

STORMWATER MANAGEMENT PLAN

CITY OF BOSSIER CITY

March 1, 2013 – February 28, 2018

(Including elements & modifications of original permit requirements)

Agency Name	City of Bossier City
Permit Number	LAR - 040001
MS4 Location Description Shreveport Louisiana Urbanized Area	City(s) Permitted: City of Bossier City
Map	Attach MS4 Boundary Map
LPDES Program Descriptions	Attached
Program Implementation Area	<input type="checkbox"/> Permitted Area

Certification: the Legally Responsible Person must sign the following certification. The signer must be either a principal executive officer, ranking elected official or other duly authorized employee.

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

Name (printed):

Title:

Signature: _____

Date:

TABLE OF CONTENTS

Instructions

Overall Program Perspective

Organization of the City's Stormwater Management Program

MCM1: Public Education & Outreach

MCM 2: Public Participation/Involvement

MCM 3: Illicit Discharge Detection & Elimination

MCM 4: Construction Site Runoff Control

MCM 5: Post-Construction Stormwater Management

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

Overall Program Perspective

This document represents the City of Bossier City's plan to meet the requirements of the Louisiana Environmental Quality Act, as amended (La. R.S. 30:2001, et seq.) "General Permit For Discharges From Small Municipal Separate Storm Sewer Systems under the Louisiana Pollutant Discharge Elimination System." The City was originally issued a LPDES permit on December 5, 2002 (Permit No. LAR040000, AI94338/PER 20020001) and successfully implemented the requirements over the initial five year permit period. The current permit was effective on March 1, 2013 and will expire on February 1, 2018. While the basic framework has not changed, several permit modifications require changes to the City's stormwater management program. This plan demonstrates how the City will meet the new permit requirements through 2018.

Mandated by Congress under the Clean Water Act and implemented in Louisiana by the Louisiana Department of Environmental Quality, the purpose of the LPDES permit regulations is to protect water quality from urban pollution carried by stormwater into waters of the State. Stormwater runoff from urban areas may contain sediments, fertilizers, pesticides, bacteria, motor oil, and other pollutants generated by various land uses and human activities. When left uncontrolled, this pollution can result in the impairment or destruction of fish, wildlife, and aquatic life habitats; a loss of aesthetic value; and threats to public safety and health.

To achieve these water quality goals, the permit requires the City to control the discharge of pollutants to the maximum extent practicable by addressing six minimum control measures (MCMs). These MCMs include:

- 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

While the focus of the permit is on prevention, the regulations also require special measures to address water bodies that are already identified as impaired in the Department of Environmental Quality's 303(d) report. In addition, the permit provides for specific actions to be taken when a Total Maximum Daily Load (TMDL) has been established for a specific pollutant of concern. A TMDL establishes the maximum amount of a pollutant that can enter a water body without violating water quality standards and results in the assignment of a waste load allocation for the pollutant to all measurable sources.

A vast majority of the City of Bossier City's storm drainage system empties into the Flat River (segment 100406) which has been identified as an impaired waterway and appears on the EPA 303(d) list. TMDLs have been finalized and/or WLAs for the following pollutants of concern: (DO) dissolved oxygen, (TDS) total dissolved solids and fecal coliform. At the time of the original development of this plan the City of Bossier City had not been identified as a source of these pollutants causing the impairment or required to monitor for these pollutants. However, in anticipation of the promulgation of approved TMDLs the City has reviewed existing storm water management operations, ordinances, protocols, and programming to assure the City has developed appropriate and cost effective best management practices (BMPs) that will control pollution to the maximum extent practicable. At the present time the City of Bossier City does not have definitive data relative to the contribution of pollutant loading to the Flat River from the storm water drainage system. This revision to the Storm Water Management Plan includes a schedule of activities to incorporate sample screening of the Flat River both north and south of the City's UA and major outfalls during wet and dry periods to identify specific pollutant loading. The SWMP will be modified (appropriate BMPs) upon discovery of any problem areas within the UA based on information from sampling results. Upon a LPDES Permit Modification to include monitoring of TMDLs, the City shall modify the Plan to include the new requirements specified by the Permit.

Organization of the City's Stormwater Management Program

The LPDES permit compliance activities are coordinated through the Environmental Affairs Division of the Utilities Department. While Environmental Affairs is responsible for overall coordination, including the submittal of annual reports, several other departments and divisions have important roles in implementing the LPDES permit.

The following organizational chart provides a summary of roles and responsibilities.

City Council

Mayor

**Article I
Department of
Planning
And Zoning**

Development Review
Zoning

Engineering

*Construction and
Inspection: Manages and
inspects Capital
Improvement Projects (CIP)
and administers
Construction Permits &
Inspections Div. Performs
site plan review (including
SWPPP) of construction
development.*

Engineering and Design: Designs CIP
and administers floodplain management
program.

*Geographical Information
Systems*

**Department of Public
Utilities**

Environmental Affairs:
Administration of the
Stormwater , Pretreatment
and Grease Trap
programs.

Stormwater Div:
· construction inspections
· business inspections
· complaint inspections
· enforcement
· dry weather screening
· monitoring
· training

Maintenance and
Operations:
Maintains sanitary sewer
system, wastewater and
water treatment plants.

**Department of
Public Works**

Maintenance:
Maintains storm
sewer system

Street Sweeping

Herbicide &
pesticide programs

Mowing of
roadways

Litter pick-up

Solid Waste:
Maintains
recycling center

The Phase II storm water management plan consists of the following six minimum control measures. Each control measure has associated Best Management Practices (BMPs) that will be implemented during the course of the permit term. The City of Bossier City will ensure that all measurable goals of the Phase II program will be met. The following is a description of each BMP and a description of:

City of Bossier City	PUBLIC EDUCATION & OUTREACH	STORMWATER DISCHARGES ASSOCIATED WITH MS4s Program Descriptions
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1. PUBLIC EDUCATION AND OUTREACH

Program Perspective: The goal of the Public Education and Outreach Program is to increase public knowledge of local water quality problems caused by urban runoff in order to maintain public support for local stormwater quality programs. This support ranges from individuals changing their daily actions to community backing for all stormwater program elements. The program should take into account pollutants commonly associated with the urban environment

PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS

The City of Bossier City Department of Public Utilities, Environmental Affairs Division, shall distribute educational material and perform outreach programs to educate school age children, commercial facilities (food services) construction industry etc. and the general public on the impacts of storm water pollution runoff and the effects it has on water quality. Annual mail outs to all water billing customers (business and residential) will reach the largest audience (over 19,000 businesses and households) and include all demographics. Our educational goal is to enlist as many volunteers both individual and corporate to play an active role in the development and implementation of the program with hopes of giving each individual volunteer a sense of personal gratification in protecting the quality of our area waters. Emphasis on educational topics will be promoted on target audiences of the following pollutants of concern: Litter, fertilizers, waste oil, paints and household hazardous wastes and practices, grease trap maintenance and other outdoor storage structures such as food waste dumpsters and storage bin for used food grease/oil recyclables, and sediment & erosion controls and related construction pollutants.

The City has developed a working relationship with the following organizations to assist us with our educational goals:

Partnerships

Implement Year	Public Education Program Element - Partnerships <i>List each program element, briefly describe. Provide the year(s) for implementation or state "ongoing" for currently implemented programs.</i>	Implementation Year(s) or "Ongoing"
2004	Keep Bossier Beautiful- Earth Day and Clean-Up Events	Ongoing
2004	Cypress Nature Center- Student and Teacher Education	Ongoing
2003	Shreveport Green- Household Hazardous Waste Events	Ongoing

In addition, an ongoing storm drain marker program allows volunteers to participate in marking events including the distribution of stormwater BMP literature. Volunteer opportunities to participate in projects may be announced in the local newspapers, the Bossier City & Keep Bossier Beautiful web site, annual mail-outs and/or the storm drain marker door hangers.

The Bossier City community has a limited industrial base. The Shreveport/Bossier City area has become a tourist destination and as a result the hotel and restaurant businesses have expanded greatly. An educational program for restaurant stormwater BMPs as well as a Grease Trap permit program was initiated due to the potential of stormwater pollution from grease trap overflows, food waste storage and cleaning practices typical of food preparation. This program includes institutions such as hospitals, nursing homes and schools. The construction of new homes and commercial developments continues at a fast pace. The importance of keeping sediment, as well as other construction related pollutants, from entering our waterways will be addressed through training sessions with builders and contractors of construction BMPs. The requirements of the LPDES permit issued for construction activities and the City’s adopted Erosion and Sediment Control ordinance is addressed through training, meetings, etc.

Educational Materials and Strategies

The City of Bossier City Environmental Affairs Division will participate in local town meetings to get input from concerned neighborhood citizens on how to better implement our existing storm water program, seek out both individual and corporate organizations to aid in the education of our youth and to help with the distribution of storm water educational material and other media. Meet with school officials to develop a storm water pollution prevention curriculum and supply them with the needed teaching materials. Develop a storm water web site and establish a storm water hotline for citizens to report any problems. Public education and outreach programs and activities may include but not be limited to the following:

Implement Year	Public Education Program Element – Educational Strategies and Materials List each program element, briefly describe. Provide the year(s) for implementation or state “ongoing” for currently implemented programs.	Implementation Year(s) or “Ongoing”
2003	Research available stormwater educational materials for schools, commercial activities and general public.	Ongoing
2003	Distribute information to the public concerning the Annual Household Hazardous Waste Disposal Event & record amounts of waste and number of participants. (revised 2010) Shreveport Green now conducts this event eight times annually and does not submit a report to Bossier City with numbers of Bossier residents or amounts of waste collected. Shreveport Green submitted an estimate only. These events are advertised in advance in the Shreveport Times.	2003-2009
2004	Develop and implement school curriculum. (the Cypress Nature Center is providing environmental education/ water quality programs)	Ongoing
2004	Seek meetings with governmental agencies, civic groups, educators & representatives of commercial facilities on stormwater pollution prevention and awareness programs.	Ongoing
2004	Institute stormwater hotline and record number of complaints.	Ongoing
2004	Begin to develop web site and update as needed.	Ongoing
2004	Participate in town meetings & document number of citizens attending.	Ongoing

2004	Distribute educational materials to schools. (Revised to purchase of Non-point Source Enviroscape model for teachers to use in the classroom and exhibits).	Ongoing
2004	Fund Environmental workshops at the Cypress Nature Center for educators. (revised to include this BMP)	2004, 2005, 2006
2004	Place pet waste containers and pet waste posters at city park. (revised)	2004
2004	Begin Storm Drain Marking Program. Work with groups and/or city departments to mark storm drains with a “Do not dump” message. Purchase markers and other materials needed. Record numbers of volunteers and civic groups as well as numbers of storm drain inlets marked. (revised to include this BMP)	Ongoing
2004	Design & purchase door hangers with a stormwater pollution prevention message to be used in conjunction with the storm drain marker program. Document number of door hangers distributed (revised to add this BMP)	2004, 2009, 2012
2004	Institute and participate in an Earth Day event for area schools in cooperation with civic organizations. Record number of students and schools represented and civic groups assisting. (revised to include this event) Keep Bossier Beautiful lost City funding at the end of 2010. This funding helped pay for a Director. A few volunteers are still active and celebrated Earth Day in 2011 & 2012 with educational programs in the schools. (revised to include this activity)	2004-2012
2005	Restock pet waste bags at city park. (revised to include this BMP)	Ongoing
2005	Record number of times the Non-point Source model was used by teachers, educators and number of students attending.	Ongoing
2005	A water awareness test developed by the America’s Clean Water Foundation was printed and handed out at the water billing office.	2005
2005	Storm water presentation to the Master Plan Task Force	2005 & 2006
2006	Develop pamphlet/materials on stormwater BMP’s to send in an annual mass mailing to all residential and commercial water billing customers. Record number of mailings sent.	Ongoing
2009	Record number of responses to the mass mailings (revised)	Ongoing
2006	Provide information to schools and restaurants concerning BMP’s for outdoor food service activities. Record number of brochures distributed. (revised to include this BMP)	2006
2006	Participate in a training session for the North West Home Builder’s Association w/ Shreveport Regional LADEQ and the City of Shreveport (revised)	2006
2007	The City of Bossier City co-sponsored a seminar titled “Stormwater Erosion and Sedimentation Control” for area contractors and developers. Record estimate of numbers attending. (revision)	2007
2007	The EPA’s “A Homeowner’s Guide to Septic Systems” was printed and delivered to all known homes/businesses on septic systems. (revised)	2007 & 2008

2007	Provide training workshops/mailings for homebuilders on the requirements of the Erosion and Sediment Control Ordinance and record number of training sessions and participants / mailing sent. (revised to include this activity)	Ongoing
2007	Class room education on recycling, litter control and the benefits of trees conducted in honor of Earth Day by volunteers of Keep Bossier Beautiful. (revised to include this activity)	Ongoing
2008	Tours and educational program conducted at Bossier City recycling center.	Ongoing
2009	Everything Green Expo at Bossier Civic Center. This event was to promote educational information on Louisianas Recycling Initiative and included vendors promoting rain barrels, sustainable land use & development and green energy. (revised to include this activity)	2009 2010
2010	Red River Clean-up – Grassroots movement to educate citizens on littering and water pollution. Various organizations & volunteers. (revised to include this activity)	Ongoing
2011	Article in the Shreveport Times about littering. Sponsored by Keep Louisiana Beautiful (revised to include this activity)	2011
2012	Article in Shreveport Times reporting the growth in demand for recycling in the Bossier Parish, city & schools (revised to include this activity)	2012

Evaluation of the Public Education & Outreach Program and Selection of Measurable Goals.

The Environmental Affairs Division will review each of the BMPs listed annually to determine the need to maintain, modify or replace the BMP based on its success. Success may be determined by; an increase in residents participating in recycling, household hazardous waste events and clean-ups, minimal problems with food service facilities, teacher participation in workshops and utilizing stormwater Enviroscope model in class rooms, builders installing BMPs for erosion and sediment control, and numbers of complaints from residents/businesses/city employees concerning stormwater discharge issues. (More complaints indicate an awareness of a possible pollution violation etc.) In some instances the BMPs and measurable goals selected for the first LPDES permit period were unattainable due to lack of experience, very limited guidance and overzealousness. However, over time and trial & error a good core educational program has been achieved.

	PUBLIC PARTICPATION / INVOLVMENT	STORMWATER DISCHARGES ASSOCIATED WITH MS4s Program Descriptions 2008 - 2012
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2. PUBLIC PARTICIPATION/INVOLVMENT

Program Perspective: Public participation/involvement is often discussed in the context of the public education measure because they share a common goal – reaching out to citizens to improve awareness and achieve program compliance. The distinction between the two programs is that public participation/involvement provides a conduit for citizens to participate in the development and implementation of the publicly funded stormwater program

PUBLIC PARTICIPATION/INVOLVEMENT

The City of Bossier City Environmental Affairs Division's public participation control measure will have a large public component. Support by the citizenry is crucial to the success of the storm water management plan. The measure will involve all socioeconomic groups. The public participation program is a key component of the public education measure. Broader public support in the development and decision making process will minimize potential legal challenges.

Public Participation/Involvement Strategies-(Original strategy)

A coordinated effort between the City of Bossier City and Bossier Parish to form a parish wide watershed commission is the primary strategy of this minimum control measure. This umbrella organization will be comprised of educators, various volunteer/nonprofit groups, business representatives, local government agencies and the general public. This strategy will bring together those groups and programs already in existence as well as individuals wishing to participate in the decision making process on methods to best preserve the various watersheds throughout the city and parish. Emphasis will be placed on public education and volunteer activities for all age groups. Storm drain stenciling, stream cleanup days and volunteer monitoring of water streams and storm drain system will be encouraged. Guidance, technical/enforcement assistance and partial funding will be provided by the City of Bossier City. A hotline will be established to aid enforcement authorities in the identification of polluters. The household hazardous waste disposal program is composed of eight events annually monitored by Shreveport Green. The City of Bossier contributes funding for these events and the program administrator conveyed that Bossier City & residents comprise about 40% of the participation. The City of Bossier City currently has a modern recycling collection facility that enjoys a large participation by the citizens. Items accepted include, metals, clear plastics, newspaper and bulk paper, tires and used motor oil.

Revised strategy-After meetings with local governmental agencies and civic groups we were not successful in establishing a watershed commission. Various entities were interested in specific activities but there was little support to serve on a watershed commission or be involved with stream monitoring. The Environmental Affairs Division will continue to work with those groups that have stepped forward to assist in our goals of involving the public in events related to water pollution prevention. The Keep Bossier Beautiful Committee visits various schools each spring to educate students on environmental Issues in honor of Earth Day. The City of Bossier City will continue to help fund Shreveport Green's Household Hazardous Waste Disposal Events. This has grown from an annual event to an bi-monthly program. This is well advertised in the local papers. The Storm Drain Marker program has involved various groups such as the Boy & Girl Scouts, Bossier Parish Community College students, Americorps students, Community Service workers and neighborhood volunteers. Materials for the program are provided by the City of Bossier City. Opportunities for the public to participate in an event are printed on the door hangers distributed to the residents as well as on the City's web site. Red River Clean-up events are held each fall and many volunteers from both sides of the Red River participate. The Environmental Affairs Division will continue to support these ongoing events. The success of these programs are based on increasing amounts collected at the recycling center, increased participation in the Household Hazardous Waste Disposal Events, growth in citizens participating in all events and feedback from students and teachers on Earth Fest.

Mechanism and Processes for Public Involvement/Participation

Implement Year	Public Involvement/Participation Program Element – Public Feedback <i>List each program element, briefly describe. Provide the year(s) for implementation or state “ongoing” for currently implemented programs.</i>	Implementation Year or “Ongoing”
2003	Research storm drain marker vendors to obtain costs and related info (Revised to include this activity)	2003
2003	Red River Beach Sweep sponsored by Keep Bossier Beautiful. (Revised to include this activity)	2003 & 2004
2003	Meeting with Public Affairs Officer to address newspaper article informing the public of the stormwater program and the search for citizens to serve on stormwater management panel.	2003
2003	E-mails sent to all Bossier City Council members requesting info on citizens interested in participating in community events	2003
2003	Two public forums for food service facilities with topics of stormwater regulations and grease trap issues. Record number of participants. (Revised to include this activity)	2003
2003	Co-sponsor the Annual Household Hazardous Waste Disposal Event and record number of participants. (revised 2010) Shreveport Green now conducts this event Bi-Monthly and does not submit a report to Bossier City with numbers of Bossier residents or amounts of waste collected. Shreveport Green submitted an estimate only.	Ongoing
2003	Record amounts of material brought to the Bossier City Recycling Center by citizens.	Ongoing
2003	Meeting with local governmental agencies on establishing a watershed commission and an educational program for students. (Revised to reflect non-attainment of this goal. Will co-sponsor events/meetings with all interested groups and document same)	Ongoing
2004	Establish a stormwater hotline & document number of problems/incidents resolved.	Ongoing
2004	Design and have printed a door hanger for the storm drain marker event. The hanger has a pollution prevention message and invitation to participate. Purchase storm drain markers and glue.	Ongoing As needed
2004	Storm Drain Marker Event held. Record numbers of storm drain inlets marked and door hangers distributed. Record names of group/s participating.	Ongoing
2004	Keep Bossier Beautiful Clean-Up and Recycling Events. Record pounds of wastes and recyclables collected and groups participating.	Ongoing
2004	Co-sponsor an Earth Day Event with Keep Bossier Beautiful. Record number of students attending and participating groups.	Ongoing
2005	Mass mail-out to all water billing accounts detailing BMPs to protect local waterways and how they could help to protect our waterways.. Record numbers of households and businesses reached.	Ongoing
2005	Research environmental attitude/awareness surveys available on the Internet from other communities and methods used to conduct them. (revised to include this activity)	2005
2006	Storm Drain Marking Event was canceled by the Boy Scouts. (Revised to reflect non-attainment of this activity by a volunteer group. Environmental Affairs staff did a storm drain marking	2006

	event instead)	
2007	Class room education performed covering topics of recycling, litter control and the benefits of trees. This was provided by volunteers of Keep Bossier Beautiful and will be an annual event in honor of Earth Day.	Ongoing
2007	Provide training workshops/mailings for homebuilders on the requirements of the Erosion and Sediment Control Ordinance and record number of training sessions and participants / mailing sent.	Ongoing
2008	Tours of the Bossier City Recycling Center were given at the request of four Bossier schools...Tours of the recycling center will now be recorded annually. (revised to include this activity)	Ongoing
2009	Lecture at LSU Ag Center on Storm Water Pollution issues in which 56 residents and staff participated (revised to include this activity)	2009
2009	Louisiana Boardwalk held an Earth Day event for the public. Vendors and volunteers provided information on recycling, litter prevention, solar power etc. (revised to include this activity)	2009
2009	Everything Green Expo at Bossier Civic Center. This event was to promote educational information on Louisianas Recycling Initiative and included vendors promoting rain barrels, sustainable land use & development and green energy. (revised to include this activity)	2009 2010
2010	Red River Clean-Up Grassroots movement of various civic, government and volunteer participants to hold a clean-up event of trash along the Red River.	2010 2011 2012
2011	Article in the Shreveport Times about littering. Sponsored by Keep Louisiana Beautiful (revised to include this activity)	2011
2012	Article in Shreveport Times reporting the growth in demand for recycling in the Bossier Parish, city & schools (revised to include this activity)	2012

	ILLICIT DISCHARGE DETECTION AND ELIMINATION	STORMWATER DISCHARGES ASSOCIATED WITH MS4s Program Descriptions 2008 - 2012
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3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

Program Perspective: The goal of the Illicit Discharge Detection and Elimination Program is, to the maximum extent practicable, to reduce the frequency and environmental impact of illicit discharges in which pollutants are intentionally or accidentally discharged into the storm sewer system.

The illicit discharge detection and elimination measure will involve both municipal employees and local citizens. The City's environmental affairs division will locate illicit discharge problem areas through public complaints, visual screening and dry weather screening methods. The program will work to detect and eliminate illicit discharges.

Illicit Discharge Detection and Elimination Strategies

The City of Bossier City will develop a storm water system map showing the location of all outfalls and the names of U.S. Waters that receive storm water discharges. The identities of all outfalls including the names of receiving waters shall be entered into a Geographic Information System (GIS) for future references. The City will develop and enforce storm sewer discharge prohibitions through an ordinance or other regulatory mechanism. The ordinance will detail appropriate enforcement procedures and actions that will be taken against discharge violators illegally dumping waste into area waters. Develop a management system to document all information gathered concerning any illicit discharge detection and elimination. Institute an education program for municipal employees, commercial facilities, and the general public about the hazards associated with illegal discharges and improper disposal methods of waste. Screen the City's storm water hotline for any reported illegal dumping or connections. The environmental affairs division with the help of the City's inflow & infiltration division will smoke test and televise the City's sanitary sewer system and as a way to detect and eliminate illicit discharges and connections to the storm sewer system. Dye testing may also be incorporated as a means of detecting illicit connections.

Outfall map

The storm water outfall map is 100% completed and will be updated as areas are annexed into city Coverage area or new development is constructed.

Training

Annual training is provided to municipal employees in the way of videos, posters, lectures, and classroom meetings, ect. Emphasis is on topics concerning the impact of illegal discharges and the importance of the Illicit Discharge Elimination program.

Stormwater Inspections

The Stormwater Discharge permit issued to the City of Bossier City requires the City to develop a plan to detect and address non-storm water discharges, including illegal dumping into the stormwater system. (Part IV.3.4)

In response, the Bossier City Environmental Affairs Dept developed an Illicit Discharge Elimination Procedures Plan (IDEP). (See attachment). The permit mandates two types of inspections, Dry Weather Screening inspections of stormwater outfalls and construction inspections.

Dry Weather Outfall Inspection / Screening

Dry weather screening is a **visual** inspection of outfalls to a receiving stream to determine possible illicit connections or prohibited discharges. If an unusual color, odor, sheen, etc., is detected an investigation will be necessary to determine the source. Dry weather outfall inspections are conducted once per year by the Bossier City Environmental Affairs inspectors. Public works employees inspect the storm water conveyance system annually as per FEMA requirements. They have received training on identification of illicit discharges to the storm water system and are vigilant on reporting any issues (suspicious discharges) to the Environmental Affairs Dept. In addition Public

Works frequently encounter homeowners dumping solids (trash, branches & grass clippings) into storm water ditches. Letters are sent to the homeowner with a warning to clean up the debris. This can be considered an inspection and enforcement action and is included in the annual stormwater report sent to LADEQ. Copies of these letters are faxed to the Environmental Affairs Dept.

TMDLs and WLAs

Total Maximum Daily Loads (TMDLs) and/or Waste Load Allocations for the Flat River have been identified for the following impairments: dissolved oxygen, fecal coliform, total dissolved solids and nonnative aquatic plants. Of these, total dissolved solids has been identified or suspected as being an issue of residential districts. The only segment of the Flat River tested by LADEQ is located in Taylor Town in south Bossier Parish. The Flat River north of Bossier City was not monitored. The above parameters (Do, fecal coliform and TDS) will first be addressed with wet weather screening and sampling of the Flat River at the northern and southern borders of the UA to determine if Bossier City is contributing to the problem. Further wet weather sampling and screening of the two major outfalls to Flat River (lateral B1 and lateral B4) will be undertaken to determine pollutant loading and possible sources should monitoring of our southern extremes prove Bossier City is contributing excessive loading or not meeting the established WLAs.

Suspected sources of fecal coliform were identified by the State as cattle grazing and possible failing septic systems. A number of septic tanks and individual oxidation ponds are located within our MS4. Pamphlets and suggested maintenance booklets have been distributed to the owners of these systems. Also BMPs concerning home-owners lawn and fertilizer use are addressed thru annual mail-outs.

Certificate of Occupancy Inspections

The Environmental Affairs Dept. checks the AS400 each morning to determine if a new business needs to be inspected. If the type of business may be of concern to either the pretreatment, stormwater or grease trap section, it is inspected and a report is filed in the stormwater files. (All environmental sections have a stormwater component.)

Pretreatment IU Inspections

Currently there are 10 major manufacturers/service industries that are on the pretreatment program. These are inspected twice annually with an extensive report written and filed that includes stormwater information.

Complaint Inspections/Investigations

Complaints are documented and investigated whether received from city employees or private citizen. Types of complaints received have involved power washing, concrete washout, and landscape services blowing grass into streets and spills/dumping into ditches. As landscapers, power washers and carpet steam cleaners are mobile; it is a priority to provide stormwater education to these types of businesses.

Other Inspections

Food Service Facilities

These are the most visible and problematic violations. Grease trap overflows, leaking dumpsters, tallow bins and compactors, outdoor washing of stove vents, kitchen floor mats, and power washing pavement and dumpster areas are a continuous problem. The grease trap program is instrumental in the inspection of these facilities. In December we modified the restaurant inspection form to include stormwater concerns. Also, restaurant managers are all given a sample of Best Management Practices to help prevent pollution to the stormwater system. Inspections are continuous with problem businesses being more frequent. These inspections will be counted in the annual report to DEQ and copies filed with the stormwater section.

Industries/small businesses

Other types of businesses of concern for stormwater pollution to our conveyance system may include those that hold discharge permits from the State of Louisiana as well as mechanical, radiator, paint & body shops, greenhouses or other businesses that have a nursery as part of their business. A schedule of inspections for these will be incorporated in our stormwater program in 2007.

Construction Inspections –

The Department of Environmental Quality did not set a frequency of inspections for construction. The MS4 permit dictates that procedures for site inspections and enforcement of control measures be written. This possibly could be included in the Erosion and Sediment control ordinance.

Illicit Discharge Detection and Elimination Plan

The goal of the IDEP is to reduce the amount of pollution to the local watershed and is based on that portion of the watershed for which Bossier City has legal authority. Cooperation with other MS4s (Barksdale and Bossier Parish) and the education of the public and businesses is instrumental to ensure water quality standards are being addressed throughout the entire watershed. The focus of the IDEP is on the elimination of improper connections, elimination of illegal dumping and minimizing the amount of seepage into the storm water system from the sanitary sewer system and septic systems.

Procedures for locating priority areas likely to have Illicit Discharges

Illicit discharges and connections to the City's separate storm sewer system will be identified using the following techniques:

- Water sampling data and other available information about water quality will be reviewed to identify problem areas.
- Pretreatment Inspections will highlight areas of interest due to type of possible discharges.
- Certificate of Occupancy Inspections will be conducted on businesses with potential storm water pollutants.

- Training of Public Works, Utilities, Engineering & Permits, Code Enforcement and Police/Fire Department employees to be observant for illicit connections and illegal discharges during their daily job functions.
- Visual screening of outfalls will be conducted annually under dry weather conditions. Dry weather is defined as periods where there has not been precipitation within 48 hours.
- Locations identified by visual screening, complaints, and water quality data as requiring follow up will be prioritized and revisited during dry weather conditions. Outfalls potentially discharging polluted materials during dry weather periods may be tested based on water quality problems found in the watershed, screening tests, odor, color, and visual observations.

Procedures for tracing the source of an Illicit Discharge

Prioritization of sources that are discharging polluting material will be as follows:

- Complaints related to the discharge of polluting materials will be investigated as they are reported. The Environmental Affairs staff investigates calls relating to discharges of improper materials into the storm water system immediately. Follow up distribution of public educational materials regarding improper disposal into the storm water drainage system may be conducted. Exception is for emergency hazardous waste spills/accidents, which are investigated by the state police and fire departments.
- Water sampling and testing will be conducted as necessary to locate the source of the illicit discharge.
- GIS mapping of the storm water system will be utilized to trace upstream of the polluted flow.
- Investigation of suspicious discharges will be made by visual inspection and/or testing of discharges upstream of the suspicious discharge. Dye testing premises in the area of suspicious flow may be conducted. Hand- outs to residents and visits to businesses alerting them to the problem that is under investigation may be conducted to solicit their assistance in finding the source. A building- by -building evaluation may also be used in areas where a problem has been isolated.

Procedures for removing the source of the discharge

Those found responsible for illegal connections/discharges will be notified for Correction/elimination of the discharge by personal visit, if possible, by one of the Environmental Affairs staff and/or by official letter. Follow-up will be conducted to ensure correction is satisfactorily completed. Where polluted discharge may cause harm or imminent danger to the public and or watercourse an immediate seize and desist demand will be made until measures are taken to correct the discharge.

- The Storm Water Pollution Prevention Ordinance, Litter Ordinance, Industrial Pretreatment Ordinance and Standard Housing Code will be used to address illicit discharges/connections. The Bossier Parish Health Sanitarians will also be instrumental in enforcement of certain discharges.

- The Environmental Affairs Department will manage the Illicit Discharge Elimination Program. The Utility Director will be responsible for implementing the plan.

Procedures for program evaluation and assessment

Documentation of actions taken to eliminate Illicit Connections and Discharges will be included in the required annual report to the LADEQ and will include the following information:

- Number of outfalls screened
- Complaints received and corrected
- Number of discharges and quantities of flow eliminated
- Number of dye tests or smoke tests conducted

Implement Year	Illicit Discharge Detection and Elimination Program Measurable Goals and Activities	Implementation Year or "Ongoing"
2003	Begin implementation of management system.	Ongoing
2003	Begin to locate stormwater outfalls and names of receiving streams	2003 & 2004
2003	Meet with GIS to submit stormwater outfall data to create an overlay.	2003 & 2004
2003	Meet with municipal dept. supervisors on establishing an employee stormwater education program/training committee (hazardous waste disposal, BMPs etc.)	2003 & 2005
2003	Research of employee training materials and order a video for 2004 training. (revised to include this activity)	2003
2003	Two workshops held to train food service managers on stormwater prohibitions and regulations. (revised to include this activity)	2003
2003	Begin to draft Illicit Detection and Elimination Ordinance (revised – draft ordinance submitted to City Attorney for review in 2005 and adopted by City Council in 2006)	2006
2004	Begin to track all activities of the storm water program including complaints and inspections, dry weather screening, illicit discharges and connections and enter information into management system.	Ongoing
2004	Document smoke testing and televising of sanitary sewer system. (revised- the I&I crew is no longer working full time in I&I. Smoke testing and televising the sewer system is done as needed. Records are kept by Utilities Maintenance Dept.)	2004
2004	Begin stormwater training to municipal employees, commercial facilities & general public to include hazards of illegal dumping and enforcement procedures. Record depts. & numbers reached.	Ongoing
2004	Meetings with civic groups, educators, governmental agencies on stormwater regulations and stormwater pollution prevention. (revised to include these activities)	Ongoing
2005	Begin mass mail-outs to businesses and residents detailing best management practices to protect local waterways.	Ongoing

	(revised to include this activity)	
2005	Illicit Discharge and Elimination Procedures (IDEP) was developed. (revised to include this requirement)	2005
2006	Document number of commercial facilities and businesses implementing stormwater management plans.(LADEQ and insp.)	Ongoing
2006	Participate in training sessions with area home builders/developers with requirements of LADEQ Discharge Permits for Construction Activities and upcoming City of Bossier Erosion and Sediment Control Ordinance. (revised to include this activity)	Ongoing
2007	Through GIS system, identify homes/businesses not connected to the city's sanitary sewer system and distribute guidance materials on maintaining septic systems.	2007 & 2008
2007	Adopted a sediment and erosion control program with construction industry and record number of inspections, enforcement actions etc.	Ongoing
2008	A warning letter sent to all active builders concerning the installation of washed gravel driveways. (run-off is illegal discharge) (revised to include this activity)	2008
2008	A brochure and letter concerning equipment available to help control floatables was sent by inter office mail to the Superintendent of Public Works. (revised to include this activity)	2008
2008	Letter of warning sent to all active home builders concerning common problems of non-compliance found on job sites and builders responsibilities to know & understand the requirements of their LPDES permit. (revised to include this activity)	2008
2010	A letter was sent to all active home builders concerning non-compliance with their LPDES & City ordinances. (revised to include this activity)	2010
2011	A step by step guidance sheet was designed to assist builders in meeting storm water requirements to be met prior to being issued a building permit. (revised to include this activity)	2011
2013	Perform dry and wet weather sampling on the Flat River north & south of UA to determine contribution of pollutants listed on the 2012 Integrated Report.	
2014		

Reporting of Spills and other Discharges

Accidental Spill 2004

In March of 2004 the City experienced a chemical spill at a lift station. The chemical (ferric sulphate) is stored in a 6,000 gallon tank and used for odor control. The spill occurred as the storage tank was being filled. The delivery driver was sitting in his cab completing paper work and was unaware that the ferric was overflowing the capacity of the tank. Two City workers were at the location working on the chemical feed pumps and alerted the driver of the spill. He immediately stopped pumping into the tank. It was estimated that about 20 gallons of ferric spilled onto

the ground. The LDEQ in Shreveport was notified.

Accidental Spill 2005

On March 15, 2005 a city maintenance crew discovered a broken 16” sewer force main at 2400 Old Minden Rd. The raw sewage was flowing into an adjacent stormwater ditch that leads to Cooper’s Bayou and thence to the Flat River. Estimated discharge was 2MGD. LDEQ was notified of the event and Louis Still, ES III, of LDEQ investigated the incident and recovery efforts. Bypasses of the force main for repairs by the contractor were needed at five locations causing untreated waste water to flow to the Red River and Cooper’s Bayou to the Flat River. Chicken wire baskets at each discharge were installed to retain rags and large solids and to hold chlorine tablets to disinfect as well as possible. The Environmental Affairs staff monitored DO, chlorine and fecal coliform. Fire hydrants were opened to dilute as much as much as possible. Parts to repair the force main were not available locally and the line repair was not complete until March 19th. A written report was submitted to LADEQ in Baton Rouge.

Temporary Bypass 2005

On March 17, 2005, the City of Bossier City experienced a temporary bypass of raw sewage to the MS4 system. The bypass was the result of a 16” sewer force main break. The incident was reported to LADEQ in Baton Rouge. Mr. Lewis Still with LDEQ Shreveport office investigated the incident and a copy of his findings is on file at the Environmental Affairs office for review.

Illicit Discharge 2006

A complaint and inspection by LADEQ on May 26, 2006 revealed the Bossier City Water Plant was discharging clarifier solids and backwash sludge to the Red River. The City applied and received a discharge permit.

Accidental Spills 2006

On April 5, 2006, the City of Bossier City experienced a temporary bypass of sewage to the City’s MS4 system. The bypass was a result of a split hose hose used to pump sewage from an area where a rehab project on a lift station was taking place. The hose was threaded through the storm drain system to cross under a busy street. The incident was reported to LDEQ in Baton Rouge.

On May 24, 2006, the City of Bossier City experienced an accidental spill of raw swage to the MS4 system. A citizen contacted the Bossier Health Unit and complained of sewage flowing into a drainage ditch. The Health Unit contacted the Bossier City Utility Department and an investigation followed. No flow was currently entering the ditch and it was thought that a partial clog

In the sewer system caused a backup and possible overflow of sewage to the storm drainage system. The incident was reported to LDEQ in Baton Rouge.

On July 31, 2006, the City of Bossier City experienced an accidental discharge of sewage to the MS4 system. A 4" main break servicing one business collapsed causing an overflow of a manhole. The main was replaced with a 6" PVC line. The incident was reported to LDEQ in Baton Rouge.

On November 8, 2006, the City of Bossier City experienced an accidental discharge when 30 feet of river bank collapsed on Mack's Bayou breaking water and sewer lines necessitating replacement of both water and sewer lines. The incident was reported to LDEQ in Baton Rouge.

Accidental Spills 2007

On Feb. 22, 2007 a 24" sewer force main ruptured near 2833 Viking Dr. An estimated 2100 gallons of sewage entered an open storm drainage ditch. The lift station crew hand operated the lift station pumps to minimize the flow until a repair could be made. The ditch was dammed to prevent the sewage from entering a waterway. Repairs were completed on Feb. 23. The incident was reported to LDEQ.

On March 9, 2007 a sanitary sewer overflow from a clogged line entered the storm drainage system in the Pecan Park subdivision. An estimated 2,479 gallons of sewage entered the storm drainage system. Hydrants were opened to flush the underground storm drainage system after the sewer blockage was cleared. The incident was reported to LDEQ.

On Oct. 30, 2007 (A loss of solids at the final effluent discharges of the N.E.T.P.) Hydraulic loading at the headworks was responded to by diverting flow from the contact chambers back to the headworks. An employee unintentionally left the effluent discharge gate open at the contact chamber sending the flow to the headworks and to the final effluent discharge point. The incident was reported to LDEQ.

On Oct. 30, 2007 the top of a cast iron gravity sewer line corroded causing seepage to the Tilman St. ditch at Airline Drive. The ditch was dammed to prevent untreated sewage from entering waterways. A section of the pipe was replaced and the rest of the line will be "slip lined" in 2008. The sewage trapped in the ditch was pumped from the ditch back into the sewer system after the repair was made. The incident was reported to LDEQ.

Accidental Spills 2008

In May 2008 a heavy rainfall event (over 10 inches in a 24 hour period) caused the effluent pumps to be overloaded with treated wastewater. (Flow recorded as high as 19 MGD entering the plant). Flooding occurred inside the plant and caused all treatment units to be overloaded and in some instances to flow out of the retaining walls and onto the ground. The City's Lift Station crews were notified to try to cut back the discharge from the North Bossier Lift Station to help take some of the load from the influent of plant 2 which helped to stop the parshall flume, grit system and oxidation ditches #3 and #4 from overflowing. The effluent pump pit could not handle the flow and flooding occurred around the chlorine contact chamber. LDEQ was contacted and asked permission to set-up a by-pass to pump from the effluent basin to the Red Chute Bayou. Permission was granted and a total of 1.6 MGD was discharged

to the Red Chute Bayou. The City of Bossier contracted with CDM to develop a sewer master study to evaluate the entire sewage system. The incident was reported to LDEQ.

In June of 2008 a malfunctioning feed breaker controlling all six submersible influent pumps at the headworks to the N.E.T.P. caused the manholes along Stockwell Rd. to overflow. Temporary electrical wiring to bypass the feed breaker was installed to restore power to the pumps until a new breaker was ordered and installed. The roadside ditches contained the sewer overflow. This was pumped back into the manholes. Residual sewage that could not be pumped was sprinkled with HTH to assist with the odor. LDEQ was contacted by telephone and a follow up report was sent.

Accidental Spills 2009

On May 12, 2009 2 manholes located on the east side of Arthur Ray Teague Parkway overflowed 3.5 hours due to the loss of capacity at the head works of the Red River Wastewater Treatment plant. One of the two screw pumps broke loose from the bottom bearing causing severe damage to the headwork structure and the pump beyond repair. Diesel pumps were set up to assist the one remaining (but damaged) screw pump. The suction line of one of the diesel pumps became clogged with rags and the plant was not able to keep up with the flow. The forty-two inch sewer main interceptor became fully charged and overflowed out of the two manholes. Additional diesel pumps were located to assist with the flow and the Bossier City Utility department made a request for emergency funds from the City Council so that a new head works structure can be built. The sewage that overflowed onto the ground was pumped back into the manholes by the City's vacuum truck. All debris was picked up and the area was then washed down. LDEQ was notified at 10:48 AM on May 12, 2009.

Accidental Spills 2010

On Aug. 29, 2010, an 18" force main ruptured releasing approximately 500 gallons of raw sewage to the storm drainage system near the intersection of McDade & Lamar Street. All pumps at Big Airline Lift Station were shut down in an effort to stop the flowing sewer water to the storm drain system. The effected drainage system was treated with fresh water and HTH. The duration of the discharge was about two hours. A contractor was hired to perform an emergency repair to the sewer force main. These repairs were completed by the next day.

An online Incident Report was completed on August 30th followed by a written report sent to LADEQ by certified mail on August 31.

On Nov. 10, 2010, Mr. Ronnie Kay of LADQ called the City of Bossier utility Dept of report that raw sewage was in a ditch behind the Timbercove Townhouses located at 2138 Airline Dr. Utility maintenance crews found a pool of sewage near a storm drain behind 2154 Airline Dr. No discharge to the storm drain was ongoing at that time. The collection system in the area was checked but no problems were evident. The Sewer Lift Station Department informed maintenance that the Northside Drive Lift Station bubbler system malfunctioned on November 8, 2010, which caused the station to be down for a short period of time. It was believed that this was the cause for the raw sewage in the storm drain ditch. The bubbler system was repaired immediately on 11-8-10. It was believed that approximately 22,000 gallons of raw sewage entered the ditch. The utility maintenance crews utilized two vacuum trucks to remove the standing sewage from the ditch then added fresh water and HTH. The City planned to TV the sewer lines in the area to try to determine how the sewer escaped into the storm drain system and

make repairs as needed. An online incident report was filed with LADEQ on November 11, 2010. This was followed by a certified mail incident report on November 11, 2010.

Accidental Spills 2011

On July 19, 2011, the Riverview Lift Station located at 122 Riverview Circle in Bossier City experienced an electrical control panel failure, causing the lift station to shut down and the collection system to be fully charged. An estimated 500 gallons of raw sewage escaped a manhole and spilled into the coffer dam for Diamond Jacks Casino riverboat. The lift station crew had the power back on within twenty minutes of their arrival. The entire discharge to boat's containment dam lasted approximately 30-45 minutes. A total of four dissolved oxygen readings were taken from different areas of the coffer dam. These readings had a range of 3.51 mg/L to 3.91 mg/L.

A report of this incident was faxed to LADEQ on July 20, 2011 at 8:47 am.

On September 14, 2011, the Bossier Parish Levee Board reported to the Bossier City Utility Dept. that sewage was found in a ditch behind Looker's Hair Design at 2118 Airline Dr. It was suspected that the overflow entered the stormwater drainage system through a catch basin located next to a manhole on the west side of Airline Dr. A second overflow occurrence was located in the parking lot of the Rodeway Inn at 3033 Hilton Dr. This overflow also entered lateral B1. At the time of the investigation no overflow was occurring. It was suspected that the overflow occurred because of a problem discovered the day before with by-pass pumps set-up at the Don Lift Station located at 2950 E. Texas St. A lift station worker discovered that the floats for the by-pass pumps were set incorrectly causing the well to fill and back up the gravity lines. The worker set the pumps to manual operation until the pump contracting company returned to reset the floats. This lift station is scheduled for rehab and bypass pumps are being utilized until repairs can be made to existing pumps. (estimate repairs will be completed in January of 2012). Utilities maintenance crews opened hydrants to flush the ditch after vacuuming sewage from the ditch. An estimated 800 to 1,000 gallons entered lateral B1.

The incident was reported to LADEQ SPOC on 14 September, 2011 followed with a written report (by fax) on Sept. 16, 2011.

LADEQ Inspector Amanda Joe performed a site visit on Sept. 27, 2011.

Sanitary Sewer Overflow 2012

On April 19, 2012, LADEQ Inspector Amanda Joe notified the City of Bossier of a complaint made concerning raw sewage in a drainage ditch in the vicinity of E. Texas St. and Hamilton Rd.

An investigation revealed a blockage in an 8" sewer line caused an overflow into the storm water drainage system. The blockage was cleared on the 19th and standing sewage in the ditch was removed by a vac truck. The ditch was sprinkled with HTH and hydrants were opened to flush the storm drain system. On the morning of the 20th it was found that sewage was slowly entering the ditch and after several attempts over several days to TV the sewer and storm drains, on April 30 it was discovered that a 4" service line that crossed INSIDE the storm drain system, had separated at a joint and was discharging into the storm drainage system. An emergency repair was completed and additional HTH and flushing of the storm drainage system was conducted. A site visit by Amanda Joe of LADEQ was conducted on the April 20.

A written report of the incident was mailed on 25 April 2012 to LADEQ SPOC.

On May 18, 2012 the City of Bossier City was notified by a citizen of sewage in a drainage ditch behind a house at 2109 Ashley Wilkes Lane in the Southgate Subdivision. An investigation revealed that a blockage in a 10 inch sewer line caused an overflow at 5008 Longstreet. The sewage in the storm drainage system was removed by a vac truck. The ditch and the storm drainage system were sprinkled with HTH and a fire hydrant was opened to flush the storm drainage system and ditch. Further investigation with video equipment revealed a broken 4 inch sewer service line that was leaking into into a storm drainage catch basin at 5008 Longstreet. Repairs to this section of pipe were completed the same day. During the City's investigation and cleanup of the above incident two inspectors from the Regional LADEQ office arrived in answer to a citizens complaint. A written report of this incident was mailed on May 22, 2012 to LADEQ SPOC.

On November 6, 2012, a citizen reported to the City of Bossier City that sewage was coming out of a manhole at 3990 Airline Dr.

An investigation revealed that an air relief valve was leaking on a force main from North Bossier Lift Station and caused sewer to overflow into a drainage ditch (Greenacres Place Ditch). The valve was replaced and cleanup was done with a vac truck on November 6th, 2012. The ditch and the storm drainage system were sprinkled with HTH and a fire hydrant was opened to flush the storm drainage system and ditch to which it flowed. An estimated 200 to 500 gallons escaped the system while repairs were made.

A written report was sent to LADEQ SPOC on 7 Nov 2012.

	CONSTRUCTION SITES RUNOFF CONTROL	STORMWATER DISCHARGES ASSOCIATED WITH MS4s Program Descriptions 2008 - 2012
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4. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

Program Perspective: The goal of the Construction Sites Runoff Control Program is to reduce, to the maximum extent practicable, sediment and other construction-related pollutants from entering the municipal separate storm sewer system.

CONSTRUCTION SITE STORM WATER RUNOFF CONTROL

Construction sites of 1 acre or more (or under 1 acre if part of a larger project) located within Bossier City Limits shall be monitored and managed to control and reduce storm water runoff to the City drainage system. By all means reasonable and practical, storm water runoff shall be controlled to minimize the displacement of sediment, silt, earth, soil, and other materials associated with clearing, grading excavation and other construction activities. Projects that are linear in nature (i.e. water mains, sewer main construction) shall be exempt from storm water runoff control. (if total area under one acre) Projects owned by the Louisiana Department of Transportation and Development or owned by the Federal Government shall be exempt from storm water runoff control. Construction sites or sites to be cleared of 1 acre or more (or under 1 acre if part of a larger project) shall require a storm-water pollution prevention plan (SWPPP) as a part of the general construction permit.

The SWPPP shall be administered and enforced by the Bossier City Environmental Affairs Department.

Name of contact person/department assigned to address questions regarding municipality's construction and post construction projects/requirements and site plan review for development and other UDC requirements:

Contact name: Mark Hudson Title: City Engineer
Phone number: (318) 741-8565

Procedures for site plan review which incorporate consideration of potential water quality impacts

Site Plan Development:

The City of Bossier City will require a Stormwater Pollution Prevention Plan (SWP3), which includes erosion and sediment control measures and materials handling procedures, to be submitted in addition to the construction plans and specifications as required by the Bossier City–Parish Unified Development Code. Any construction activity located within the city that includes ground clearing, land grading, excavation, and other land disturbing activities, resulting in the disturbance of 1 acre or more of total land area, is subject to the requirements of this ordinance. This includes both new development and re-development. This ordinance also applies to disturbances of less than 1 acre of land that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) or more acres of land within the MS4 area.

Storm Water Runoff Strategies

A storm water pollution prevention plan (SWPPP) shall be developed and implemented in accordance with the requirements of the construction general permit or any individual or groups NPDES permit issued for storm water discharges from the construction site. The rules and regulations of storm water runoff control as well as the enforcement of the SWPPP shall be defined and stated via an Ordinance to be adopted by the Bossier City Council. Parts of a permitted SWPPP may include (but will not be limited to) the following:

- Check dams
- Construction entrances
- Filter berms
- Geotextiles
- Grass lined channels
- Rip-rap
- Sediment trap
- Silt fence
- Sodding
- Storm drain inlet protection
- Vegetated buffer zone

Site Plan Review:

The City of Bossier City-Parish has established minimum criteria for effective erosion and sediment site plan review procedures. The 2004 City of Bossier City-Parish Unified Development Code, City Ordinance No. 126 of the Municipal Code of the City of Bossier City, and Ordinance No. 3908 of the Parish Code of Bossier Parish serves as the official guide for erosion and sediment control principles and practices. The Director of Public Utilities with the cooperation of the City's Engineering Department shall ensure that all construction site operators and/or owners submit a copy of the SWP3 for review of individual construction site plans to ensure consistency with local sediment and erosion control requirements.

Procedures for receipt and consideration of information submitted by the public.

Inquires concerning a construction project (zoning, flood zone, ect.) are received by the city's engineering office and may be forwarded to Environmental Affairs if a complaint or question concerning the stormwater construction ordinance is involved. The hot line for complaints is advertised on the Bossier City web site as well as on any published materials sent to the residents. If a complaint received does not concern the MS4 Stormwater Program, the caller is directed to the correct department. Otherwise ALL complaints are investigated and an investigation report is written detailing the complaint information and how the complaint was resolved. This report is filed in a dedicated folder and is recorded on the annual report to LADEQ.

Procedures for site inspection and enforcement of control measures

Inspections: City inspectors may perform construction site inspections to evaluate whether BMP's established in the construction site SWP3 are effectively implemented. The City may also ensure that requirements established in the operator's General Permit are being put into operation. Upon receiving a copy of the operator and/or owners NOI the City may indiscriminately conduct site inspections. If during a City inspection it is determined that the construction site is in non-compliance with the State issued permit or City ordinance, enforcement actions may be imposed. [MS4 Permit Manager software](#) is used to track the number of inspections, enforcement actions and penalties.

Enforcement: It is unlawful for any person or persons to violate any provision or fails to comply with the requirements of this Ordinance. Any person who violates any of the provisions of this Ordinance shall be subject to one or more of the enforcement actions outlined in this Section.

1) Informal Enforcement:

The Environmental Affairs department will make phone calls or schedule meetings as the first level of enforcement with the person(s) informing them of their non-compliance. As a result of these actions this department will give the person(s) a specified time frame to comply with the City's ordinance.

2) Notice of Violation.

The Director may issue a written Notice of Violation to any person who has violated or is in violation of this Ordinance. Failure to comply with any act required in the

Notice of Violation shall be a separate violation for each day beyond the thirtieth (30th) day following the NOV. Nothing in this Section shall limit the authority of the Director to take any action, including emergency actions or any other enforcement action, without first issuing an NOV. In appropriate situations the Director may notify the person verbally either in person or by telephone prior to, and in some cases in lieu of, written notification.

3) **Stop Work Order**

Whenever the Director determines that any activity is occurring which is not in compliance with the requirements of this Section, the Director can order the activity stopped upon service of written notice upon responsible operator and/or owner. The operator and/or owner shall immediately stop all activities until authorized in writing by the City to proceed. If the operator and/or owner cannot be located, the notice to stop shall be posted in a conspicuous place upon the area where the activity is occurring and shall state the nature of the violation.

4) **Fines/Penalties**

An operator and/or owner who willfully or negligently violates any provision of this Ordinance, or any other related laws or regulations shall be punished by a fine imposed by the Director according to the following schedule of offences:

- 1) First Offence: **\$500.00** per day per offence
- 2) Second Offence: **\$1,000.00** per day per offence
- 3) Third Offence: **\$1,500.00** per day per offence

C. The Director may assess liability for cost to any operator and/or owner in violation of this Ordinance for all actual cost incurred by the City in surveillance, sampling and testing, abatement, and remediation associated with the construction site.

Training and Education for Construction Site Operators

The Environmental Affairs Stormwater Division and the Northwest Home Builders Association offers operator training that includes:

- Preparation of the Notice of Intent
- SWP3 Development and Required Contents of SWP3
- Understanding Permit Language
- Cost of State Permit
- Submittal of Notice of Termination
- BMP education

Implement Year	Construction Site Stormwater Run Off Control Measurable Goals & Activities	Implementation Year or "Ongoing"
2003	Research construction site stormwater control measure by attending workshops, seminars pertaining to LPDES permits and stormwater pollution plans.	Ongoing
2003	Develop and implement a "Unified Development Code" to set standards for all aspects of development including hydrology, site plan review, storm drainage etc.	2003
2004	Create and adopt ordinance mandating construction site storm water runoff control for construction sites of one acre or more. Ordinance shall also address Post-Construction Storm Water Management. (revised – research and meetings with engineering to guide formation of ordinance to adopt in 2005.)	2007
2005	Create and adopt ordinance mandating construction site storm water runoff control for construction sites of one acre or more. Ordinance shall also address Post-Construction Storm Water Management. (amended this measurable goal to complete ordinance in 2007)	2007
2007	Adoption of Ordinance #107 Construction and Post Construction Erosion and Sediment Control Ordinance Regulating Discharges to the Municipal Separate Stormwater Drainage System (MS4) To Prevent and/or Minimize Pollution from Stormwater Runoff.	2007
2007	Enforce Ordinance mandating construction site storm water runoff control for construction sites of 1 acre or more (inspections and related activities. Record number of inspections and enforcement actions.	Ongoing
2007	Provide training workshops for builders concerning permit requirements, SWPPPs and BMPs for construction sites. (revised to include this activity)	Ongoing
2008	Notice sent to all active builders concerning the new ordinance and stormwater requirements to be met prior to being issued a building permit. Common problems/ noncompliance the stormwater inspectors were finding at construction sites were explained and a reminder that enforcement measures would be coming for noncompliance. (revised to include this activity)	2008
2008	A notice was sent to all active builders concerning the installation of washed gravel driveways. Builders were told that the discharge from this activity could not be allowed to run into the street. (revised to include this activity)	2008
2009	Mail-Outs to residents concerning BMP's for paint and building materials waste. (revised to include this activity)	2009
2009	Training film on SWPPP for construction sites & Universal Wastes (bulbs, batteries etc) were purchased. (revised) new activity)	2009
2009	Two inspectors received training and certificates through the	2009

	National Stormwater Center. (revised to include this activity)	
2010	A letter was sent to all active homebuilders detailing common permit violations on job sites and warning to comply with their LPDES permits. (revised to include this activity)	2010
2011	A permits checklist for homebuilders was prepared and placed on the counter at the City of Bossier Permits office to detailing needed documents for their LPDES permits and Environmental Affairs.	2011

	POST-CONSTRUCTION STORMWATER MANAGEMENT	STORMWATER DISCHARGES ASSOCIATED WITH MS4s Program Descriptions 2008 – 2012
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5. POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Program Perspective

The goal of the Post-Construction Stormwater Management program is to implement planning procedures and enforcement mechanisms to reduce, to the maximum extent practicable, stormwater impacts resulting from areas of new development and significant redevelopment.

The City of Bossier City goals for the post construction runoff control are to evaluate the processes as necessary to consider and address stormwater concerns after construction is complete. Goals also include education and outreach activities to help inform and prepare contractors. These activities are needed to establish a post-construction program that will control polluted runoff from construction sites with a land disturbance greater that or equal to one acre (or under one acre if part of a continuous project).

POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Construction sites of 1 acre or more located within the City Limits of Bossier City shall require permanent improvements to be constructed such that storm water runoff shall be as free as practical of sediment, silt, earth, soil, oil or other materials harmful to the receiving streams. Post-Construction Storm Water Management Improvement Plans shall be reviewed and approved prior to construction by the Bossier City Engineer. Construction shall be permitted and inspected by the Bossier City Permits Department.

Post-Construction Storm Water Management Strategies

A storm water pollution prevention plan (SWPPP) shall be developed as part of the general permit requirements for projects affecting 1 acre or more. The (SWPPP) shall stipulate construction and post-construction storm water management strategies. Post-Construction Storm Water Management shall

comply with other requirements as required by the Bossier City Unified Development Code. Parts of a permitted SWPPP may; include (but will not be limited to) the following:

- Buffer zones
- Catch basins
- Detention ponds
- Grassed filter strips
- Open space design
- Storm water wetlands
- Landscaping

Regulatory mechanism

Implement Year	Regulatory Mechanism	Implementation Year or “Ongoing”
2007	Construction and Post Construction Erosion and Sediment Control Ordinance to establish legal authority to carry out all inspections, surveillance, monitoring and enforcement procedures necessary to ensure compliance with this ordinance.	2007

As per Ordinance No. 107 of 2007:

A. Land development/redevelopment that meets the requirements of this Section shall address stormwater runoff quality through the use of permanent BMP’s that shall be maintained in perpetuity. The following shall apply:

1) Structural Control Measures.

Structural BMP’s, such as pipes and inlets, ponds, swales, etc. located on private property shall be owned and operated by the owner(s) of the property on which the BMP is located, unless the City, in writing, agrees that a person other than the owner shall own or operate such BMP measure.

2) BMP Approval.

As a condition of approval of the BMP, the operator and/or owner shall also agree to maintain the BMP to its design capacity unless or until the City relieves the property owner of that responsibility in writing. The obligation to maintain the BMP shall be memorialized on the subdivision plat, annexation plat, development agreement or other instrument or in a form acceptable to the City and shall be recorded in the office

of the Bossier Parish Clerk and recorded.

3) **Inspection and Maintenance.**

The operator and/or owner of a site must, unless an on-site stormwater management facility or practice is dedicated to and accepted by the City, execute an inspection and maintenance agreement that shall be binding on all subsequent owners of the permanent BMPs.

4) **Permanent BMPs.**

Permanent BMPs included in a final drainage plan, which are subject to an inspection and maintenance agreement must undergo ongoing inspections to document maintenance and repair needs and to ensure compliance with the requirements of the agreements, the plan and this Section.

ENFORCEMENT AND PENALTIES.

A. *It is unlawful for any person or persons to violate any provision or fails to comply with any of the requirements of this Ordinance. Any person who violates any of the provisions of this Ordinance shall be subject to one or more of the enforcement actions outlined in this Section.*

1) **Notice of Violation.**

The Director may issue a written Notice of Violation to any person who has violated or is in violation of this Ordinance. Failure to comply with any act required in the Notice of Violation shall be a separate violation for each day beyond the thirtieth (30th) day following the NOV. Nothing in this Section shall limit the authority of the Director to take any action, including emergency actions or any other enforcement action, without first issuing an NOV. In appropriate situations the Director may notify the person verbally either in person or by telephone prior to, and in some cases in lieu of, written notification.

2) *Whenever the Director determines that any activity is occurring which is not in compliance with the requirements of this Section, the Director can order the activity*

stopped upon service of written notice upon responsible operator and/or owner. The operator and/or owner shall immediately stop all activities until authorized in writing by the City to proceed. If the operator and/or owner cannot be located, the notice to stop shall be posted in a conspicuous place upon the area where the activity is occurring and shall state the nature of the violation.

B. An operator and/or owner who willfully or negligently violates any provision of this Ordinance, or any other related laws or regulations shall be punished by a fine imposed by the Director according to the following schedule of offences:

- 1) First Offence: **\$500.00** per day per offence*
- 2) Second Offence: **\$1,000.00** per day per offence*
- 3) Third Offence: **\$1,500.00** per day per offence*

C. The Director may assess liability for cost to any operator and/or owner in violation of this Ordinance for all actual cost incurred by the City in surveillance, sampling and testing, abatement, and remediation associated with the construction site.

Measurable Goals and Activities

Implement Year	Construction and Post Construction Erosion and Sediment Control Measurable Goals/Best Management Practices	Implementation Year or Ongoing
2003	Research post construction site runoff control. Attend workshops and seminars pertaining to LPDES permits and stormwater pollution plans. Document training events attended.	Ongoing
2003	Work with Duncan and Associates to develop a Unified Development Code	2003
2004	Create and adopt ordinance mandating construction site stormwater runoff control for construction sites of one acre or more. Ordinance shall also address Post Construction Stormwater Management. (revised to complete ordinance in 2005)	2007
2004	Formally adopt the Unified Development Code	2004
2005	Create and adopt ordinance mandating construction site stormwater runoff control for construction sites of one acre or more. Ordinance shall also address Post Construction Storm Water Management. (revised to complete ordinance in 2007)	2007
2007	Enforce Ordinance mandating construction site and post construction	Ongoing

	site runoff control for construction sites of one acre or more. (post construction activities through City Engineering Office)	
2008	Pre-construction meetings with developers to ensure drainage requirements/issues meet requirements of the UDC.	Ongoing
2010	Training – Information of web seminars concerning Smart-growth, Green Infrastructure etc. is forwarded to the city planners office.	Ongoing

	POLLUTION PREVENTION/ GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS	STORMWATER DISCHARGES ASSOCIATED WITH MS4s Program Descriptions 2008 - 2012
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6. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

Program Perspective

The goal of the Pollution Prevention/Good Housekeeping for Municipal Operations program is to reduce, to the maximum extent practicable, the amount and type of pollution that is generated by municipal operations or from municipally owned property.

POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

The City of Bossier City Pollution Prevention/Good Housekeeping measures for municipal operations programs goal are to reduce pollutant runoff from municipal operations.

Implementation of an operation and maintenance program

The vehicle maintenance program requires that all city-owned vehicles be inspected quarterly to eliminate the amount of oil, grease and fluid leaks as well as other required maintenance. A computer listing of vehicles needing inspection/maintenance is printed monthly and sent to the various department heads to ensure that the vehicles within their departments are inspected. The City of Bossier City has two street sweepers and full time operators. Although a continuous street sweeping program is utilized, emphasis in the fall is placed on those streets particularly covered with tree litter. The storm sewer system is visually inspected during rain events to ensure good drainage and correction of any blockages within the system. A current program of open ditch cleaning has been very successful in reducing flooding. Outfall inspections will be performed on a regular basis.

The City of Bossier City does not use salt or sand for deicing or store deicing products. In the infrequent happenstance of an ice storm, small amounts of calcium chloride are purchased to apply to entries and exits of municipal operations.

The current pesticide program emphasis is on mosquito control. Permethrin is stored in 2 ½ gallon containers and mixed with mineral oil as needed. Larvicide pellets are also used. These chemicals are stored in a drain less concrete block building. The parks and recreation department uses orthene for fire ant control on public parks used for organized sports. Fertilizers are placed upon just 3 out of 17 playing fields on quarterly basis.

D. Measurable Goals

Implement Year	Measurable Goals and activities	Implementation year or ongoing
2003	Develop annual pollution prevention and good housekeeping training program for employees. Record training activities.	Ongoing
2003	Incorporate into current vehicle maintenance schedule to include a quarterly check for leaking fluids. Document by computer tracking that vehicle was serviced.	Ongoing
2003	Record street sweeping activities by tons of debris removed or miles of sweeping conducted.	Ongoing
2003	Co-sponsor with Shreveport Green the Household Hazardous Waste Disposal events and record number of households from Bossier City participating.	Ongoing
2005	Install two “doggie waste” containers at city park.	2005
2005	Post “Pooper Scooper” signs at park entrances.	2005
2005	Develop a storm water conveyance tracking system to schedule inspections, maintenance activities and other actions taken. (public works dept)	Ongoing
2005	Incorporate information into GIS once the inventory of storm water facilities and outfalls are completed.	Completed in 2004
2005	Record amounts and types of recyclables materials delivered to the recycling center.	Ongoing
2006	Locate all septic tanks in use.	2006 & 2007
2006	Complete a survey of tank owners noting age of tank, frequency of pumping and where it discharges if possible. Distribute information materials on septic tank maintenance. (Amended to not incorporate this goal as the Bossier Parish Health Unit over-sees the maintenance and installation of septic systems and information packets are given to the owners of these systems. The City will develop additional information brochures and mail or hand-deliver to owners of these systems.)	2007 & 2008
2009	Training videos purchased to educate city employees on construction and universal waste.	2009
2011	Stormwater personnel attended a LADEQ MS4 workshop in Shreveport concerning the TMDL program.	2011

