

Storm Water Management Plan

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Parish of Caddo

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1.0 Introduction to Storm Water Management

1.1 What is the Purpose of the Storm Water Management Plan?

The purpose of this Storm Water Management Plan (SWMP) is to present information to the public on Caddo Parish's goals and efforts to maintain and improve the quality of the waters that receive runoff from the parish. This plan also is used to document Caddo Parish's compliance and cooperation with state and federal storm water permitting programs as required by the Clean Water Act. The parish welcomes the opportunity to participate in these programs in order to further the Parish's goal of providing a safe and environmentally clean place to live and work for all of our citizens. Caddo Parish's commitment to this program includes planning, developing, and implementing an effective Storm Water Management Program that is protective of the environment and fair to all citizens and businesses in the parish while protecting and improving the public safety of the citizens and the environment.

1.2 Is Caddo Parish Required to Prepare a Plan?

Yes. In accordance with the Clean Water Act, the Environmental Protection agency (EPA) and the Louisiana Department of Environmental Quality (LDEQ) implemented regulations that govern the discharge of storm water from certain urbanized areas. These regulations require Caddo Parish to develop, implement, and maintain a Storm Water Management Plan.

Caddo Parish is included in this regulatory requirement because we are considered to be the operator of a regulated small municipal separate storm sewer system (MS4). A small MS4 is any publicly-owned storm water drainage system from an area with a population of less than 100,000 persons and with a population density of at least 1,000 persons per square mile. The requirement to prepare and implement a Storm Water Management Plan, as well as other requirements, is listed in a permit issued by the LDEQ. The LDEQ issued a general permit for all small municipal separate storm sewer systems (LDEQ Permit no. LAR040000) in the State of Louisiana. This permit requires the governing body responsible for the municipal separate storm sewer system (such as Caddo Parish) to file a Notice of Intent and prepare and implement a Storm Water Management Plan. The most recent Notice of intent was submitted by Caddo Parish in December 2018. The Storm Water Management Plan is to be maintained and updated during the five year term of the permit. Since we expect to learn more about protecting and improving the water quality in our area as we work on this program, this plan will evolve as we learn from our efforts.

1.3 Goals for the Storm Water Management Program

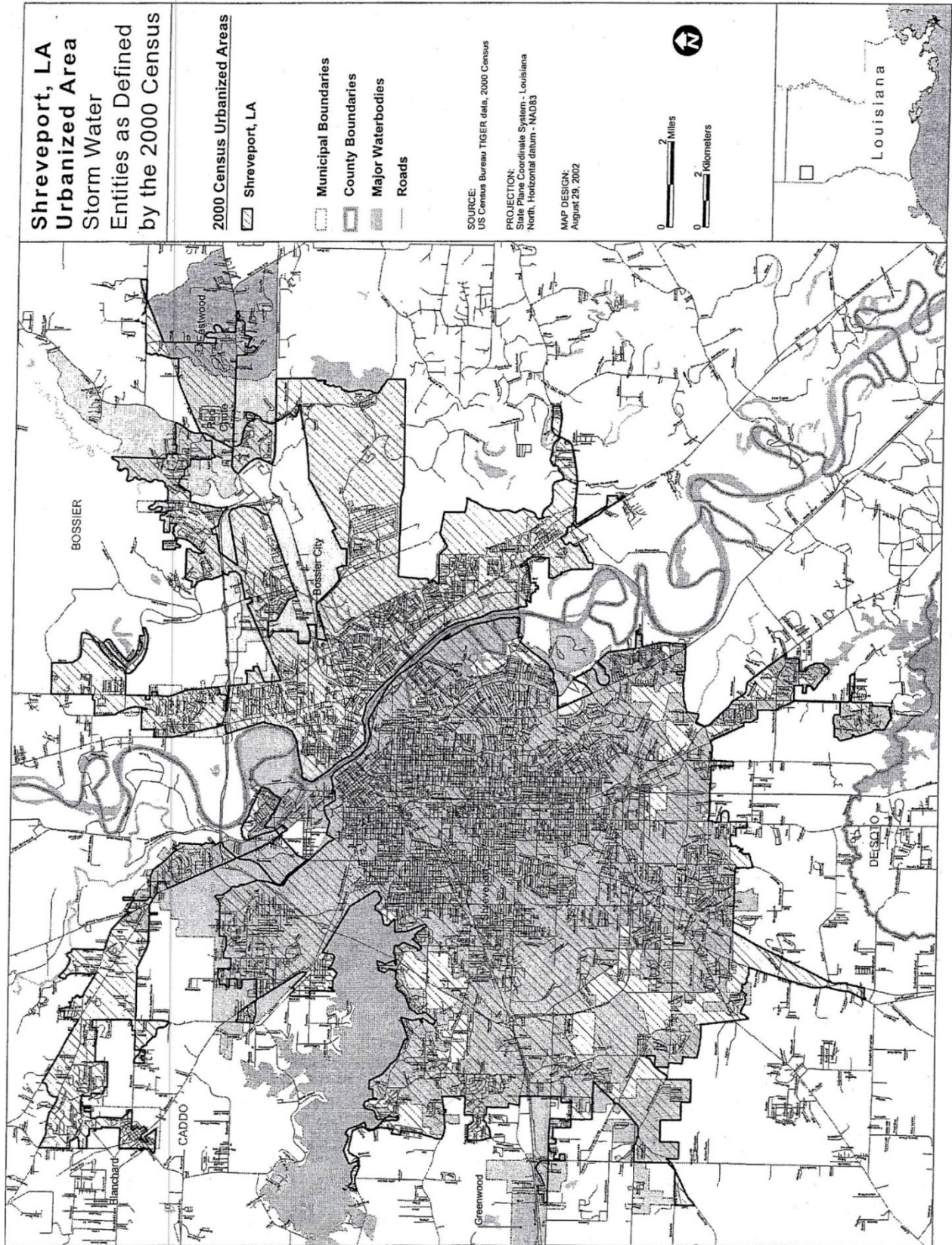
The goal of this program is to improve the quality of the storm water runoff from the more populated areas of the parish. By reducing or eliminating these potential pollutants in the storm water runoff, the quality of the water in the streams and rivers should be improved. Improving the quality of these waters will provide cleaner and safer water for drinking, fishing, swimming, and other recreational purposes.

In preparing this Storm Water Management Plan, Caddo Parish hopes to meet its regulatory requirements but also to educate the public, private businesses, and ourselves (governmental agencies, departments, and employees) as to the importance of controlling the quality of the storm water runoff from these areas and how best to accomplish this goal. Our intent is to address the specific issues identified by the EPA, LDEQ, private citizens and businesses, as well as our employees. These issues will help us determine how we are impacting the quality of our storm water runoff and the quality of our environment. We expect these issues to also provide some general “common sense” initiatives for the overall protection of our waters. It is our goal to reach out to all of our citizens and businesses and to reach inward to our agencies, departments, and employees in order to encourage their involvement and cooperation. Caddo Parish will lead the way in reducing pollutants by vigorously developing and implementing storm water management practices throughout the parish for all parish operations not just those in the urbanized areas.

1.4 Roles and Responsibilities of Caddo Parish, the Public, and Other Agencies

What is the role of Caddo Parish?

Caddo Parish will be responsible for the development and implementation of the SWMP in the urbanized areas (as designated by EPA) located outside of the City of Shreveport. The currently recognized urbanized areas for Caddo Parish are indicated on the map labeled as Figure 1 attached to this plan. The urbanized areas for Caddo Parish include all of the City of Shreveport and the more densely population portions of the parish around and outside of the Shreveport city limits. Under the LDEQ Small MS4 General Permit, Caddo Parish is responsible for developing and implementing this SWMP to maintain and improve the quality of the waters that receive storm water discharge from the urbanized areas, as shown in Figure 1. In addition to addressing the discharges from the urbanized areas, Caddo Parish has prepared this SWMP as a parish-wide program to protect all of the receiving waters in the parish.



As the department responsible for drainage and engineering in the parish, the Caddo Parish Department of Public Works will be responsible for development, implementation, and maintenance of the SWMP. The Director of Public Works is designated as the Caddo Parish official responsible for the SWMP. The director is assisted by Public Works Project Manager, and Public Works Inspector. These positions assist in MS4 implementation as part of their normal duties. Although the Department of Public Works takes the lead role in plan development and implementation, many other departments and administrative officials will be actively involved in the development, implementation, and support of the program.

In order to accomplish the goals and directives of this program, Caddo Parish will utilize the information obtained from public comments, the EPA database for Phase II storm water BMPs, LDEQ water quality data, USGS topographic maps along with other engineering information including GIS data from the various government agencies and departments to formulate the elements of the SWMP. In addition, information from business and civic groups and communities in the parish and in particular in the urbanized areas will be reviewed and where possible incorporated into the SWMP.

What is the roll of the public?

The public can play a significant role in working with and supporting the parish in our efforts to implement this Storm Water management Program. Caddo Parish believes the public can provide valuable input and assistance for our program. This can be in the form of input from the public on this plan, public input on potential pollutants sources or in the form of participating in our future public outreach programs to educate the public and participate in pollution prevention events. For our program and this plan to be successful, an active and involved public will be necessary for support and implementation assistance.

What is the role of the City of Shreveport?

The City of Shreveport having a population greater than 100,000 people as determined by the Bureau of the Census, was issued a Phase I storm water general permit for large municipal areas by EPA and upon renewal by LDEQ. Shreveport has been authorized to discharge storm water under this general permit since 1995. The Phase I general permit has more stringent terms and conditions than the Phase II general permit due to the increased potential for pollutants from the more densely populated urban areas (population over 100,000 people). Therefore, the City of Shreveport will retain the Phase I storm water permit covering the urbanized areas within the city limits.

Residences and businesses within this area are under the City of Shreveport's regulatory authority and should follow the terms and conditions set forth by the City of Shreveport to comply with their Phase I permit. The City of Shreveport will be consulted on issues involving the urbanized areas within the Metropolitan Planning Area five-mile limit.

As a result of Shreveport's Phase I Storm Water Permit coverage, the City of Shreveport will implement pollution control measures within the Shreveport City limits on behalf of Caddo Parish. This will prevent duplicate efforts while still maintaining adequate control measures to reduce pollutants in the storm water discharge.

All portions of the urbanized area within the five-mile Metropolitan Planning Area will be a cooperative effort by Caddo Parish as lead agency and the City of Shreveport. Areas outside of the Metropolitan Planning Area and the remainder of the parish will be the responsibility of Caddo Parish with Consultation from the smaller municipalities and communities in the parish outside of the City of Shreveport on the portions of the SWMP that affects their communities.

What are the roles of other government agencies?

Under the Phase II storm Water Program, the LDEQ is considered to be the administrative authority for Caddo Parish. That is, it is the responsibility of the LDEQ to review the parish's program and ensure that it meets the goal of improving or maintaining the quality of the receiving waters. The EPA also maintains this responsibility but is not typically as closely involved as LDEQ.

Under portions of the program, Caddo Parish will utilize existing environmental programs already implemented by the LDEQ. For example, the LDEQ currently maintains a storm water permitting program for regulated construction sites that disturb land greater than five acres and another storm water permitting program for construction sites that disturb between 1 and 5 acres. Caddo Parish will utilize these programs to partially fulfill their requirements for a similar permitting program. In this way, Caddo Parish's efforts can complement the LDEQ program and improve implementation of the program through local plan review and inspections, rather than duplication of effort in the permitting process.

1.5 How Does The Storm Water Management Plan Work?

The Storm Water Management Plan is a document that describes Caddo Parish's intent and plan of action to reduce potential pollutants in the storm water that discharges from the parish to surface waters. The plan will be a source of information as well as a road map of the process which will be used to work towards the goal of protecting the quality of our waters. The process documented in the plan is as follows:

1. Identification of program goals,
2. Characterization and assessment of drainage areas and receiving waters,
3. Identification of potential problem areas and opportunities,
4. Selection of control measures, and
5. Implementation, operation, and maintenance of the program.

The Plan serves as documentation of the assessment and characterization of the Caddo Parish drainage areas and receiving waters. The basic intent for characterizing and assessing the drainage areas and receiving waters is to identify the existing conditions accurately; so that goals can be accurately set and problem areas and opportunities can be identified. Once the plan is followed to identify problem areas and opportunities, appropriate control measures can be selected to address the problems.

The plan also provides selection criteria for determining what control measures are considered to be Best Management Practices (BMPs) that can effectively be implemented to reduce potential pollutants in the storm water runoff. Lastly, the SWMP provides guidance on the implementation, operation and maintenance of the control measures and the program. As a program that is focused on controlling pollutants from urban areas, and considering the current trends towards and increases in urban areas, it is likely that this will be an ongoing program that will need to be maintained well into the future. Additionally, the program will need to be maintained to address the specific needs and characteristics of the parish as they change; so the plan includes provisions for updating the program and the SWMP for it to remain an accurate reflection of the current conditions in the parish.

2.0 Characterization and Assessment of drainage Areas

To be sure the program goals are properly focused on areas where an impact can be made, it is necessary to assess existing water resource conditions and the pollutants which may get into the storm water. The first step in this process is to identify and characterize the drainage areas. The second step is to identify and characterize the receiving waters. Next, problem areas can be identified and potential relationships can be formulated, if present, between the problems and the characterization information. The intent is not to necessarily point a finger at any one issue, but to try to identify potential areas where control measures may effectively reduce pollutants in the discharge. For the program to be effective, the water quality objectives for the program need to be consistent with the water quality objectives established for each receiving water. Lastly, steps need to be taken to be sure that the continued operation of existing water conveyances and the implementation of control measures will not adversely impact sensitive areas or environments.

2.1 Description of Drainage Areas

At the time of initial preparation of this SWMP, drainage mapping is not yet completed, so a description of the drainage areas will not be specifically included in the SWMP until mapping is completed.

Future description and characterization of the drainage areas will address the following:

- Land use,
- Zoning,
- Topography,
- Drainage conveyances,
- Industrial development
- Residential development
- Erosion potential,
- Industrial activities,
- Population segments,
- Existing structural controls, and
- Potential problems and opportunities.

2.2 Description of Receiving Streams

Red River and its tributaries drain all of Caddo Parish except for a small portion of southwest Caddo Parish which drains to tributaries of the Sabine River. The following streams have been identified as receiving waters for Caddo Parish: Cross Bayou, Twelve mile Bayou, Red River, Cross Lake, Gilmer Bayou, and Wallace Lake.

As a drinking water supply for the City of Shreveport, Cross Lake is certainly considered to be a top priority for protection from potential pollutants in the storm water discharge. Many of the other receiving waters are designated for recreational use, fish and wildlife use, and agricultural use. All of these uses may be impacted by potential pollutants in the storm water runoff and are addressed by this plan.

A more detailed assessment of the receiving waters will be conducted after mapping of the MS4 is completed and receiving waters and receiving water segments can be more accurately identified. Future description and characterization of the receiving waters will include the following:

- Designated uses,
- Existing uses,
- Impaired status,
- Physical, chemical, and biological conditions
- Storm drainage characteristics,
- Base flow characteristics,
- Water quality objectives, and
- Other stream-specific data, as available.

2.3 What are TMDLs?

Total Maximum Daily Loads (TMDL) are water quality assessments that determine the source or sources of pollutants of concern for a particular water body, consider the maximum amounts of each pollutant the water body can assimilate, and then allocate to each source a set level of pollutants that may be discharged (i.e., a “wasteload allocation”) without causing water quality problems in the stream or river. At the time of this initial plan preparation, no TMDLs have been issued for the receiving waters for Caddo Parish. It is anticipated that some TMDLs may be issued in the future. Consequently, this plan does not currently address any specific TMDLs. If TMDLs are approved during the term of this permit, BMPs may be reviewed and changed as necessary to properly address to TMDLs.

2.4 Drainage Area Water Quality/Quantity Objectives

One of Caddo Parish’s drainage area objectives in preparing this plan and implementing the Storm Water Management Program is to maintain or improve the quality of the waters that receive storm water discharge from the parish. On a bi-annual basis, the state of Louisiana conducts an assessment of all surface water bodies. The purpose of this assessment, known as the Integrated Report of Water Quality in Louisiana 305(b), is to determine whether the quality of the water is appropriate for the water’s designated uses. If the state determines that a certain pollutant is present at levels which exceed levels appropriate for the water body’s intended uses, then the water body may be considered to be impaired.

For impaired receiving waters, the goal of this Storm Water Management Program will be to initiate BMPs, where feasible, that are focused on reducing the pollutant loading for which the water is considered impaired. For waters that are not considered impaired, the goal of this Storm Water Management Program will be to initiate BMPs to prevent future impairment of receiving waters.

The other main drainage area objective for Caddo Parish is to maintain water runoff quantities rates which maintain or improve existing runoff conditions. As developed areas expand to new development and as re-development opportunities are utilized, it is important to take advantage of a planning process that addresses the maintenance of water quality objectives.

The process includes maintaining the runoff rates at pre-development levels, implementation of planning strategies to reduce runoff from developed areas, and protect sensitive areas and drainage pathways. Overall, the intent is to prevent new development and re-development from compounding any existing water quality problems or from creating any new water quality problems.

As of December 2018, Caddo had several bodies of water in impairment with most being of natural causes and none were municipal sources that Caddo is in control of. This Integrated Report of Water Quality in Louisiana 305(b) will be reviewed annual for possible adjustments in our BMPs. Bayou Pierre, Boggy Bayou, and Wallace Lake are all affected by storm water activities from the City of Shreveport. The Parish is currently working with the City to determine these causes and create solutions that the City can use to reduce. The City was working to re-construct sewer mains and manholes to correct.

2.5 Threatened and Endangered Species

Storm Water discharges or the implementation of the SWMP for Caddo Parish to our knowledge, does not adversely affect any listed threatened or endangered species or adversely modify designated critical habitat. If any listed species or critical habitat is encountered within the urbanized area, the U.S. Fish and Wildlife Service will be consulted.

Caddo Parish will also pursue the requirement for LDEQ permittees obtaining authorization to discharge storm water from small (less than 5 acres and more than 1 acre) and large (five acres or over) construction sites to certify that their activities do not impact any listed threatened or endangered species or will adversely modify designated critical habitat.

2.6 National Register of Historic Places

Storm water discharges or the implementation of the SWMP for Caddo Parish to our knowledge, does not adversely affect any properties listed or eligible for listing in the National Register of Historic Places. Should the potential for one of these sites to be impacted occur, Caddo Parish will contact the State Historic Preservation Officer to coordinate the necessary activities to avoid or minimize the impacts on the property.

Caddo Parish will also pursue the requirement for LDEQ permittees obtaining authorization to discharge storm water from small (less than 5 acres and more than 1 acre) and large (five acres or over) construction sites to certify that their activities do not impact historical or potentially historical sites.

3.0 What are Best Management Practices?

Best Management Practices (BMPs) are generally the actions and activities taken under this program to remove pollutants from the storm water runoff. These BMPs can be in the form of structural BMPs, such as detention basins or erosion control practices. The BMPs may also be non-structural BMPs such as educational outreach and public awareness efforts. BMP's are the central element of the Storm Water Management Program, and as such, have a controlling effect on the success of the program. That is why it is very important to collect data on the receiving waters and potential sources of pollutants; so BMPs can be properly selected to address the specific characteristic and needs of Caddo Parish.

3.1 BMP Selection Criteria

One of the ways to categorize BMPs is pollution prevention BMPs and pollution treatment BMPs. Due to the volume of storm water that can accumulate over a large area, pollution treatment BMPs are not typically feasible on a large scale. In most cases, smaller pollution treatment BMPs as well as pollution prevention BMPs can be implemented on a localized basis. In addition, many non-structural BMPs can be implemented as pollution prevention BMPs in an effective manner in a large scale. Consequently, the selection of BMPs in this program is weighed heavily on pollution prevention BMPs and non-structural controls which, when combined, have the potential to reduce pollutants in the storm water runoff. In many instances, a single BMP may be viewed as not being very effective, but in combination with other BMPs may be effective in reducing pollutants in the storm water runoff.

3.2 Measured Goals

Measurable goals are the criteria selected that allow for the assessment of the effectiveness of the BMPs. These goals and objectives quantify the progress of implementation of the SWMP. For each BMP, Caddo Parish has selected measurable goals. Some of the measurable goals are narrative and some are quantitative. In all cases, the measurable goals have been developed to provide a description of the activity, the anticipated result in achieving the goal, and the frequency and dates of each action.

The measurable goals were selected after careful consideration and review, taking into consideration comments, regulatory guidelines, consultation with the effected government agencies and departments as well as the communities and municipalities within the urbanized areas, and Caddo Parish employees. These goals were selected, not just to meet regulatory requirements but to obtain a true evaluation of the appropriateness and effectiveness of the best management practices (BMP) incorporated into the SWMP. These goals were selected for their ability to measure the effectiveness of the BMP while utilizing the available resources of the parish along with cooperation from the public, local civic groups, businesses, and environmental groups will be used to perform the evaluation functions. Specific BMPs and the measurable goals for each BMP may be found in Table 1, Best Management Practices Summary and in the BMP Data Sheets in Appendix A.

These BMPs will be evaluated each year for effectiveness in the overall goal, improving water quality in Caddo Parish. The BMP will be considered a success if the measurable goal for each item was met and as a result the water quality in the Parish was improved. In some cases, the actual goal may not have been totally met, but the overall goal of improved water quality may have been achieved.

3.3 Minimum Control Measures

Six minimum control measures have been specified by the LDEQ. For each minimum control measure, Caddo Parish has identified BMPs to control pollutants in the storm water runoff.

3.3.1 Public Education and Outreach on Storm Water Impacts

Caddo Parish will continue a public education program to distribute educational materials to the community as well as use equivalent outreach activities to educate the public, businesses, and government agencies and departments about the impact of storm water discharges on waterbodies and the steps that the public can take to reduce pollutants in the storm water runoff.

Table 1 provides a summary of the current proposed BMPs. Appendix A provides a more detailed listing and description of each BMP and measurable goal. The BMPs selected for this minimum control measure are:

- Internet access to Storm Water Management Plan,
- Educational Pamphlets on Household Waste Management, and
- Public Meetings to Introduce SWMP and Solicit Input.

3.3.2 Public Involvement/Participation

Caddo Parish will comply with State and local public notice requirements when conducting a public involvement program. Wherever possible, Caddo Parish will reach out to all people of various economic and ethnic group in the community to include them in the development, implementation, and review of the Storm Water Management Program. Caddo Parish will actively pursue opportunities for members of the public to participate in program development and implementation, including attending public hearings, workshops, and working as citizen volunteers on various storm water pollution prevention projects.

Table 1 provides a summary of the current proposed BMPs Appendix A provides a more detailed listing and description of each BMP and measurable goal. The BMPs selected for this minimum control measure are:

- Household Hazardous Waste Disposal Sponsorship,
- Stakeholder Meetings-Land Developers and Engineers, and
- Neighborhood Cleanup Assistance.

3.3.3 Illicit Discharge Detection and Elimination

Caddo Parish has developed, implemented, and enforced a program to detect and eliminate illicit discharges in to the municipal separate storm water system. As part of the detection program, the parish maintains maps of the storm water system indicating the location of all outfalls and the name and location of all receiving streams that the system discharges into. The parish will seek the appropriate regulatory authority to prohibit non-storm water discharges into the storm sewer system and implement appropriate enforcement procedures and actions. The plan developed and implemented (Appendix E) to detect and address non-storm water discharges, including illegal dumping, to the storm water sewer system utilizes outfall inspections quarterly during wet and dry periods. An example of the inspection report can be found in Appendix D. As part of this program, the parish will inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper waste disposal.

Table 1 provides a summary of the current proposed BMPs. Appendix A provides a more detailed listing and description of each BMP and measurable goal. The BMPs selected for this minimum control measure are:

- Storm Sewer Map Development,
- Illicit Discharge Prohibition Ordinance,
- Illicit Discharge Detection Plan, and
- Illicit Discharge Educational Outreach

The following categories of non-storm water discharges or flows are allowed in the storm water sewer system unless at a later date they are determined to be significant contributors of pollutants to the storm water sewer system:

- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20));
- Uncontaminated pumped ground water;
- Incidental discharge of potable water (e.g. drinking fountain overflows);
- Foundation drains;
- Air conditioning condensate;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering runoff;
- Water from individual residential car washing;
- Flows from riparian habitats and wetlands;
- DE chlorinated swimming pool discharge;
- Residual street wash water;
- Discharges or flows from firefighting activities (excluding predictable and controllable discharges from a fire fighting training facility);
- Other similar occasional incidental discharges such as charity car washes that may be added to this list at a later date.

3.3.4 Construction Site Storm Water Runoff Control

The Phase II permit requires Caddo Parish to develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the storm water sewer system from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb once acre or more.

Presently, the storm water runoff from these sites are required to be permitted by LDEQ and must follow the terms and conditions of one of the LPDES storm water general permits that requires a pollution prevention plan that addresses the issues that the parish is being asked to place on these sites. Therefore, Caddo Parish will rely on the LPDES storm water construction general permits terms and conditions for these sites. The parish will take whatever regulatory means necessary to require these construction sites to obtain the required LPDES storm water permits prior to construction and to implement the terms and conditions of the permit including a Pollution Prevention Plan addressing the required erosion and sediment control practices and controlling waste at these construction sites (i.e., discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste) as well as other areas of concern.

The Phase II storm water permit for Caddo Parish requires the parish develop and maintain a program for the review of construction site plans which incorporate consideration of potential water quality impacts. Therefore, Caddo Parish has Parish Ordinance chapter 46 (www.caddo.org) as its regulatory authority to require that these plans and relevant Pollution Prevention Plans be submitted for review prior to commencement of construction activities and that after review areas of concern be addressed prior to construction. At the completion of the construction project, Caddo Parish will require a copy of the Notice of Termination or Completion Report form that is sent to the LDEQ indicating that the site has undergone final stabilization.

As required by the Phase II permit, Caddo Parish has procedures for receipt and consideration of information submitted by the public. The information from the public will be incorporated into the SWMP and the measurable goals as established in the SWMP. All legitimate complaints and concerns will be addressed in a timely fashion.

The permit requires Caddo Parish to develop and maintain procedures for site inspection and enforcement of control measures. Caddo Parish has regulatory authority to conduct site inspections and to have the authority to enforce control measures. Since, these sites are regulated under a LPDES permit and would be in violation of that LPDES permit, the name of the identified violator and the reason for the referral will be sent to LDEQ for enforcement action under the LPDES permitting program. Caddo Parish does not maintain any inspection forms during normal inspection activities. The only documents maintained are letters of non-compliance for Parish Ordinances.

Table 1 provides a summary of the current proposed BMPs, Appendix A provides a more detailed listing and description of each BMP and measurable goal. The BMPs selected for this minimum control measure are:

- Construction Site Runoff Control Ordinance,
- Construction Site Inspection, Enforcement, and Compliance Procedures, and
- Erosion and Pollution Control Guidance.

3.3.5 Post-Construction Storm Water Management in New Developments and Redevelopments

Phase II of the storm water general permit requires Caddo Parish to develop, maintain, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the storm sewers system in the designated urbanized area. These controls are to ensure that water quality impacts are prevented or minimized. Caddo Parish has Parish Ordinance chapter 46 (www.caddo.org) as it regulatory authority to require adherence.

Caddo Parish will maintain strategies which include a combination of appropriate structural (swales, retention ponds, habitat gardens) and/or non-structural (open spaces, wetlands, landscapes) BMPs to reduce and/or control pollutants in the storm water runoff.

Caddo Parish has regulatory authority to address post-construction runoff from new developments and redevelopment projects and to ensure adequate long-term operations and maintenance of BMPs.

Table 1 provides a summary of the current proposed BMPs. Appendix A provides a more detailed listing and description of each BMP and measurable goal. The BMPs selected for this minimum control measure are:

- Post-construction Runoff Management Ordinances, and
- Post-construction Runoff Management Program.

3.3.6 Pollution Prevention/Good Housekeeping for Municipal Operations

Caddo Parish will develop and maintain an operation and maintenance program with the aim of training employees in preventing or reducing pollutants in the runoff from municipal operations. Using readily available training materials and those developed within Caddo Parish's operations, employees will be trained to prevent and reduce storm water pollutants from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

As of December 2018, the Parish of Caddo has three LPDES permits for discharges at Fleet (LAR05N690), South Camp (LAR05N689), and North Camp (LAR05N848) locations. The Parish utilizes the each site's Storm Water Pollution Prevention Plan which includes housekeeping (see appendix F for example).

Table 1 provides a summary of the current proposed BMPs, Appendix A provides a more detailed listing and description of each BMP and measurable goal. The BMPs selected for this minimum control measure are: (See each of the locations SWPPP for more details).

- Operation and Maintenance Program,
- Employee Training,
- Storm Water Pollution Prevention Plans, and
- Parish-Wide Operations Review to Identify Non-storm Water Discharges.

**TABLE 1
BEST MANAGEMENT PRACTICES SUMMARY**

Best Management Practices	Description	Measurable Goals	Maintaining (year)				
			2019	2020	2021	2022	2023
Public Education and Outreach							
Public Participation							
Illicit Discharge Detection & Elimination							
Construction Site storm Water Runoff Control							
Post Construction Runoff Control							
Pollution Prevention/Good Housekeeping for Municipal Operations							

4.0 Evaluation of the Storm Water Management Plan

As a program that will need to be maintained and updated to reflect the current conditions in the parish, the SWMP will need to be reviewed annually, and updated, as necessary, to remain current and effective. This will be accomplished through an annual review of each BMP and the entire mix of BMPs being implemented. This review and assessment will be documented in an annual report.

4.1 Annual Reporting

The general permit requires that Caddo Parish submit an annual report to LDEQ by March 10th of each year after coverage under the permit is obtained. This report includes:

- The status of compliance with permit conditions;
- An assessment of the appropriateness of the best management practices being adopted in the SWMP;
- Progress toward achieving the identified measurable goals for each minimum control measure;
- Results of information collected and analyzed during the reporting year, including monitoring data if available;
- Summary of the storm water activities that are planned for the next reporting year; and
- Report any change in identified measurable goals that apply to the program elements.

The yearly report for each reporting period will be attached to Appendix C of this document and will be made available to the public for comment.

4.2 Evaluating and Updating the SWMP

Caddo Parish, on an ongoing basis, will evaluate program compliance, the appropriateness of the identified best management practices, and progress towards achieving the identified measurable goals, and make any needed changes and updates to the SWMP. This will be accomplished by utilizing public comments, questionnaires and surveys, various tracking methods to record measurable goals, visual inspections of the storm water and storm water structures within the urbanized area, analytical testing of storm water and suspected illicit discharge waters as necessary, and by performing an annual review of the SWMP.

Appendix A

BMP Data Sheets

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public Education and Outreach	
Base Management Practice (BMP) Internet Access to Storm Water Management Plan	
BMP Description: Provide link to Storm Water Management Plan from Caddo Parish Home Page at www.caddo.org	
Measurable Goal: Maintain the Storm Water Management Plan and keep current links on web page. Use “hit” counter to track the number of times the plan is accessed.	
Year 1	Update Storm Water Management plan as necessary. Record and count the number of “hits” each year.
Year 2	Update Storm Water Management plan as necessary. Record and count the number of “hits” each year.
Year 3	Update Storm Water Management plan as necessary. Record and count the number of “hits” each year.
Year 4	Update Storm Water Management plan as necessary. Record and count the number of “hits” each year.
Year 5	Update Storm Water Management plan as necessary. Record and count the number of “hits” each year.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public Education and Outreach	
Best Management Practice (BMP): Educational Pamphlets on Household Waste Management	
BMP Description: Distribute household waste management educational pamphlets at manned solid waste disposal centers managed by Parish. Pamphlets will address how to handle normal household wastes, recyclable materials, used oil, and household hazards waste.	
Measurable Goal: On an annual basis, document the number of pamphlets distributed to track the amount of educational materials provided to the public.	
Year 1	Update pamphlets, distribute at multiple locations and document distribution.
Year 2	Update pamphlets, distribute at multiple locations and document distribution.
Year 3	Update pamphlets, distribute at multiple locations and document distribution.
Year 4	Update pamphlets, distribute at multiple locations and document distribution.
Year 5	Update pamphlets, distribute at multiple locations and document distribution.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public Education and Outreach	
Best Management Practice (BMP): Public meeting to introduce Storm Water Management Plan and solicit input from the public	
BMP Description: Conduct a public meeting to inform the public on the goals and intent of the parish storm water management program and request input on the Storm Water Management plan. The public meeting will be held in conjunction with annual FEMA meetings. Prepare public notice for the meetings to ensure that the public is aware of the time and location of the meeting. Request comment on the plan and solicit input.	
Measurable Goal: Conduct the public meeting and document the attendees and the comments from the public. Document and maintain the public notice for the meeting.	
Year 1	Schedule, prepare, and publish meetings for the year and document.
Year 2	Schedule, prepare, and publish meetings for the year and document.
Year 3	Schedule, prepare, and publish meetings for the year and document.
Year 4	Schedule, prepare, and publish meetings for the year and document.
Year 5	Schedule, prepare, and publish meetings for the year and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public Education and Outreach	
Best Management Practice (BMP): Storm water pollution prevention educational pamphlets	
BMP Description: Expand upon programs presented by Walter B. Jacobs Nature Park dealing with storm water pollution and pollution prevention measures.	
Measurable Goal: Create a program in year 1 and by year 3 have a plan implemented and on an annual basis, document the number of participants in the program.	
Year 1	Visit with Park officials and develop a program for use
Year 2	Run trial program on a few classes and re-evaluate
Year 3	Implement program and document
Year 4	Maintain program and document
Year 5	Maintain program and document

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public involvement and Participation	
Best Management Practice (BMP): Household hazardous waste disposal sponsorship	
BMP Description: Co-sponsor Household hazardous waste disposal activities for collection of household hazardous waste from parish citizens.	
Measurable Goal: On an annual basis, co-sponsor the Household Hazardous Waste Activities with other government and civic groups. Provide personnel and resources as needed to assist in this regional effort. Document the amount of waste collected and disposed on an annual basis.	
Year 1	Schedule annual waste drive with other government and civic groups and document results.
Year 2	Schedule annual waste drive with other government and civic groups and document results.
Year 3	Schedule annual waste drive with other government and civic groups and document results.
Year 4	Schedule annual waste drive with other government and civic groups and document results.
Year 5	Schedule annual waste drive with other government and civic groups and document results.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public Involvement and Participation	
Best Management Practice (BMP): Stakeholder meetings-land developers and engineers	
BMP Description: Conduct stakeholder meetings to solicit assistance in developing technical requirements for BMPs to be used for construction activities and BMPs to be used for Post-Construction runoff control.	
Measurable Goal: Annually conduct meetings to discuss the Parish requirements and provide information to the stakeholders and get comments from the stakeholders on the implementation of the BMPs. Document attendees, information presented, and comments provided for all meetings.	
Year 1	Schedule and conduct annual meeting and document.
Year 2	Schedule and conduct annual meeting and document.
Year 3	Schedule and conduct annual meeting and document.
Year 4	Schedule and conduct annual meeting and document.
Year 5	Schedule and conduct annual meeting and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Public Involvement and Participation	
Best Management Practice (BMP): Neighborhood cleanup assistance	
BMP Description: Conduct periodic neighborhood clean-up drives.	
Measurable Goal: Conduct periodic neighborhood clean-up drive and document	
Year 1	Plan and hold neighborhood clean-up drive and document.
Year 2	Plan and hold neighborhood clean-up drive and document.
Year 3	Plan and hold neighborhood clean-up drive and document.
Year 4	Plan and hold neighborhood clean-up drive and document.
Year 5	Plan and hold neighborhood clean-up drive and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Illicit Discharge Detection and Elimination	
Best Management Practice (BMP): Storm sewer map development	
BMP Description: Maintain a map of the outfalls from the areas permitted under the Phase II small MS4 General Permit. Identify the waterbodies receiving discharge from the MS4 and the waterbodies that drain to the permitted areas.	
Measurable Goal: Update the map as physical changes may impact the number of outfalls from the permitted areas.	
Year 1	Monitor and update map as needed.
Year 2	Monitor and update map as needed.
Year 3	Monitor and update map as needed.
Year 4	Monitor and update map as needed.
Year 5	Monitor and update map as needed.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Illicit Discharge Detection and Elimination	
Best Management Practice (BMP): Illicit Discharge Prohibition Ordinance	
BMP Description: Maintain and enforce Storm Water Quality Management Ordinance Chapter 46, Stormwater Management which can be found on Parish Ordinance Page at www.caddo.org	
Measurable Goal: Maintain and enforce Storm Water Quality Management Ordinance	
Year 1	Update ordinance if needed and enforce.
Year 2	Update ordinance if needed and enforce.
Year 3	Update ordinance if needed and enforce.
Year 4	Update ordinance if needed and enforce.
Year 5	Update ordinance if needed and enforce.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Illicit Discharge Detection and Elimination	
Best Management Practice (BMP): Illicit Discharge Detection Plan	
BMP Description: Maintain a written plan to identify and remedy illicit discharges. Plan will include the development of procedures to identify the illicit discharges and measures to be taken after identification.	
Measurable Goal: Maintain illicit Discharge Detention Plan and inspect when needed. Approximately 20% of the outfalls will be subjected to dry weather monitoring each year. Each outfall inspection will be documented and recorded. At the end of each five year cycle, all outfalls will have been inspected. Annually, document the number of outfalls inspected.	
Year 1	Schedule outfield inspection each quarter and document.
Year 2	Schedule outfield inspection each quarter and document.
Year 3	Schedule outfield inspection each quarter and document.
Year 4	Schedule outfield inspection each quarter and document.
Year 5	Schedule outfield inspection each quarter and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Illicit Discharge Detection and Elimination	
Best Management Practice (BMP): Illicit Discharge Educational Outreach	
BMP Description: Maintain illicit discharge education pamphlet for industry and the public to be distributed at parish offices for new businesses, new homes, and for existing population and businesses.	
Measurable Goal: Provide pamphlets to parish offices to be made available and distributed to applicable persons and businesses. Annually, document the number of pamphlet distributed.	
Year 1	Update pamphlet if needed and document number distributed.
Year 2	Update pamphlet if needed and document number distributed.
Year 3	Update pamphlet if needed and document number distributed.
Year 4	Update pamphlet if needed and document number distributed.
Year 5	Update pamphlet if needed and document number distributed.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Construction Site Storm Water Runoff Control	
Best Management Practice (BMP): Construction Site Runoff Control Ordinance	
BMP Description: Maintain Ordinance and enforce	
Measurable Goal: Maintain Ordinance and enforce	
Year 1	Maintain Ordinance and enforce.
Year 2	Maintain Ordinance and enforce.
Year 3	Maintain Ordinance and enforce.
Year 4	Maintain Ordinance and enforce.
Year 5	Maintain Ordinance and enforce.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Construction Site Storm Water Runoff Control	
Best Management Practice (BMP): Construction Site Inspection, Enforcement, and Compliance Procedures	
BMP Description: Prepare and maintain procedures for inspection, enforcement, and compliance requirements related to construction site runoff control.	
Measurable Goal: Maintain a list approved erosion and runoff control measures to be used for all construction and re-development projects that disturb one or more acres of land. With this guidance, each potentially regulated entity will prepare a SWPPP and provide a copy to the Parish prior to starting construction. The SWPPP will be the same document the regulated entity will use to comply with the state and federal permitting requirements for the project. Locations will be inspected if complaints are received or if it is determined the location is deemed to be a high-risk for the discharge of pollutants.	
Year 1	Schedule inspection, enforce where needed and document.
Year 2	Schedule inspection, enforce where needed and document.
Year 3	Schedule inspection, enforce where needed and document.
Year 4	Schedule inspection, enforce where needed and document.
Year 5	Schedule inspection, enforce where needed and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Construction Site Storm Water Runoff Control	
Best Management Practice (BMP): Erosion and Pollutant Control Guidance	
BMP Description: Provide Erosion and Pollutant Control Selection Sheet for engineers, developers, and contractors to use for selection of appropriate, pre-approved erosion control measures. Guidance will provide end-users with a list of pre-approved site specific BMPs to be used at construction sites.	
Measurable Goal: Maintain Erosion and Pollutant Control Guidance for the use of engineers, developers, and contractors to use.	
Year 1	Update guidance as needed and distribute.
Year 2	Update guidance as needed and distribute.
Year 3	Update guidance as needed and distribute.
Year 4	Update guidance as needed and distribute.
Year 5	Update guidance as needed and distribute.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Post-Construction Storm Water Management in New Development and Redevelopment	
Best Management Practice (BMP): Post-Construction Runoff Management Ordinance	
BMP Description: Maintain Ordinance and enforce	
Measurable Goal: Maintain Ordinance and enforce	
Year 1	Maintain Ordinance, enforce and document.
Year 2	Maintain Ordinance, enforce and document.
Year 3	Maintain Ordinance, enforce and document.
Year 4	Maintain Ordinance, enforce and document.
Year 5	Maintain Ordinance, enforce and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Post-Construction Storm Water Management in New Development or Redevelopment	
Best Management Practice (BMP): Post-Construction Runoff Management Program (including implementation and maintenance strategy)	
BMP Description: Develop, implement, and enforce the program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development. The program will address detention requirements and the operation and maintenance of the detention structures for the life of the structure.	
Measurable Goal: Maintain written procedures for inspection, enforcement, and compliance. Plans will be reviewed and locations will be inspected if complaints are received or if it is determined the location is deemed to be a high-risk.	
Year 1	Review and update procedures as needed and document.
Year 2	Review and update procedures as needed and document.
Year 3	Review and update procedures as needed and document.
Year 4	Review and update procedures as needed and document.
Year 5	Review and update procedures as needed and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Pollution Prevention/Good Housekeeping for Municipal Operations	
Best Management Practice (BMP): Operation and Maintenance Program	
BMP Description: Maintain an Operation and Maintenance Program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.	
Measurable Goal: Maintain guidelines and procedures for waste handling and recycling, equipment operation and maintenance, spill prevention and response, pesticides and herbicides, roadway and building maintenance.	
Year 1	Review procedures and update as needed and document.
Year 2	Review procedures and update as needed and document.
Year 3	Review procedures and update as needed and document.
Year 4	Review procedures and update as needed and document.
Year 5	Review procedures and update as needed and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Pollution Prevention/Good Housekeeping for Municipal Operations	
Best Management Practice (BMP): Employee Training	
BMP Description: Conduct employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.	
Measurable Goal: Maintain the training program. Conduct annual training for employees. Document dates, names, and topics for all training.	
Year 1	Train all employees yearly and document.
Year 2	Train all employees yearly and document.
Year 3	Train all employees yearly and document.
Year 4	Train all employees yearly and document.
Year 5	Train all employees yearly and document.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Pollution Prevention/Good Housekeeping for Municipal Operations	
Best Management Practice (BMP): Storm Water Pollution Prevention Plans	
BMP Description: Obtain Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities and prepare Storm Water Pollution Prevention Plans (SWPPPs) for the North and South Camps and Fleet Services Shop	
Measurable Goal: Complete SWPPP for each facility in the first year of the permit.	
Year 1	Review and update SWPPP and submit annual report.
Year 2	Review and update SWPPP and submit annual report.
Year 3	Review and update SWPPP and submit annual report.
Year 4	Review and update SWPPP and submit annual report.
Year 5	Review and update SWPPP and submit annual report.

CADDO PARISH
 STORM WATER MANAGEMENT PROGRAM
 BMP DATA SHEETS

Control Measure Category: Pollution Prevention/Good Housekeeping for Municipal Operations	
Best Management Practice (BMP): Review all parish operations to identify any non-storm water discharges	
BMP Description: Conduct an internal review of all parish operations. Verify that point sources and non-point sources are properly permitted and maintaining regulatory requirements to maintain water quality	
Measurable Goal: Conduct a review of the parish facilities that may have point source or non-point source discharges which may require regulatory authorization to operate annually, obtain regulatory authorization for all applicable sources.	
Year 1	Review and update as needed annually.
Year 2	Review and update as needed annually.
Year 3	Review and update as needed annually.
Year 4	Review and update as needed annually.
Year 5	Review and update as needed annually.

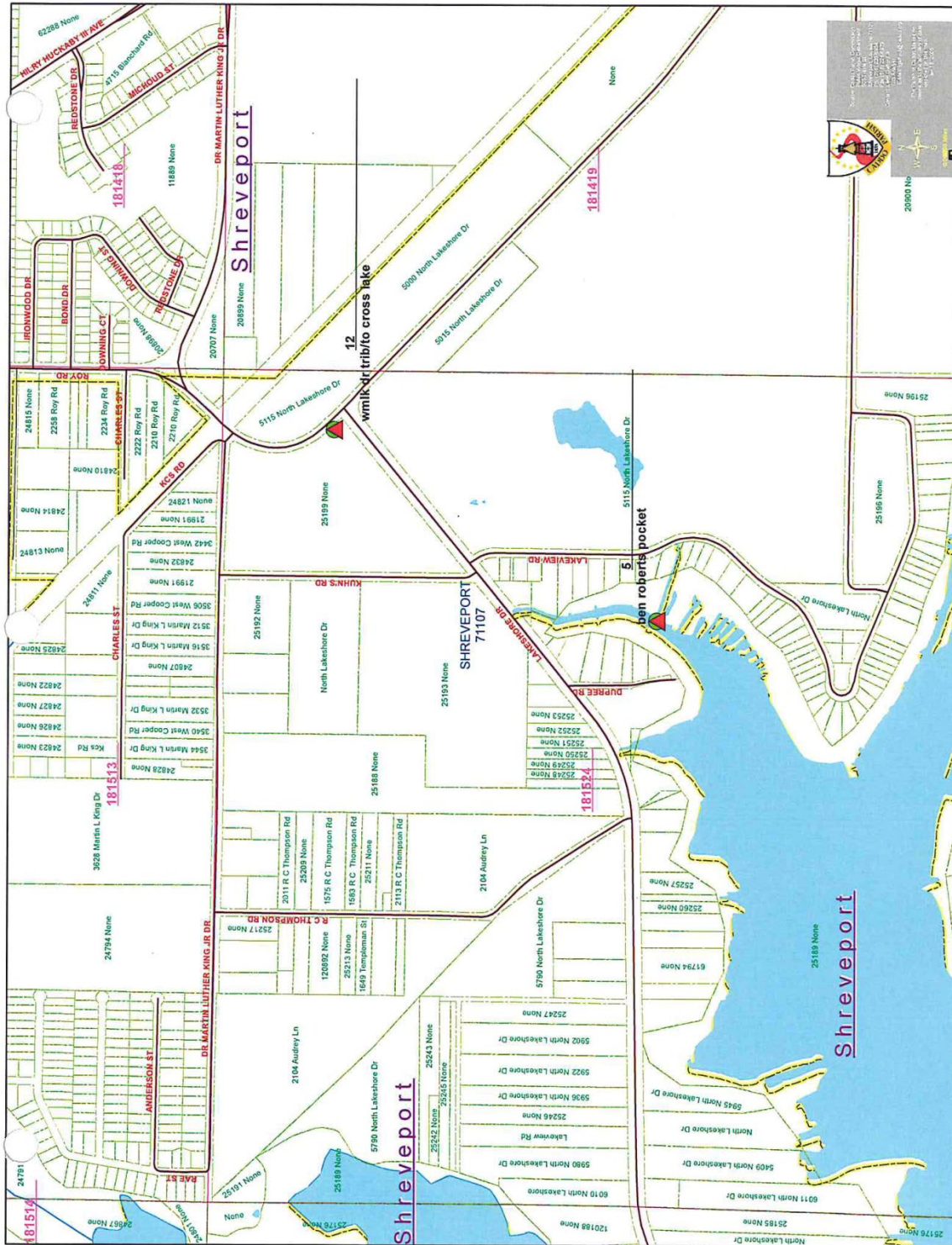
Appendix B

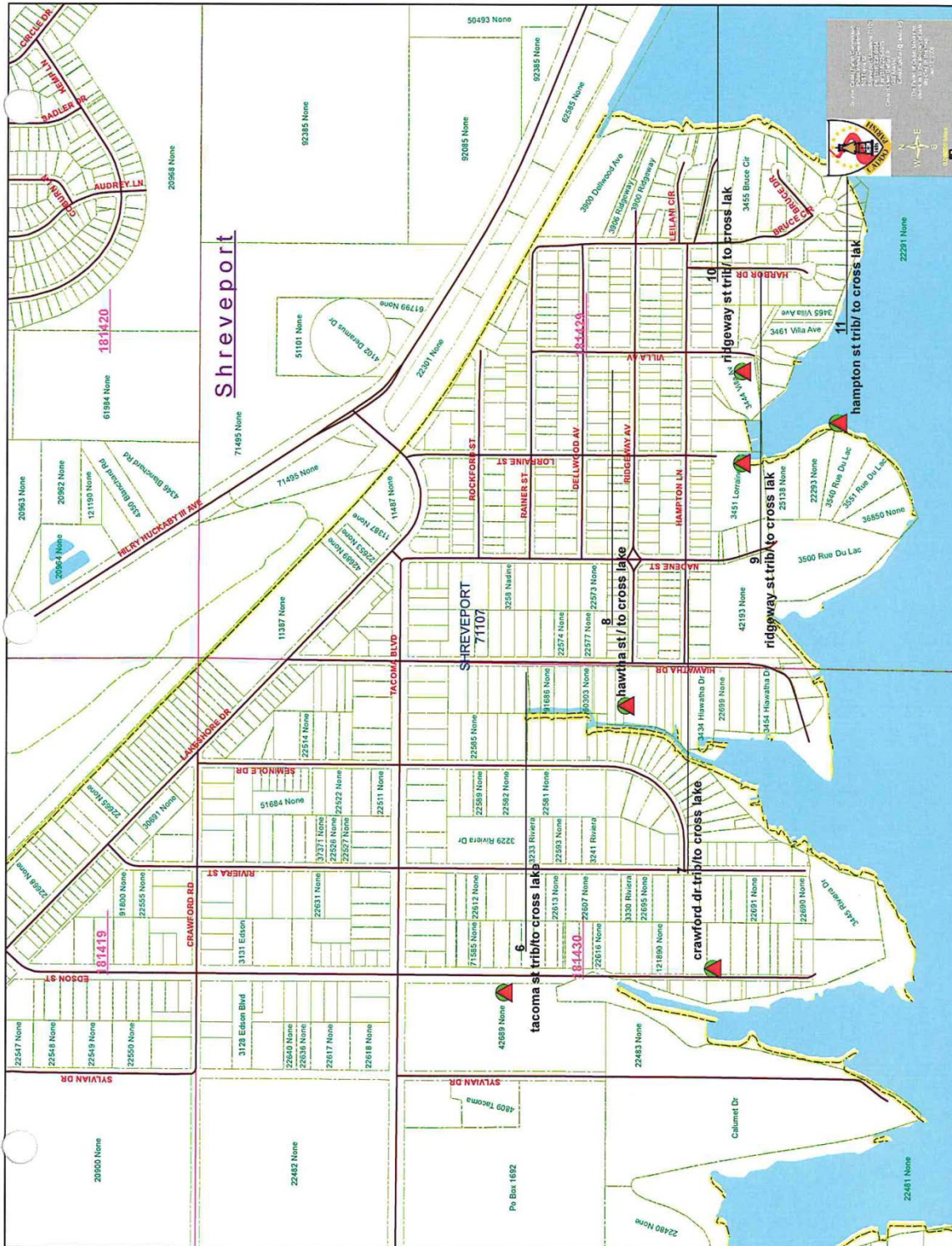
Maps

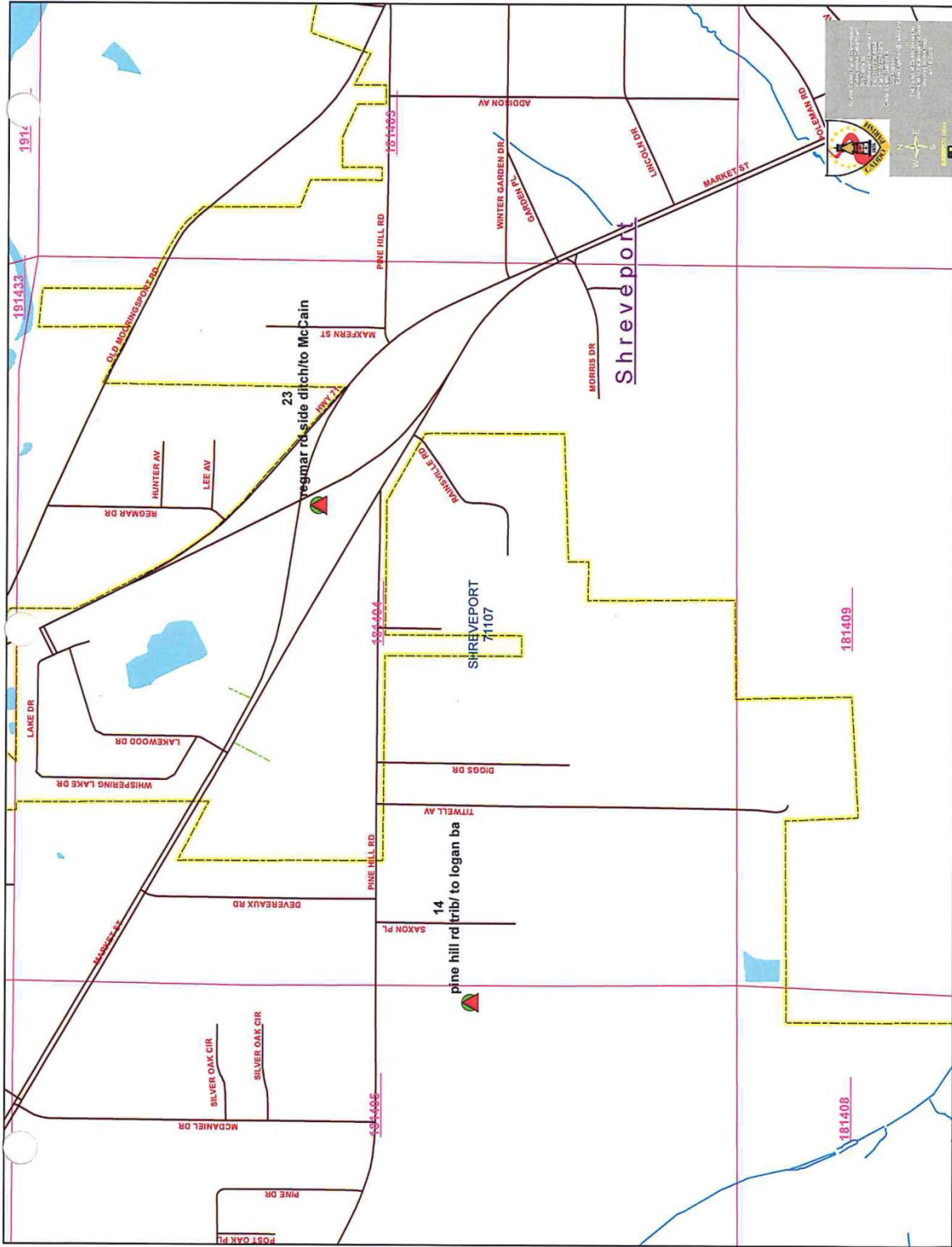
Quarterly Schedule

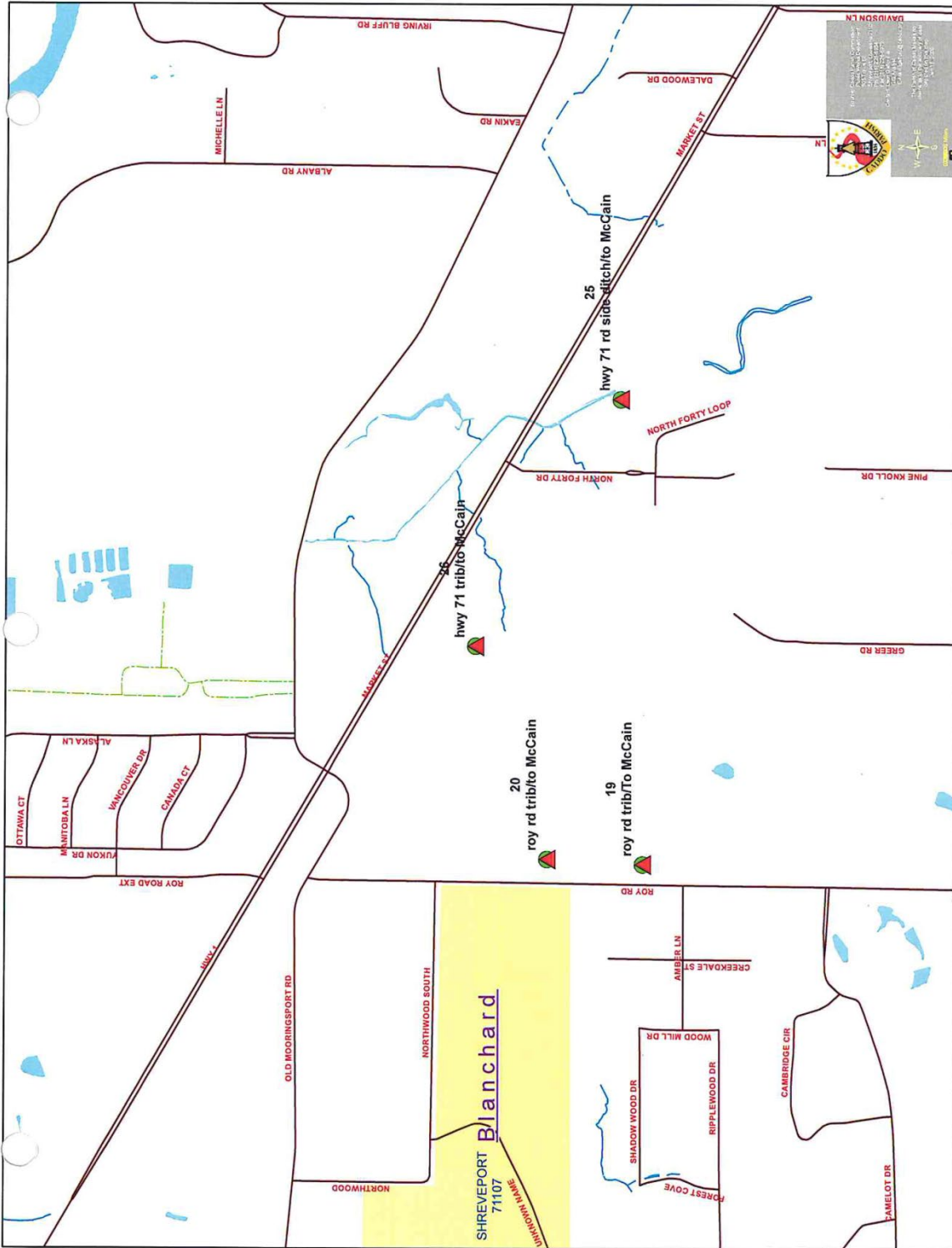
North Camp out Falls

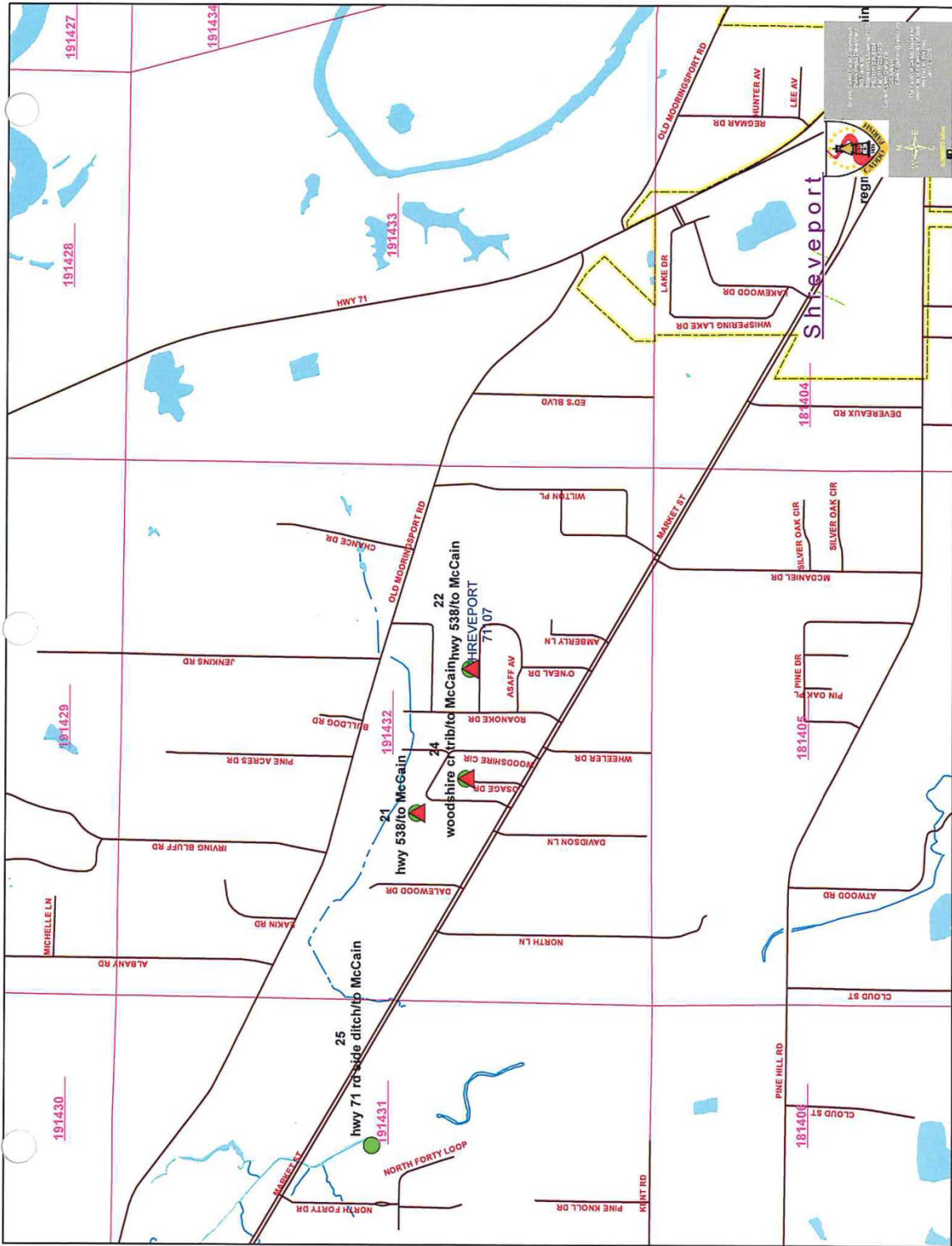
Outfalls	DITCH_TYPE	Outfall Loactions	Gis Directions		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
			NORTHING	EASTING												
1	EARTHEN	blanchard latex xing/to chocta	3.604885670	415950.426836789	x			x			x					
2	EARTHEN	latex rd unamed/to choctaw	3.605231230	415474.133108577	x			x			x					
3	EARTHEN	choctaw bayou xing furh rd	3.604510640	415653.363531008	x			x			x					
4	EARTHEN	furrh rd trib/ to choctaw	3.604683950	415894.754594497	x			x			x					
5	EARTHEN	ben roberts pocket	3.600161910	420074.265727639	x			x			x					
6	EARTHEN	tacoma st trib/to cross lake	3.598777390	421511.063920933	x			x			x					
7	EARTHEN	crawford dr trib/to cross lake	3.598371620	421558.207910023	x			x			x					
8	CONCRETE	hawtha st / to cross lake	3.598541080	422068.832762561	x			x			x					
9	EARTHEN	ridgeway st trib/ to cross lak	3.598316360	422540.026121869	x			x			x					
10	EARTHEN	ridgeway st trib/ to cross lak	3.598315440	422718.516642548	x			x			x					
11	EARTHEN	hampton st trib/ to cross lak	3.598130050	422618.740074310	x			x			x					
12	CONCRETE	wmlk dr trib/to cross lake	3.600790630	420445.637944991	x			x			x					
13	EARTHEN	roy rd trib/ to logan bayou	3.604021740	420521.543749866	x			x			x					
14	EARTHEN	pine hill rd trib/ to logan ba	3.604846590	423827.953720630	x			x			x					
15	EARTHEN	pine hill rd trib/to logan	3.605297490	417353.493699017	x			x			x					
16	EARTHEN	pine hill rd trib/ to McCain	3.605275190	419190.116118675	x			x			x					
17	EARTHEN	pine hill rd trib/ to McCain c	3.605207530	419605.521387411		x			x			x				x
18	EARTHEN	roy rd trib/to McCain	3.605615560	420657.087502172		x			x			x				x
19	EARTHEN	roy rd trib/To McCain	3.606665080	420687.094437308		x			x			x				x
20	EARTHEN	roy rd trib/to McCain	3.606895900	420699.255754502		x			x			x				x
21	EARTHEN	hwy 538/to McCain	3.606585730	422822.683877468		x			x			x				x
22	EARTHEN	hwy 538/to McCain	3.606424540	423259.928359976		x			x			x				x
23	EARTHEN	regmar rd side ditch/to McCain	3.605190920	424945.204184831		x			x			x				x
24	EARTHEN	woodshire cr trib/to McCain	3.606435880	422927.055121513		x			x			x				x
25	EARTHEN	hwy 71 rd side ditch/to McCain	3.606719020	421814.343182891		x			x			x				x
26	EARTHEN	hwy 71 trib/to McCain	3.607070580	421215.223060988		x			x			x				x
27	EARTHEN	roy rd trib/roy rd	3.608234090	419306.343310738		x			x			x				x
28	EARTHEN	hwy 71 trib/to McCain	3.608803780	418338.599664918		x			x			x				x
29	EARTHEN	hwy 538 trib/to McCain	3.608536040	416990.204257824		x			x			x				x
30	EARTHEN	hwy 538 trib/to McCain	3.608782270	416058.409928172		x			x			x				x
32	EARTHEN	hwy 173 trib/to choctaw	3.607411310	415820.883762236		x			x			x				x

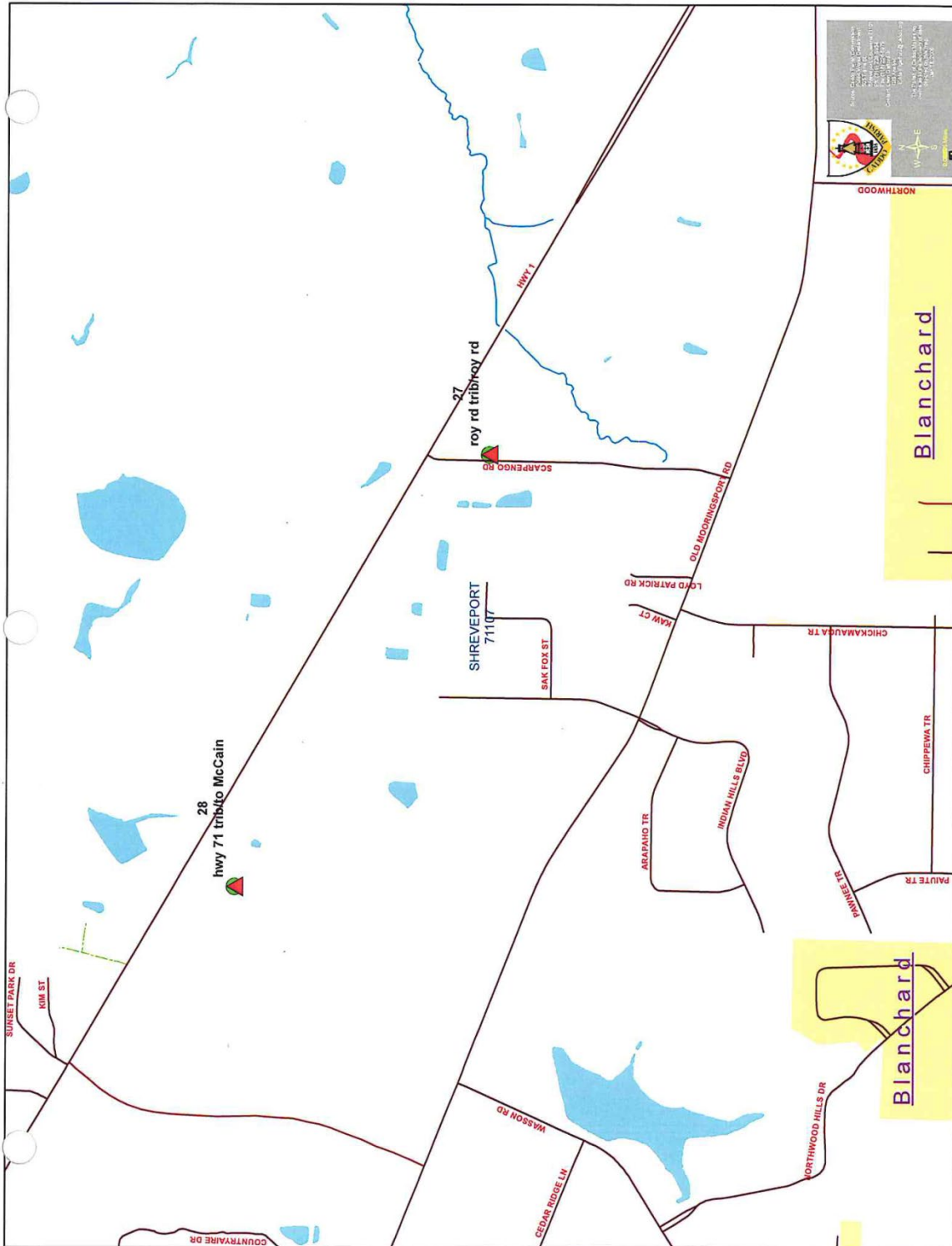


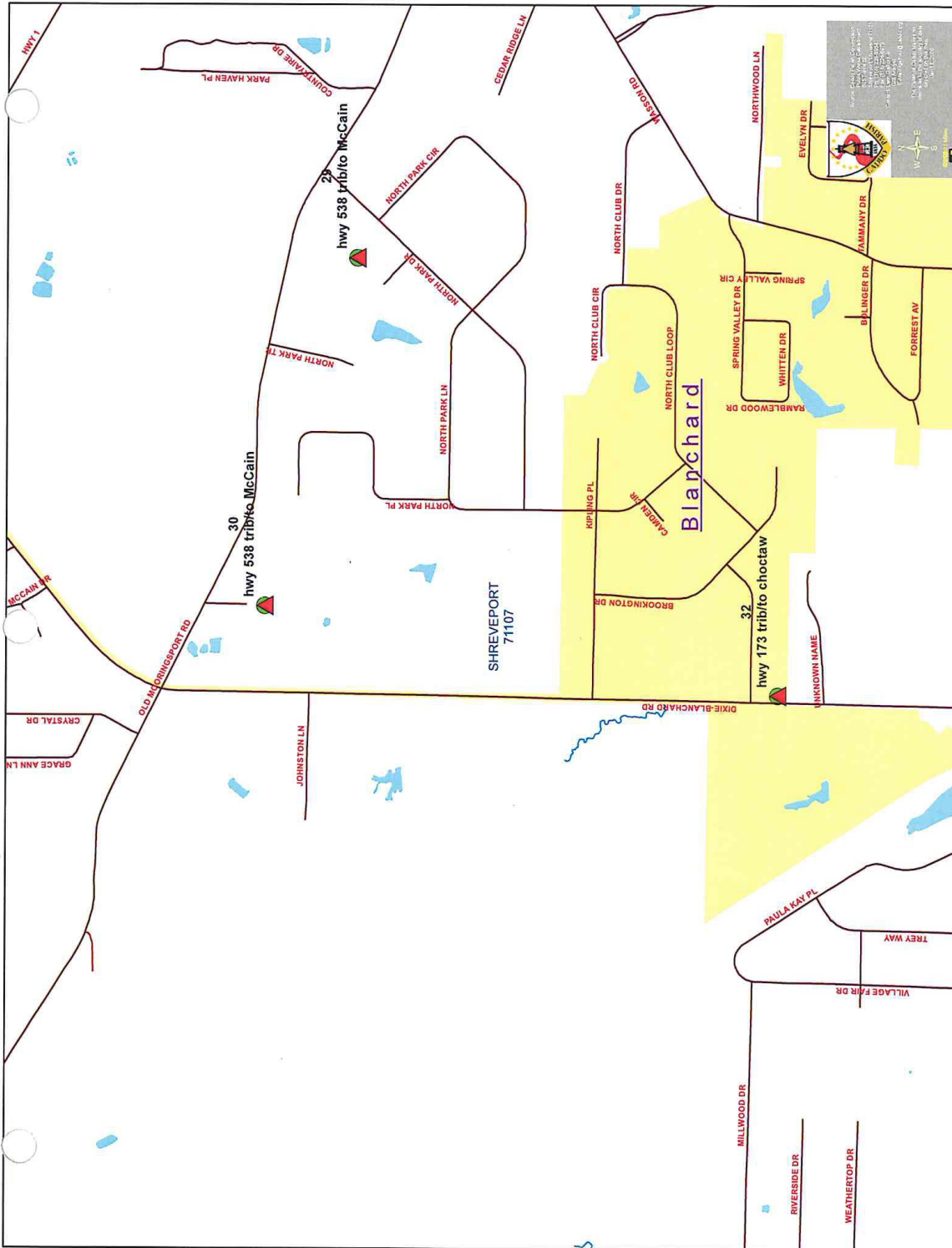








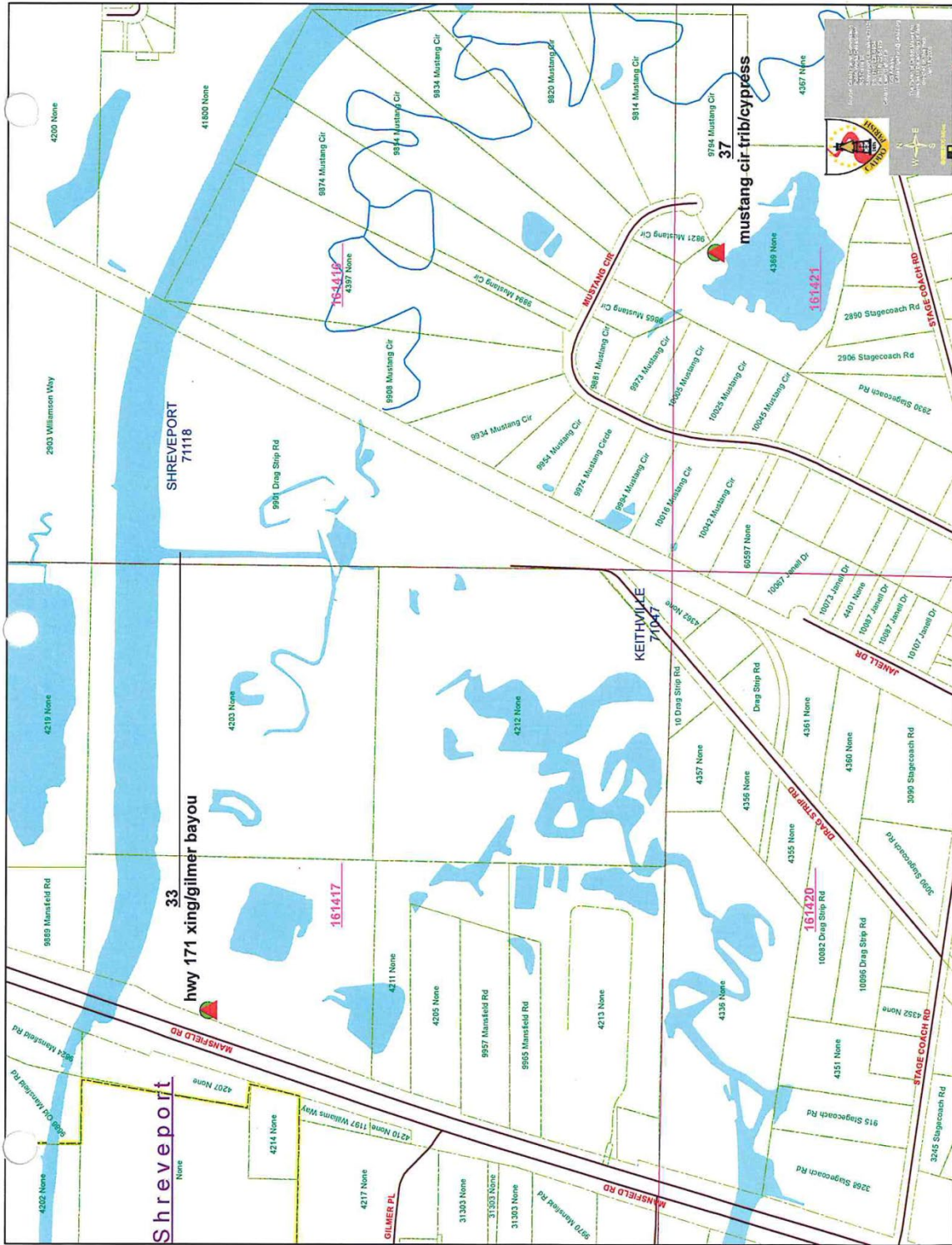


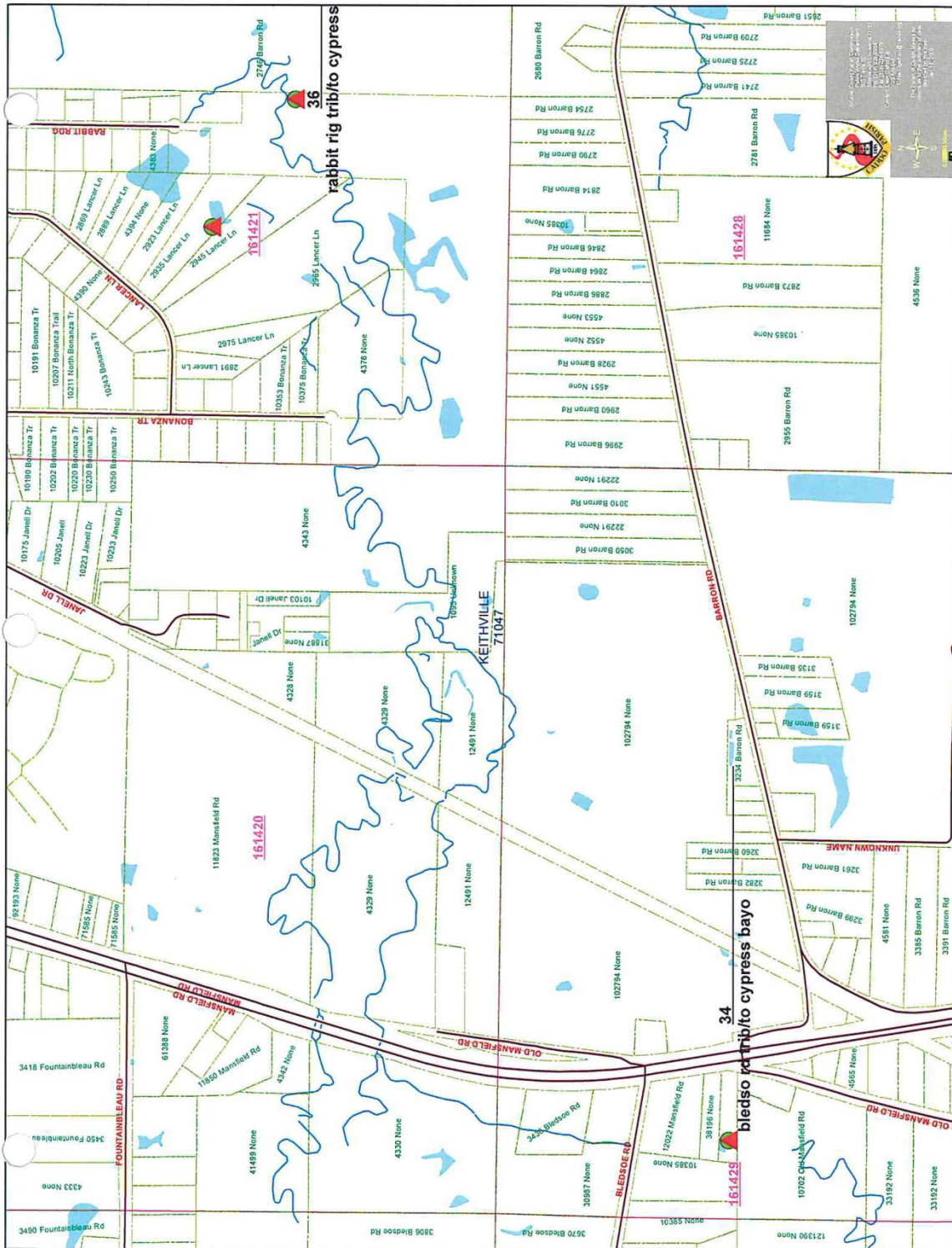


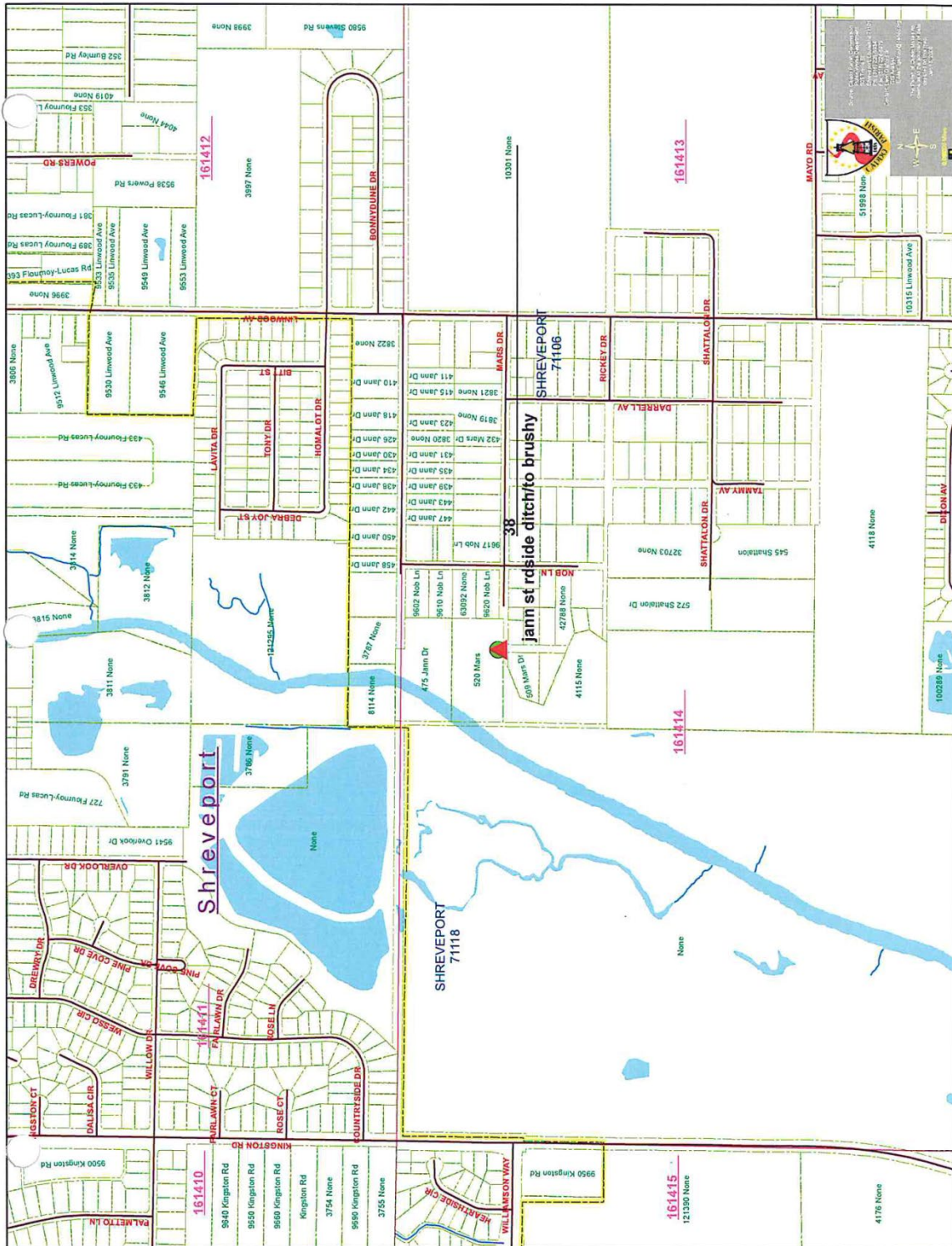
South Camp out Falls

Quarterly Schedule

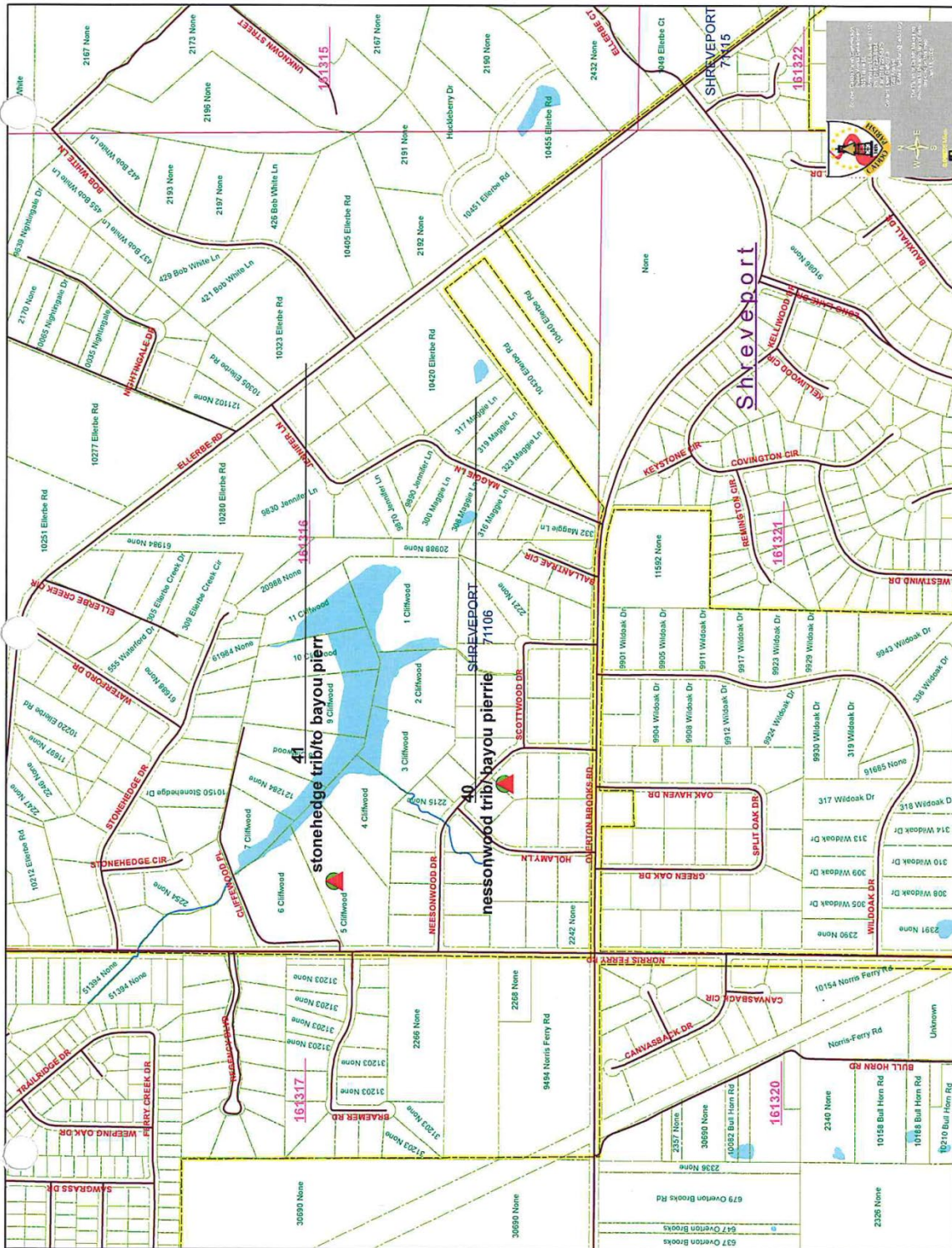
Outfalls	DITCH TYPE	Outfall Locations	Gis Directions		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
			NORTHING	EASTING												
33	EARTHEN	hwy 171 xing/gilmer bayou	3.582325840	422734.043588429	x			x			x					
34	EARTHEN	bledso rd trib/to cypress bayo	3.579588860	421872.032744504	x			x			x					
35	EARTHEN	lancer ln trib/ to cypress bay	3.580704750	423841.169594736	x			x			x					
36	EARTHEN	rabbit rig trib/to cypress	3.580525940	424117.156611630	x			x			x					
37	EARTHEN	mustang cir trib/cypress	3.581750820	423907.785423870	x			x			x					
38	EARTHEN	jann st rdside ditch/to brushy	3.583043030	427537.964978772	x			x			x					
39	EARTHEN	wildoak dr trib/ to wallace la	3.580628200	433512.707392423	x			x			x					
40	EARTHEN	nessonwood trib/ bayou pierrie	3.581766310	433181.954289522	x			x			x					
41	EARTHEN	stonehedge trib/to bayou pierr	3.582095900	432992.423176967	x			x			x					











Appendix C

Appendix D

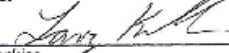
**APPENDIX I
RECORD OF QUARTERLY VISUAL EXAMINATIONS
OF STORM WATER QUALITY**

Facility: Caddo Parish South Camp
 Outlet: Bledace Rd
 Monitoring Period (check one): January 1 to March 31 July 1 to September 30
 May 1 to June 30 October 1 to December 31
 Date of Inspection: 5-24-18 9:00
 Time of Sample Collection for Inspection: _____
 Rainfall Event Start: _____
 Total Rainfall for Event: _____
 Rainfall Event Duration (hours): _____
 Estimate Total Runoff (gallons): _____
 Was the previous rainfall event (> 0.1 inches) more than 72 hours prior to this rainfall event?
 (check one): YES NO

VISUAL OBSERVATIONS (check the appropriate box, if other, please describe observation)

Observation	Description	
Color	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Other
Odor	<input checked="" type="checkbox"/> No odor	<input type="checkbox"/> Other
Clarity	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Other
Floating Solids	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Other
Suspended Solids	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Other
Foam	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Other
Oil Sheen	<input checked="" type="checkbox"/> Not present	<input type="checkbox"/> Other
Other indicators of pollutants	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other

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

Sampler / observer: Larry Keller 
 Site Manager: Mr. James Hankins

- Notes:**
1. Keep a signed, certified copy of this checklist with the SWPP.
 2. Inspection must be made during daylight hours.
 3. Visual examinations must of samples collected within the first 30 minutes (or as soon as practical, but not more than 1 hour) of the beginning of discharge from the facility.
 4. Samples for observation may only be collected from the discharge associated with qualifying storm events (greater than 0.1 inch in magnitude and occurs at least 72 hours. If no qualifying event occurs during the monitoring period, mark the storm event as " No Qualifying Event During the Quarter" and keep a record of documentation with a signed certification, with the SWPPP

Appendix E

Illicit Discharge Detection Plan

Updated June 2019

1.0 Introduction

The Parish of Caddo, Louisiana has demonstrated a strong commitment to protecting its water resources and continues to strive to preserve its valuable parks, wetlands, bayous, and lakes.

Stormwater discharges in the Parish of Caddo are regulated under the National Pollutant Discharge Elimination System (NPDES) by the MS4 General Permit, administered by the Louisiana Department of Environmental Quality. This Illicit Discharge Detection Plan serves as a guide for parish staff to manage illicit discharges and illicit connections to the Parish's Municipal Separate Storm Sewer System (MS4).

This plan provides procedures and documents required to comply with the illicit discharge portions of the MS4 Permit, as described in Minimum Control Measure 3.

The specific goals of this plan are to:

- Develop procedures to identify, investigate, enforce, and eliminate illicit discharges.
- Prioritize areas of the Parish that are more vulnerable or likely to have illicit discharges.
- Develop an inspection plan and schedule to identify potential illicit discharges.
- Meet staff and public education objectives of the Parish's NPDES MS4 Permit.
- Provide effective tools for Parish staff to identify and respond to illicit discharges.

1.1 About Illicit Discharge

Illicit discharges to storm sewer systems are caused by a variety of situations and can be described by the path of entry and by the pattern of flow.

- Flow can directly enter into the storm sewer system via an illegal connection or even by an approved connection that exceeds the effluent standards set by the permit issued. They can also indirectly enter the storm sewer system due to accidental leakage into inlets or infiltration with groundwater through joints or cracks in the sewer.
- Illicit discharges could be intermittent, (only occurring a few hours per day or a few days per year), continuous, or transitory (occurring only once).

Illicit discharges are considered “illicit” because the water is not treated for water quality impairments before entering receiving waters. An illicit discharge may contain compounds that have the potential to be harmful to the health or welfare of citizens, to the environment, surface waters, or the storm sewer system. The receiving waters could be recreational areas or eventual drinking water sources. Even well maintained separate storm sewer systems can contribute to water pollution and deliver heavy metals, oil, grease, solvents, nutrients, toxics, bacteria to downstream water bodies.

Common Sources of Illicit Discharges

Construction Sites

Construction sites are a common source of illicit discharges to storm sewer systems. Runoff from these sites can transport sediment, automotive liquids, hazardous materials, higher than normal pH conditions, or abnormal temperatures. Construction sites that disturb more than one acre of soil or pose a risk to water resources require a “NPDES Construction Stormwater General Permit” issued by the Louisiana Department of Environmental Quality. As a part of this permit, site owners and operators must develop a Stormwater Pollution Prevention Plan (SWPPP) that specify the erosion control and pollution reduction measures that will be taken to ensure contaminated stormwater does not leave the construction site. Some of the BMPs that may be required by construction sites include items such as silt fence, inlet protection, and containment of runoff from erodible surfaces.

Illegal Dumping

Illegal dumping often occurs by persons that are unaware of the laws and rules about disposal of certain liquids or solid waste. Some individuals may assume that all sewer drainage is treated in the same manner as sanitary wastewater, while others may deliberately and knowingly dispose of waste into storm sewers. Common examples of items that are dumped into storm sewers include paint, trash, used motor oil, automotive liquids such as antifreeze, wash water from services (concrete contractors, carpet cleaning operations), cooking oils, and grease.

Sanitary Waste

Sanitary waste (sewage) can enter storm sewer systems through a variety of ways. Failed utility components or broken pipes can be one pathway. For example, a blocked or broken sanitary sewer pipe, septic system, or pump station near a storm sewer system could lead to overflow or infiltration of wastewater to the storm sewer pipe. Another common way wastewater enters the storm sewer is when a connection from a home or business is made directly to a storm sewer. Often storm and sanitary sewers appear similar from the outside and contractors may connect to the wrong pipe, either accidentally or deliberately. While less common, recreational vehicle (RV) owners might dispose of sanitary waste into storm sewer systems.

Washing Activities and Improper Storage Containers

Commercial washing activities often result in a watery mix of detergents and solids that is called wash water. Wash water that drains directly to a stormwater system is considered an illicit discharge. Some examples include commercial vehicle washing and restaurant cleaning activities. Dumpsters or storage barrels that leak onto pavement are also illicit discharges. Storage containers should be covered and sealed to prevent or reduce rainwater from entering the container. Uncovered stockpiles of materials have potential to wash particles or other materials away from the stockpile and contribute to pollution in water bodies.

Car Accidents

Automotive fluids might enter storm drains after leaking from damaged vehicle parts or tanks. Liquids or materials in shipping containers also have the potential to leak or wash into the storm sewer system. Accidents taking place during rain events could make containment of these spills more difficult.

NPDES Permit Holders

Industrial, non-stormwater discharge to storm sewer is only allowed when the owner has an approved NPDES industrial permit which requires the site to meet water quality standards set by the Louisiana Department of Environmental Quality before discharging to the storm sewer system. However, if the owner is exceeding the effluent limits set by the permit then they are illicitly discharging to the storm sewer. An example of exceeding NPDES industrial permit requirements could be an industrial facility that disposes of water with no chemical contaminants but at a very high temperature. Water quality standards typically set a required temperature limit that the facility is required to meet to discharge to the storm sewer. If the temperature limits are exceeded then it is considered illicit discharge.

1.2 Federal and State Requirement

The Federal Clean Water Act of 1972 made it unlawful to discharge any pollutant from a point source into navigable waters unless a permit was obtained. This permit program is called the National Pollutant Discharge Elimination System (NPDES). As part of the program, small cities are required to submit a Municipal Separate Storm Sewer System (MS4) General Permit which approves the discharge of stormwater to lakes, rivers, wetlands, and other receiving waters (EPA 2015). In Louisiana, the MS4 Permit is administered by the Louisiana Department of Environmental Quality.

Parish of Caddo is a rural area, as defined by the Bureau of the Census, due to its population and proximity to other metropolitan areas. The Parish is classified as an NPDES Phase II community, more commonly referred to as a small MS4 community, and is therefore required to submit the MS4 General Permit. The MS4 Permits have six specific goals or Minimum Control Measures (MCM), within the permit's SWPPP, as listed below.

1. Public education and outreach
2. Public participation/involvement
3. Illicit discharge detection and elimination
4. Construction site runoff control
5. Post-construction runoff control
6. Pollution prevention/good housekeeping

2.0 Analysis of Existing Conditions

The Parish of Caddo has met previous MS4 SWPPP requirements and has mapped public storm sewer infrastructure, including constructed stormwater ponds, stormwater wetlands, and wellhead protection areas using Geographic Information System (GIS) software. The Parish's GIS data are regularly updated.

Parish staff have actively promoted educational opportunities to staff and citizens regarding stormwater issues. They have used and continue to use mediums such as the Parish website, www.caddo.org, workshops, and social media messages.

Parish Ordinance, Chapter 46, for Stormwater Illicit Discharge was developed by the Parish in 2007 and can be found at www.caddo.org. Some common examples of illicit discharge exemptions listed in the Parish Code include:

- Discharges that have an NPDES permit, Notice of Intent, waiver, or wastewater discharge order administered by the EPA or the MPCA
- Firefighting activities or other activities protecting public health and safety
- Water line flushing
- Landscape irrigation or lawn watering
- Residential and non-commercial car washing
- Foundation or footing drains that discharge uncontaminated groundwater
- De-chlorinated swimming pool water

2.1 Priority Area Identification

Illicit discharges have higher likelihood of occurrence in particular areas within a community. Risk factors for illicit discharge include commercial and industrial land uses, age of infrastructure, size of the drainage areas, presence of septic systems and environmental permit holders, and locations where past spills and illicit discharges have occurred. Areas within the Parish that are considered more vulnerable to pollutants include natural resource protection areas. When identifying the priority areas within the Parish of Caddo, both the chance of occurrence and vulnerability were considered.

An Illicit Discharge High Priority Outfall Maps have been developed as tools for Parish officials. The Outfall Priority Map draws attention to the likelihood of potential illicit discharge from “High” and “Moderate” outfalls in the Parish’s storm sewer inventory. These outfalls have a greater potential of illicit discharges. The Parish will work to schedule inspections of those outfalls at times optimal for detecting illicit discharge with a goal of inspecting each a minimum of once per permit cycle.

3.0 Procedures and Plans

3.1 Procedures

Inspection for Illicit Discharges

The highest priority in the elimination of illicit discharge is to find continuous or intermittent discharges into the storm sewer system

The High Priority Outfall map lists outfalls that are scheduled to be inspected at least once in the five year permit cycle for illicit discharges. When specifically looking for illicit discharge, inspections will be done during dry-weather conditions (at least 72 hours of no precipitation). Discharges from storm sewer during dry periods could be from an allowable source, so if suspected, source identification or testing of the discharge could be done to determine if pollutants are present.

Parish staff who work in the field are trained to recognize signs of illicit discharge. This is intended to ensure efficiency in the management of these issues. Informal assessments will be incorporated during maintenance and inspection activities and suspicious activity will be reported to the Public Works Director.

Reporting Illicit Discharges

Any storm sewer discharge with high turbidity, odors, floatables, oil film, or unusual colors should be reported to the Parish Sheriff’s Dispatch (911) or the public works department for further investigation. Other signs of a suspected illicit discharge could include unusual flows after a dry weather period or during cold winter months. Reports of suspected illicit discharge may come from landowners, the general public, other governmental agencies, or city staff.

Reports should be routed to the Parish of Caddo's 911 Emergency Dispatch Call Center. The dispatch responder will ask initial informational questions regarding the location, description, and caller's contact information. The information gathered will be forwarded to the appropriate responders and to the public works director as needed for documentation.

The dispatch team will then assign a patrol officer, and either a staff member from public works, on call Utility staff person or the Fire Department (depending on the day, time, and availability of staff) will visit the scene. The patrol officer would likely arrive quickly, and should confirm the observation, ensure public safety, and if possible, end any active illicit discharges. They should communicate any findings to the public works or Utility staff after the site is secure. The first person from the public works, Utility or Fire Department staff should:

- Determine the need for environmental mitigation
- Estimate the volume
- Collect a sample
- Take photos
- Track the source of the discharge

The Public Works Department will be responsible for investigating the source of the pollution.

Tracking the Source of Illicit Discharges

In the case of a confirmed illicit discharge by an unknown source, staff in the Public Works and/or Fire Departments will review known information available about the initial report of illicit discharge, available GIS information, and any other useful or historical reports of similar locations or circumstances.

The staff investigating the illicit discharge may have to trace the substance upstream through the storm sewer to possible inlet locations or land or business owners. To identify potential sources, city staff may use tools including:

- Recording the storm sewer
- Water sampling
- Smoke or dye-testing

In the case of transitory illicit discharges, targeted public education and interaction is a useful tool in investigating a source or violator and eliminating future cases of an illicit discharge. An "Illicit Discharge Detection and Elimination" pamphlet has been developed to use as a general educational tool.

Elimination of Illicit Discharges

The process of eliminating an illicit discharge will depend on the source and its characteristics. Parish staff has the right to access, monitor, and sample all parts of the Municipal Storm Sewer System. If the Parish has been refused access to any private storm sewer system and is able to demonstrate probable cause of a violation or need to inspect due to overall public health, safety, and welfare, then the Parish may seek issuance of a search warrant. In the case of a known violation, the Parish may suspend stormwater system access as warranted by the Parish Ordinance on Illicit Discharge. If the violation constitutes “an immediate danger...the Parish is authorized to enter upon the subject property without giving prior notice and to take any and all measures necessary to abate the violation and/or restore the property” (Parish Ordinance Chapter 46).

In the case of transitory or one-time occurrences a Public Works or Police Department staff member will communicate with the violator regarding the legality and the consequences of the act. If the violator is an employee at a business, it is the responsibility of Parish staff to ensure the owner is aware of the issue and that the consequences of repeated action are understood. If the spill is greater than 5 gallons and considered a hazardous substance, the Louisiana Department of Environmental Quality will be called to determine the process for containment and mitigation.

If direct connections are found by buildings inspectors, sewer televising, routine inspections, or reports of discharge at an outfall, the Public Works Department and Buildings Inspector should determine the owner of the connection. Direct connections to the storm sewer system, if needed, would require a NPDES Stormwater permit and must meet the Parish Code Requirements. In the case that the connection is considered illicit, the Parish may suspend the owner’s access to the Stormwater System or the Parish is authorized to enter the property and abate the problem if deemed a public health or environmental risk. The owner will be responsible for the cost of abatement as defined in Parish Ordinance Chapter 46.

In the case of a sanitary sewer leakage the Public Works, Utilities, and/or Building Inspections staff will review the nature of the problem to ensure the cause of the leakage has been resolved. All infrastructure will be repaired and any other utilities, agencies, or businesses that are impacted must be notified.

If excessive non-point source pollution (animal waste, street runoff, yard runoff, trash) is identified, the Parish staff will determine if the problem can be reasonably corrected through education or maintenance.

Groundwater contamination can pose a challenge to the Parish and contaminated groundwater would be considered an illicit discharge upon entering the storm sewer system. The first step would be to determine the source and the severity of the contamination. The Parish will work with the appropriate agencies, if needed, to contain and mitigate the spill.

Enforcement Response Procedure

Illicit discharge violations could include the following infringements, which are considered misdemeanor charges:

- Illegal disposal/dumping
- Illicit discharges and connections
- Public nuisance
- Dumping in street
- Dumping on public property
- Theft (of services)
- Unlawful deposit of garbage, litter, or like

Enforcement actions taken can include:

- Verbal warning
- Suspension or Stop Work Orders
- Fines
- Reimbursement of the cost of abatement and/or monitoring
- Civil Action

Factors to consider in the selection of enforcement response include:

- Frequency of violations
- Other types of non-compliance
- Degree of impact to the environment and the community

In the case of a non-threatening connection on private property, a Suspension Order would be sent to the offender informing them of the violation(s) of the applicable statute or provision in the Parish Code. The Order may also include the cost of abatement, including administrative costs, and time limitations as described in Parish Ordinance Chapter 46.

Documentation Procedures

The Public Works Department would be responsible for documenting known and suspected violations of illicit discharges in the municipal storm sewer system that are reported to the Public Works Department. Reports of illicit discharges may come from various sources and departments, and this department would ensure that the reports are completed and shared with the appropriate departments. This will allow the Public Works Department to track how and where illicit discharges occur in the Parish and how best to manage follow-up inspections and/or monitoring. A follow-up inspection would occur at a time deemed necessary, if required, to determine if the activity persists beyond the first occurrence.

Public Works staff will document known information using the Illicit Discharge Inspection Form upon inspection of the outfall where illicit discharge is suspected. The information collected can be compiled to update GIS maps or develop reports of incidents within the Parish, as needed.

3.2 Employee Education

Field staff will be trained on illicit discharge by means of an in-person training or an employee training video that was created in conjunction with this plan. Parish procedures will be reviewed with employees, as well as the locations of reference materials and contact information. Additional reminders will be posted on the Parish's Intranet site and/or via email newsletters as needed.

3.3 Future Recommendations

The Public Works Department will review the illicit discharge inspection schedule and update records as needed. The plan should also be updated as contact information changes and procedures are revised. Upon the next SWPPP Permit application, the program will be revisited to determine if strategies and procedures defined in this plan are being used and to see if measurable progress is being made in the Parish in regards to illicit discharge elimination.

Appendix F