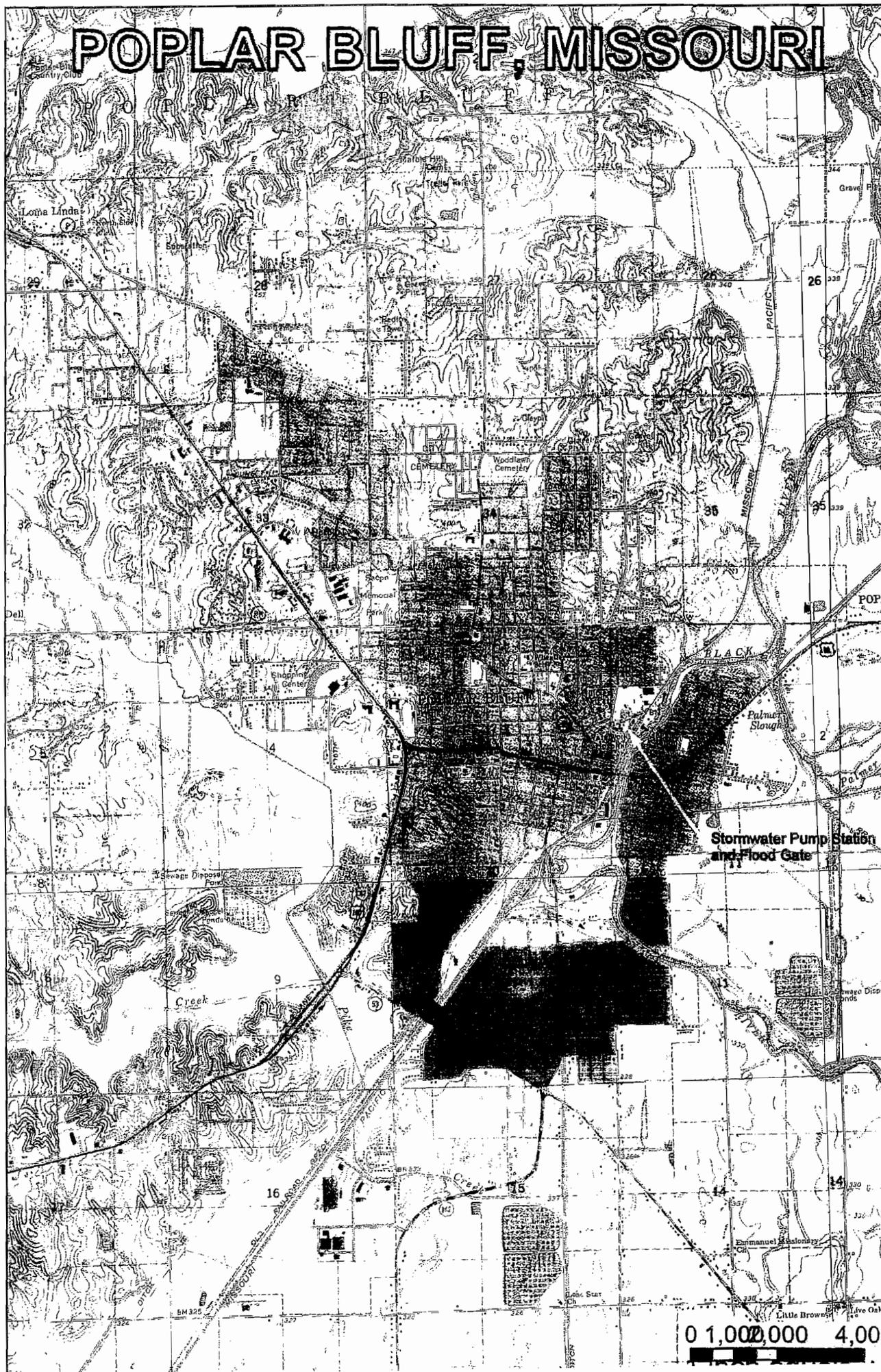




FIGURE 3 – STORM WATER OUTLETS

Legend

- StormwaterOutlets
- NEW BYPASS
- US HWY
- HWY
- STATE HWY
- LOCAL ARTERIAL
- LOCAL COLLECTOR
- LOCAL ROAD
- GRAVEL ROAD
- UNIMPROVED RD
- Public Land Survey

Rivers
Streams
Water Body
Swamp

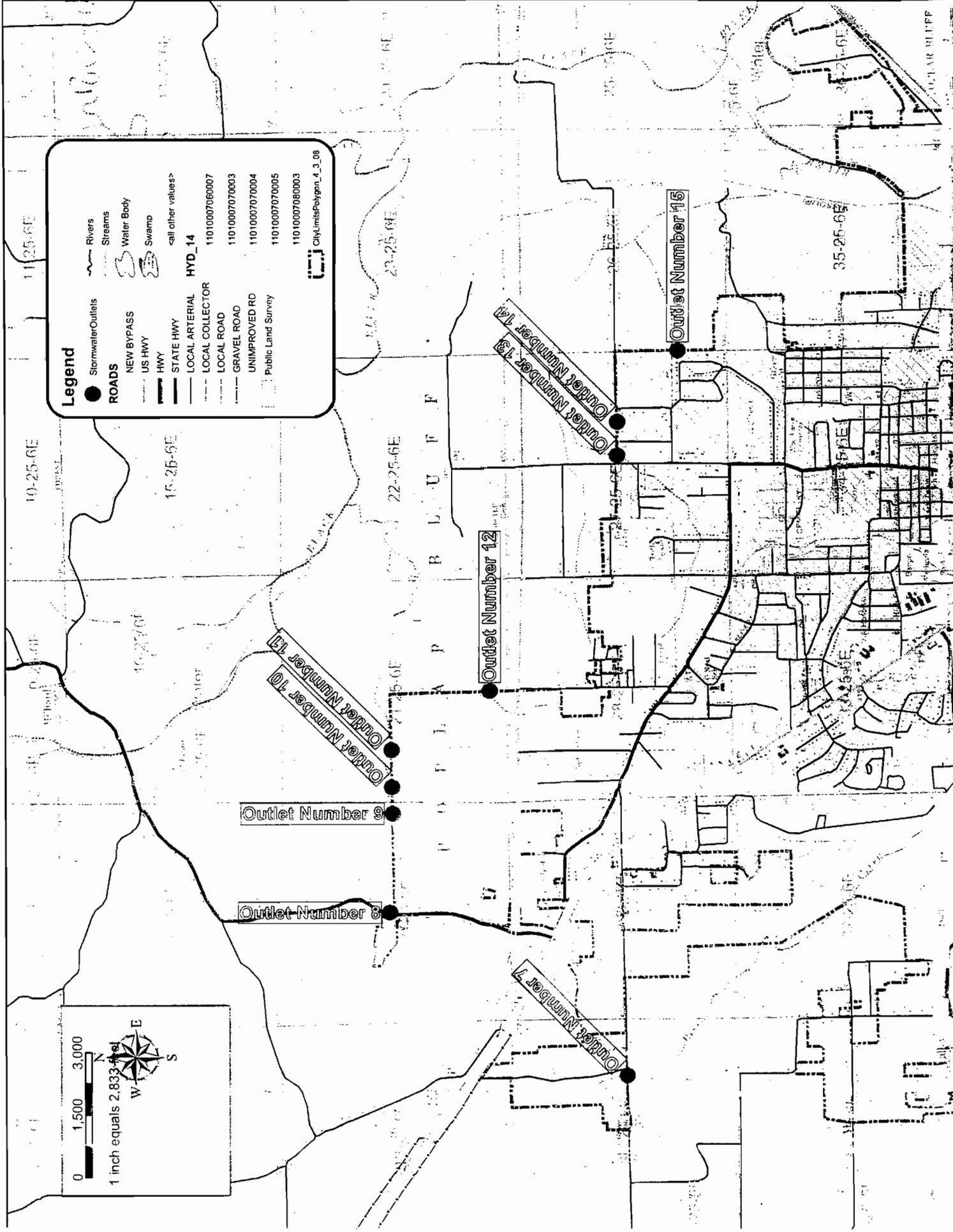
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CityLimitsPolygon_4_3_08

0 1,500 3,000

1 inch equals 2,833 feet



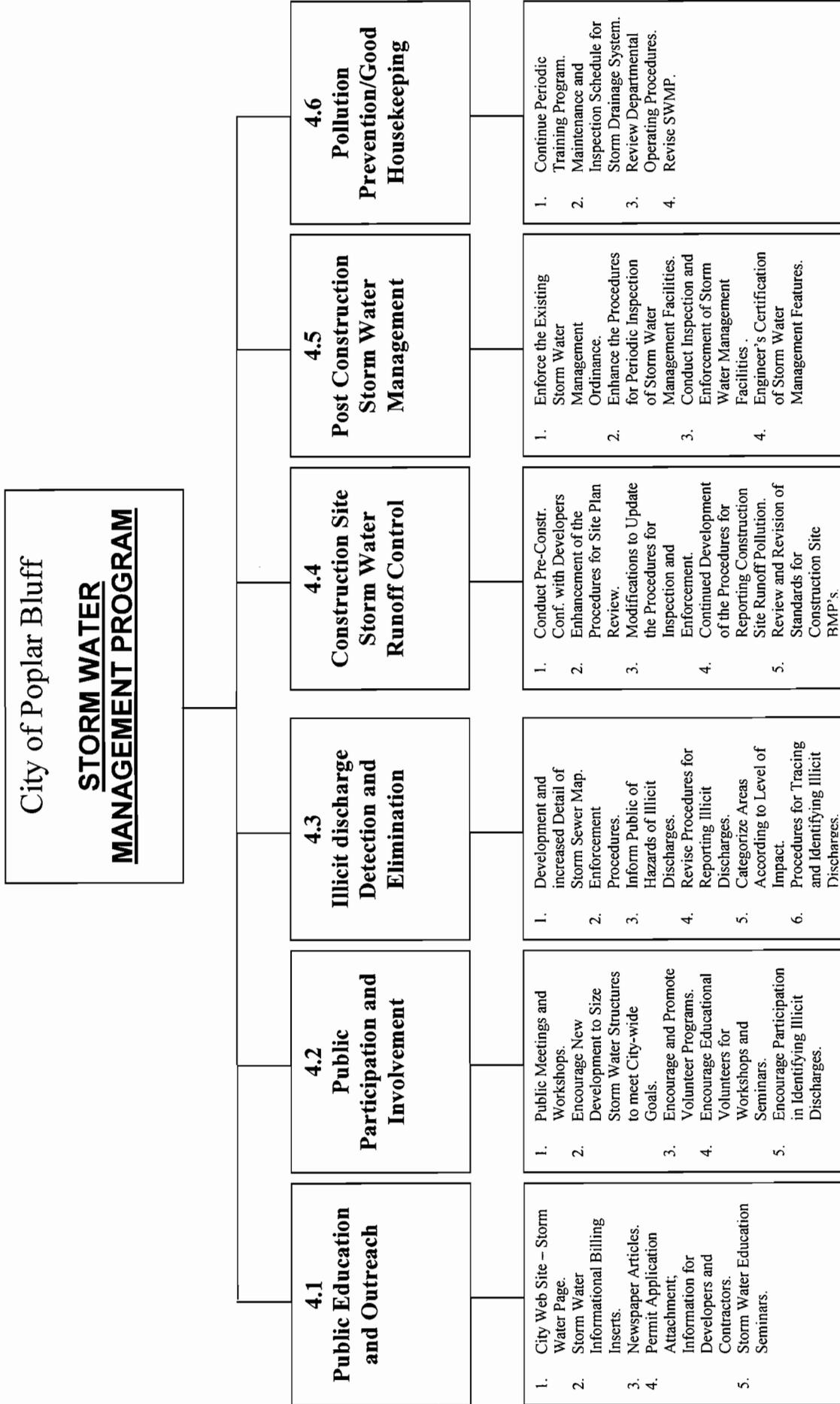


FIGURE 4 – SWMP CONTROL MEASURES



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	SW	SE	17	24N	6E	Butler	36.72246	90.43708
5	SW	SW	17	24N	6E	Butler	36.72431	90.44471
6	NE	NE	18	24N	6E	Butler	36.73549	90.44564
7	SE	NE	30	25N	6E	Butler	36.78891	90.45091
8	SW	NE	20	25N	6E	Butler	36.80425	90.43694
9	SE	NE	20	25N	6E	Butler	36.80388	90.42878
10	SW	NW	21	25N	6E	Butler	36.80386	90.42660
11	SW	NW	21	25N	6E	Butler	36.80385	90.42355
12	SW	SE	21	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	36.78435	90.39139
16	SW	SE	2	24N	6E	Butler	36.75129	90.38247
17	SW	SW	11	24N	6E	Butler	36.73696	90.38708

STORM WATER OUTLET – RECEIVING STREAM

Storm Water Outlet Number	Receiving Water
1	Black River
2	Main Ditch
3	Pike Creek
4	Craven Creek
5	Craven Creek
6	Black Creek
7	Pike Creek
8	Unnamed Tributary to Black River
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



(to be included with storm water permit application submittal to MDNR)